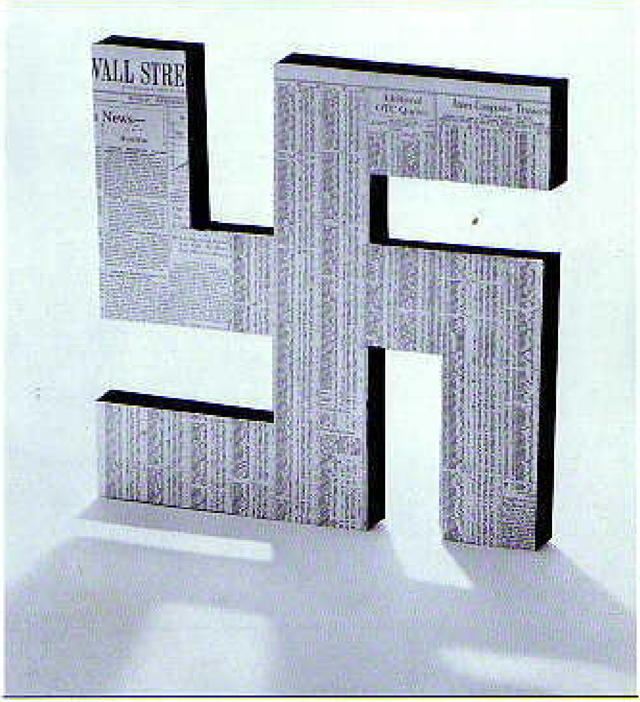
Here is the incredible story of the American financiers who provided the money and matériel Hitler used to launch World War II.



WALL STREET AND THE RISE OF HITLER

Antony C. Sutton

PREFACE

This is the third and final volume of a trilogy describing the role of the American corporate socialists, otherwise known as the Wall Street financial elite or the Eastern Liberal Establishment, in three significant twentieth-century historical events: the 1917 Lenin-Trotsky Revolution in Russia, the 1933 election of Franklin D. Roosevelt in the United States, and the 1933 seizure of power by Adolf Hitler in Germany.

Each of these events introduced some variant of socialism into a major country — *i.e.,* Bolshevik socialism in Russia, New Deal socialism in the United States, and National socialism in Germany.

Contemporary academic histories, with perhaps the sole exception of Carroll Quigley's *Tragedy And Hope,* ignore this evidence. On the other hand, it is understandable that universities and research organizations, dependent on financial aid from foundations that are controlled by this same New York financial elite, would hardly want to support and to publish research on these aspects of international politics. The bravest of trustees is unlikely to bite the hand that feeds his organization.

It is also eminently clear from the evidence in this trilogy that "public-spirited businessmen" do not journey to Washington as lobbyists and administrators in order to serve the United States. They are in Washington to serve their own profit-maximizing interests. Their purpose is not to further a competitive, free-market economy, but to manipulate a politicized regime, call it what you will, to their own advantage.

It is business manipulation of Hitler's accession to power in March 1933 that is the topic of *Wall Street and the Rise of Hitler.*

ANTONY C. SUTTON

July, 1976

BACK

WALL STREET AND THE RISE OF HITLER

By
Antony C. Sutton

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Dedicated to the memory of Floyd Paxton — entrepreneur, inventor, writer, and American, who believed in and worked for individual rights in a free society under the Constitution

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CHAPTER ONE

Wall Street Paves the Way for Hitler

> *The Dawes Plan, adopted in August 1924, fitted perfectly into the plans of the German General Staffs military economists.* (Testimony before United States Senate, Committee on Military Affairs, 1946.)

The post-World War II Kilgore Committee of the United States Senate heard detailed evidence from government officials to the effect that,

> *...when the Nazis came to power in 1933, they found that long strides had been made since 1918 in preparing Germany for war from an economic and industrial point of view.*[1]

This build-up for European war both before and after 1933 was in great part due to Wall Street financial assistance in the 1920s to create the German cartel system, and to technical assistance from well-known American firms which will be identified later, to build the German Wehrmacht. Whereas this financial and technical assistance is referred to as "accidental" or due to the "short-sightedness" of American businessmen, the evidence presented below strongly suggests some degree of premeditation on the part of these American financiers. Similar and unacceptable pleas of "accident" were made on behalf of American financiers and industrialists in the parallel example of building the military power of the Soviet Union from 1917 onwards. Yet these American capitalists were willing to finance and subsidize the Soviet Union while the Vietnam war was underway, knowing that the Soviets were supplying the other side.

The contribution made by American capitalism to German war preparations before 1940 can only be described as phenomenal. It was certainly crucial to German military capabilities. For instance, in 1934 Germany produced domestically only 300,000 tons of natural petroleum products and less than 800,000 tons of synthetic gasoline; the balance was imported. Yet, ten years later in World War II, after transfer of the Standard Oil of New Jersey hydrogenation patents and technology to I. G. Farben (used to produce synthetic gasoline from coal), Germany produced about 6 1/2 million tons of oil — of which 85 percent (5 1/2 million tons) was synthetic oil using the Standard Oil hydrogenation process. Moreover, the control of synthetic oil output in Germany was held by the I. G. Farben subsidiary, Braunkohle-Benzin A. G., and this Farben cartel itself was created in 1926 with Wall Street financial assistance.

On the other hand, the general impression left with the reader by modern historians is that this American technical assistance was accidental and that American industrialists were innocent of wrongdoing. For example, the Kilgore Committee stated:

> *The United States accidentally played an important role in the technical arming of Germany. Although the German military planners had ordered and persuaded manufacturing corporations to install modern equipment for mass*

production, neither the military economists nor the corporations seem to have realized to the full extent what that meant. Their eyes were opened when two of the chief American automobile companies built plants in Germany in order to sell in the European market, without the handicap of ocean freight charges and high German tariffs. Germans were brought to Detroit to learn the techniques of specialized production of components, and of straight-line assembly. What they saw caused further reorganization and refitting of other key German war plants. The techniques learned in Detroit were eventually used to construct the dive-bombing Stukas .... At a later period I. G. Farben representatives in this country enabled a stream of German engineers to visit not only plane plants but others of military importance, in which they learned a great deal that was eventually used against the United States.[2]

Following these observations, which emphasize the "accidental" nature of the assistance, it has been concluded by such academic writers as Gabriel Kolko, who is not usually a supporter of big business, that:

It is almost superfluous to point out that the motives of the American firms bound to contracts with German concerns Were not pro. Nazi, whatever else they may have been.[3]

Yet, Kolko to the contrary, analyses of the contemporary American business press confirm that business journals and newspapers were fully aware of the Nazi threat and its nature, while warning their business readers of German war preparations. And even Kolko admits that:

The business press [in the United States] was aware, from 1935 on, that German prosperity was based on war preparations. More important, it was conscious of the fact that German industry was under the control of the Nazis and was being directed to serve Germany's rearmament, and the firm mentioned most frequently in this context was the giant chemical empire, I. G. Farben.[4]

Further, the evidence presented below suggests that not only was an influential sector of American business aware of the nature of Naziism, but for its own purposes aided Naziism wherever possible (and profitable) —*with full knowledge that the probable outcome would be war involving Europe and the United States.* As we shall see, the pleas of innocence do not accord with the facts.

1924: The Dawes Plan

The Treaty of Versailles after World War I imposed a heavy reparations burden on defeated Germany. This financial burden — a real cause of the German discontent that led to acceptance of Hitlerism — was utilized by the international bankers for their own benefit. The opportunity to float profitable loans for German cartels in the United States was presented by the Dawes Plan and later the Young Plan. Both plans were engineered by these central bankers, who manned the committees for their own pecuniary advantages, and although technically the committees were not appointed by the U.S. Government, the plans were in fact approved and sponsored by the Government.

Post-war haggling by financiers and politicians fixed German reparations at an annual fee of 132 billion gold marks. This was about one quarter of Germany's total 1921 exports. When Germany was unable to make these crushing payments, France and Belgium occupied the Ruhr to take by force what could not be obtained voluntarily. In 1924 the Allies appointed a committee of bankers (headed by American banker Charles G. Dawes) to develop a program of reparations payments. The resulting Dawes Plan was, according to Georgetown University Professor of International Relations Carroll Quigley, "largely a J.P. Morgan production."[5] The Dawes Plan arranged a series of foreign loans totaling $800 million with their proceeds flowing to Germany. These loans are important for our story because the proceeds, raised for the greater part in the United States from dollar investors, were utilized in the mid-1920s to create and consolidate the gigantic chemical and steel combinations of I. G. Farben and Vereinigte Stahlwerke, respectively. These cartels not only helped Hitler to power in 1933; they also produced the bulk of key German war materials used in World War II.

Between 1924 and 1931, under the Dawes Plan and the Young Plan, Germany paid out to the Allies about 86 billion marks in reparations. At the same time Germany borrowed abroad, mainly in the U.S., about 138 billion marks — thus making a net German payment of only three billion marks for reparations. Consequently, the burden of German monetary reparations to the Allies was actually carried by foreign subscribers to German bonds issued by Wall Street financial houses — at significant profits for themselves, of course. And, let it be noted, these firms were owned by the same financiers who periodically took off their banker hats and donned new ones to become "statesmen." As "statesmen" they formulated the Dawes and Young Plans to "solve" the "problem" of reparations. As bankers, they floated the loans. As Carroll Quigley points out,

> *It is worthy of note that this system was set up by the inter. national bankers and that the subsequent lending of other people's money to Germany was very profitable to these bankers.*[6]

Who were the New York international bankers who formed these reparations commissions?

The 1924 Dawes Plan experts from the United States were banker Charles Dawes and Morgan representative Owen Young, who was president of the General Electric Company. Dawes was chairman of the Allied Committee of Experts in 1924. In 1929 Owen Young became chairman of the Committee of Experts, supported by J.P. Morgan himself, with alternates T. W. Lamont, a Morgan partner, and T. N. Perkins, a banker with Morgan associations. In other words, the U.S. delegations were purely and simply, as Quigley has pointed out, J. P. Morgan delegations using the authority and seal of the United States to promote financial plans for their own pecuniary advantage. As a result, as Quigley puts it, the "international bankers sat in heaven, under a rain of fees and commissions."[7]

The German members of the Committee of Experts were equally interesting. In 1924 Hjalmar Schacht was president of the Reichsbank and had taken a prominent role in organization work for the Dawes Plan; so did German banker Carl Melchior. One of the 1928 German delegates was A. Voegler of the German steel cartel Stahlwerke Vereinigte. In brief, the two significant countries involved — the United States and Germany —were represented by the Morgan bankers on one side and Schacht and Voegler on the other, both of whom were key characters in the rise of Hitler's Germany and subsequent German rearmament.

Finally, the members and advisors of the Dawes and Young Commissions were not only associated with New York financial houses but, as we shall later see, were directors of firms within the German cartels which aided Hitler to power.

1928: The Young Plan

According to Hitler's financial genie, Hjalmar Horace Greeley Schacht, and Nazi industrialist Fritz Thyssen, it was the 1928 Young Plan (the successor to the Dawes Plan), formulated by Morgan agent Owen D. Young, that brought Hitler to power in 1933.

Fritz Thyssen claims that,

> *I turned to the National Socialist Party only after I became convinced that the fight against the Young Plan was unavoidable if complete collapse of Germany was to be prevented.*[8]

The difference between the Young Plan and the Dawes Plan was that, while the Young Plan required payments in goods produced in Germany financed by foreign loans, the Young Plan required monetary payments and "In my judgment [wrote Thyssen] the financial debt thus created was bound to disrupt the entire economy of the Reich."

The Young Plan was assertedly a device to occupy Germany with American capital and pledge German real assets for a gigantic mortgage held in the United States. It is noteworthy that German firms with U.S. affiliations evaded the Plan by the device of temporary foreign ownership. For instance, A.E.G. (German General Electric), affiliated with General Electric in the U.S., was sold to a Franco-Belgian holding company and evaded the conditions of the Young Plan. It should be noted in passing that Owen Young was the major financial backer for Franklin D. Roosevelt in the United European venture when FDR, as a budding Wall Street financier, endeavoured to take advantage of Germany's 1925 hyperinflation. The United European venture was a vehicle to speculate and to profit upon the imposition of the Dawes Plan, and is clear evidence of private financiers (including Franklin D. Roosevelt) using the power of the state to advance their own interests by manipulating foreign policy.

Schacht's parallel charge that Owen Young was responsible for the rise of Hitler, while obviously self-serving, is recorded in a U.S. Government Intelligence report relating the interrogation of Dr. Fritz Thyssen in September, 1945:

> *The acceptance of the Young Plan and its financial principles increased unemployment more and more, until about one million were unemployed. People were desperate. Hitler said he would do away with unemployment. The government in power at that time was very bad, and the situation of the people was getting worse. That really was the reason of the enormous success Hitler had in the election. When the last election came, he got about 40%.*[9]

However, it was Schacht, not Owen Young, who conceived the idea which later became the Bank for International Settlements. The actual details were worked out at a conference presided over by Jackson Reynolds, "one of the leading New York bankers," together with Melvin Traylor of the First National Bank of Chicago, Sir Charles Addis, formerly of the Hong Kong and Shanghai Banking Corporation, and various French and German bankers.[10]

The B.I.S. was essential under the Young Plan as a means to afford a ready instrument for promoting international financial relations. According to his own statements, Schacht also gave Owen Young the idea that later became the post-World War II International Bank for Reconstruction and Development:

> *"A bank of this kind will demand financial co-operation be, tween vanquished and victors that will lead to community of interests which in turn will give rise to mutual confidence and understanding and thus promote and ensure peace."*
>
> *I can still vividly recall the setting in which this conversation took place. Owen Young was seated in his armchair puffing away at his pipe, his legs outstretched, his keen eyes fixed unswervingly on me. As is my habit when propounding such arguments I was doing a quiet steady "quarter-deck" up and down the room. When I had finished there was a brief pause. Then his whole face lighted up and his resolve found utterance in the words:*
>
> *"Dr. Schacht, you gave me a wonderful idea and I am going to sell it to the world.*[11]

B.I.S. — The Apex of Control

This interplay of ideas and cooperation between Hjalmar Sehacht in Germany and, through Owen Young, the J.P. Morgan interests in New York, was only one facet of a vast and ambitious system of cooperation and international alliance for world control. As described by Carroll Quigley, this system was "... nothing less than to create a world system of financial control, in private hands, able to dominate the political system of each country and the economy of the world as a whole.[12]

This feudal system worked in the 1920s, as it works today, through the medium of the private central bankers in each country who control the national money supply of individual economies. In the 1920s and 1930s, the New York Federal Reserve System, the Bank of England, the Reichs-bank in Germany, and the Banque de France also more or less influenced the political apparatus of their respective countries indirectly through control of the money supply and creation of the monetary environment. More direct influence was realized by supplying political funds to, or withdrawing support from, politicians and political parties. In the United States, for example, President Herbert Hoover blamed his 1932 defeat on withdrawal of support by Wall Street and the switch of Wall Street finance and influence to Franklin D. Roosevelt.

Politicians amenable to the objectives of financial capitalism, and academies prolific with ideas for world control useful to the international bankers, are kept in line with a system of rewards and penalties. In the early 1930s the guiding vehicle for this international system of financial and political control, called by Quigley the "apex of the system," was the Bank for International Settlements in Basle, Switzerland. The B.I.S. apex continued its work during World War II as the medium through which the bankers — who apparently were not at war with each other — continued a mutually beneficial exchange of ideas, information, and planning for the post-war world. As one writer has observed, war made no difference to the international bankers:

The fact that the Bank possessed a truly international staff did, of course, present a highly anomalous situation in time of war. An American President was transacting the daily business of the Bank through a French General Manager, who had a German Assistant General Manager, while the Secretary-General was an Italian subject. Other nationals occupied other posts. These men were, of course, in daily personal contact with each other. Except for Mr. McKittrick [see infra] *theft were of course situated permanently in Switzerland during this period and were not supposed to be subject to orders of their government at any time. However, the directors of the Bank remained, of course, in their respective countries and had no direct contact with the personnel of the Bank. It is alleged, however, that H. Schacht, president of the Reichsbank, kept a personal representative in Basle during most of this time.*[13]

It was such secret meetings, *"*... meetings more secret than any **ever** held by Royal Ark Masons or by any Rosicrucian Order..."[14] between the central bankers at the "apex" of control that so intrigued contemporary journalists, although they only rarely and briefly penetrated behind the mask of secrecy.

Building the German Cartels

A practical example of international finance operating behind the scenes to build and manipulate politico-economic systems is found in the German cartel system. The three largest loans handled by the Wall Street international bankers for German borrowers in the 1920s under the Dawes Plan were for the benefit of three German cartels which a few years later aided Hitler and the Nazis to power. American financiers were directly represented on the boards of two of these three German cartels. This American assistance to German cartels has been described by James Martin as follows: "These loans for reconstruction became a vehicle for arrangements that did more to promote World War II than to establish peace after World War I.[15]

The three dominant cartels, the amounts borrowed and the Wall Street floating syndicate were as follows:

German Cartel	Wall Street Syndicate	Amount Issued
Allgemeine Elektrizitats-Gesellschaft (A.E.G.) (German General Electric)	National City Co.	$35,000,000
Vereinigte Stahlwerke (United Steelworks)	Dillon, Read & Co.	$70,225,000
American I.G. Chemical (I.G. Farben)	National City Co.	$30,000,000

Looking at all the loans issued, it appears that only a handful of New York financial houses handled the German reparations financing. Three houses — Dillon, Read Co.; Harris, Forbes & Co.; and National City Company — issued almost three-quarters of the total face amount of the loans and reaped most of the profits:

Wall Street Syndicate Manager	**Participation in German industrial issues in U.S. capital market**	**Profits on German loans***	**Percent of total**
Dillon, Read & Co.	$241,325,000	$2.7 million	29.2
Harris, Forbes & Co.	186,500,000	1.4 million	22.6
National City Co.	173,000,000	5.0 million	20.9
Speyer & Co.	59,500,000	0.6 million	7.2
Lee, Higginson & Co.	53,000,000	n.a	6.4
Guaranty Co. of N.Y.	41,575,000	0.2 million	5.0
Kuhn, Loeb & Co.	37,500,000	0.2 million	4.5
Equitable Trust Co.	34,000,000	0.3 million	4.1
TOTAL	$826,400,000	$10.4 million	99.9

Source: See Appendix A
*Robert R. Kuczynski, *Bankers Profits from German Loans*

(Washington, D.C.: Brookings Institution, 1932), p. 127.

After the mid-1920s the two major German combines of I.G. Farben and Vereinigte Stahlwerke dominated the chemical and steel cartel system created by these loans. Although these firms. had a voting majority in the cartels for only two or three basic products, they were able — through control of these basics — to enforce their will throughout the cartel. I.G. Farben was the main producer of basic chemicals used by other combines making chemicals, so its economic power position cannot be measured only by its capacity to produce a few basic chemicals. Similarly, Vereinigte Stahlwerke, with a pig-iron capacity greater than that of all other German iron and steel producers combined, was able to exercise far more influence in the semi-finished iron and steel products cartel than its capacity for pig-iron production suggests. Even so the percentage output of these cartels for all products was significant:

Vereinigte Stahlwerke products	**Percent of German total production in 1938**
Pig iron	50.8
Pipes and tubes	45.5
Heavy plate	36.0

Explosives	35.0
Coal tar	33.3
Bar steel	37.1

I.G. Farben	**Percent of German total production in 1937**
Synthetic methanol	100.0
Magnesium	100.0
Chemical nitrogen	70.0
Explosives	60.0
Synthetic gasoline (high octane)	46.0 (1945)
Brown coal	20.0

Among the products that brought I.G. Farben and Vereinigte Stahlwerke into mutual collaboration were coal tar and chemical nitrogen, both of prime importance for the manufacture of explosives. I. G. Farben had a cartel position that assured dominance in the manufacture and sale of chemical nitrogen, but had only about one percent of the cok-ing capacity of Germany. Hence an agreement was made under which Farben explosives subsidiaries obtained their benzol, toluol, and other primary coal-tar products on terms dictated by Vereinigte Stahlwerke, while Vereinigte Stahlwerke's explosives subsidiary was dependent for its nitrates on terms set by Farben. Under this system of mutual collaboration and inter-dependence, the two cartels, I.G. Farben and Vereinigte Stahlwerke, produced 95 percent of German .explosives in 1957-8 on the eve of World War II. *This production was from capacity built by American loans and to some extent by American technology*.

The I. G. Farben-Standard Oil cooperation for production of synthetic oil from coal gave the I. G. Farben cartel a monopoly of German gasoline production during World War II. Just under one half of German high octane gasoline in 1945 was produced directly by I. G. Farben and most of the balance by its affiliated companies.

In brief, in synthetic gasoline and explosives (two of the very basic elements of modern warfare), the control of German World War II output was in the hands of two German combines created by Wall Street loans under the Dawes Plan.

Moreover, American assistance to Nazi war efforts extended into other areas.[17] The two largest tank producers in Hitler's Germany were Opel, a wholly owned subsidiary of General Motors (controlled by the J.P. Morgan firm), and the Ford A. G. subsidiary of the Ford Motor Company of Detroit. The Nazis granted tax-exempt status to Opel in 1936, to enable General Motors to expand its production facilities. General Motors obligingly reinvested the resulting profits into German industry. Henry Ford was decorated by the Nazis for *his* services to Naziism. (See p. 93.) Alcoa and Dow Chemical worked closely with Nazi industry with numerous transfers of their domestic U.S. technology. Bendix

Aviation, in which the J.P. Morgan-controlled General Motors firm had a major stock interest, supplied Siemens & Halske A. G. in Germany with data on automatic pilots and aircraft instruments. As late as 1940, in the "unofficial war," Bendix Aviation supplied complete technical data to Robert Bosch for aircraft and diesel engine starters and received royalty payments in return.

In brief, American companies associated with the Morgan-Rockefeller international investment bankers — not, it should be noted, the vast bulk of independent American industrialists — were intimately related to the growth of Nazi industry. It is important to note as we develop our story that General Motors, Ford, General Electric, DuPont and the handful of U.S. companies intimately involved with the development of Nazi Germany were — except for the Ford Motor Company — controlled by the Wall Street elite — the J.P. Morgan firm, the Rockefeller Chase Bank and to a lesser extent the Warburg Manhattan bank.[18] This book is not an indictment of *all* American industry and finance. It is an indictment of the "apex" — those firms controlled through the handful of financial houses, the Federal Reserve Bank system, the Bank for International Settlements, and their continuing international cooperative arrangements and cartels which attempt to control the course of world politics and economics.

Footnotes:

[1]United States Congress. Senate. Hearings before a Subcommittee of the Committee on Military Affairs. *Elimination of German Resources for War.* Report pursuant to S. Res. 107 and 146, July 2, 1945, Part 7, (78th Congress and 79th Congress), (Washington: Government Printing Office, 1945), hereafter cited as *Elimination of German Resources.*

[2]*Elimination of German Resources,* p. 174.

[3]Gabriel Kolko, "American Business and Germany, 1930-1941," *The Western Political Quarterly,* Volume XV, 1962.

[4]Ibid, p. 715.

[5]Carroll Quigley, *op. cit.*

[6]Ibid, p. 308.

[7]Carroll Quigley, *op.* cit., p. 309.

[8]Fritz Thyssen, *I Paid Hitler,* (New York: Farrar & Rinehart, Inc., n.d.), p. 88.

[9]U.S. Group Control Council (Germany), Office of the Director of Intelligence, Intelligence Report No. EF/ME/1, 4 September 1945. Also see Hjalmar Schacht, *Confessions of "the old Wizard",* (Boston: Houghton Mifflin, 1956)

[10]Hjalmar Schacht, *op* cit., p. 18. Fritz Thyssen adds, "Even at the time Mr,

Dillon, a New York Banker of Jewish origin whom I much admire told me 'In your place I would not sign the plan.'"

[11]Ibid, p. 282.

[12]Carroll Quigley, *op. cit.*, p. 324.

[13]Henry H. Schloss, *The Bank for International Settlements* (Amsterdam,: North Holland Publishing Company, 1958)

[14]John Hargrave, *Montagu Norman*, (New York: The Greystone Press, n.d.). p. 108.

[15]James Stewart Martin, *op.* cit., p. 70.

[16]See Chapter Seven for more details of Wall Street loans to German industry.

[17]See Gabriel Kolko, *op. cit.*, for numerous examples.

[18]In 1956 the Chase and Manhattan banks merged to become Chase Manhattan.

BACK

CHAPTER TWO

The Empire of I.G. Farben

> *Farben was Hitler and Hitler was Farben.* (Senator Homer T. Bone to Senate Committee on Military Affairs, June 4, 1943.)

On the eve of World War II the German chemical complex of I.G. Farben was the largest chemical manufacturing enterprise in the world, with extraordinary political and economic power and influence within the Hitlerian Nazi state. I. G. has been aptly described as "a state within a state."

The Farben cartel dated from 1925, when organizing genius Hermann Schmitz (with Wall Street financial assistance) created the super-giant chemical enterprise out of six already giant German chemical companies — Badische Anilin, Bayer, Agfa, Hoechst, Weiler-ter-Meer, and Griesheim-Elektron. These companies were merged to become Inter-nationale Gesellschaft Farbenindustrie A.G. — or I.G. Farben for short. Twenty years later the same Hermann Schmitz was put on trial at Nuremburg for war crimes committed by the I. G. cartel. Other I. G. Farben directors were placed on trial but the American affiliates of I. G. Farben and the American directors of I. G. itself were quietly forgotten; the truth was buried in the archives.

It is these U.S. connections in Wall Street that concern us. Without the capital supplied by Wall Street, there would have been no I. G. Farben in the first place and almost certainly no Adolf Hitler and World War II.

German bankers on the Farben *Aufsichsrat* (the supervisory Board of Directors)[1] in the late 1920s included the Hamburg banker Max War-burg, whose brother Paul Warburg was a founder of the Federal Reserve System in the United States. Not coincidentally, Paul Warburg was also on the board of American I. G., Farben's wholly owned U.S. subsidiary. In addition to Max Warburg and Hermann Schmitz, the guiding hand in the creation of the Farben empire, the early Farben *Vorstand* included Carl Bosch, Fritz ter Meer, Kurt Oppenheim and George von Schnitzler.[2] All except Max Warburg were charged as "war criminals" after World War II.

In 1928 the American holdings of I. G. Farben *(i.e.*, the Bayer Company, General Aniline Works, Agfa Ansco, and Winthrop Chemical Company) were organized into a Swiss holding company, i. G. Chemic (Inter-nationale Gesellschaft fur Chemisehe Unternehmungen A. G.), controlled by I. G. Farben in Germany. In the following year these American firms merged to become American I. G. Chemical Corporation, later renamed General Aniline & Film. Hermann Schmitz, the organizer of I. G. Farben in 1925, became a prominent early Nazi and supporter of Hitler, as well as chairman of the Swiss I. G. Chemic and president of American I. G. The Farben complex both in Germany and the United States then developed into an integral part of the formation and operation of the Nazi state machine, the Wehrmacht and the S.S.

I. G. Farben is of peculiar interest in the formation of the Nazi state because Farben directors materially helped. Hitler and the Nazis to power in 1933. We have photographic evidence (see page 60) that I.G. Farben contributed 400,000 RM to Hitler's political "slush fund." It was this secret fund which financed the Nazi seizure of control in March 1933. Many years earlier Farben had obtained Wall Street funds for the 1925 cartelization and expansion in Germany and $30 million for American I. G. in 1929, and had Wall Street directors on the Farben board. It has to be noted that these funds were raised and directors appointed years before Hitler was promoted as the German dictator.

The Economic Power of I. G. Farben

Qualified observers have argued that Germany could not have gone to war in 1939 without I. G. Farben. Between 1927 and the beginning of World War II, I.G. Farben doubled in size, an expansion made possible in great part by American technical assistance and by American bond issues, such as the one for $30 million offered by National City Bank. By 1939 I. G. acquired a participation and managerial influence in some 380 other German firms and over 500 foreign firms. The Farben empire owned its own coal mines, its own electric power plants, iron and steel units, banks, research units, and numerous commercial enterprises. There were over 2,000 cartel agreements between I. G. and foreign firms — including Standard Oil of New Jersey, DuPont, Alcoa, Dow Chemical, and others in the United States, The full story of I,G, Farben and its world-wide ae-tivities before World War II can never be known, as key German records were destroyed in 1945 in anticipation of Allied victory. However, one post-war investigation by the U.S, War Department concluded that:

> *Without I. G.'s immense productive facilities, its intense re. search, and vast international affiliations, Germany's prosecution of the war would have been unthinkable and impossible; Farben not only directed its energies toward arming Germany, but concentrated on weakening her intended victims, and this double-barreled attempt to expand the German industrial potential for war and to restrict that of the rest of the world was not conceived and executed "in the normal course of business." The proof is overwhelming that I. G. Farben officials had full prior knowledge of Germany's plan for world conquest and of each specific aggressive act later undertaken ....*[3]

Directors of Farben firms *(i.e.,* the "I. G. Farben officials" referred to in the investigation) included not only Germans but also prominent American financiers. This 1945 U.S. War Department report concluded that I.G.'s assignment from Hitler in the prewar period was to make Germany self-sufficient in rubber, gasoline, lubricating oils, magnesium, fibers, tanning agents, fats, and explosives. To fulfill this critical assignment, vast sums were spent by I.G. on processes to extract these war materials from indigenous German raw materials - in particular the plentiful German coal resources. Where these processes could not be developed in Germany ,they were acquired from abroad under cartel arrangements. For example, the process for iso-octane, essential for aviation fuels, was obtained from the United States,

> *... in fact entirely [from] the Americans and has become known to us in detail in its separate stages through our agreements with them [Standard Oil of New Jersey] and is being used very extensively by us.*[4]

The process for manufacturing tetra-ethyl lead? essential for aviation gasoline, was obtained by I. G. Farben from the United States, and in 1939 I.G. was sold $20 million of high-grade aviation gasoline by Standard Oil of New Jersey. Even before Germany manufactured tetra-ethyl lead by the American process it was able to "borrow" 500 tons from the Ethyl Corporation. This loan of vital tetra-ethyl lead was not repaid and I.G. forfeited the $1 million security. Further, I.G. purchased large stocks of magnesium from Dow Chemical for incendiary bombs and stockpiled explosives, stabilizers, phosphorus, and cyanides from the outside world.

In 1939, out of 43 major products manufactured by I.G., 28 were of "primary concern" to the German armed forces. Farben's ultimate control of the German war economy, acquired during the 1920s and 1930s with Wall Street assistance, can best be assessed by examining the percentage of German war material output produced by Farben plants in 1945. Farben at that time produced 100 percent of German synthetic rubber, 95 percent of German poison gas (including all the Zyklon B gas used in the concentration camps), 90 percent of German plastics, 88 percent of German magnesium, 84 percent of German explosives, 70 percent of German gunpowder, 46 percent of German high octane (aviation) gasoline, and 33 percent of German synthetic gasoline.[5] (See Chart 2-1 and Table 2-1.)

Table 2-1: German Army (Wehrmacht) Dependence on I.G. Farben Production (1943):

Product	Total German Production	Percent Produced by I.G. Farben
Synthetic Rubber	118,600 tons	100
Methanol	251,000 tons	100
Lubricating Oil	60,000 tons	100
Dyestuffs	31,670 tons	98
Poison Gas	—	95
Nickel	2,000 tons	95
Plastics	57,000 tons	90
Magnesium	27,400 tons	88
Explosives	221,000 tons	84
Gunpowder	210,000 tons	70
High Octane (Aviation) Gasoline	650,000 tons	46
Sulfuric Acid	707,000 tons	35

Chart 2-1: German Army (Wehrmacht) Dependence on I.G. Farben Production (1943)

Dr. von Schnitzler, of the I.G. Farben *Aufsichsrat*, made the following pertinent statement

in 1943:

> *It is no exaggeration to say that without the services of German chemistry performed under the Four Year Plan the prosecution of modern war would have been unthinkable.*[6]

Unfortunately, when we probe the technical origins of the more important of these military materials — quite apart from financial Support for Hitler — we find links to American industry and to American businessmen. There were numerous Farben arrangements with American firms, including cartel marketing arrangements, patent agreements, and technical exchanges as exemplified in the Standard Oil-Ethyl technology transfers mentioned above. These arrangements were used by I.G. to advance Nazi policy abroad, to collect strategic information, and to consolidate a world-wide chemical cartel.

One of the more horrifying aspects of I.G. Farben's cartel was the invention, production, and distribution of the Zyklon B gas, used in Nazi concentration camps. Zyklon B was pure Prussic acid, a lethal poison produced by I.G. Farben Leverkusen and sold from the Bayer sales office through Degesch, an independent license holder. Sales of Zyklon B amounted to almost three-quarters of Degesch business; enough gas to kill 200 million humans was produced and sold by I.G. Farben. The Kilgore Committee report of 1942 makes it clear that the I.G. Farben directors had precise knowledge of the Nazi concentration camps and the use of I.G. chemicals. This prior knowledge becomes significant when we later consider the role of the American directors in I.G.'s American subsidiary. The 1945 interrogation of I.G. Farben director yon Schnitzler reads:

> Q. What did you do when they told you that I.G. chemicals was *[sic]* being used to kill, to murder people held in concentration camps?
>
> A. I was horrified.
>
> Q. Did you do anything about it?
>
> A. I kept it for me [to myself] because it was too terrible .... I asked Muller-Cunradi is it known to you and Ambros and other directors in Auschwitz that the gases and chemicals are being used to murder people.
>
> Q. What did he say?
>
> A. Yes: it is known to all I.G. directors in Auschwitz.[7]

There was no attempt by I.G. Farben to halt production of the gases — a rather ineffective way for von Schnitzler to express any concern for human life, "because it was too terrible."

The Berlin N.W. 7 office of I.G. Farben was the key Nazi overseas espionage center. The unit operated under Farben director Max Ilgner, nephew of I.G. Farben president Hermann Schmitz. Max Ilgner and Hermann Schmitz were on the board of American I.G., with fellow directors Henry Ford of Ford Motor Company, Paul Warburg of Bank of Manhattan, and Charles E. Mitchell of the Federal Reserve Bank of New York.

At the outbreak o£ war in 1939 VOWI employees were ordered into the Wehrmacht but in

fact continued to perform the same work as when nominally under I.G. Farben. One of the more prominent of these Farben intelligence workers in N.W. 7 was Prince Bernhard of the Netherlands, who joined Farben in the early 1930s after completion of an 18-month period of service in the black-uniformed S.S.[8]

The U.S. arm of the VOWI intelligence network was Chemnyco, Inc. According to the War Department,

> *Utilizing normal business contacts Chemnyco was able to transmit to Germany tremendous amounts of material ranging from photographs and blueprints to detailed descriptions of whole industrial plants.*[9]

Chemnyco's vice president in New York was Rudolph Ilgner, an American citizen and brother of American I, G. Farben director Max Ilgner. In brief, Farben operated VOWI, the Nazi foreign intelligence operation, before World War II and the VOWI operation was associated with prominent members of the Wall Street Establishment through American I.G. and Chemnyco.

The U.S. War Department also accused I.G. Farben and its American associates of spearheading Nazi psychological and economic warfare programs through dissemination of propaganda via Farben agents abroad, and of providing foreign exchange for this Nazi propaganda. Farben's cartel arrangements promoted Nazi economic warfare — the outstanding example being the voluntary Standard Oil of New Jersey restriction on development of synthetic rubber in the United States at the behest of I. G. Farben. As the War Department report puts it:

> *The story in short is that because of Standard Oil's determination to maintain an absolute monopoly of synthetic rubber developments in the United States, it fully accomplished I.G.'s purpose of preventing United States production by dissuading American rubber companies from undertaking independent research in developing synthetic rubber processes.*[10]

In 1945 Dr. Oskar Loehr, deputy head of the I.G. "Tea Buro," confirmed that I. G. Farben and Standard Oil of New Jersey operated a "preconceived plan" to suppress development of the synthetic rubber industry in the United States, to the advantage of the German Wehrmacht and to the disadvantage of the United States in World War II.

Dr. Loehr's testimony reads (in part) as follows:

> Q. Is it true that while the delay in divulging the buna [synthetic rubber] processes to American rubber companies was taking place, Chemnyco and Jasco were in the meantime keeping I.G. well informed in regard to synthetic rubber development in the U.S.?
>
> A. Yes.
>
> Q. So that at all times I.G. was fully aware of the state of the development of the American synthetic rubber industry?
>
> A. Yes.

Q. Were you present at the Hague meeting when Mr. Howard [of Standard Oil] went there in 1939?

A. No.

Q. Who was present?

A. Mr. Ringer, who was accompanied by Dr. Brown of Ludwigshafen. Did they tell you about the negotiations?

A. Yes, as far as they were on the buna part of it.

Q. Is it true that Mr. Howard told I.G. at this meeting that the developments in the U.S. had reached such a stage that it would no longer be possible for him to keep the information in regard to the buna processes from the American companies?

A. Mr. Ringer reported it.

Q. Was it at that meeting that for the first time Mr. Howard told I.G. the American rubber companies might have to be informed of the processes and he assured I.G. that Standard Oil would control the synthetic rubber industry in the U.S.? Is that right?

A. That is right. That is the knowledge I got through Mr. Ringer.

Q. So that in all these arrangements since the beginning of the development of the synthetic rubber industry the suppression of the synthetic rubber industry in the U.S. was part of a preconceived plan between I.G. on the one hand and Mr. Howard of Standard Oil on the other?

A. That is a conclusion that must be drawn from the previous facts.[11]

I.G. Farben was pre-war Germany's largest earner of foreign exchange, and this foreign exchange enabled Germany to purchase strategic raw materials, military equipment, and technical processes, and to finance its overseas programs of espionage, propaganda, and varied military and political activities preceding World War II. Acting on behalf of the Nazi state, Farben broadened its own horizon to a world scale which maintained close relations with the Nazi regime and the Wehrmaeht. A liaison office, the *Vermittlungsstelle W,* was established to maintain communications between I.G. Farben and the German Ministry of War:

The aim of this work is the building up o.[a tight organ izatton for armament in the I.G. which could be inserted without difficulty in the existing organization of the I.G. and the individual plants. In the case of war, I.G. will be treated by the authorities concerned with armament questions as one big plant which, in its task for the armament, as far as it is possible to do so from the technical point of view, will regulate itself without any organizational influence from outside (the work in this direction was in principle agreed upon with the Ministry of War Wehrwirtschaftsant) *and from this office with the*

Ministry of Economy. To the field of the work of the Vermittlungsstelle W *belongs, besides the organizational set-up and long-range planning, the continuous collaboration with regard to the armament and technical questions with the authorities of the Reich and with the plants of the I.G.*[12]

Unfortunately the files of the *Vermittlungsstelle* offices were destroyed prior to the end of the war, although it is known from other sources that from 1934 onwards a complex network of transactions evolved between I.G. and the Wehrmacht. In 1934 I. G. Farben began to mobilize for war, and each I.G. plant prepared its war production plans and submitted the plans to the Ministries of War and Economics. By 1935-6 war games were being held at I.G. Farben plants and wartime technical procedures rehearsed.[13] These war games were described by Dr. Struss, head of the Secretariat of I.G.'s Technical Committee:

It is true that since 1934 or 1935, soon after the establishment of the Vermittlungsstelle W *in the different works, theoretical war plant games had been arranged to examine how the effect of bombing on certain factories would materialize. It was particularly taken into consideration what would happen if 100- or 500-kilogram bombs would fall on a certain factory and what would be the result of it. It is also right that the word* Kriegsspiele *was used for it.*

The Kriegsspiele *were prepared by Mr. Ritter and Dr. Eckell, later on partly by Dr. yon Brunning by personal order on Dr. Krauch's own initiative or by order of the Air Force, it is not known to me. The tasks were partly given by the* Vermittlung-sstelle W *and partly by officers of the Air Force. A number of officers of all groups of the Wehrmacht (Navy, Air Force, and Army) participated in these* Kriegsspiele.

The places which were hit by bombs were marked in a map of the plant so that it could be ascertained which parts of the plant were damaged, for example a gas meter or an important pipe line. As soon as the raid finished, the management of the plant ascertained the damages and reported which part of the plant had to stop working; they further reported what time would be required in order to repair the damages. In a following meeting the consequences of the Kriegsspiele *were described and it was ascertained that in the case of Leuna [plant] the damages involved were considerably high; especially it was found out that alterations of the pipe lines were to be made at considerable cost.*[14]

Consequently, throughout the 1930s I. G. Farben did more than just comply with orders from the Nazi regime. Farben was an initiator and operator for the Nazi plans for world conquest. Farben acted as a research and intelligence organization for the German Army and voluntarily initiated Wehrmacht projects. In fact the Army only rarely had to approach Farben; it is estimated that about 40 to 50 percent of Farben projects for the Army were initiated by Farben itself. In brief, in the words of Dr, von Schnitzler:

Thus, in acting as it had done, I.G. contracted a great responsibility and constituted a substantial aid in the chemical domain and decisive help to Hitler's foreign policy, which led to war and to the ruin of Germany. Thus, I must conclude that I.G. is largely responsible for Hitler's policy,

Polishing I. G. Farben's Public Image

This miserable picture of pre-war military preparation was known abroad and had to be sold — or disguised — to the American public in order to facilitate Wall Street fund-raising and technical assistance on behalf of I. G. Farben in the United States. A prominent New York public relations firm was chosen for the job of selling the I.G. Farben combine to America. The most notable public relations firm in the late 1920s and 1930s was Ivy Lee & T.J. Ross of New York. Ivy Lee had previously undertaken a public relations campaign for the Rockefellers, to spruce up the Rockefeller name among the American public. The firm had also produced a syncophantic book entitled *USSR*, undertaking the same clean-up task for the Soviet Union — even while Soviet labor camps were in full blast in the late 20s and early 30s.

From 1929 onwards Ivy Lee became public relations counsel for I. G. Farben in the United States. In 1934 Ivy Lee presented testimony to the House Un-American Activities Committee on this work for Farben.[15] Lee testified that I.G. Farben was affiliated with the American Farben firm and "The American I.G. is a holding company with directors such people as Edsel Ford, Walter Teagle, one of the officers of the City Bank .... " Lee explained that he was paid $25,000 per year under a contract made with Max Ilgner of I.G. Farben. His job was to counter criticism levelled at I.G. Farben within the United States. The advice given by Ivy Lee to Farben on this problem was acceptable enough:

> *In the first place, I have told them that they could never in the world get the American people reconciled to their treatment of the Jews: that that was just foreign to the American mentality and could never be justified in the American public opinion, and there was no use trying.*
>
> *In the second place, anything that savored of Nazi propaganda in this country was a mistake and ought not to be under. taken. Our people regard it as meddling with American affairs, and it was bad business.*[16]

The initial payment of $4,500 to Ivy Lee under this contract was made by Hermann Schmitz, chairman of I.G. Farben in Germany. It was deposited in the New York Trust Company under the name of I. G. Chemic (or the "Swiss I.G.," as Ivy Lee termed it). However, the second and major payment of $14,450 was made by William von Rath of the American I.G. and also deposited by Ivy Lee in New York Trust Company, for the credit of his personal account. (The firm account was at the Chase Bank.) This point about the origin of the funds is 'important when we consider the identity of directors of American I.G., because payment by American I.G. meant that the bulk of the Nazi propaganda funds were not of German origin. *They were American funds earned in the U.S. and under control of American directors, although used for Nazi propaganda in the United States.*

In other words, most of the Nazi propaganda funds handled by Ivy Lee were *not* imported from Germany.

The use to which these American funds were put was brought out under questioning by the House Un-American Activities Committee:

> Mr. DICKSTEIN. As I understand you, you testified that you received no

> propaganda at all, and that you had nothing to do with the distribution of propaganda in this country?
>
> Mr. LEE. I did not testify I received none Mr. Dickstein.
>
> Mr. DICKSTEIN. I will eliminate that part of the question, then.
>
> Mr. LEE. I testified that I disseminated none whatever.
>
> Mr. DICKSTEIN. Have you received or has your firm received any propaganda literature from Germany at any time?
>
> Mr. LEE. Yes, sir.
>
> Mr. DICKSTEIN. And when was that?
>
> Mr. LEE. Oh, we have received — it is a question of what you call propaganda. We have received an immense amount of literature.
>
> Mr. DICKSTEIN. You do not know what that literature was and what it contained?
>
> Mr. LEE. We have received books and pamphlets and newspaper clippings and documents, world without end.
>
> Mr. DICKSTEIN. I assume someone in your office would go over them and see what they were?
>
> Mr. LEE. Yes, sir.
>
> Mr. DICKSTEIN. And then after you found out what they were, I assume you kept copies of them?
>
> Mr. LEE. In some cases, yes: and in some, no. A great many of them, of course, were in German, and I had what my son sent me. He said they were interesting and significant, and those I had translated or excerpts of them made.[17]

Finally, Ivy Lee employed Burnham Carter to study American new paper reports on Germany and prepare suitable pro-Nazi replies. It should be noted that this German literature was not Farben literature, it was official Hitler literature:

> Mr. DICKSTEIN. In other words, you receive this material that deals with German conditions today: You examine it and you advise them. It has nothing to do with the German Government, although the material, the literature, is official literature of the Hitler regime. That is correct, is it not?
>
> Mr. LEE. Well, a good deal of the literature was not official.
>
> Mr. DICKSTEIN. It was not I.G. literature, was it?

Mr. LEE. No; I.G. sent it to me.

Mr. DICKSTEIN. Can you show us one scrap of paper that came in here that had anything to do with the I.G.?

Mr. LEE. Oh, yes. They issue a good deal of literature. But I do not want to beg the question. There is no question whatever that under their authority I have received an immense amount of material that came from official and unofficial sources.

Mr. DICKSTEIN. Exactly. In other words, the material that was sent here by the I.G. was material spread — we would call it propaganda t by authority of the German Government. But the distinction that you make in your statement is, as I take it, that the German Government did not send it to you directly; that it was sent to you by the I.G.

Mr. LEE. Right.

Mr. DICKSTEIN. And it had nothing to do with their business relations just now.

Mr. LEE. That is correct.

The American I.G. Farben

Who were the prominent Wall Street establishment financiers who directed the activities of American I.G., the I.G. Farben affiliate in the United States promoting Nazi propaganda?

American I.G. Farben directors included some of the more prominent members of Wall Street. German interests re-entered the United States after World War I, and successfully overcame barriers designed to keep I.G. out of the American market. Neither seizure of German patents, establishment of the Chemical Foundation, nor high tariff walls were a major problem.

By 1925, General Dyestuff Corporation was established as the exclusive selling agent for products manufactured by Gasselli Dyestuff (renamed General Aniline Works, Inc., in 1929) and imported from Germany. The stock of General Aniline Works was transferred in 1929 to American I.G. Chemical Corporation and later in 1939 to General Aniline & Film Corporation, into which American I.G. and General Aniline Works were merged. American I.G. and its successor, General Aniline & Film, is the unit through which control of I.G.'s enterprises in the U.S. was maintained. The stock authorization of American I.G. was 3,000,000 common A

shares and 3,000,000 common B shares. In return for stock interests in General Aniline Works and Agfa-Ansco Corporation, I.G. Farben in Germany received all the B shares and 400,000 A shares. Thirty million dollars of convertible bonds were sold to the American public and guaranteed as to principal and interest by the German I.G. Farben, which received an option to purchase an additional 1,000,000 A shares.

Table 2-2: The Directors of American I.G. at 1930:

American I,G. Director	Citizenship	Other Major Associations
Carl BOSCH	German	FORD MOTOR CO. A-G
Edsel B. FORD	U.S.	FORD MOTOR CO. DETROIT
Max ILGNER	German	Directed I.G. FARBEN N.W.7 (INTELLIGENCE) office. Guilty at Nuremberg War Crimes Trials.
F. Ter MEER	German	Guilty at Nuremberg War Crimes Trials
H.A. METZ	U.S.	Director of I.G. Farben Germany and BANK OF MANHATTAN (U.S.)
C.E. MITCHELL	U.S.	Director of FEDERAL RESERVE BANK OF N.Y. and NATIONAL CITY BANK
Herman SCHMITZ	German	On boards of I.G. Farben (President) (Germany) Deutsche Bank (Germany) and BANK FOR INTERNATIONAL SETTLEMENTS. Guilty at Nuremberg War Crimes Trials.
Walter TEAGLE	U.S.	Director FEDERAL RESERVE BANK OF NEW YORK and STANDARD OIL OF NEW JERSEY
W.H. yon RATH	Naturalized	Director of GERMAN GENERAL U.S. ELECTRIC (A.E.G.)
Paul M. WARBURG	U.S.	First member of the FEDERAL RESERVE BANK OF NEW YORK and BANK OF MANHATTAN
W.E. WEISS	U.S.	Sterling Products

Source: Moody's Manual of Investments; 1930, p. 2149.

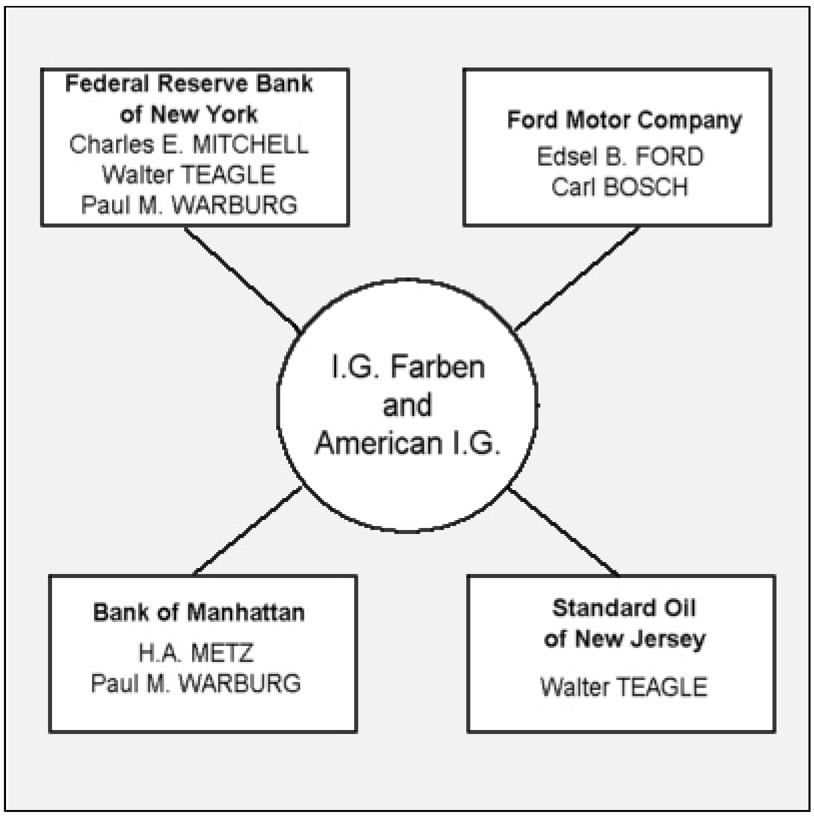
Note: Walter DUISBERG (U.S.), W. GRIEF (U.S.), and Adolf KUTTROFF (U.S.) were also Directors of American I.G. Farben at this period.

The management of American I.G. (later General Aniline) was dominated by I.G. or former I.G. officials. (See Table 9..9..) Hermann Schmitz served as president from 1929 to 1936 and was then succeeded by his brother, Dietrich A. Schmitz, a naturalized American citizen,

until 1941. Hermann Schmitz, who was also a director of the bank for International Settlements, the "apex" of the international financial control system. He remained as chairman of the board of directors from 1936 to 1939.

The original board of directors included nine members who were, or had been, members o [the board of I.G. Farben in Germany (Hermann Schmitz, carl Bosch, Max Ilgner, Fritz ter Meer, and Wilfred Grief), or had been previously employed by I.G. Farben in Germany (Walter Duisberg, Adolph Kuttroff, W.H. yon Rath, Herman A. Metz). Herman A. Metz was an American citizen, a staunch Democrat in politics and a former comptroller of the City of New York. A tenth, W.E. Weiss, had been under contract to I.G.

Directors of American I.G. were not only prominent in Wall Street and American industry but more significantly were drawn from a few highly influential institutions:



The remaining four members of the American I.G. board were prominent American citizens and members of the Wall Street financial elite: C.E. Mitchell, chairman of National City Bank and the Federal Reserve Bank of New York; Edsel B. Ford, president of Ford Motor Company; W.C. Teagle, another director of Standard Oil of New Jersey; and, Paul Warburg, first member of the Federal Reserve Bank of New York and chairman of the Bank of Manhattan Company.

Directors of American I.G. were not only prominent in Wall Street and American industry but more significantly were drawn from a few highly influential institutions. (See chart above.)

Between 1929 and 1939 there were changes in the make-up of the board of American I.G. The number of directors varied from time to time, although a majority always had I.G.

backgrounds or connections, and the board never had less than four American directors. In 1939 — presumably looking ahead to World War II — an effort was made to give the board a more American complexion, but despite the resignation of Hermann Schmitz, Carl Bosch, and Walter Duisberg, and the appointment of seven new directors, seven members still belonged to the I.G. group. This I.G. predominance increased during 1940 and 1941 as American directors, including Edsel Ford, realized the political unhealthiness of I.G. and resigned.

Several basic observations can be made from this evidence. First, the board of American I.G. had three directors from the Federal Reserve Bank of New York, the most influential of the various Federal Reserve Banks. American I.G. also had interlocks with Standard Oil of New Jersey, Ford Motor Company, Bank of Manhattan (later to become the Chase Manhattan), and A.E.G. (German General Electric). Second, three members of the board of this American I.G. were found guilty at Nuremburg War Crimes Trials. These were the German, not the American, members. Among these Germans was Max Ilgner, director of the I.G. Farben N.W. 7 office in Berlin, *i.e.,* the Nazi pre-war intelligence office. If the directors of a corporation are collectively responsible for the activities of the corporation, then the American directors should also have been placed on trial at Nuremburg, along with the German directors — that is, if the purpose of the trials was to determine war guilt. Of course, if the purpose of the trials had been to divert attention away from the U.S. involvement in Hitler's rise to power, they succeeded very well in such an objective.

Footnotes:

[1]German firms have a two-tier board of directors. The *Aufsichsrat* concerns itself with overall supervision, including financial policy, while the *Vorstand* is concerned with day-to-day management.

[2]Taken from *Der Farben-Konzern 1928,* (Hoppenstedt, Berlin: I928), pp. 4-5.

[3]*Elimination of German Resources*, p. 943.

[4]Ibid, p. 945.

[5]*New York Times*, October 21, 1945, Section 1, pp. 1, 12.

[6]Ibid, p. 947.

[7]*Elimination of German Resources.*

[8]Bernhard is today better known for his role as chairman of the secretive, so-called Bilderberger meetings. See U.S. Congress, House of Representatives, Special Committee on Un-American Activities, *Investigation of Nazi Propaganda Activities and Investigation of Certain other Propaganda Activities.* 73rd Congress, 2nd Session, Hearings No. 73-DC-4. (Washington: Government Printing Office, 1934), Volume VIII, p. 7525.

[9]Ibid p. 949.

[10]Ibid p. 952.

[11]Ibid p. 1293.

[12]Ibid p. 954.

[13]Ibid p. 954.

[14]Ibid, pp. 954-5.

[15]U.S. Congress. House of Representatives, Special Committee on Un-American Activities, *Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, op. cit.*

[16]Ibid, p. 178.

[17]Ibid, p. 183.

[18]Ibid, p. 188.

BACK

CHAPTER THREE

General Electric Funds Hitler

> *Among the early Roosevelt fascist measures was the National Industry Recovery Act (NRA) of June 16, 1933. The origins of this scheme are worth repeating. These ideas were first suggested by Gerard Swope of the General Electric Company ... following this they were adopted by the United States Chamber of Commerce ....* (Herbert Hoover, *The Memoirs of Herbert Hoover: The Great Depression, 1929-1941*, New York: The Macmillan Company, 1952, p. 420)

The multi-national giant General Electric has an unparalleled role in twentieth-century history. The General Electric Company electrified the Soviet Union in the 1920s and 1930s, and fulfilled for the Soviets Lenin's dictum that "Socialism = electrification."[1] The Swope Plan, created by General Electric's one-time president Gerard Swope, became Franklin D. Roosevelt's New Deal, by a process deplored by one-time President Herbert Hoover and described in *Wall Street and FDR*.[2] There was a long-lasting, intimate relationship between Swope and Young of General Electric Company and the Roosevelt family, as there was between General Electric and the Soviet Union. In 1936 Senator James A. Reed of Missouri, an early Roosevelt supporter, became aware of Roosevelt's betrayal of liberal ideas and attacked the Roosevelt New Deal program as a "tyrannical" measure "leading to despotism, [and] sought by its sponsors under the communistic cry of 'Social Justice.'" Senator Reed further charged on the floor of the Senate that Franklin D. Roosevelt was a "hired man for the economic royalists" in Wall Street and that the Roosevelt family "is one of the largest stockholders in the General Electric Company."[3]

As we probe into behind-the-scenes German interwar history and the story of Hitler and Naziism, we find both Owen D. Young and Gerard Swope of General Electric tied to the rise of Hitlerism and the suppression of German democracy. That General Electric directors are to be found in each of these three distinct historical categories — i.e., the development of the Soviet Union, the creation of Roosevelt's New Deal, and the rise of Hitlerism — suggests how elements of Big Business are keenly interested in the socialization of the world, for their own purposes and objectives, rather than the maintenance of the impartial market place in a free society.[4] General Electric profited handsomely from Bolshevism, from Roosevelt's New Deal socialism, and, as we shall see below, from national socialism in Hitler's Germany.

General Electric in Weimar Germany

Walter Rathenau was, until his assassination in 1922, managing director of Allgemeine Elekrizitats Gesellschaft (A.E.G,), or German General Electric, and like Owen Young and Gerard Swope, his counterparts in the U.S., he was a prominent advocate of corporate socialism. Walter Rathenau spoke out publicly against competition and free enterprise,

Why? Because both Rathanau and Swope wanted the protection and cooperation of the state for their own corporate objectives and profit. (But not of course for anybody else's objectives and profits.) Rathanau expressed their plea in *The New Political Economy:*

> *The new economy will, as we have seen, be no state or governmental economy but a private economy committed to a civic power of resolution which certainly will require state cooperation for organic consolidation to overcome inner friction and increase production and endurance.*[5]

When we disentangle the turgid Rathenau prose, this means that the power of the State was to be made available to private firms for their own corporate purposes, *i.e.,* what is popularly known as national socialism. Rathenau spoke out publicly against competition and free enterprise. inheritance."[6] Not their *own* wealth, so far as can be determined, but the wealth of others who lacked political pull in the State apparatus.

Owen D. Young of General Electric was one of the three U.S. delegates to the 1923 Dawes Plan meeting which established the German reparations program. And in the Dawes and Young Plans we can see how some private firms were able to benefit from the power of the State. The largest single loans from Wall Street to Germany during the 1920s were reparations loans; it was ultimately the U.S. investor who paid for German reparations. The cartelization of the German electrical industry under A.E.G. (as well as the steel and chemical industries discussed in Chapters One and Two) was made possible with these Wall Street loans:

Date of Offering	**Borrower**	**Managing Bank in the U.S.**	**Face Amount of Issue**
Jan. 26, 1925	Allgemeine Elektrizitats-Gesellschaft (A. E, G.)	National City Co.	$10,000,000
Dec. 9, 1925	Allgemeine National City Co. Elektrizitats-Gesellschaft (A. E.G.)		10,000,000
May 22, 1928	Allgemeine Elektrizitats-Gesellschaft (A.E.G.)	National City Co.	10,000,000
June 7, 1928	Allgemeine Elektrizitats-Gesellschaft (A. E.G.)	National City Co.	5,000,000

In 1928, at the Young Plan reparations meetings, we find General Electric president Owen D. Young in the chair as the chief U.S. delegate, appointed by the U.S. government to use

U.S. government power and prestige to decide international financial matters enhancing Wall Street and General Electric profits. In 1930 Owen D. Young, after whom the Young Plan for German reparations was named, became chairman of the Board of General Electric Company in New York City. Young was also chairman of the Executive Committee of Radio Corporation of America and a director of both German General Electric (A.E.G.) and Osram in Germany. Young also served on the boards of other major U.S. corporations, including General Motors, NBC, and RKO; he was a councilor of the National Industrial Conference Board, a director of the International Chamber of Commerce, and deputy chairman of the board of the Federal Reserve Bank of New York.

Gerard Swope was president and director of General Electric Company as well as French and German associated companies, including A.E.G. and Osram in Germany. Swope was also a director of RCA, NBC, and the National City Bank of New York. Other directors of International General Electric at this time reflect Morgan control of the company, and both Young and Swope were generally known as the Morgan representatives on the G.E. board, which included Thomas Cochran, another partner in the J.P. Morgan firm. General Electric director Clark Haynes Minor was president of International General Electric in the 1920s. Another director was Victor M. Cutter of the First National Bank of Boston and a figure in the *"Banana* Revolutions" in Central America.

In the late 1920s Young, Swope, and Minor of International General Electric moved into the German electrical industry and gained, if not control as some have reported, then at least a substantial say in the internal affairs of both A.E.G. and Osram. In July 1929 an agreement was reached between General Electric and three German firms — A.E.G., Siemens & Halske, and Koppel and Company — which between them owned all the shares in Osram, the electric bulb manufacturer. General Electric purchased 16% percent of Osram stock and reached a joint agreement for international control of electric bulbs production and marketing. Clark Minor and Gerard Swope became directors of Osram.[7]

In July 1929 great interest was shown in rumors circulating in German financial circles that General Electric was also buying into A.E.G. and that talks to this end were in progress between A.E.G. and G.E.[8] In August it was confirmed that 14 million marks of common A.E.G. stock were to be issued to General Electric. These shares, added to shares bought on the open market, gave General Electric a 25-percent interest in A.E.G. A closer working agreement was signed between the two companies, providing the German company U.S. technology and patents. It was emphasized in the news reports that A.E.G. would not have participation in G.E., but that on the other hand G.E. would finance expansion of A.E.G. in Germany.[9] The German financial press also noted that there was no A.E.G. representation on the board of G.E. in the United States but that five Americans were now on the board of A.E.G. The *Vossische Zeitung* recorded,

> *The American electrical industry has conquered the worM, and only a few of the remaining opposing bastions have been able to withstand the onslaught...*[10]

By 1930, unknown to the German financial press, General Electric had similarly gained an effective technical monopoly of the Soviet electrical industry and was soon to penetrate even the remaining bastions in Germany, particularly the Siemens group. In January 1930 three G.E. men were elected to the board of A.E.G. — Clark H. Minor, Gerard Swope, and E. H. Baldwin — and International General Electric (I.G.E.) continued its moves to merge the world electrical industry into a giant cartel under Wall Street control.

In February General Electric focused on the remaining German electrical giant, Siemens & Halske, and while able to obtain a large block of debentures issued on behalf of the German firm by Dillon, Read of New York, G.E. was not able to gain participation or directors on the Siemens board. While the German press recognized even this limited control as" an historical economic event of the first order and an important step toward a future world electric trust,"[11] Siemens retained its independence from General Electric — and this independence is important for our story. The *New York Times* reported,

> *The entire press emphasizes the fact that Siemens, contrary to A.E.G., maintains its independence for the future and points out that no General Electric representative will sit on Stemen's board of directors.*[12]

There is no evidence that Siemens, either through Siemens & Halske or Siemens-Schukert, participated directly in the financing of Hitler. Siemens contributed to Hitler only slightly and indirectly through a share participation in Osram. On the other hand, both A.E.G. and Osram directly financed Hitler through the Nationale Treuhand in substantial ways. Siemens retained its independence in the early 1930s while both A.E.G. and Osram were under American dominance and with American directors. *There is no evidence that Siemens, without American directors, financed Hitler. On the other hand, we have irrefutable documentary evidence (see page 56) that both German General Electric and Osram, both with American directors, financed Hitler.*

In the months following the attempted Wall Street take over of Siemens, the pattern of a developing world trust in the electrical industry clarified; there was an end to international patent fights and the G.E. interest in A.E.G. increased to nearly 30 percent.[13]

Consequently, in the early 1930s, as Hitler prepared to grab dictatorial power in Germany — backed by some, but by no means all, German and American industrialists — the German General Electric (A.E.G.) was owned by International General Electric (about 30 percent), the Gesellschaft für Electrische Unternemungen (25 percent), and Ludwig Lowe (25 percent). International General Electric also had an interest of about 16 2/3rds percent in Osram, and an additional indirect influence in

Companies Linked to German General Electric through Common Electric Directors:	**Directors of German General Electric (A.E.G.)**	**Relationship of Linked Firm with Financing of Hitler:**
Accumulatoran-Fabrik	Quandt Pfeffer	*Direct Finance, see p, 55*
Osram	Mamroth Peierls	*Direct Finance, see p. 57*
Deutschen Babcock-Wilcox	Landau	Not known
Vereinigte Stahlwerke	Wolff Nathan Kirdorf Goldschmidt	*Direct Finance, see p. 57*

Krupp	Nathan Klotzbach	*Direct Finance,* *see p. 59*
I.G. Farben	Bucher Flechtheim von Rath	*Direct Finance,* *see p. 57*
Allianz u. Stuttgarten Verein Phoenix	von Rath Wolff Fahrenhorst	Reported, but not substantiated *see p. 57*
Thyssen	Fahrenhorst	*Direct Finance,* *see p. 104*
Demag	Fahrenhorst Flick	*see p. 57*
Dynamit Gelsenkirchener Bergwerks	Flechtheim Kirdorf Flechtheim	Through I.G. Farben *Direct Finance,* *see p. 57*
International General Electric	Young Swope Minor Baldwin	Through A.E.G., *see p. 52*
American I.G. Farben	von Rath	Through I.G. Farben see p. 47
International Bank (Amsterdam)	H. Furstenberg Goldschmidt	Not known

Osram through A.E.G. directors. On the board of A.E,G., apart from the four American directors (Young, Swope, Minor, and Baldwin), we find Pferdmenges of Oppenheim & Co. (another Hitler financier), and Quandt, who owned 75 percent of Accumlatoren-Fabrik, a major direct financier of Hitler. In other words, among the German board members of A.E.G. we find representatives from several of the German firms that financed Hitler in the 1920s and 1930s.

General Electric and the Financing of Hitler

The tap root of modern corporate socialism runs deep into the management of two affiliated multi-national corporations: General Electric Company in the United States and its foreign associates, including German General Electric (A.E.G.), and Osram in Germany. We have noted that Gerard Swope, second president and chairman of General Electric, and Walter Rathanau of A.E.G. promoted radical ideas for control of the State by private business interests.

From 1915 onwards International General Electric (I.G.E.), located at 120 Broadway in New York City, acted as the foreign investment, manufacturing, and selling organization for the General Electric Company. I.G.E. held interests in overseas manufacturing companies including a 25 to 30-percent holding in German General Electric (A.E.G.), plus holdings in Osram G.m.b.H. Kommanditgesellschaft, also in Berlin. These holdings gave International General Electric four directors on the board of A.E.G., and another director at Osram, and significant influence in the internal domestic policies of these German companies. The

significance of this General Electric ownership is that A.E.G. and Osram were prominent suppliers of funds for Hitler in his rise to power in Germany in 1933. A bank transfer slip dated March 2, 1933 from A.E.G. to Delbruck Schickler & Co. in Berlin requests that 60,000 Reichsmark be deposited in the "Nationale Treuhand" (National Trusteeship) account for Hitler's use. This slip is reproduced on page 56.

I.G. Farben was the most important of the domestic financial backers of Hitler, and (as noted elsewhere) I.G. Farben controlled American I.G. Moreover, several directors of A.E.G. were also on the board of I.G. Farben — i.e., Hermann Bucher, chairman of A.E.G. was on the I.G. Farben board; so were A.E.G. directors Julius Flechtheim and Walter von Rath. I.G. Farben contributed 30 percent of the 1933 Hitler National Trusteeship (or takeover) fund.

Walter Fahrenhorst of A.E.G. was also on the board of Phoenix A-G, Thyssen A-G and Demag A-G — and all were contributors to Hitler's fund. Demag A-G contributed 50,000 RM to Hitler's fund and had a director with A.E.G.— the notorious Friedrich Flick, and early Hitler supporter, who was later convicted at the Nuremberg Trials. Accumulatoren Fabrik A-G was a Hitler contributor (25,000 RM, see page 60) with two directors on the A.E.G. board, August Pfeffer and Gunther Quandt. Quandt personally owned 75 percent of Accumulatoren Fabrik.

Osram Gesellschaft, in which International General Electric had a 16 2/3rds direct interest, also had two directors on the A.E.G. board: Paul Mamroth and Heinrich Pferls. Osram contributed 40,000 RM directly to the Hitler fund. The Otto Wolff concern, Vereinigte Stahlwerke A-G, recipient of substantial New York loans in the 1920s, had three directors on the A.E.G. board: Otto Wolff, Henry Nathan and Jakob Goldschmidt. Alfred Krupp yon Bohlen, sole owner of the Krupp organization and an early supporter of Hitler, was a member of the Aufsichsrat of A.E.G. Robert Pferdmenges, a member of Himmler's Circle of Friends, was also a director of A, E.G.

In other words, almost all of the German directors of German General Electric were financial supporters of Hitler and associated not only with A.E.G. but with other companies financing Hitler.

Walter Rathenau[14] became a director of A,E.G. in 1899 and by the early twentieth century was a director of more than 100 corporations. Rathenau was also author of the" Rathenau Plan," which bears a remarkable resemblance to the "Swope Plan" — i.e., FDR's New Deal but written by Swope of G.E. *In other words, we have the extraordinay coincidence that the authors of New Deal-tike plans in the U.S. and Germany were also prime backers of their implementers: Hitler in Germany and Roosevelt in the U.S.*

Swope was chairman of the board of General Electric Company and International General Electric. In 1932 the American directors of A.E.G, were prominently connected with American banking and political circles as follows:

GERARD SWOPE	Chairman of International General Electric and president of General Electric Company, director of National City Bank (and other companies),

	director of A.E.G. and Osram in Germany. Author of FDR's New Deal and member of numerous Roosevelt organizations.
Owen D. Young	Chairman of board of General Electric, and deputy chairman, Federal Reserve Bank of New York. Author, with J. P, Morgan, of the Young Plan which superseded the Dawes Plan in 1929. (See Chapter One.)
CLARK H. Minor	President and director of International General Electric, director of British Thomson Houston, Compania Generale di Electtricita (Italy), and Japan Electric Bond & Share Company (Japan).

In brief, we have hard evidence of unquestioned authenticity (see p, 56) to show that German General Electric contributed substantial sums to Hitler's political fund. There were four American directors of A.E.G. (Baldwin, Swope, Minor, and Clark), which was 80 percent owned by International General Electric. Further, I.G.E. and the four American directors were the largest single interest and consequently had the greatest single influence in A.E.G. actions and policies. Even further, almost all other directors of A.E.G. were connected with firms (I. G. Farben, Accumulatoren Fabrik, *etc.)* which contributed directly — as firms — to Hitler's political fund. However, only the German directors of A.E.G were placed on trial in Nuremburg in 1945.

Technical Cooperation with Krupp

Quite apart from financial assistance to Hitler, General Electric extended its assistance to cartel schemes with other Hitler backers for their mutual benefit and the benefit of the Nazi state. Cemented tungsten carbide is one example of this G.E.-Nazi cooperation. Prior to November 1928, American industries had several sources for both tungsten carbide and tools and dies containing this hard-metal composition. Among these sources were the Krupp Company of Essen, Germany, and two American firms to which Krupp was then shipping and selling, the Union Wire Die Corporation and Thomas Prosser & Son. In 1928 Krupp obligated itself to grant licenses under United States patents which it owned to the Firth-Sterling Steel Company and to the Ludlum Steel Company. Before 1928, this tungsten carbide for use in tools and dies sold in the United states for about $50 a pound.

The United States patents which Krupp claimed to own were assigned from Osram Kommanditgesellschaft, and had been previously assigned by the Osram Company of Germany to General Electric. However, General Electric had also developed its own patents, principally the Hoyt and Gilson patents, covering competing processes for cemented tungsten carbide. General Electric believed that it could utilize these patents independently without infringing on or competing with Krupp patents. But instead of using the G.E. patents independently in competition with Krupp, or testing out its rights under the patent laws, General Electric worked out a cartel agreement with Krupp to pool the patents of both parties and to give General Electric a monopoly control of tungsten carbide in the United States.

The first step in this cartel arrangement was taken by Carboloy Company, Inc., a General Electric subsidiary, incorporated for the purpose of exploiting tungsten carbide. The 1920s price of around $50 a pound was raised by Carboloy to $458 a pound. Obviously, no firm could sell any great amounts of tungsten carbide in this price range, but the price would maximize profits for G.E. In 1934 General Electric and Carboloy were also able to obtain, by purchase, the license granted by Krupp to the Ludlum Steel Company, thereby eliminating one competitor. In 1936, Krupp was induced to refrain from further imports into the United States. Part of the price paid for the elimination from the American market of tungsten carbide manufactured abroad was a reciprocal undertaking that General Electric and Carboloy would not export from the U.S. Thus these American companies tied their own hands by contract, or permitted Krupp to tie their hands, and denied foreign markets to American industry. Carboloy Company then acquired the business of Thomas Prosser & Son, and in 1937, for nearly $1 million, Carboloy acquired the competing business of the Union Wire Die Corporation. By refusing to sell, Krupp cooperated with General Electric and Carboloy to persuade Union Wire Die Corporation to sell out.

Licenses to manufacture tungsten carbide were then refused. A request for license by the Crucible Steel Company was refused in 1936. A request by the Chrysler Corporation for a license was refused in 1938. A license by the Triplett Electrical Instrument Company was refused on April 25, 1940. A license was also refused to the General Cable Company. The Ford Motor Company for several years expressed strong opposition to the high-price policy followed by the Carboloy Company, and at one point made a request for the right to manufacture for its own use. This was refused. As a result of these tactics, General Electric and its subsidiary Carboloy emerged in 1936 or 1937 with virtually a complete monopoly of tungsten carbide in the United States.

In brief, General Electric — with the cooperation of another Hitler supporter, Krupp — jointly obtained for G,E. a monopoly in the U.S. for tungsten carbide. So when World War II began, General Electric had a monopoly at an established price of $450 a pound — almost ten times more than the 1928 price — and use in the U.S. had been correspondingly restricted,

A.E.G. Avoids the Bombs in World War II

By 1939 the German electrical industry had become closely affiliated with two U.S. firms: International General Electric and International Telephone and Telegraph. The largest firms in German electrical production and their affiliations listed in order of importance were:

Firm and Type of Production	**Percent of German 1939 production**	**U.S. Affiliated Firm**
Heavy Current Industry		
General Electric (A.E.G.)	40 percent	International General Electric
Siemens Schukert A.G.	40 percent	None
Brown Boveri et Cie	17 percent	None

Telephone and Telegraph		
Siemens und Halske	60 percent	None
Lorenz A.G.	85 percent	I.T.T
Radio		
Telefunken (A.E.G. after 1941)	60 percent	International General Electric
Lorenz	35 percent	I.T.T.
Wire and Cable		
Felton & Guilleaume A.G.	20 percent	I.T.T.
Siemens	20 percent	None
A.E.G.	20 percent	International General Electric

In other words, in 1939 the German electrical equipment industry was concentrated into a few major corporations linked in an international cartel and by stock ownership to two .major U.S. corporations. This industrial complex was never a prime target for bombing in World War II. The A.E.G. and I.T.T. plants were hit only incidentally in area raids and then but rarely. The electrical equipment plants bombed as targets were not those affiliated with U.S. firms. It was Brown Boveri at Mannheim and Siemensstadt in Berlin — which were *not* connected with the U.S. — who were bombed. As a result, German production of electrical war equipment rose steadily throughout World War II, peaking as late as 1944. According to the U.S. Strategic Bombing Survey reports, "In the opinion of Speers' assistants and plant officials, the war effort in Germany was never hindered in any important manner by any shortage of electrical equipment."[15]

One example of the non-bombing policy for German General Electric was the A. E.G. plant at 185 Muggenhofer Strasse, Nuremburg. Study of this plant's output in World War II is of interest because it illustrates the extent to which purely peacetime production was converted to war work. The pre-war plant manufactured household equipment, such as hot plates, electric ranges, electric irons, toasters, industrial baking ovens, radiators, water heaters, kitchen ovens, and industrial heaters. In 1939, 1940 and 1941, most of the Nuremburg plant's production facilities were used for the manufacture of peacetime products. In 1942 the plant's production was shifted to manufacture of war equipment. Metal parts for communications equipment and munitions such as bombs and mines were made. Other war production consisted of parts for searchlights and amplifiers. The following tabulation very strikingly shows the conversion to war work:

Year	Total sales in 1000 RM	Percent for war	Percent ordinary production
1939	12,469	5	95
1940	11,754	15	85
1941	21,194	40	60
1942	20,689	61	39
1948	31,455	67	33

1944	31,205	69	31

The actual physical damage by bombing to this plant was insignificant. No serious damage occurred until the raids of February 20 and 21, 1945, near the end of the war, and then protection had been fairly well developed. Raids during which bombs struck in the plant area and the trifling damage done are listed as follows:

Date of raid	Bombs striking plant	Damage done
March 8, 1943	30 stick type I.B.	Trifling, but 3 storehouses outside the main plant destroyed.
Sept. 9, 1944	None (blast damage)	Trifling, glass and blackout curtain damage.
Nov. 26, 1944	14000 lb. HE in open space in plant grounds	Wood shop destroyed, water main broken.
Feb. 20, 1945	2 HE	3 buildings damaged.
Feb. 21, 1945	5 HE, many I.B.'s	Administration bldg. destroyed & enameling works damaged by HE.

Another example of a German General Electric plant not bombed is the A.E.G. plant at Koppelsdorf producing radar sets and bomber antennae. Other A.E.G. plants which were not bombed and their war equipment production were:

LIST OF A.E.G. FACTORIES NOT BOMBED IN WORLD WAR II

	Name of Branch	Location	Product
1.	Werk Reiehmannsdoff mit Unterabteilungen in Wallendorf und Unterweissbach	Kries Saalfeld	Measuring Instruments
2.	Werk Marktschorgast	Bayreuth	Starters
3.	Werk F18ha	Sachsen	Short Wave Sending Sets
4.	Werk Reichenbach	Vogtland	Dry Cell Batteries
5.	Werk Burglengefeld	Sachsen/S.E. Chemnitz	Heavy Starters
6.	Werk Nuremburg	Belringersdorf/ Nuremburg	Small Components
7.	Werk Zirndorf	Nuremburg	Heavy Starters
8.	Werk Mattinghofen	Oberdonau	1 KW Senders 250

	Meters & long wave for torpedo boats & U-boats
9. Unterwerk Neustadt Coburg	Radar Equipment

That the A.E.G. plants in Germany were not bombed in World War II was confirmed by the United States Strategic Bombing Survey, officered by such academics as John K. Galbraith and such Wall Streeters as George W. Ball and Paul H. Nitze. Their "German Electrical Equipment Industry Report" dated January 1947 concludes:

> *The industry has never been attacked as a basic target system, but a few plants,* i.e. *Brown Boveri at Mannheim, Bosch at Stuutgart and Siemenstadt in Berlin, have been subjected to precision raids; many others were hit in area raids.*[17]

At the end of World War II an Allied investigation team known as FIAT was sent to examine bomb damage to German electrical industry plants. The team for the electrical industry consisted of Alexander G.P.E. Sanders of International Telephone and Telegraph of New York, Whit-worth Ferguson of Ferguson Electric Company, New York, and Erich J. Borgman of Westinghouse Electric. Although the stated objective of these teams was to examine the effects on Allied bombing of German targets, the objective of this particular team was to get the German electrical equipment industry back into production as soon as possible. Whirworth Ferguson wrote a report dated March 31, 1945 on the A.E.G. Ostland-werke and concluded, "this plant is immediately available for production of fine metal parts and assemblies.[18]

To conclude, we find that both Rathenau of A.E.G. and Swope of General Electric in the U.S. had similar ideas of putting the State to work for their own corporate ends. General Electric was prominent in financing Hitler, it profited handsomely from war production — and yet it managed to evade bombing in World War II. Obviously the story briefly surveyed here deserves a much more thorough — and official — investigation.

Footnotes:

[1]For the technical details see the three-volume study, Antony C. Sutton, *Western Technology and Soviet Economic Development*, (Stanford, California: Hoover Institution Press, 1968, 1971), 1973), hereafter cited as *Western Technology Series.*

[2](New York: Arlington House Publishers, 1975)

[3]*New York Times,* October 6, 1936. See also Antony C. Sutton, *Wall Street and FDR, op. cit.*

[4]Of course, socialist pleading by businessmen is still with us. Witness the injured cries when President Ford proposed deregulation of airlines and trucking. See for example *Wall Street Journal,* November 25, 1975.

[5]Mimeographed Translation in Hoover Institution Library, p. 67. Also see Walter Rathenau, *In Days to Come,* (London: Allen & Unwin, n.d.)

[6]Ibid, p. 249.

[7]*New York Times,* July 2, 1929.

[8]Ibid, July 28, 1929.

[9]Ibid, August 2, 1929 and August 4, 1929.

[10]Ibid, August 6, 1929.

[11]Ibid, February 2, 1930.

[12]Ibid, February 2, 1930.

[13]Ibid, May 11, 1930. For the prewar machinations of General Electric, Osram, and the Dutch company N.V. Philips Gloeilampenfabrieken of Eindhoven Holland, see Chapter 11, *"Electric* Eels," in James Stewart Martin, *op cit.* Martin was Chief of the Economic Warfare Division of the U.S. Department of Justice and comments that "The A.E.G. of Germany was largely controlled by the American company, General Electric." The assumption by this author is that the G.E. influence was somewhat less than controlling although substantial enough. Because of Martin's official position and access to official documents, not known to the author, his statement that A.E.G. was "largely controlled" by U.S. General Electric cannot be lightly dismissed. However, if we accept that G.E. "largely controlled" A.E.G., then the most serious questions arise which clamor for investigation. A.E.G. was a prime financier of Hitler and "control" would more deeply implicate the U.S. parent company than is suggested by the evidence presented here.

[14]Son of Emil Rathenau, founder of A.E.G., born in 1867 and assassinated in 1922.

[15]The United States Strategic Bombing Survey, *German Electrical Equipment Industry/Report,* (Equipment Division, January 1947), p. 4.

[16]U.S. Strategic Bombing Survey, *Plant Report of A.E.G. (Allgemeine Elektrizitats Gesellschaft),* Nuremburg, Germany: June 1945), p. 6.

[17]p. 3. Consequently, "production during the war was adequate until November 1944" and "in the opinion of Speer assistants and plant officials the war effort in Germany was never hindered in any important manner by any shortage of electrical equipment." Difficulties arose only at the very end of the war when the whole economy was threatened with collapse. The report concluded, "All important needs for electrical equipment in 1944 may therefore be said to have

been met, since plans were always optimistic."

[18]U.S. Strategic Bombing Survey, *AEG-Ostlandwerke GmbH*, by Whitworth Ferguson, 31 May 1945.

BACK

CHAPTER FOUR

Standard Oil Fuels World War II

> *In two gears Germany will be manufacturing oil and gas enough out of soft coal for a long war. The Standard Oil of New York is furnishing millions of dollars to help.* (Report from the Commercial Attaché, U.S. Embassy in Berlin, Germany, January 1933, to State Department in Washington, D.C,)

The Standard Oil group of companies, in which the Rockefeller family owned a one-quarter (and controlling) interest,[1] was of critical assistance in helping Nazi Germany prepare for World War II. This assistance in military preparation came about because Germany's relatively insignificant supplies of crude petroleum were quite insufficient for modern mechanized warfare; in 1934 for instance about 85 percent of German finished petroleum products were imported. The solution adopted by Nazi Germany was to manufacture synthetic gasoline from its plentiful domestic coal supplies. It was the hydrogenation process of producing synthetic gasoline and iso-octane properties in gasoline that enabled Germany to go to war in 1940 — and this hydrogenation process was developed and financed by the Standard Oil laboratories in the United States in partnership with I.G. Farben.

Evidence presented to the Truman, Bone, and Kilgore Committees after World War II confirmed that Standard Oil had at the same time "seriously imperiled the war preparations of the United States."[2] Documentary evidence was presented to all three Congressional committees that before World War II Standard Oil had agreed with I.G. Farben, in the so-called Jasco agreement, that synthetic rubber was within Farben's sphere of influence, while Standard Oil was to have an absolute monopoly in the U.S. *only if and when* Farben allowed development of synthetic rubber to take place in the U.S.:

> *Accordingly [concluded the Kilgore Committee] Standard fully accomplished I.G.'s purpose of preventing United States production by dissuading American rubber companies from undertaking independent research in developing synthetic rubber processes.*[3]

Regrettably, the Congressional committees did not explore an even more ominous aspect of this Standard Oil — I.G. Farben collusion: that at this time directors of Standard Oil of New Jersey had not only strategic warfare affiliations to I.G. Farben, but had other links with Hitler's Germany — even to the extent of contributing, through German subsidiary companies, to Heinrich Himmler's personal fund and with membership in Himmler's Circle of Friends as late as 1944.

During World War II Standard Oil of New Jersey was accused of treason for this pre-war alliance with Farben, even while its continuing wartime activities within Himmler's Circle of Friends were unknown. The accusations of treason were vehemently denied by Standard Oil. One of the more prominent of these defenses was published by R.T. Haslam, a director

of Standard Oil of New Jersey, in *The Petroleum Times* (December 25, 1943), and entitled "Secrets Turned into Mighty War Weapons Through I.G. Farben Agreement."[4] This was an attempt to turn the tables and present the pre-war collusion as advantageous to the United States.

Whatever may have been Standard Oil's wartime recollections and hasty defense, the 1929 negotiations and contracts between Standard and I.G. Farben were recorded in the contemporary press and describe the agreements between Standard Oil of New Jersey and I.G. Farben and their intent. In April 1929 Walter C. Teagle, president of Standard Oil of New Jersey, became a director of the newly organized American I.G. Farben. Not because Teagle was interested in the chemical industry but because,

> *It has for some years past enjoyed a very close relationship with certain branches of the research work of the I.G. Farbenin-dustrie which bear closely upon the oil industry.*[5]

It was announced by Teagle that joint research work on production of oil from coal had been carried on for some time and that a research laboratory for this work was to be established *in the United States*.[6] In November 1929 this jointly owned Standard — Farben research company was established *under the management of the Standard Oil Company of New Jersey,* and all research and patents relating to production of oil from coal held by both I.G. and Standard were pooled. Previously, during the period 1926-1929, the two companies had cooperated in development of the hydrogenation process, and experimental plants had been placed in operation in both the U.S. and Germany. It was now proposed to erect new plants in the U.S. at Bayway, New Jersey and Baytown, Texas, in addition to expansion of the earlier experimental plant at Baton Rouge. Standard announced:

> *... the importance of the new contract as applied to this country lay in the fact that it made certain that the hydrogenation process would be developed commercially in this country under the guidance of American oil interests.*[7]

In December 1929 the new company, Standard I.G. Company, was organized. F.A. Howard was named president, and its German and American directors were announced as follows: E.M. Clark, Walter Duisberg, Peter Hurll, R.A. Reidemann, H.G. Seidel, Otto von Schenck, and Guy Wellman.

The majority of the stock in the research company was owned by Standard Oil. The technical work, the process development work, and the construction of three new oil-from-coal plants in the United States was placed in the hands of the Standard Oil Development Company, the Standard Oil technical subsidiary. It is clear from these contemporary reports that the development work on oil from coal was undertaken by Standard Oil of New Jersey within the United States, in Standard Oil plants and with majority financing and control by Standard. The results of this research were made available to I.G. Farben and became the basis for the development of Hitler's oil from-coal-program which made World War II possible.

The Haslam article, written by a former Professor of Chemical Engineering at M.I.T. (then vice president of Standard Oil of New Jersey) argued — contrary to these recorded facts — that Standard Oil was able, through its Farben agreements, to obtain *German* technology for the United States. Haslam cited the manufacture of toluol and paratone (Op-panol), used to

stabilize viscosity of oil, an essential material for desert and Russian winter tank operations, and buna rubber. However, this article, with its erroneous self-serving claims, found its way to wartime Germany and became the subject of a "Secret" I.G. Farben memorandum dated June 6, 1944 from Nuremburg defendent and then-Farben official von Knieriem to fellow Farben management officials. This yon Knieriem "Secret" memo set out those facts Haslam avoided in his *Petroleum Times* article. The memo was in fact a summary of what Standard was unwilling to reveal to the American public — i.e., the major contribution made by Standard Oil of New Jersey to the Nazi war machine. The Farben memorandum states that the Standard Oil agreements were *absolutely essential* for I.G. Farben:

> *The closing of an agreement with Standard was necessary for technical, commercial, and financial reasons:technically, because the specialized experience which was available only in a big oil company was necessary to the further development of our process,* and no such industry existed in Germany; commercially, *because in the absence of state economic control in Germany at that time, IG had to avoid a competitive struggle with the great oil powers, who always sold the best gasoline at the lowest price in contested markets;* financially, *because IG, which had already spent extraordinarily large sums for the development of the process,* had to seek financial relief in order to be able to continue development in other new technical fields, such as buna.[8]

The Farben memorandum then answered the key question: What did I.G. Farben acquire from Standard Oil that was "vital for the conduct of war?" The memo examines those products cited by Haslam — i.e., iso-octane, tuluol, Oppanol-Paratone, and buna — and demonstrates that contrary to Standard Oil's public claim, their technology came to a great extent from the U.S., not from Germany.

On iso-octane the Farben memorandum reads, in part,

> *By reason of their decades of work on motor fuels, the Americans were ahead of us in their knowledge of the quality requirements that are called for by the different uses of motor fuels. In particular they had developed, at great expense, a large number of methods of testing gasoline for different uses. On the basis of their experiments they had recognized the good anti, knock quality of iso-octane long before they had any knowledge of our hydrogenation process. This is proved by the single fact that in America fuels are graded in octane numbers, and iso-octane was entered as the best fuel with the number 100. All this knowledge naturally became ours as a result of the agreement, which saved us much effort and protected us against many errors.*

I.G. Farben adds that Haslam's claim that the production of iso-octane became known in America only through the Farben hydrogenation process was not correct:

> *Especially in the case of iso-octane, it is shown that we owe much to the Americans because in our own work we could draw widely on American information on the behavior of fuels in motors. Moreover, we were also kept currently informed by the Americans on the progress of their production process and its further development.*
>
> *Shortly before the war, a new method for the production of iso-octane was*

found in America — alkylation with isomerization as a preliminary step. This process, which Mr. Haslain does not mention at all, originates in fact entirely with the Americans and has become known to us in detail in its separate stages through our agreements with them, and is being used very extensively by us.

On toluol, I.G. Farben points to a factual inaccuracy in the Haslam article: toluol was *not* produced by hydrogenation in the U.S. is claimed by Professor Haslam. In the case of Oppanol, the I.G. memo calls Haslam's information "incomplete" and so far as buna rubber is concerned, *"we* never gave technical information to the Americans, nor did technical cooperation in the buna field take place." Most importantly, the Farben memo goes on to describe some products not cited by Haslam in his article:

> *As a consequence of our contracts with the Americans, we received from them, above and beyond the agreement, many very valuable contributions for the synthesis and improvement of motor fuels and lubricating oils, which Just now during the war are most useful to us; and we also received other advantages from them. Primarily, the following may be mentioned:*
>
> *(1) Above all, improvement of fuels through the addition of* tetraethyl-lead *and the manufacture of this product. It need not be especially mentioned that without tetraethl-lead the present methods of warfare would be impossible. The fact that since the beginning of the war we could produce tetraethyl-lead is entirely due to the circumstances that, shortly before, the Americans had presented us with the production plans, complete with their know-how. It was, moreover, the first time that the Americans decided to give a license on this process in a foreign country (besides communication of unprotected secrets) and this only on our urgent requests to Standard Oil to fulfill our wish.* Contractually we could not demand it, *and we found out later that the War Department in Washington gave its permission only after long deliberation.*
>
> *(2) Conversion of low-molecular unsaturates into usable gasoline* (polymerization). *Much work in this field has been done here as well as in America. But the Americans were the first to carry the process through on a large scale, which suggested to us also to develop the process on a large technical scale. But above and beyond that, plants built according to American processes are functioning in Germany.*
>
> *(3) In the field of* lubricating oils as *well, Germany through the contract with America, learned of experience which is extraordinarily important for present day warfare.*
>
> *In this connection, we obtained not only the experience of Standard, but, through Standard, the experiences of General Motors and other large American motor companies as well.*
>
> *(4) As a further remarkable example of advantageous effect for us of the contract between IG and Standard Oil, the following should be mentioned: in the years 1934 / 1935 our government had the greatest interest in gathering from abroad a stock of especially valuable mineral oil products (in particular, aviation gasoline and aviation lubricating oil), and holding it in reserve to an*

amount approximately equal to 20 million dollars at market value. The German Government asked IG if it were not possible, on the basis o fits friendly relations with Standard Oil, to buy this amount in Farben's name; actually, however, as trustee of the German Government. The fact that we actually succeeded by means of the most difficult negotiations in buying the quantity desired by our government from the American Standard Oil Company and the Dutch — English Royal — Dutch — Shell group and in transporting it to Germany, was made possible only through the aid of the Standard Oil Co.

Ethyl Lead for the Wehrmacht

Another prominent example of Standard Oil assistance to Nazi Germany — in cooperation with General Motors — was in supplying ethyl lead. Ethyl fluid is an anti-knock compound used in both aviation and automobile fuels to eliminate knocking, and so improve engine efficiency; without such anti-knocking compounds modern mobile warfare would be impractical.

In 1924 the Ethyl Gasoline Corporation was formed in New York City, jointly owned by the Standard Oil Company of New Jersey and General Motors Corporation, to control and utilize U.S. patents for the manufacture and distribution of tetraethyl lead and ethyl fluid in the U.S. and abroad. Up to 1935 manufacture of these products was undertaken *only* in the United States. In 1935 Ethyl Gasoline Corporation transferred its know-how to Germany for use in the Nazi rearmament program. This transfer was undertaken over the protests of the U.S. Government.

Ethyl's intention to transfer its anti-knock technology to Nazi Germany came to the attention of the Army Air Corps in Washington, D.C. On December 15, 1934 E. W. Webb, president of Ethyl Gasoline, was advised that Washington had learned of the intention of "forming a German company with the I.G. to manufacture ethyl lead in that country." The War Department indicated that there was considerable criticism of this technological transfer, which might "have the gravest repercussions" for the U.S.; that the commercial demand for ethyl lead in Germany was too small to be of interest; and,

... it has been claimed that Germany is secretly arming [and] ethyl lead would doubtless be a valuable aid to military aeroplanes.[10]

The Ethyl Company was then advised by the Army Air Corps that "under no conditions should you or the Board of Directors of the Ethyl Gasoline Corporation disclose any secrets or 'know-how' in connection with the manufacture of tetraethyl lead to Germany.[11]

On January 12, 1935 Webb mailed to the Chief of the Army Air Corps a "Statement of Facts," which was in effect a denial that any such technical knowledge would be transmitted; he offered to insert such a clause in the contract to guard against any such transfer. However, contrary to its pledge to the Army Air Corps, Ethyl subsequently signed a joint production agreement with I.G. Farben in Germany to form Ethyl G.m.b.H. and with Montecatini in fascist Italy for the same purpose.

It is worth noting the directors of Ethyl Gasoline Corporation at the time of this transfer:[12] E.W. Webb, president and director; C.F. Kettering; R.P. Russell; W.C. Teagle, Standard Oil

of New Jersey and trustee of FDR's Georgia Warm Springs Foundation; F. A. Howard; E. M. Clark, Standard Oil of New Jersey; A. P. Sloan, Jr.; D. Brown; J. T. Smith; and W.S. Parish of Standard Oil of New Jersey.

The I.G. Farben files captured at the end of the war confirm the importance of this particular technical transfer for the German Wehrmacht:

> *Since the beginning of the war we have been in a position. to produce lead tetraethyl solely because, a short time before the outbreak of the war, the Americans had established plants for us ready for production and supplied us with all available experience. In this manner we did not need to perform the difficult work of development because we could start production right away on the basis of all the experience that the Americans had had for years.*[13]

In 1938, just before the outbreak of war in Europe, the German Luftwaffe had an urgent requirement for 500 tons of tetraethyl lead. Ethyl was advised by an official of DuPont that such quantities of ethyl would be used by Germany for military purposes.[14] This 500 tons was loaned by the Ethyl Export Corporation of New York to Ethyl G.m.b.H. of Germany, in a transaction arranged by the Reich Air Ministry with I.G. Farben director Mueller-Cunradi. The collateral security was arranged in a letter dated September 21, 1938[15] through Brown Brothers, Harriman & Co. of New York.

Standard Oil of New Jersey and Synthetic Rubber

The transfer of ethyl technology for the Nazi war machine was repeated in the case of synthetic rubber. There is no question that the ability of the German Wehrmacht to fight World War II depended on synthetic rubber — as well as on synthetic petroleum — because Germany has no natural rubber, and war would have been impossible without Farben's synthetic rubber production. Farben had a virtual monopoly of this field and the program to produce the large quantities necessary was financed by the Reich:

> *The volume of planned production in this field was far beyond the needs of peacetime economy. The huge costs involved were consistent only with military considerations in which the need for self-sufficiency without regard to cost was decisive.*[16]

As in the ethyl technology transfers, Standard Oil of New Jersey was intimately associated with I.G. Farben's synthetic rubber. A series of joint cartel agreements were made in the late 1920s aimed at a joint world monopoly of synthetic rubber. Hitler's Four Year Plan went into effect in 1937 and in 1938 Standard provided I.G. Farben with its new butyl rubber process. On the other hand Standard kept the German buna process secret within the United States and it was not until June 1940 that Firestone and U.S. Rubber were allowed to participate in testing butyl and granted the buna manufacturing licenses. Even then Standard tried to get the U.S. Government to finance a large-scale buna program — reserving its own funds for the more promising butyl process.[17]

Consequently, Standard assistance in Nazi Germany was not limited to oil from coal, although this was the most important transfer. Not only was the process for tetraethyl

transferred to I.G. Farben and a plant built in Germany owned jointly by I.G., General Motors, and Standard subsidiaries; but as late as 1939 Standard's German subsidiary designed a German plant for aviation gas. Tetraethyl was shipped on an emergency basis for the Wehrmacht and major assistance was given in production of butyl rubber, while holding secret in the U.S. the Farben process for buna. In other words, Standard Oil of New Jersey (first under president W.C. Teagle and then under W..S. Farish) consistently aided the Nazi war machine while refusing to aid the United States.

This sequence of events was not an accident. President W.S. Farish argued that not to have granted such technical assistance to the Wehrmacht "... would have been unwarranted."[18] The assistance was knowledgeable, ranged over more than a decade, and was so substantive that without it the Wehrmacht could not have gone to war in 1939.

The Deutsche-Amerikanische Petroleum A.G. (DAPAG)

The Standard Oil subsidiary in Germany, Deutsche-Amerikanische Petroleum A.G. (DAPAG), was 94-percent owned by Standard Oil of New Jersey. DAPAG had branches throughout Germany, a refinery at Bremen, and a head office in Hamburg. Through DAPAG, Standard Oil of New Jersey was represented in the inner circles of Naziism — the Keppler Circle and Himmler's Circle of Friends. A director of DAPAG was Karl Lindemann, also chairman of the International Chamber of Commerce in Germany, as well as director of several banks, including the Dresdner Bank, the Deutsche Reichsbank, and the private Nazi-oriented bank of C. Melchior & Company, and numerous corporations including the HAPAG (Hamburg-Amerika Line). Lindemann was a member of Keppler's Circle of Friends as late as 1944 and so gave Standard Oil of New Jersey a representative at the very core of Naziism. Another member of the board of DAPAG was Emil Helfrich, who was an original member of the Keppler Circle.

In sum, Standard Oil of New Jersey had two members of the Keppler Circle as directors of its German wholly owned subsidiary. Payments to the Circle from the Standard Oil subsidiary company, and from Lindemann and Helffrich as individual directors, continued until 1944, the year before the end of World War II.[19]

Footnotes:

[1]In 1935, John D. Rockefeller, Jr. owned stock valued at $245 million in Stan dard Oil of New Jersey, Standard Oil of California, and Socony-Vacuun Company, *New York Times*, January 10, 1935.

[2]*Elimination of German Resources*, op cit., p. 1085.

[3]Ibid.

[4]*NMT*, I.G. Farben case, p. 1304.

[5]*New York Times*, April 28, 1929.

[6]Ibid.

[7]Ibid, November 24, 1929.

[8]*NMT,* I.G. Farben case, Volumes VII and VIII, pp. 1304-1311,

[9]See letter from U.S. War Department reproduced as Appendix D.

[10]United States Congress. Senate. Hearings before a subcommittee of the Committee on Military Affairs. *Scientific and Technical Mobilization,* (78th Congress, 1st session, S. 702), Part 16, (Washington: Government Printing Office, 1944), p. 939. Hereafter cited as *Scientific and Technical Mobilization.*

[11]Ibid.

[12]*Oil and Petroleum Yearbook, 1938,* p. 89.

[13]*New York Times,* October 19, 1945, p. 9.

[14]George W. Stocking & Myron W. Watkins, *Cartels in Action,* (New York: The Twentieth Century Fund, 1946), p. 9.

[15]For original documents see *NMT,* I.G. Farben case, Volume VIII, pp. 1189-94.

[16]*NMT,* I.G. Farben case, Volume VIII, p. 1264-5.

[17]*Scientific and Technical Mobilization,* p. 543.

[18]Robert Engler, *The Politics of Oil,* (New York: The MacMillan Company, 1961), p. 102.

[19]See Chapter Nine for details.

BACK

CHAPTER FIVE

I.T.T. Works Both Sides of the War

> *Thus while I.T.T. Focke-Wolfe planes were bombing Allied ships, and I. T. T. lines were passing information to German submarines, I.T.T. direction .finders were saving other ships from torpedoes.* (Anthony Sampson, *The Sovereign State of I.T.T.,* New York: Stein & Day, 1973, p. 40.)

The multi-national giant International Telephone and Telegraph (I.T.T.)[1] was founded in 1920 by Virgin Islands-born entrepreneur Sosthenes Behn. During his lifetime Behn was the epitome of the politicized businessman, earning his profits and building the I.T.T. empire through political maneuverings rather than in the competitive market place. In 1923, through political adroitness, Behn acquired the Spanish telephone monopoly, Compania Telefonica de Espana. In 1924 I.T.T., now backed by the J.P. Morgan firm, bought what later became the International Standard Electric group of manufacturing plants around the world.

The parent board of I.T.T. reflected the J.P. Morgan interests, with Morgan partners Arthur M. Anderson and Russell Leffingwell. The Establishment law firm of Davis, Polk, Wardwell, Gardiner & Reed was represented by the two junior partners, Gardiner & Reed.

DIRECTORS OF I.T.T. IN 1933:

Directors	**Affiliation with other Wall Street firms:**
Arthur M. ANDERSON	Partner, J.P. MORGAN and New York Trust Company
Hernand BEHN	Bank of America
Sosthenes BEHN	NATIONAL CITY BANK
F. Wilder BELLAMY	Partner in Dominick & Dominicik
John W. CUTLER	GRACE NATIONAL BANK, Lee Higginson
George H. GARDINER	Partner in Davis, Polk, Wardwell, Gardiner & Reed
Allen G. HOYT	NATIONAL CITY BANK
Russell C. LEFFINGWELL	Partner J.P. MORGAN and CARNEGIE CORP.
Bradley W. PALMER	Chairman, Executive Committee, UNITED FRUIT
Lansing P. REED	Partner in Davis, Polk, Wardwell, Gardiner & Reed

The National City Bank (NCB) in the Morgan group was represented by two directors, Sosthenes Behn and Allen G. Hoyt. In brief, I.T.T. was a Morgan-controlled company; and we have previously noted the interest of Morgan-controlled companies in war and revolution abroad and political maneuvering in the United States.[2]

In 1930 Behn acquired the German holding company of Standard Elekrizitäts A.G., controlled by I.T.T. (62.0 percent of the voting stock), A.E.G. (81.1 percent of the voting stock) and Felton & Guilleaume (six percent of the voting stock). In this deal Standard acquired two German manufacturing plants and a majority stock interest in Telefonfabrik Berliner A.G.I.T.T. also obtained the Standard subsidiaries in Germany, Ferdinand Schuchardt Berliner Fernsprech-und Telegraphenwerk A,G., as well as Mix & Genest in Berlin, and Suddeutsche Apparate Fabrik G,m.b.H. in Nuremburg.

It is interesting to note in passing that while Sosthenes Behn's I.T.T. controlled telephone companies and manufacturing plants in Germany, the cable traffic between the U.S. and Germany was under the control of Deutsch-Atlantische Telegraphengesellschaft (the German Atlantic Cable Company). This firm, together with the Commercial Cable Company and Western Union Telegraph Company, had a monopoly in transatlantic U.S.-German cable communications. W.A. Harriman & Company took over a block of 625,000 shares in Deutsch-Atlantische in 1925, and the firm's board of directors included an unusual array of characters, many of whom we have met elsewhere. It included, for example, H. F. Albert, the German espionage agent in the United States in World War I; Franklin D. Roosevelt's former business associate yon Berenberg-Gossler; and Dr. Cuno, a former German chancellor of the 1923 inflationary era. I.T.T. in the United States was represented on the board by yon Guilleaume and Max Warburg of the Warburg banking family

Baron Kurt von Schroder and the I.T.T.

There is no record that I.T.T. made direct payments to Hitler before the Nazi grab for power in 1933. On the other hand, numerous payments were made to Heinrich Himmler in the late 1930s and in World War II itself through I.T.T. German subsidiaries. The first meeting between Hitler and I.T.T. officials — so far as we know — was reported in August 1933,[3] when Sosthenes Behn and I.T.T. German representative Henry Manne met with Hitler in Berchesgaden. Subsequently, Behn made contact with the Keppler circle (see Chapter Nine) and, through Keppler's influence, Nazi Baron Kurt von Schröder became the guardian of I.T.T. interests in Germany. Schröder acted as the conduit for I.T.T. money funneled to Heinrich Himmler's S.S. organization in 1944, *while World War II was in progress, and the United states was at war with Germany.*[4]

Through Kurt Schröder, Behn and his I.T.T. gained access to the profitable German armaments industry and bought substantial interest in German armaments firms, including Focke-Wolfe aircraft. These armaments operations made handsome profits, which could have been repatriated to the United States parent company. But they were reinvested in German rearmament. This reinvestment of profits in German armament firms suggests that Wall Street claims it was innocent of wrongdoing in German rearmament — and indeed did not even know of Hitler's intentions — are fraudulent. Specifically, I.T.T. purchase of a substantial interest in Focke-Wolfe meant, as Anthony Sampson has pointed out, that I.T.T. was producing German planes used to kill Americans and their allies — and it made excellent profits out of the enterprise.

In Kurt von Schröder, I.T.T. had access to the very heart of the Nazi power elite. Who was Schröder? Baron Kurt von Schröder was born in Hamburg in 1889 into an old, established German banking family. An earlier member of the Schröder family moved to London, changed his name to Schroder (without the dierisis) and organized the banking firm of J. Henry Schroder in London and J. Henry Schroder Banking Corporation in New York. Kurt von Schröder also became a partner in the private Cologne Bankhaus, J. H. Stein & Company, founded in the late eighteenth century. Both Schröder and Stein had been promoters, in company with French financiers, of the 1919 German separatist movement which attempted to split the rich Rhineland away from Germany and its troubles. In this escapade prominent Rhineland industrialists met at J. H. Stein's house on January 7, 1919 and a few months later organized a meeting, with Stein as chairman, to develop public support for the separatist movement. The 1919 action failed. The group tried again in 1923 and spearheaded another movement to break the Rhineland away from Germany to come under the protection of France. This attempt also failed. Kurt yon Schrader then linked up with Hitler and the early Nazis, and as in the 1919 and 1923 Rhineland separatist movements, Schröder represented and worked for German industrialists and armaments manufacturers.

In exchange for financial and industrial support arranged by yon Schrader, he later gained political prestige. Immediately after the Nazis gained power in 1933 Schrader became the German representative at the Bank for International Settlements, which Quigley calls the apex of the international control system, as well as head of the private bankers group advising the German Reichsbank. Heinrich Himmler appointed Sehroder an S.S. Senior Group Leader, and in turn Himmler became a prominent member of Keppler's Circle. (See Chapter Nine.)

In 1938 the Schroder Bank in London became the German financial agent in Great Britain, represented at financial meetings by its Managing Director (and a director of the Bank of England), F.C. Tiarks. By World War II Baron Schrader had in this manner acquired an impressive list of political and banking connections reflecting a widespread influence; it was even reported to the U.S. Kilgore Committee that Schrader was influential enough in 1940 to bring Pierre Laval to power in France. As listed by the Kilgore Committee, Sehroder's political acquisitions in the early 1940s were as follows:

SS Senior Group Leader. Iron Cross of First and Second Class.	Trade Group for Wholesale and Foreign Trade – Manager.
Swedish Consul General.	Akademie fur Deutsches Recht (Academy of Germany Law) – Member
International Chamber of Commerce – Member of administrative committee.	City of Cologne – Councilor.
Council of Reich Post Office – Member of advisory board.	University of Cologne – Member of board of trustees.
German Industrial and Commerce Assembly – Presiding member.	Kaiser Wilhelm Foundation – Senator.

Reich Board of Economic Affairs Member.	Advisory Council of German-Albanians.
Deutsche Reichsbahn – President of administrative board.	Goods Clearing Bureau – Member.
	Working Committee of Reich Group for Industry and Commerce – Deputy chairman.[5]

Schröder's banking connections were equally impressive and his business connections (not listed here) would take up two pages:

Bank for International Settlement – Member of the directorate.	Deutsche Verkehrs-Kredit-Bank, A.G., Berlin (Controlled by Deutsche Reichsbank) – Chairman of board of directors.
J.H. Stein & Co, Cologne – Partner (Banque Worms was French cortespondent).	Deutsche Ueberseeische Bank (Controlled by Deutsche Bank, Berlin) – Director.[6]
Deutsche Reichsbank, Berlin. Adviser to board of directors.	
Wirtschaftsgruppe Private Bankegewerbe – Leader.	

This was the Schröder who, after 1933, represented Sosthenes Behn of I.T.T. and I.T.T. interests in Nazi Germany. Precisely because Schröder had these excellent political connections with Hitler and the Nazi State, Behn appointed Schröder to the boards of all the I.T.T. German companies: Standard Electrizitatswerke A.G. in Berlin, C. Lorenz A.G. of Berlin, and Mix & Genest A.G. (in which Standard had a 94-percent participation).

In the mid-1930s another link was forged between Wall Street and Schröder, this time through the Rockefellers. In 1936 the underwriting and general securities business handled by J. Henry Schroder Banking Corporation in New York was merged into a new investment banking firm — Schroder, Rockefeller & Company, Inc. at 48 Wall Street. Carlton P. Fuller of Schroder Banking Corporation became president and Avery Rockefeller, son of Percy Rockefeller (brother of John D. Rockefeller) became vice president and director of the new firm. Previously, Avery Rockefeller had been associated behind the scenes with J. Henry Schroder Banking Corporation; the new firm brought him out into the open.[7]

Westrick, Texaco, and I.T.T.

I.T.T. had yet another conduit to Nazi Germany, through German attorney Dr. Gerhard Westrick. Westrick was one of a select group of Germans who had conducted espionage in

the United States during World War I. The group included not only Kurt von Schröder and Westrick but also Franz yon Papen — whom we shall meet in company with James Paul Warburg of the Bank of Manhattan in Chapter Ten — and Dr. Heinrich Albert. Albert, supposedly German commercial attache in the U.S. in World War I, was actually in charge of financing yon Papen's espionage program. After World War I Westrick and Albert formed the law firm of Albert & Westrick which specialized in, and profited heavily from, the Wall Street reparations loans. The Albert & Westrick firm handled the German end of the J Henry Schroder Banking loans, while the John Foster Dulles firm of Sullivan and Cromwell in New York handled the U.S. end of the Schroder loans.

Just prior to World War II the Albert-Papen-Westrick espionage operation in the United States began to repeat itself, only this time around the American authorities were more alert. Westrick came to the U.S. in 1940, supposedly as a commercial attache but in fact as Ribbentrop's personal representative. A stream of visitors to the influential Westrick in-eluded prominent directors of U.S. petroleum and industrial firms, and this brought Westrick to the attention of the FBI.

Westrick at this time became a director of all I.T.T. operations in Germany, in order to protect I.T.T. interests during the expected U.S. involvement in the European war.[8] Among his other enterprises Westrick attempted to persuade Henry Ford to cut off supplies to Britain, and the favored treatment given by the Nazis to Ford interests in France suggests that Westrick was partially successful in neutralizing U.S. aid to Britain.

Although Westrick's most important wartime business connection in the United States was with International Telephone and Telegraph, he also represented other U.S. firms, including Underwood Elliott Fisher, owner of the German company Mercedes Buromaschinen A.G.; Eastman Kodak, which had a Kodak subsidiary in Germany; and the International Milk Corporation, with a Hamburg subsidiary. Among Westrick's deals (and the one which received the most publicity) was a contract for Texaco to supply oil to the German Navy, which he arranged with Torkild Rieber, chairman of the board of Texaco Company.

In 1940 Rieber discussed an oil deal with Hermann Goering, and Westrick in the United States worked for Texas Oil Company. His automobile was bought with Texaco funds, and Westrick's driver's license application gave Texaco as his business address. These activities were publicized on August 12, 1940. Rieber subsequently resigned from Texaco and Westrick returned to Germany. Two years later Rieber was chairman of South Carolina Shipbuilding and Dry Docks, supervising construction of more than $10 million of U.S. Navy ships, and a director of the Guggenheim family's Barber Asphalt Corporation and Seaboard Oil Company of Ohio.[9]

I.T.T. in Wartime Germany

In 1939 I.T.T. in the United States controlled Standard Elektrizitats in Germany, and in turn Standard Elektrizitats controlled 94 percent of Mix & Genest. On the board of Standard Elektrizitats was Baron Kurt yon Schrader, a Nazi banker at the core of Naziism, and Emil Heinrich Meyer, brother-in-law of Secretary of State Keppler (founder of the Keppler Circle) and a director of German General Electric. Schrader and Meyer were also directors of Mix & Genest and the other I.T.T. subsidiary, C. Lorenz Company; both of these I.T.T. subsidiaries were monetary contributors to Himmler's Circle of Friends — *i.e.,* the Nazi S.S.

slush fund. As late as 1944, Mix & Genest contributed 5,000 RM to Himmler and Lorenz contributed 20,000 RM. In short, during World War II International Telephone and Telegraph was making cash payments to S.S. leader Heinrich Himmler.[10] These payments enabled I.T.T. to protect its investment in Focke-Wolfe, an aircraft manufacturing firm producing fighter aircraft used against the United States.

The interrogation of Kurt von Schröder on November 19, 1945 points up the deliberate nature of the close and profitable relationship between Colonel Sosthenes Behn of I.T.T., Westrick, Schröder, and the Nazi war machine during World War II, and that *this was a deliberate and knowledgeable relationship:*

> Q. You have [told] us in your earlier testimony, a number of companies in Germany in which the International Telephone and Telegraph Company or the Standard Electric Company had a participation. Did either International Telephone and Telegraph Company or the Standard Electric Company have a participation in any other company in Germany?
>
> A. Yes. The Lorenz Company, shortly before the war, took a participation of about 25 percent in Focke-Wolfe A.G. in Bremen. Focke-Wolfe was making airplanes for the German Air Ministry. I believe that later as Focke-Wolfe expanded and took in more capital that the interest of Lorenz Company dropped a little below this 25 percent.
>
> Q. So this participation in Focke-Wolfe by Lorenz Company began after Lorenz Company was nearly 100-percent owned and controlled by Colonel Behn through the International Telephone and Telegraph Company?
>
> A. Yes.
>
> Q. Did Colonel Behen *[sic]* approve of this investment by the Lorenz Company in Focke-Wolfe?
>
> A. I am confident that Colonel Behn approved before his representatives who were in close touch with him formally approved the transaction.
>
> Q. What year was it that the Lorenz Company made the investment which gave it this 25 percent participation in Foeke-Wolfe?
>
> A. I remember it was shortly before the outbreak of war, that is, shortly before the invasion of Poland. [Ed: 1939]
>
> Q Would Westrick know all about the details of the participations of Lorenz Company in Foeke-Wolfe, A.G. of Bremen?
>
> A. Yes. Better than I would.
>
> Q. What was the size of the investment that Lorenz Company made in the Focke-Wolfe A.G., of Bremen, which gave them the initial 25 percent participation?

A. 250,000 thousand RM initially, and this was substantially increased, but I don't recall the extent of the additional investments that Lorenz Company made to this Focke-Wolfe A.G. of Bremen.

Q. From 1055, until the outbreak of the European War, was Colonel Behn in a position to transfer the profits from investments of his companies in Germany to his companies in the United States?

A. Yes. While it would have required that his companies take a little less than the full dividends because of the difficulty of securing foreign exchange, the great bulk of the profits could have been transferred to the company of Colonel Behn in the United States. However, Colonel Behn did not elect to do this and at no time did he ask me if I could accomplish this for him. Instead, he appeared to be perfectly content to have all the profits of the companies in Germany, which he and his interests controlled, reinvesting these profits in new buildings and machinery and any other enterprises engaged in producing armaments.

Another one of these enterprises, Huth and Company, G.m.b.H., of Berlin, which made radio and radar parts, many of which were used in equipment going to the German Armed Forces. The Lorenz Company as I recall it [had] a 50-percent participation in Huth and Company. The Lorenz Company also had a small subsidiary which acted as a sales agency for the Lorenz Company to private customers.

Q. You were a member of the board of Lorenz Company's board of director, from about 1935 up to the present time. During this time, Lorenz Company and some of the other companies, such as Foeke-Wolfe with which it had large participations, were engaged in the manufacture of equipment for armaments and war production. Did you know or did you hear of any protest made by Colonel Behn or his representatives against these companies engaged in these activities preparing Germany for war?

A. No.

Q. Are you positive that there was no other occasion in which you were asked by either Westrick, Mann [sic], Colonel Behn or any other person connected with the International Telephone and Telegraphic Company interests in Germany, to intervene on behalf of the company with the German authorities.

A. Yes. I don't remember any request for my intervention in any matter of importance to the Lorenz Company or any other International Telephone and Telegraph interests in Germany.

I have read the record of this interrogation and I swear that the answers I have given to the question of Messrs. Adams and Pajus are true to the best of knowledge and belief. s/Kurt yon Schröder

It was this story of I.T.T.-Nazi cooperation during World War II and I.T.T. association with Nazi Kurt von Schröder that I.T.T. *wanted* to conceal — and almost was successful in

concealing. James Stewart Martin recounts how during the planning meetings of the Finance Division of the Control Commission he was assigned to work with Captain Norbert A. Bogdan, who out of uniform was vice president of the J. Henry Schroder Banking Corporation of New York. Martin relates that "Captain Bogdan had argued vigorously against investigation of the Stein Bank on the grounds that it was 'small potatoes.'"[11] Shortly after blocking this maneuver, two permanent members of Bogdan's staff applied for permission to investigate the Stein Bank — although Cologne had not yet fallen to U.S. forces. Martin recalls that "The Intelligence Division blocked that one," and so some information on the Stein-Schröder Bank-I.T.T. operation survived.

Footnotes:

[1]For an excellent review of I.T.T.'s worldwide activities, see Anthony Sampson, *The Sovereign State of I.T.T.,* (New York: Stein & Day, 1973).

[2]See also Sutton, *Wall Street and the Bolshevik Revolution, op. cit.*

[3]*New York Times,* August 4, 1933.

[4]See also Chapter Nine for documentary proof of these I.T.T. payments to the S.S.

[5]*Elimination of German Resources,* p. 871.

[6]Ibid.

[7]*New York Times,* July 20, 1936.

[8]Anthony Sampson reports a meeting between I.T.T. vice president Kenneth Stockton and Westrick in which the preservation of I.T.T. properties was planned. See Anthony Sampson, op. cit., p. 39.

[9]There is no substance to reports that Rieber received $20,000 from the Nazis. These reports were investigated by the F.B.I. with no proof forthcoming. See United States Senate, Subcommittee to Investigate the Administration of the. Internal Security Act, Committee on the Judiciary, *Morgenthau Diary (Germany),* Volume I, 90th Congress, 1st Session, November 20, 1967, (Washington: U.S. Government Printing Office, 1967), pp. 316-8. On Rieber see also *Appendix to the Congressional Record,* August 20, 1942, p, A 1501-2, Remarks of Hon. John M. Coffee.

[10]See pp. 128-130 for further details.

[11]James Stewart Martin, *op. cit., p. 52.*

BACK

CHAPTER SIX

Henry Ford and the Nazis

> *I would like to outline the importance attached by high [Nazi] officials to respect the desire and maintain the good will of "Ford," and by "Ford" I mean your father, yourself, and the Ford Motor Company, Dearborn.* (Josiah E. Dubois, Jr, *Generals in Grey Suits*, London: The Bodley Head, 1953, p. 250.)

Henry Ford is often seen to be something of an enigma among the Wall Street elite. For many years in the 20s and 30s Ford was popularly known as an enemy of the financial establishment. Ford accused Morgan and others of using war and revolution as a road to profit and their influence in social systems as a means of personal advancement. By 1938 Henry Ford, in his public statements, had divided financiers into two classes: those who profited from war and used their influence to bring about war for profit, and the "constructive" financiers. Among the latter group he now included the House of Morgan. During a 1938 *New York Times* interview[1] Ford averred that:

> *Somebody once said that sixty families have directed the destinies of the nation. It might well be said that if somebody would focus the spotlight on twenty-five persons who handle the nation's finances, the world's real warmakers would be brought into bold relief.*

The *Times* reporter asked Ford how he equated this assessment with his long-standing criticism of the House of Morgan, to which Ford replied:

> *There is a constructive and a destructive Wall Street. The House of Morgan represents the constructive. I have known Mr. Morgan for many years. He backed and supported Thomas Edison, who was also my good friend ....*

After expounding on the evils of limited agricultural production — allegedly brought about by Wall Street — Ford continued,

> *... if these financiers had their way we'd be in a war now. They want war because they make money out of such conflict — out of the human misery that wars bring.*

On the other hand, when we probe behind these public statements we find that Henry Ford and son Edsel Ford have been in the forefront of American businessmen who try to walk both sides of every ideological fence in search of profit. Using Ford's own criteria, the Fords are among the "destructive" elements.

It was Henry Ford who in the 1930s built the Soviet Union's first modern automobile plant (located at Gorki) and which in the 50s and 60s produced the trucks used by the North Vietnamese to carry weapons and munitions for use against Americans.[2] At about the same

time, Henry Ford was also the most famous of Hitler's foreign backers, and he was rewarded in the 1930s for this long-lasting support with the highest Nazi decoration for foreigners.

This Nazi favor aroused a storm of controversy in the United States and ultimately degenerated into an exchange of diplomatic notes between the German Government and the State Department. While Ford publicly protested that he did not like totalitarian governments, we find in practice that Ford knowingly profited from both sides of World War II — from French and German plants producing vehicles at a profit for the Wehrmacht, and from U.S. plants building vehicles at a profit for the U.S. Army.

Henry Ford's protestations of innocence suggest, as we shall see in this chapter, that he did not approve of Jewish financiers profiting from war (as some have), but if anti-Semitic Morgan[3] and Ford profited from war that was acceptable, moral and "constructive."

Henry Ford: Hitler's First Foreign Backer

On December 20, 1922 the *New York Times* reported[4] that automobile manufacturer Henry Ford was financing Adolph Hitler's nationalist and anti-Semitic movements in Munich. Simultaneously, the Berlin newspaper *Berliner Tageblatt* appealed to the American Ambassador in Berlin to investigate and halt Henry Ford's intervention into German domestic affairs. It was reported that Hitler's foreign backers had furnished a "spacious headquarters" with a "host of highly paid lieutenants and officials." Henry Ford's portrait was prominently displayed on the walls of Hitler's personal office:

> *The wall behind his desk in Hitler's private office is decorated with a large picture of Henry Ford. In the antechamber there is a large table covered with books, nearly all of which are a translation of a book written and published by Henry Ford.*[5]

The same *New York Times* report commented that the previous Sunday Hitler had reviewed,

> *The so-called Storming Battalion.., 1,000 young men in brand new uniforms and armed with revolvers and blackjacks, while Hitler and his henchmen drove around in two powerful brand-new autos.*

The *Times* made a clear distinction between the German monarchist parties and Hitler's anti-Semitic fascist party. Henry Ford, it was noted, ignored the Hohenzollern monarchists and put his money into the Hitlerite revolutionary movement.

These Ford funds were used by Hitler to foment the Bavarian rebellion. The rebellion failed, and Hitler was captured and subsequently brought to trial. In February 1923 at the trial, vice president Auer of the Bavarian Diet testified:

> *The Bavarian Diet has long had the information that the Hitler movement was partly financed by an American anti-Semitic chief, who is Henry Ford. Mr. Ford's interest in the Bavarian anti-Semitic movement began a year ago when one of Mr. Ford's agents, seeking to sell tractors, came in contact with Diedrich Eichart, the notorious Pan-German. Shortly after, Herr Eichart asked*

> *Mr. Ford's agent for financial aid. The agent returned to America and immediately Mr. Ford's money began coming to Munich.*
>
> *Herr Hitler openly boasts of Mr. Ford's support and praises Mr. Ford as a great individualist and a great anti-Semite. A photograph of Mr. Ford hangs in Herr Hitler's quarters, which is the center of monarchist movement.*[6]

Hitler received a mild and comfortable prison sentence for his Bavarian revolutionary activities. The rest from more active pursuits enabled him to write *Mein Kampf.* Henry Ford's book, *The International Jew,* earlier circulated by the Nazis, was translated by them into a dozen languages, and Hitler utilized sections of the book verbatim in writing *Mein Kampf*.[7]

We shall see later that Hitler's backing in the late 20s and early 30s came from the chemical, steel, and electrical industry cartels, rather than directly from individual industrialists. In 1928 Henry Ford merged his German assets with those of the I.G. Farben chemical cartel. A substantial holding, 40 percent of Ford Motor A.G. of Germany, was transferred to I.G. Farben; Carl Bosch of I.G. Farben became head of Ford A.G. Motor in Germany. Simultaneously, in the United States Edsel Ford joined the board of American I.G. Farben. (See Chapter Two.)

Henry Ford Receives a Nazi Medal

A decade later, in August 1938 — after Hitler had achieved power with the aid of the cartels — Henry Ford received the Grand Cross of the German Eagle, a Nazi decoration for distinguished foreigners. The *New York Times* reported it was the first time the Grand Cross had been awarded in the United States and was to celebrate Henry Ford's 75th birthday.[8]

The decoration raised a storm of criticism within Zionist circles in the U.S. Ford backed off to the extent of publicly meeting with Rabbi Leo Franklin of Detroit to express his sympathy for the plight of German Jews:

> *My acceptance of a medal from the German people [said Ford] does not, as some people seem to think, involve any sympathy on my part with naziism. Those who have known me for many years realize that anything that breeds hate is repulsive to me.*[9]

The Nazi medal issue was picked up in a Cleveland speech by Secretary of Interior Harold Ickes. Ickes criticized both Henry Ford and Colonel Charles A. Lindbergh for accepting Nazi medals. The curious part of the Ickes speech, made at a Cleveland Zionist Society banquet, was his criticism of "wealthy Jews" and *their* acquisition and use of wealth:

> *A mistake made by a non-Jewish millionaire reflects upon him alone, but a false step made by a Jewish man of wealth reflects upon his whole race. This is harsh and unjust, but it is a fact that must be faced.*[10]

Perhaps Ickes was tangentially referring to the roles of the Warburgs in the I.G. Farben cartel: Warburgs were on the board of I.G. Farben in the U.S. and Germany. In 1938 the Warburgs were being ejected by the Nazis from Germany. Other German Jews, such as the

Oppenheim bankers, made their peace with the Nazis and were granted "honorary Aryan status."

Ford Motor Company Assists the German War Effort

A post-war Congressional subcommittee investigating American support for the Nazi military effort described the manner in which the Nazis succeeded in obtaining U.S. technical and financial assistance as "quite fantastic.[11] Among other evidence the Committee was shown a memorandum prepared in the offices of Ford-Werke A.G. on November 25, 1941, written by Dr. H. F. Albert to R. H. Schmidt, then president of the board of Ford-Werke A.G. The memo cited the advantages of having a majority of the German firm held by Ford Motor Company in Detroit. German Ford had been able to exchange Ford parts for rubber and critical war materials needed in 1938 and 1939 "and they would not have been able to do that if Ford had not been owned by the United States." Further, with a majority American interest German Ford would "more easily be able to step in and dominate the Ford holdings throughout Europe." It was even reported to the Committee that two top German Ford officials had been in a bitter personal feud about who was to control Ford of England, such "that one of them finally got up and left the room in disgust."

According to evidence presented to the Committee, Ford-Werke A.G. was technically transformed in the late 1930s into a German company. All vehicles and their parts were produced in Germany, by German workers using German materials under German direction and exported to European and overseas territories of the United States and Great Britain. Any needed foreign raw materials, rubber and nonferrous metals, were obtained through the American Ford Company. American influence had been more or less converted into a supporting position *(Hilfsstellung)* for the German Ford plants.

At the outbreak of the war Ford-Werke placed itself at the disposal of the Wehrmacht for armament production. It was assumed by the Nazis that as long as Ford-Werke A.G. had an American majority, it would be possible to bring the remaining European Ford companies under German influence — i.e., that of Ford-Werke A.G. — and so execute Nazi "Greater European" policies in the Ford plants in Amsterdam, Antwerp, Paris, Budapest, Bucharest, and Copenhagen:

> *A majority, even if only a small one, of Americans is essential for the transmittal of the newest American models, as well as American production and sales methods. With the abolition of the American majority, this advantage, as well as the intervention of the Ford Motor Company to obtain raw materials and exports, would be lost, and the German plant would practically only be worth its machine capacity.*[12]

And, of course, this kind of strict neutrality, taking an international rather than a national viewpoint, had earlier paid off for Ford Motor Company in the Soviet Union, where Ford was held in high regard as the ultimate of technical and economic efficiency to be achieved by the Stak-hanovites.

In July 1942 word filtered back to Washington from Ford of France about Ford's activities on behalf of the German war effort in Europe. The incriminating information was promptly

buried and even today only part of the known documentation can be traced in Washington.

We do know, however, that the U.S. Consul General in Algeria had possession of a letter from Maurice Dollfuss of French Ford — who claimed to be the first Frenchman to go to Berlin after the fall of France — to Edsel Ford about a plan by which Ford Motor could contribute to the Nazi war effort. French Ford was able to produce 20 trucks a day for the Wehrmacht, which [wrote Dollfuss] is better than,

> *... our less fortunate French competitors are doing. The reason is that our trucks are in very large demand by the German authorities and I believe that as long as the war goes on and at least for some period of time, all that we shall produce will be taken by the German authorities .... I will satisfy myself by telling you that... the attitude you have taken, together with your father, of strict neutrality, has been an invaluable asset for the production of your companies in Europe.*[13]

Dollfuss disclosed that profits from this German business were already 1.6 million francs, and net profits for 1941 were no less than 58,000,000 francs — because the Germans paid promptly for Ford's output. On receipt of this news Edsel Ford cabled:

> *Delighted to hear you are making progress. Your letters most interesting. Fully realize great handicap you are working under. Hope you and family well. Regards.*
>
> *s/ Edsel Ford*[14]

Although there is evidence that European plants owned by Wall Street interests were not bombed by the U.S. Air Force in World War II, this restriction apparently did not reach the British Bombing Command. In March 1942 the Royal Air Force bombed the Ford plant at Poissy, France. A subsequent letter from Edsel Ford to Ford General Manager Sorenson about this RAF raid commented, *"Photographs* of the plant on fire were published in American newspapers but fortunately no reference was made to the Ford Motor Company.[15] In any event, the Vichy government paid Ford Motor Company 38 million francs as compensation for damage done to the Poissy plant. This was not reported in the U.S. press and would hardly be appreciated by those Americans at war with Naziism. Dubois asserts that these *private* messages from Ford in Europe were passed to Edsel Ford by Assistant Secretary of State Breckenridge Long. This was the same Secretary Long who one year later suppressed *private* messages through the State Department concerning the extermination of Jews in Europe. 16 Disclosure of those messages conceivably could have been used to assist those desperate people.

A U.S. Air Force bombing intelligence report written in 1943 noted that,

> *Principal wartime activities [of the Ford plant] are probably manufacture of light trucks and of spare parts for all the Ford trucks and cars in service in Axis Europe (including captured Russian Molotovs).*[16]

The Russian Molotovs were of course manufactured by the Ford-built works at Gorki, Russia. In France during the war, passenger automobile production was entirely replaced by

military vehicles and for this purpose three large additional buildings were added to the Poissy factory. The main building contained about 500 machine tools, "all imported from the United States and including a fair sprinkling of the more complex types, such as Gleason gear cutters, Bullard automatics and Ingersoll borers.[17]

Ford also extended its wartime activities into North Africa. In December 1941 a new Ford Company, Ford-Afrique, was registered in France and granted all the rights of the former Ford Motor Company, Ltd. of England in Algeria, Tunisia, French Morocco, French Equatorial, and French West Africa. North Africa was not accessible to British Ford so this new Ford Company — registered in German-occupied France — was organized to fill the gap. The directors were pro-Nazi and included Maurice Dollfuss (Edsel Ford's correspondent) and Roger Messis (described by the U.S. Algiers Consul General as "known to this office by repute as unscrupulous, is stated to be a 100 percent pro-German")[18]

The U.S. Consul General also reported that propaganda was common in Algiers about

> *... the collaboration of French-German-American capital and the questionable sincerity of the American war effort, [there] is already pointing an accusing finger at a transaction Which has been for long a subject of discussion in commercial circles.*[19]

In brief, there is documentary evidence that Ford Motor Company worked on both sides of World War II. If the Nazi industrialists brought to trial at Nuremburg were guilty of crimes against mankind, then so must be their fellow collaborators in the Ford family, Henry and Edsel Ford. However, the Ford story was concealed by Washington — apparently like almost everything else that could touch upon the name and sustenance of the Wall Street financial elite.

Footnotes:

[1]June 4, 1938, 2:2.

[2]A list of these Gorki vehicles and their model numbers is in Antony G. Sutton, *National Suicide: Military Aid to the Soviet Union*, (New York: Arlington House Publishers, 1973), Table 7-2, p. 125.

[3]The House of Morgan was known for its anti-Semitic views.

[4]Page 2, Column 8.

[5]Ibid.

[6]Jonathan Leonard, *The Tragedy of Henry Ford*, (New York: G.P. Putnam's Sons, 1932), p. 208. Also see U.S. State Department Decimal File, National Archives Microcopy M 336, Roll 80, Document 862.00S/6, "Money sources of Hitler," a report from the U.S. Embassy in Berlin.

[7]On this see Keith Sward, *The Legend of Henry Ford*, (New York: Rinehart & Co, 1948), p. 139.

[8]*New York Times*, August l, 1938.

[9]Ibid., December 1, 1938, 12:2.

[10]Ibid., December 19, 1938, 5:3.

[11]*Elimination of German Resources*, p. 656.

[12]*Elimination of German Resources*, pp. 657-8.

[13]Josiah E. Dubois, Jr., *Generals in Grey Suits*, (London: The Bodley Head, 1958), p. 248.

[14]Ibid., p. 249.

[15]Ibid., p. 251.

[16]Ibid.

[17]U.S. Army Air Force, *Aiming point report No I.E.2*, May 29, 1943.

[18]U.S. State Department Decimal File, 800/61o.1.

[19]Ibid.

BACK

CHAPTER SEVEN

Who Financed Adolf Hitler?

The funding of Hitler and the Nazi movement has yet to be explored in exhaustive depth. The only published examination of Hitler's personal finances is an article by Oron James Hale, "Adolph Hitler: Taxpayer,[1] which records Adolph's brushes with the German tax authorities before he became *Reichskanzler,* In the 1920s Hitler presented himself to the German tax man as merely an impoverished writer living on bank loans, with an automobile .bought on credit. Unfortunately, the original records used by Hale do not yield the source of Hitler's income, loans, or credit, and German law "did not require self-employed or professional persons to disclose in detail the sources of income or the nature of services rendered."[2] Obviously the funds for the automobiles, private secretary Rudolf Hess, another assistant, a chauffeur, and expenses incurred by political activity, came from somewhere. But, like Leon Trotsky's 1917 stay in New York, it is hard to reconcile Hitler's known expenditures with the precise source of his income.

Some Early Hitler Backers

We do know that prominent European and American industrialists were sponsoring all manner of totalitarian political groups at that time, including Communists and various Nazi groups. The U.S. Kilgore Committee records that:

> *By 1919 Krupp was already giving financial aid to one of the reactionary political groups which sowed the seed of the present Nazi ideology. Hugo Stinnes was an early contributor to the Nazi Party* (National Socialistische Deutsche Arbeiter Partei). *By 1924 other prominent industrialists and financiers, among them Fritz Thyssen, Albert Voegler, Adolph* [sic] *Kirdorf, and Kurt von Schroder, were secretly giving substantial sums to the Nazis. In 1931 members of the coalowners' association which Kirdorf headed pledged themselves to pay 50 pfennigs for each ton of' coal sold, the money to go to the organization which Hitler was building.*[3]

Hitler's 1924 Munich trial yielded evidence that the Nazi Party received $20,000 from Nuremburg industrialists. The most interesting name from this period is that of Emil Kirdorf, who had earlier acted as conduit for financing German involvement in the Bolshevik Revolution.[4] Kirdorfs role in financing Hitler was, in his own words:

> *In 1923 I came into contact for the first time with the National-Socialist movement .... I first heard the Fuehrer in the Essen Exhibition Hall. His clear exposition completely convinced and overwhelmed me. In 1927 I first met the Fuehrer personally. I travelled to Munich and there had a conversation with the Fuehrer in the Bruckmann home. During four and a half hours Adolf Hitler explained to me his programme in de tail. I then begged the Fuehrer to put together the lecture he had given me in the form of a pamphlet. I then*

distributed this pamphlet in my name in business and manufacturing circles.

Since then I have placed myself completely at the disposition of his movement, Shortly after our Munich conversation, and as a result of the pamphlet which the Fuehrer composed and I distributed, a number of meetings took place between the Fuehrer and leading personalities in the field of indus. try. For the last time before the taking over of power, the leaders of industry met in my house together with Adolf Hitler, Rudolf Hess, Hermann Goering and other leading personalities of the party.[5]

In 1925 the Hugo Stinnes family contributed funds to convert the Nazi weekly *Volkischer Beobachter* to a daily publication. Putzi Hanf-staengl, Franklin D. Roosevelt's friend and protegé, provided the remaining funds.[6] Table 7-1 summarizes presently known financial contributions and the business associations of contributors from the United States. Putzi is not listed in Table 7-1 as he was neither industrialist nor financier.

In the early 1930s financial assistance to Hitler began to flow more readily. There took place in Germany a series of meetings, irrefutably documented in several sources, between German industrialists, Hitler himself, and more often Hitler's representatives Hjalmar Sehaeht and Rudolf Hess. The critical point is that the German industrialists financing Hitler were predominantly directors of cartels with American associations, ownership, participation, or some form of subsidiary connection. The Hitler backers were not, by and large, firms of purely German origin, or representative of German family business. Except for Thyssen and Kirdoff, in most cases they were the German multi-national firms — *i.e., I.G.* Farben, A.E.G., DAPAG, *etc.* These multi-nationals had been built up by American loans in the 1920s, and in the early 1930s had American directors and heavy American financial participation.

One flow of foreign political funds not considered here is that reported from the European-based Royal Dutch Shell, Standard Oil's great competitor in the 20s and 30s, and the giant brainchild of Anglo-Dutch businessman Sir Henri Deterding. It has been widely asserted that Henri Deterding personally financed Hitler. This argument is made, for instance, by biographer Glyn Roberts in *The Most Powerful Man in the World.* Roberts notes that Deterding was impressed with Hitler as early as 1921:

...and the Dutch press reported that, through the agent Georg Bell, he [Deterding] had placed at Hitler's disposal, while the party was "still in long clothes," no less than four million guilders.[7]

It was reported (by Roberts) that in 1931 Georg Bell, Deterding's agent, attended meetings of Ukrainian Patriots in Paris "as joint delegate of Hitler and Deterding."[8] Roberts also reports:

Deterding was accused, as Edgar Ansell Mowrer testifies in his Germany Puts the Clock Back, of *putting up a large sum of money for the Nazis on the understanding that success would give him a more favored position in the German oil market. On other occasions, figures as high as £55,000,000 were mentioned.*[9]

Biographer Roberts really found Deterding's strong anti-Bolshevism distasteful, and rather than present hard evidence of funding he is inclined to assume rather than prove that Deterding was pro-Hitler. But pro-Hitlerism is not a necessary consequence of anti-Bolshevism; in any event Roberts offers no proof of finance, and hard evidence of Deterding's involvement was not found by this author.

Mowrer's book contains neither index nor footnotes as to the source of his information and Roberts has no specific evidence for his accusations. There is circumstantial evidence that Deterding was pro-Nazi. He later went to live in Hitler's Germany and increased his share of the German petroleum market. So there may have been some contributions, but these have not been proven.

Similarly, in France (on January 11, 1932), Paul Faure, a member of the *Chambre des Députés,* accused the French industrial firm of Schneider-Creuzot of financing Hitler — and incidentally implicated Wall Street in other financing channels.[10]

The Schneider group is a famous firm of French armaments manufacturers. After recalling the Schneider influence in establishment of Fascism in Hungary and its extensive international armaments operations, Paul Fauré turns to Hitler, and quotes from the French paper *LeJournal*, "that Hitler had received 300,000 Swiss gold francs" from subscriptions opened in Holland under the case of a university professor named von Bissing. The Skoda plant at Pilsen, stated Paul Fauré, was controlled by the French Schneider family, and it was the Skoda directors von Duschnitz and von Arthaber who made the subscriptions to Hitler. Fauré concluded:

> . . . *I am disturbed to see the directors of Skoda, controlled by Schneider, subsidizing the electoral campaign of M. Hitler; I am disturbed to see your firms, your financiers, your industrial cartels unite themselves with the most nationalistic of Germans ....*

Again, no hard evidence was found for this alleged flow of Hitler funds.

Fritz Thyssen and W.A. Harriman Company of New York

Another elusive case of reported financing of Hitler is that of Fritz Thyssen, the German steel magnate who associated himself with the Nazi movement in the early 20s. When interrogated in 1945 under Project Dustbin,[11] Thyssen recalled that he was approached in 1923 by General Ludendorf at the time of French evacuation of the Ruhr. Shortly after this meeting Thyssen was introduced to Hitler and provided funds for the Nazis through General Ludendorf. In 1930-1931 Emil Kirdorf approached Thyssen and subsequently sent Rudolf Hess to negotiate further funding for the Nazi Party. This time Thyssen arranged a credit of 250,000 marks at the Bank Voor Handel en Scheepvaart N.V. at 18 Zuidblaak in Rotterdam, Holland, founded in 1918 with H.J. Kouwenhoven and D.C. Schutte as managing partners.[12] This bank was a subsidiary of the August Thyssen Bank of Germany (formerly von der Heydt's Bank A.G.). It was Thyssen's personal banking operation, and it was affiliated with the W. A. Harriman financial interests in New York. Thyssen reported to his Project Dustbin interrogators that:

> *I chose a Dutch bank because I did not want to be mixed up with German*

banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands.[13]

Thyssen's book *I Paid Hitler,* published in 1941, was purported to be written by Fritz Thyssen himself, although Thyssen denies authorship. The book claims that funds for Hitler — about one million marks — came mainly from Thyssen himself. *I Paid Hitler* has other unsupported assertions, for example that Hitler was actually descended from an illegitimate child of the Rothschild family. Supposedly Hitler's grandmother, Frau Schickelgruber, had been a servant in the Rothschild household and while there became pregnant:

... an inquiry once ordered by the late Austrian chancellor, Engelbert Dollfuss, yielded some interesting results, owing to the fact that the dossiers of the police department of the Austro-Hungarian monarch were remarkably complete.[14]

This assertion concerning Hitler's illegitimacy is refuted entirely in a more solidly based book by Eugene Davidson, which implicates the Frankenberger family, not the Rothschild family.

In any event, and more relevant from our viewpoint, the August Thyssen front bank in Holland — *i.e.,* the Bank voor Handel en Scheepvaart N.V. — controlled the Union Banking Corporation in New York. The Harrimans had a financial interest in, and E. Roland Harriman (Averell's brother) was a director of, this Union Banking Corporation. The Union Banking Corporation of New York City was a joint Thyssen-Harriman operation with the following directors in 1932:[15]

E. Roland HARRIMAN	Vice president of W. A. Harriman & Co., New York
H.J. KOUWENHOVEN	Nazi banker, managing partner of August Thyssen Bank and Bank voor Handel Scheepvaart N.V. (the transfer bank for Thyssen's funds)
J. G. GROENINGEN	Vereinigte Stahlwerke (the steel cartel which also funded Hitler)
C. LIEVENSE	President, Union Banking Corp., New York City
E. S. JAMES	Partner Brown Brothers, later Brown Brothers, Harriman & Co.

TABLE 7-1: FINANCIAL LINKS BETWEEN U.S. INDUSTRIALISTS AND ADOLF HITLER

Thyssen arranged a credit of 250,000 marks for Hitler, through this Dutch bank affiliated with the Harrimans. Thyssen's book, later repudiated, states that as much as one million marks came from Thyssen.

Thyssen's U.S. partners were, of course, prominent members of the Wall Street financial establishment. Edward Henry Harriman, the nineteenth-century railroad magnate, had two sons, W. Averell Harriman (born in 1891), and E. Roland Harriman (born in 1895). In 1917 W. Averell Harriman was a director of Guaranty Trust Company and he was involved in the Bolshevik Revolution.[16] According to his biographer, Averell started at the bottom of the career ladder as a clerk and section hand after leaving Yale in 1913, then *"he* moved steadily forward to positions of increasing responsibility in the fields of transportation and finance.[17] In addition to his directorship in Guaranty Trust, Harriman formed the Merchant Shipbuilding Corporation in 1917, which soon became the largest merchant fleet under American flag. This fleet was disposed of in 1925 and Harriman entered the lucrative Russian market.[18]

In winding up these Russian deals in 1929, Averell Harriman received a windfall profit of $1 million from the usually hard-headed Soviets, who have a reputation of giving nothing away without some present or later *quid pro quo.* Concurrently with these successful moves in international finance, Averell Harriman has always been attracted by so-called "public" service. In 1913 Harriman's "public" service began with an appointment to the Palisades Park Commission. In 1933 Harriman was appointed chairman of the New York State Committee of Employment, and in 1934 became Administrative Officer of Roosevelt's NRA — the Mussolini-like brainchild of General Electric's Gerard Swope.[19] There followed a stream of "public" offices, first the Lend Lease program, then as Ambassador to the Soviet Union, later as Secretary of Commerce.

By contrast, E. Roland Harriman confined his activities to private business in international finance without venturing, as did brother Averell, into "public" service. In 1922 Roland and Averell formed W. A. Harri-man & Company. Still later Roland became chairman of the board of Union Pacific Railroad and a director of *Newsweek* magazine, Mutual Life Insurance Company of New York, a member of the board of governors of the American Red Cross, and a member of the American Museum of Natural History.

Nazi financier Hendrik Jozef Kouwenhoven, Roland Harriman's fellow-director at Union Banking Corporation in New York, was managing director of the Bank voor Handel en Scheepvaart N.V. (BHS) of Rotterdam. In 1940 the BHS held approximately $2.2 million assets in the Union Banking Corporation, which in turn did most of its business with BHS.[20] In the 1930s Kouwenhoven was also a director of the Vereinigte Stahlwerke A.G., the steel cartel founded with Wall Street funds in the mid-1920s. Like Baron Schroder, he was a prominent Hitler supporter.

Another director of the New York Union Banking Corporation was Johann Groeninger, a German subject with numerous industrial and financial affiliations involving Vereinigte Stahlwerke, the August Thyssen group, and a directorship of August Thyssen Hutte A.G.[21]

This affiliation and mutual business interest between Harriman and the Thyssen interests does not suggest that the Harrimans directly financed Hitler. On the other hand, it does

show that the Harrimans were intimately connected with prominent Nazis Kouwenhoven and Groeninger and a Nazi front bank, the Bank voor Handel en Scheepvaart. There is every reason to believe that the Harrimans knew of Thyssen's support for the Nazis. In the case of the Harrimans, it is important to bear in mind their long-lasting and intimate relationship with the Soviet Union and the Harriman's position at the center of Roosevelt's New Deal and the Democratic Party. The evidence suggests that some members of the Wall Street elite are connected with, and certainly have influence with, *all* significant political groupings in the contemporary world socialist spectrum — Soviet socialism, Hitler's national socialism, and Roosevelt's New Deal socialism.

Financing Hitler in the March 1933 General Election

Putting the Georg Bell-Deterding and the Thyssen-Harriman cases to one side, we now examine the core of Hitler's backing. In May 1932 the so-called "Kaiserhof Meeting" took place between Schmitz of I.G. Farben, Max Ilgner of American I.G. Farben, Kiep of Hamburg-America Line, and Diem of the German Potash Trust. More than 500,000 marks was raised at this meeting and deposited to the credit of Rudolf Hess in the Deutsche Bank. It is noteworthy, in light of the "Warburg myth" described in Chapter Ten that Max Ilgner of the American I.G. Farben contributed 100,000 RM, or one-fifth of the total. The "Sidney Warburg" book claims Warburg involvement in the funding of Hitler, and Paul Warburg was a director of American I.G. Farben[22] while Max Warburg was a director of I.G. Farben.

There exists irrefutable documentary evidence of a further role of. international bankers and industrialists in the financing of the Nazi Party and the *Volkspartie* for the March 1933 German election. A total of three million Reichmarks was subscribed by prominent firms and businessmen, suitably "washed" through an account at the Delbruck Schickler Bank, and then passed into the hands of Rudolf Hess for use by Hitler and the NSDAP. This transfer of funds was followed by the Reichstag fire, abrogation of constitutional rights, and consolidation of Nazi power. Access to the Reichstag by the arsonists was obtained through a tunnel from a house where Putzi Hanfstaengel was staying; the Reichstag fire itself was used by Hitler as a pretext to abolish constitutional rights. In brief, within a few weeks of the major funding of Hitler there was a linked sequence of major events: the financial contribution from prominent bankers and industrialists to the 1933 election, burning of the Reichstag, abrogation of constitutional rights, and subsequent seizure of power by the Nazi Party.

The fund-raising meeting was held February 20, 1933 in the home of Goering, who was then president of the Reichstag, with Hjalmar Horace Greeley Schacht acting as host. Among those present, according to I.G. Farben's von Schnitzler, were:

> *Krupp von Bohlen, who, in the beginning of 1933, was president of the Reichsverband der Deutschen Industrie Reich Association of German Industry; Dr. Albert Voegler, the leading man of the Vereinigte Stahlwerke; Von Loewenfeld; Dr, Stein, head of the Gewerkschaft Auguste-Victoria, a mine which belongs to the IG.*[23]

Hitler expounded his political views to the assembled businessmen in a lengthy two-and-one-half hour speech, using the threat of Communism and a Communist take-over to great effect:

It is not enough to say we do not want Communism in our economy. If we continue on our old political course, then we shall perish .... It is the noblest task of the leader to find ideals that are stronger than the factors that pull the people together. I recognized even while in the hospital that one had to search for new ideals conducive to reconstruction. I found them in nationalism, in the value of personality, and in the denial of reconciliation between nations ....

Now we stand before the last election. Regardless of the outcome, there will be no retreat, even if the coming election does not bring about decision, one way or another. If the election does not decide, the decision must be brought about by other means. I have intervened in order to give the people once more the chance to decide their fate by themselves ....

There are only two possibilities, either to crowd back the opponent on constitutional grounds, and for this purpose once more this election; or a struggle will be conducted with other weapons, which may demand greater sacrifices. I hope the German people thus recognize the greatness of the hour.[24]

After Hitler had spoken, Krupp von Bohlen expressed the support of the assembled industrialists and bankers in the concrete form of a three-million-mark political fund. It turned out to be more than enough to acquire power, because 600,000 marks remained unexpended after the election.

Hjalmar Schacht organized this historic meeting. We have previously described Schacht's links with the United States: his father was cashier for the Berlin Branch of Equitable Assurance, and Hjalmar was intimately involved almost on a monthly basis with Wall Street.

The largest contributor to the fund was I.G. Farben, which como mitted itself for 80 percent (or 500,000 marks) of the total. Director A. Steinke, of BUBIAG (Braunkohlen-u. Brikett-Industrie A.G.), an I.G. Farben subsidiary, personally contributed another 200,000 marks. In brief, 45 percent of the funds for the 1933 election came from I.G. Farben. If we look at the directors of American I.G. Farben — the U.S. subsidiary of I.G. Farben — we get close to the roots of Wall Street involvement with Hitler. The board of American I.G. Farben at this time contained some of the most prestigious names among American industrialists: Edsel B. Ford of the Ford Motor Company, C.E. Mitchell of the Federal Reserve Bank of New York, and Walter Teagle, director of the Federal Reserve Bank of New York, the Standard Oil Company of New Jersey, and President Franklin D. Roosevelt's Georgia Warm Springs Foundation.

Paul M. Warburg, first director of the Federal Reserve Bank of New York and chairman of the Bank of Manhattan, was a Farben director and in Germany his brother Max Warburg was also a director of I.G, Farben. H. A. Metz of I.G. Farben was also a director of the Warburg's Bank of Manhattan. Finally, Carl Bosch of American I.G. Farben was also a director of Ford Motor Company A-G in Germany.

Three board members of American I.G. Farben were found guilty at the Nuremburg War Crimes Trials: Max Ilgner, F. Ter Meer, and Hermann Schmitz. As we have noted, the American board members — Edsel Ford, C. E. Mitchell, Walter Teagle, and Paul Warburg

— were not placed on trial at Nuremburg, and so far as the records are concerned, it appears that they were not even questioned about their knowledge of the 1933 Hitler fund.

The 1933 Political Contributions

Who were the industrialists and bankers who placed election funds at the disposal of the Nazi Party in 1933? The list of contributors and the amount of their contribution is as follows:

FINANCIAL CONTRIBUTIONS TO HITLER:
Feb. 23-Mar. 13, 1933:

(The Hjalmar Schacht account at Delbruck, Schickler Bank)

Political Contributions by Firms (with selected affiliated directors)	Amount Pledged	Percent of Firm Total
Verein fuer die Bergbaulichen Interessen (Kitdorf)	$600,000	45.8
I.G. Farbenindustrie (Edsel Ford, C.E. Mitchell, Walter Teagle, Paul Warburg)	400,000	30.5
Automobile Exhibition, Berlin (Reichsverbund der Automobilindustrie S.V.)	100,000	7.6
A.E.G., German General Electric (Gerard Swope, Owen Young, C.H. Minor, Arthur Baldwin)	60,000	4.6
Demag	50,000	3.8
Osram G.m.b.H. (Owen Young)	40,000	3.0
Telefunken Gesellsehaft ruer drahtlose Telegraphic	85,000	2.7
Accumulatoren-Fabrik A.G. (Quandt of A.E.G.)	25,000	1.9
Total from industry	1,310,000	99.9

Plus Political Contributions by Individual Businessmen:

Karl Hermann	300,000

Director A. Steinke (BUBIAG-Braunkohlen—u. Brikett —Industrie A.G.)	200,000
Dir. Karl Lange (Geschaftsfuhrendes Vostandsmitglied des Vereins Deutsches Maschinenbau—Anstalten)	50,000
Dr. F. Springorum (Chairman: Eisen-und Stahlwerke Hoesch A.G.)	36,000

Source: See Appendix for translation of original document.

How can we prove that these political payments actually took place?

The payments to Hitler in this final step on the road to dictatorial Naziism were made through the private bank of Delbruck Sehickler. The Delbruck Schickler Bank was a subsidiary of Metallgesellschaft A.G. ("Metall"), an industrial giant, the largest non-ferrous metal company in Germany, and the dominant influence in the world's nonferrous metal 'trading. The principal shareholders of *"Metall"* were I.G. Farben and the British Metal Corporation. We might note incidentally that the British directors on the" Metall" *Aufsichsrat* were Walter Gardner (Amalgamated Metal Corporation) and Captain Oliver Lyttelton (also on the board of Amalgamated Metal and paradoxically later in World War II to become the British Minister of Production).

There exists among the Nuremburg Trial papers the original transfer slips from the banking division of I.G. Farben and other firms listed on page 110 to the Delbruck Schickler Bank in Berlin, informing the bank of the transfer of funds from Dresdner Bank, and other banks, to their *Nationale Treuhand* (National Trusteeship) account. This account was disbursed by Rudolf Hess for Nazi Party expenses during the election. Translation of the I.G. Farben transfer slip, selected as a sample, is as follows:[25]

Translation of I.G, Farben letter of February 27, 1933, advising of transfer of 400,000 Reichsmarks to National Trusteeship account:

I.G. FARBENINDUSTRIE AKTIENGESELLSCHAFT
Bank Department

Firm: Delbruck Schickler & Co.,
BERLIN W.8
Mauerstrasse 63/65, Frankfurt (Main) 20
Our Ref: (Mention in Reply) 27 February 1933
B./Goe.

We are informing you herewith that we have authorized the Dresdner Bank in Frankfurt/M., to pay you tomorrow forenoon: RM 400,000 which you will use in favor of the account "NATIONALE TREUHAND" (National Trusteeship).

Respectfully,

I.G. Farbenindustrie
Aktiengesellschaft
by Order:

(Signed) SELCK (Signed)
BANGERT

By special delivery.[26]

At this juncture we should take note of the efforts that have been made to direct our attention away from American financiers (and German financiers connected with American-affiliated companies) who were, involved with the funding of Hitler. Usually the blame for financing Hitler has been exclusively placed upon Fritz Thyssen or Emil Kirdorf. In the case of Thyssen this blame was widely circulated in a book allegedly authored by Thyssen in the middle of World War II but later repudiated by him.[27] Why Thyssen would want to admit such actions before the defeat of Naziism is unexplained.

Emil Kirdorf, who died in 1937, was always proud of his association with the rise of Naziism. The attempt to limit Hitler financing to Thyssen and Kirdorf extended into the Nuremburg trials in 1946, and was challenged only by the Soviet delegate. Even the Soviet delegate was unwilling to produce evidence of American associations; this is not surprising because the Soviet Union depends on the goodwill of these same financiers to transfer much needed advanced Western technology to the U.S.S.R.

At Nuremburg, statements were made and allowed to go unchallenged which were directly contrary to the known direct evidence presented above. For example, Buecher, Director General of German General Electric, was absolved from sympathy for Hitler:

> *Thyssen has confessed his error like a man and has courageously paid a heavy penalty for it. On the other side stand men like Reusch of the Gutehoffnungshuette, Karl Bosch, the late chairman of the I.G. Farben Aufsichtsrat, who would very likely have come to a sad end, had he not died in time. Their feelings were shared by the deputy chairman of the Aufsichtsrat of Kalle. The Siemens and AEG companies which, next to I.G. Farben, were the most powerful German concerns, and they were determined opponents of national socialism.*
>
> *I know that this unfriendly attitude on the part of the Siemens concern to the Nazis resulted in the firm receiving rather rough treatment. The Director General of the AEG (Allgemeine Elektrizitats Gesellschaft), Geheimrat Buecher, whom I knew from my stay in the colonies, was anything but a Nazi. I can assure General Taylor that it is certainly wrong to assert that the leading industrialists as such favored Hitler before his seizure of power.*[28]

Yet on page 56 of this book we reproduce a document originating with General Electric, transferring General Electric funds to the National Trusteeship account controlled by Rudolf Hess on behalf of Hitler and used in the 1933 elections.

Similarly, von Schnitzler, who was present at the February 1933 meeting on behalf of I.G. Farben, denied I.G. Farben's contributions to the 1933 Nationale Treuhand:

> *I never heard again of the whole matter [that of financing Hitler], but I believe that either the buro of Goering or Schacht or the Reichsverband der Deutschen Industrie had asked the of fice of Bosch or Schmitz for payment of IG's share in the elec tion fund. As I did not take the matter up again I not even at that time knew whether and which amount had been paid by the IG. According to the volume of the IG, I should estimate IG's share being something like 10 percent of the election fund, but as far as I know there is no evidence that I.G. Farben participated in the payments.*[29]

As we have seen, the evidence is incontrovertible regarding political cash contributions to Hitler at the crucial point of the takeover of power in Germany — and Hitler's earlier speech to the industrialists clearly revealed that a coercive takeover was the premeditated intent.

We know exactly who contributed, how much, and through what channels. It is notable that the largest contributors — I.G. Farben, German General Electric (and its affiliated company Osram), and Thyssen — were affiliated with Wall Street financiers. These Wall Street financiers were at the heart of the financial elite and they were prominent in contemporary American politics. Gerard Swope of General Electric was author of Roosevelt's New Deal, Teagle was one of NRA's top administrators, Paul Warburg and his associates at American I.G. Farben were Roosevelt advisors. It is perhaps not an extraordinary coincidence that Roosevelt's New Deal — called a "fascist measure" by Herbert Hoover — should have so closely resembled Hitler's program for Germany, and that both Hitler and Roosevelt took power in the same month of the same year — March 1933.

Footnotes:

[1]*The American Historical Review,* Volume LC, NO. 4, July. 1955. p, 830.

[2]Ibid, fn. (2).

[3]*Elimination of German Resources*, p. 648. The Albert Voegler mentioned in the Kilgore Committee list of early Hitler supporters was the German representative on the Dawes Plan Commission. Owen Young of General Electric (see Chapter Three) was a U.S. representative for the Dawes Plan and formulated its successor, the Young Plan.

[4]Antony C. Sutton, *Wall Street and the Bolshevik Revolution, op. cit,*

[5]*Preussiche Zettung,* January 3, 1937.

[6]See p. 116.

[7]Glyn Roberts, *The Most Powerful Man in the World,* (New York: Covicl, Friede, 1938), p. 305.

[8]Ibid., p. 313.

[9]Ibid., p. 322.

[10]See *Chambre des Deputes — Debats,* February 11, 1932, pp. 496-500.

[11]U.S. Group Control Council (Germany0 Office of the Director of Intelligence, Field Information Agency, Technical). Intelligence Report No. EF/ME/1,4 September 1945. "Examination of Dr. Fritz Thyssen," p, 13, Hereafter cited as Examination of Dr. Fritz Thyssen.

[12]The Bank was known in Germany as *Bank fur Handel und Schiff.*

[13]Examination of Dr. Fritz Thyssen.

[14]Fritz Thyssen, *I Paid Hitler,* (New York: Farrar & Rinehart, Inc., 1941). p. 159.

[15]Taken from *Bankers Directory,* !932 edition, p, 2557 and Poors, *Directory of Directors.* J.L. Guinter and Knight Woolley were also directors.

[16]See Antony C. Sutton, *Wall Street and the Bolshevik Revolution, op. cit.*

[17]*National Cyclopaedia,* Volume G, page 16.

[18]For a description of these ventures, based on State Department files, see An, tony C. Sutton, *Western Technology and Soviet Economic Development,* Volume 1, *op. cit.*

[19]See Antony C. Sutton, *Wall Street and FDR.* Chapter Nine, "Swope's Plan," *op. cit.*

[20]See *Elimination of German Resources,* pp. 728-30.

[21]For yet other connections between the Union Banking Corp, and German enterprises, see Ibid., pp. 728-30.

[22]See Chapter Ten.

[23]*NMT,* Volume VII, p. 555.

[24]Josiah E. Dubois, Jr., *Generals in Grey Suits op. cit.,* p. 323.

[25]Original reproduced on page 64.

[26]*NMT,* Volume VII, p. 565. See p. 64 for photograph of original document.

[27]Fritz Thyssen, *I Paid Hitler,* (New York: Toronto: Farrat & Rinehart, Inc., 1941).

[28]*NMT,* Volume VI, pp. 1169-1170.

[29]*NMT,* Volume VII, p. 565.

BACK

CHAPTER EIGHT

Putzi: Friend of Hitler and Roosevelt

Ernst Sedgewiek Hanfstaengl (or Hanfy or Putzi, as he was more usually called), like Hjalmar Horaee Greeley Sehacht, was another German-American at the core of the rise of Hitlerism. Hanfstaengl was born into a well-known New England family; he was a cousin of Civil War General John Sedgewiek and a grandson of another Civil War General, William Heine. Introduced to Hitler in the early l920s by Captain Truman-Smith, the U.S. Military Attaehe in Berlin, Putzi became an ardent Hitler supporter, on occasion financed the Nazis and, according to Ambassador William Dodd, "... is said to have saved Hitler's life in 1923."[1]

By coincidence, S.S. leader Heinrich Himmler's father was also Putni's form master at the Royal Bavarian Wilhelms gymnasium. Putzi's student day friends at Harvard University were "such outstanding future figures" as Walter Lippman, John Reed (who figures prominently in *Wall Street and the Bolshevik Revolution)*, and Franklin D. Roosevelt. After a few years at Harvard, Putzi established the family art business in New York; it was a delightful combination of business and pleasure, for as he says, "the famous names who visited me were legion, Pierpont Morgan, Toscanini, Henry Ford, Caruso, Santos-Dumont, Charlie Chaplin, Paderewski, and a daughter of President Wilson."[2] It was also at Harvard that Putzi made friends with the future President Franklin Delano Roosevelt:

> *I took most of my meals at the Harvard Club, where I made friends with the young Franklin D. Roosevelt, at that time a rising New York State Senator. Also I received several invitations to visit his distant cousin Teddy, the former President, who had retired to his estate at Sagamore Hill.*[3]

From these varied friendships (or perhaps after reading this book and its predecessors, *Wall Street and FDR* and *Wall Street and the Bolshevik Revolution*, the reader may consider Putzi's friendship to have been confined to a peculiarly elitist circle), Putzi became not only an early friend, backer and financier of Hitler, but among those early Hitler supporters he was, *"*., . almost the only person who crossed the lines of his (Hitler's) groups of acquaintances."[4]

In brief, Putzi was an American citizen at the heart of the Hitler entourage from the early 1920s to the late 1930s. In 1943, after falling out of favor with the Nazis and interned by the Allies, Putzi was bailed out of the miseries of a Canadian prisoner of war camp by his friend and protector President Franklin D. Roosevelt. When FDR's actions threatened to become an internal political problem in the United States, Putzi was re-interned in England. As if it is not surprising enough to find both Heinrich Himmler and Franklin D. Roosevelt prominent in Putzi's life, we also discover that the Nazi Stormtrooper marching songs were composed by Hanfstaengl, "including the one that was played by the brownshirt columns as they marched through the Brandenburger Tor on the day Hitler took over power.[5] To top this eye-opener, Putzi averred that the genesis of the Nazi chant "Sieg Heil, Sieg Heil," used in the Nazi mass rallies, was none other than "Harvard, Harvard, Harvard, rah, rah, rah."

Putzi certainly helped finance the first Nazi daily press, the *Volkische Beobachter*. Whether he saved Hitler's life from the Communists is less verifiable, and while kept out of the actual writing process of *Mein Kampf* — much to his disgust — Putzi did have the honor to finance its publication, "and the fact that Hitler found a functioning staff when he was released from jail was entirely due to our efforts. ,"[7]

When Hitler came to power in March 1933, simultaneously with Franklin Delano Roosevelt in Washington, a private "emissary" was sent from Roosevelt in Washington, D.C. to Hanfstaengl in Berlin, with a message to the effect that as it appeared Hitler would soon achieve power in Germany, Roosevelt hoped, in view of their long acquaintance, that Putzi would do his best to prevent any rashness and hot-headedness. "Think of your piano playing and try and use the soft pedal if things get too loud," was FDR's message. *"If* things start getting awkward please get in touch with our ambassador at once.[8]

Hanfstaengl kept in close touch with the American Ambassador in Berlin, William E. Dodd — apparently much to his disgust, because Putzi's recorded comments on Dodd are distinctly unflattering:

> *In many ways, he [Dodd] was an unsatisfactory representative. He was a modest little Southern history professor, who ran his embassy on a shoestring and was probably trying to save money out of his pay. At a time when it needed a robust millionaire to compete with the flamboyance of the Nazis, he teetered around self-effacingly as if he were still on his college campus. His mind and his prejudices were small.*[9]

In point of fact Ambassador Dodd pointedly tried to decline Roosevelt's Ambassadorial appointment. Dodd had no inheritance and preferred to live on his State Department pay rather than political spoils; unlike the politician Dodd was particular from whom he received money. In any event, Dodd commented equally harshly on Putzi, "... he gave money to Hitler in 1923, helped him write *Mein Kampf,* and was in every way familiar with Hitler's motives ...."

Was Hanfstaengl an agent for the Liberal Establishment in the U.S.? We can probably rule out this possibility because, according to Ladislas Farago, it was Putzi who blew the whistle on top-level British penetration of the Hitler command. Farago reports that Baron William S. de Ropp had penetrated the highest Nazi echelons in pre-World War II days and Hitler used de Ropp *"*... as his confidental consultant about British affairs.[10] De Ropp was suspected as being a double agent only by Putzi. According to Farago:

> *The only person ... who ever suspected him of such duplicity and cautioned the Fuehrer about him was the erratic Putzt Hanfstaengl, the Harvard educated chief of Hitler's office dealing with the foreign press.*

As Farago notes, "Bill de Ropp was playing the game In both camps — a double agent at the very top."[11] Putzi was equally diligent in warning his friends, the Hermann Goerings, about potential spies in *their* camp. Witness the following extract from Putzi's memoirs, in which he points the accusing finger of espionage at the Goerings' gardener..

> *"Herman," I said one day, "I will bet any money that fellow Greinz is a police*

spy." "Now really, Putzi," Karin [Mrs. Herman Goertng] broke in, "he's such a nice fellow and he's a wonderful gardener." "He's doing exactly what a spy ought to do," I told her, "he has made himself indispensable."[12]

By 1941 Putzi was out of favor with Hitler and the Nazis, fled Germany, and was interned in a Canadian prisoner of war camp. With Germany and the United States now at war Putzi re-calculated the odds and concluded, *"Now* I knew for certain that Germany would be defeated."[13] Putzi's release from the POW camp came with the personal intervention of old friend President Roosevelt:

One day a correspondent of the Hearst press named Kehoe obtained permission to visit Fort Hens. I managed to have a few words with him in a corner. "I know your boss well," I told him. "Will you do me a small service?" Fortunately he recognized my name.

I gave him a letter, which he slipped into his pocket. It was addressed to the American Secretary of State, Cordell Hull. A few days later it was on the desk of my Harvard Club friend, Franklin Delano Roosevelt. In it I offered to act as a political and psychological warfare adviser in the war against Germany.[14]

The response and offer to "work" for the American side was accepted. Putzi was installed in comfortable surroundings with his son, U.S. Army Sergeant Egon Hanfstaengl, also there as a personal aide. In 1944, under pressure of a Republican threat to blow the whistle on Roosevelt's favoritism for a former Nazi, Egon was shipped out to New Guinea and Putzi hustled off to England, where the British promptly interned him for the duration of the war, Roosevelt or no Roosevelt,

Putzi's Role in the Reichstag Fire

Putzi's friendships and political manipulations may or may not be of any great consequence, but his role in the Reichstag fire is significant. The firing of the Reichstag on February 27, 1933 is one of the key events of modern times. The fire was used by Adolf Hitler to claim imminent Communist revolution, suspend constitutional rights, and seize totalitarian power. From that point on there was no turning back for Germany; the world was set upon the course to World War II.

At the time the firing of the Reichstag was blamed on the Communists, but there is little question in historical perspective that the fire was deliberately set by the Nazis to provide an excuse to seize political power. Fritz Thyssen commented in the post-war Dustbin interrogations:

When the Reichstag was burned, everyone was sure it had been done by the communists. I later learned in Switzerland that it was all a lie.[15]

Schacht states quite emphatically:

Nowadays it would be quite clear that this action could not be fastened on the Communist Party. To what extent individual National Socialists co-operated in

the planning and execution of the deed will be difficult to establish, but in view of all that has been revealed in the meantime, the fact must be accepted that Goebbels and Goering each played a leading part, the one in planning, the other in carrying out the plan.[16]

The Reichstag fire was deliberately set, probably utilizing a flammable liquid, by a group of experts. This is where Putzi Hanfstaengl comes into the picture. The key question is how did this group, bent on arson, gain access to the Reichstag to do the job? After 8 p.m. only one door in the main building was unlocked and this door was guarded. Just before 9 p.m. a tour of the building by watchmen indicated all was well; no flammable liquids were noticed and nothing was out of the ordinary in the Sessions Chamber where the fire started. Apparently no one could have gained access to the Reichstag building after 9 p.m., and no one was seen to enter or leave between 9 p.m. and the start of the fire.

There was only one way a group with flammable materials could have entered the Reichstag — through a tunnel that ran between the Reichstag and the Palace of the Reichstag President. Hermann Goering was president of the Reichstag and lived in the Palace, and numerous S.A. and S.S. men were known to be in the Palace. In the words of one author:

The use of the underground passage, with all its complications, was possible only to National-Socialists, the advance and escape of the incendiary gang was feasible only with the connivance of highly-placed employees of the Reichstag. Every clue, every probability points damningly in one direction, to the conclusion that the burning of the Reichstag was the work of National-Socialists.[17]

How does Putzi Hanfstaengl fit into this picture of arson and political intrigue?

Putzi — by his own admission — was in the Palace room at the other end of the tunnel leading to the Reichstag. And according to *The Reichstag Fire Trial,* Putzi Hanfstaengl was actually in the Palace itself during the fire:

propaganda apparatus stood ready, and the leaders of the Storm Troopers were in their places. With the official bulletins planned in advance, the orders of arrest prepared, Karwahne, Frey and Kroyer waiting patiently in their cafe, the preparations were complete, the scheme almost perfect.[18]

Dimitrov also asserts that:

The National-Socialist leaders, Hitler, Goering and Goebbels, together with the high National-Socialist officials, Daluege, Hanfstaengl and Albrecht, happened to be present in Berlin on the day of the fire, despite that the election campaign was at its highest pitch throughout Germany, six days before the poll. Goering and Goebbels, under oath, furnished contradictory explanations for their "fortuitous" presence in Berlin with Hitler on that day. The National-Socialist Hanfstaengl, as Goering's "guest," was present in the Palace of the Reichstag President, immediately adjacent to the Reichstag, at the time when the .fire broke out, although his "host" was not there at that time.[19]

According to Nazi Kurt Ludecke, there once existed a document signed by S.A. Leader Karl Ernst — who supposedly set the fire and was later murdered by fellow Nazis — which implicated Goering, Goebbels, and Hanfstaengl in the conspiracy.

Roosevelt's New Deal and Hitler's New Order

Hjalmar Schacht challenged his post-war Nuremburg interrogators with the observation that Hitler's New Order program was the same as Roosevelt's New Deal program in the United States. The interrogators understandably snorted and rejected the observation. However, a little research suggests that not only are the two programs quite similar in content, but that Germans had no trouble in observing the similarities. There is in the Roosevelt Library a small book presented to FDR by Dr. Helmut Magers in December 1933.[20] On the flyleaf of this presentation copy is written the inscription,

> *To the President of the United States, Franklin D. Roosevelt, in profound admiration of his conception of a new economic order and with devotion for his personality. The author, Baden, Germany, November 9, 1933.*

FDR's reply to this admiration for his new economic order was as follows:[21]

> *(Washington) December 19, 1933*
>
> *My dear Dr. Magers: I want to send you my thanks for the copy of your little book about me and the "New Deal." Though, as you know, I went to school in Germany and could speak German with considerable fluency at one time, I am reading your book not only with great interest but because it will help my German.*
>
> *Very sincerely yours,*

The New Deal or the "new economic order" was not a creature of classical liberalism. It was a creature of corporate socialism. Big business as reflected in Wall Street strived for a state order in which they could control industry and eliminate competition, and this was the heart of FDR's New Deal. General Electric, for example, is prominent in both Nazi Germany and the New Deal. German General Electric was a prominent financier of Hitler and the Nazi Party, and A.E.G. also financed Hitler both directly and indirectly through Osram. International General Electric in New York was a major participant in the ownership and direction of both A.E.G. and Osram. Gerard Swope, Owen Young, and A. Baldwin of General Electric in the United States were directors of A.E.G. However, the story does not stop at General Electric and financing of Hitler in 1933.

In a previous book, *Wall Street and the Bolshevik Revolution*, the author identified the role of General Electric in the Bolshevik Revolution and the geographic location of American participants as at 120 Broadway, New York City; the executive offices of General Electric were also at 120 Broadway. When Franklin Delano Roosevelt was working in Wall Street, his address was also 120 Broadway. In fact, Georgia Warm Springs Foundation, the FDR Foundation, was located at 120 Broadway. The prominent financial backer of an early Roosevelt Wall Street venture from 120 Broadway was Gerard Swope of General Electric. And it was "Swope's Plan" that became Roosevelt's New Deal — the fascist plan that

Herbert Hoover was unwilling to foist on the United States. In brief, both Hitler's New Order and Roosevelt's New Deal were backed by the same industrialists and in content were quite similar — *i.e.*, they were both plans for a corporate state.

There were then both corporate and individual bridges between FDR,s America and Hitler's Germany. The first bridge was the American I.G. Farben, American affiliate of I.G. Farben, the largest German corporation. On the board of American I.G. sat Paul Warburg, of the Bank of Manhattan and the Federal Reserve Bank of New York. The second bridge was between International General' Electric, a wholly owned subsidiary of General Electric Company and its partly owned affiliate in Germany, A.E.G. Gerard Swope, who formulated FDR's New Deal, was chairman of I.G.E. and on the board of A.E.G. The third "bridge" was between Standard Oil of New Jersey and Vacuum Oil and its wholly owned German subsidiary, Deutsche-Amerikanisehe Gesellschaft. The chairman of Standard Oil of New Jersey was Walter Teagle, of the Federal Reserve Bank of New York. He was a trustee of Franklin Delano Roosevelt's Georgia Warm Springs Foundation and appointed by FDR to a key administrative post in the National Recovery Administration.

These corporations were deeply involved in both the promotion of Roosevelt's New Deal and the construction of the military power of Nazi Germany. Putzi Hanfstaengl's role in the early days, up to the mid-1930s anyway, was an informal link between the Nazi elite and the White House. After the mid-1930s, when the world was set on the course for war, Putzis importance declined — while American Big Business continued to be represented through such intermediaries as Baron Kurt von Schroder attorney Westrick, and membership in Himmler's Circle of Friends.

Footnotes:

[1]William E. Dodd, *Ambassador Dodd's Diary, 1933-1938,* (New York: Harcourt, Brace & Co., 1941), p. 360.

[2]Ernst Hanfstaengl, *Unheard Witness,* (New York: J.B. Lippincott, 1957), p. 28.

[3]Ibid., p.

[4]Ibid., p. 52.

[5]Ibid., p. 53.

[6]Ibid., p. 59.

[7]Ibid., p. 122.

[8]Ibid., pp. 197-8.

[9]Ibid., p. 214.

[10]Ladislas Farago, *The Game of the Foxes,* (New York: Bantam, 1973), p. 97.

[11]Ibid., p. 106.

[12]Ernst Hanfstaengl, *Unheard Witness, op.* cit., p. 76.

[13]Ibid.

[14]Ibid., pp. 310-11.

[15]*Dustbin* report EF/Me/1. Interview of Thyssen, p. 13.

[16]Hjalmar Horace Greeley Schacht, *Confessions of" The Old Wizard,"* (Boston: Houghton Mifflin, 1956), p. 276.

[17]George Dimitrov, *The Reichstag Fire Trial,* (London: The Bodley Head, 1934), p. 309.

[18]Ibid., p. 310.

[19]Ibid., p. 311.

[20]Helmut Magers, *Ein Revolutionar Aus Common Sense,* (Leipzig: R. Kittler Verlag, 1934).

[21]Nixon, Edgar B., Editor, *Franklin D. Roosevelt and Foreign Affairs,* (Cambridge: The Belknap Press of Harvard University Press, 1969), Volume 1: January 1933-February 1934. Franklin D. Roosevelt Library. Hyde Park, New York.

BACK

CHAPTER NINE

Wall Street and the Nazi Inner Circle

> *During the entire period of our business contacts we. had no inkling of Farben's conniving part in Hitler's brutal policies. We offer any help we can give to see that complete truth is brought to light and that rigid justice is done.* (F. W. Abrams, Chairman of the Board, Standard Oil of New Jersey, 1946.)

Adolf Hitler, Hermann Goering, Josef Goebbels, and Heinrich Himmler, the inner group of Naziism, were at the same time heads of minor fiefdoms within the Nazi State. Power groups or political cliques were centered around these Nazi leaders, more importantly after the late 1930s around Adolf Hitler and Heinrich Himmler, Reich-Leader of the S.S. (the dreaded *Schutzstaffel).* The most important of these Nazi inner circles was created by order of the Fuehrer; it was known first as the Keppler Circle and later as Himmler's Circle of Friends.

The Keppler Circle originated as a group of German businessmen supporting Hitler's rise to power before and during 1933. In the mid-1930s the Keppler Circle came under the influence and protection of S.S. chief Himmler and the organizational control of Cologne banker and prominent Nazi businessman Kurt von Schroder. Schroder, it will be recalled, was head of the J.H. Stein Bank in Germany and affiliated with the L. Henry Schroder Banking Corporation of New York. It is within this innermost of the inner circles, the very core of Naziism, that we find Wall Street, including Standard Oil of New Jersey and I.T.T., represented from 1933 to as late as 1944.

Wilhelm Keppler, founder of the original Circle of Friends, typifies the well-known phenomenon of a politicized businessman — *i.e., a* businessman who cultivates the political arena rather than the impartial market place for his profits. Such businessmen have been interested In promoting socialist causes, because a planned socialist society provides a most lucrative opportunity for contracts through political influence.

Scenting such profitable opportunities, Keppler joined the national socialists and was close to Hitler before 1933. The Circle of Friends grew out of a meeting between Adolf Hitler and Wilhelm Keppler in December 1931. During the course of their conversation — this was several years before Hitler became dictator — the future Fuehrer expressed a wish to have reliable German businessmen available for economic advice when the Nazis took power. *"Try* to get a few economic leaders — they need not be Party members — who will be at our disposal when we come into power.[1] This Keppler undertook to do.

In March 1933 Keppler was elected to the Reichstag and became Hitler's financial expert. This lasted only briefly. Keppler was replaced by the infinitely more capable Hjalmar Schacht, and sent to Austria where in 1938 he became Reichs Commissioner, but still able to use his position to acquire considerable power in the Nazi State. Within a few years he captured a string of lucrative directorships in German firms, including chairman of the board of two I.G. Farben subsidiaries: Braunkohle-Benzin A.G. and Kontinental Oil A.G.

Braunkohle-Benzin was the German exploiter of the Standard Oil of New Jersey technology for production of gasoline from coal. (See Chapter Four.)

In brief, Keppler war the chairman of the very firm that utilized American technology for the indispensible synthetic gasoline which enabled the Wehrmacht to go to war in 1939. This is significant because, when linked with other evidence presented in this chapter, it suggests that the profits and control of these fundamentally important technologies for German military ends were retained by a small group of international firms and businessmen operating across national borders.

Keppler's nephew, Fritz Kranefuss, under his uncle's protection, also gained prominence both as Adjutant to S.S. Chief Heinrich Himmler and as a businessman and political operator. It was Kranefuss' link with Himmler which led to the Keppler circle gradually drawing away from Hitler in the 1930s to come within Himmler's orbit, where in exchange for annual donations to Himmler's pet S.S. projects Circle members received political favors and not inconsiderable protection from the S.S.

Baron Kurt von Schroder was, as we have noted, the I.T.T. representative in Nazi Germany and an early member of the Keppler Circle. The original Keppler Circle consisted of:

THE ORIGINAL (PRE-1932) MEMBERS OF THE KEPPLER CIRCLE

Circle Member	Main Associations
Wilhelm KEPPLER	Chairman of I.G. Farben subsidiary Braunkohle-Benzin A.G. (exploited Standard Oil of N.J. oil from coal technology)
Fritz KRANEFUSS	Keppler's nephew and Adjutant to Heinrich Himmler. On Vorstand of BRABAG
Kurt von SCHRODER	On board of all International Telephone & Telegraph subsidiaries in Germany
Karl Vincenz KROGMANN	Lord Mayor of Hamburg
August ROSTERG	General Director of WINTERSHALL
Emil MEYER	On the board of I.T.T. subsidiaries and German General Electric.
Otto STEINBRINCK	Vice president of VEREINIGTE STAHLWERKE (steel cartel founded with Wall Street loans in 1926)
Hjalmar SCHACHT	President of the REICHSBANK
Emil HELFFRICH	Board chairman of GERMAN-AMERICAN PETROLEUM CO. (94-percent owned by

	Standard Oil of New Jersey) (See above under Wilhelm Keppler)
Friedrich REINHARDT	Board chairman COMMERZBANK
Ewald HECKER	Board chairman of ILSEDER HUTTE
Graf von BISMARCK	Government president of STETTIN

The S.S. Circle of Friends

The original Circle of Friends met with Hitler in May 1932 and heard a statement of Nazi objectives. Heinrich Himmler then became a frequent participant in the meetings, and through Himmler, various S.S. officers as well as other businessmen joined the group. This expanded group in time became Himmler's Circle of Friends, with Himmler acting as protector and expeditor for its members.

Consequently, banking and Industrial interest — were heavily represented in the inner circle of Naziism, and their pre-1933 financial contributions to Hitlerism which we have earlier enumerated were amply repaid. Of the "Big Five" German banks, the Dresdner Bank had the closest connections with the Nazi Party: at least a dozen members of Dresdner Bank's board of directors had high Nazi rank and no fewer than seven Dresdner Bank directors were among Keppler's expanded Circle of Friends, which never exceeded 40.

When we examine the names comprising both the original pre-1933 Keppler Circle and the post-1933 expanded Keppler and Himmler's Circle, we find the Wall Street multi-nationals heavily represented — more so than any other institutional group. Let us take each Wall Street multinational or its German associate in turn — those identified in Chapter Seven as linked to financing Hitler — and examine their links to Keppler and Heinrich Himmler.

I.G. Farben and the Keppler Circle

I.G. Farben was heavily represented within the Keppler Circle: no fewer than eight out of the peak circle membership of 40 were directors of I.G. Farben or a Farben subsidiary. These eight members included the previously described Wilhelm Keppler and his nephew Kranefuss, in addition to Baron Kurt von Schroder. The Farben presence was emphasized by member Hermann Schmitz, chairman of I.G. Farben and a director of Vereinigte Stahlwerke, both cartels built and consolidated by the Wall Street loans of the 1920s. A U.S. Congressional report described Hermann Schmitz as follows:

> *Hermann Schmitz, one of the most important persons in Germany, has achieved outstanding success simultaneously in the three separate fields, industry, finance, and government, and has served with zeal and devotion every government in power. He symbolizes the German citizen who out of the devastation of the First World War made possible the Second.*

> *Ironically, his may be said to be the greater guilt in that in 1919 he was a member of the Reich's peace delegation, and in the 1930's was in a position to teach the Nazis much that theft had to know concerning economic penetration, cartel uses, synthetic materials for war.*[2]

Another Keppler Circle member on the I.G. Farben board was Friedrich Flick, creator of the steel cartel Vereinigte Stahlwerke and a director of Allianz Versicherungs A.G. and German General Electric (A.E.G.).

Heinrich Schmidt, a director of Dresdner Bank and chairman of the board of I.G. Farben subsidiary Braunkohle-Benzin A.G., was in the circle; so was Karl Rasehe, another director of the Dresdner Bank and a director of Metallgesellschaft (parent of the Delbruck Schickler Bank) and Accumulatoren-Fabriken A.G. Heinrich Buetefisch was also a director of I.G. Farben and a member of the Keppler Circle. In brief, the I.G. Farben contribution to Rudolf Hess' Nationale Treuhand — the political slush fund — was confirmed after the 1933 takeover by heavy representation in the Nazi inner circle.

How many of these Keppler Circle members in the I.G. Farben complex were affiliated with Wall Street?

MEMBERS OF THE ORIGINAL KEPPLER CIRCLE ASSOCIATED WITH U.S. MULTI-NATIONALS

Member of Keppler Circle	I.G. Farben	I.T.T.	Standard Oil of New Jersey	General Electric
Wilhelm KEPPLER	Chairman of Farben subsidiary BRABAG		—	
Fritz KRANEFUSS	On Aufsichrat of BRABAG		—	
Emil Heinrich MEYER		On board of all I.T.T. German subsidiaries: Standard/Mix & Genest/Lorenz	—	Board of A.E.G.
Emil HELFFRICH			Chairman of DAPAG (94-percent owned by Standard of New Jersey	
Friedrich FLICK	I.G. Farben	—	—	Board of A.E.G.
Kurt von SCHRODER	On board of all I.T.T. subsidiaries in Germany			

Similarly, we can identify other Wall Street institutions represented in the early Keppler's Circle of Friends, confirming their monetary contributions to the National Trusteeship Fund operated by Rudolf Hess on behalf of Adolf Hitler. These representatives were Emil Heinrich Meyer and banker Kurt von Schroder on the boards of all the I.T.T. subsidiaries in Germany, and Emil Helffrich, the board chairman of DAPAG, 94-percent owned by Standard Oil of New Jersey.

Wall Street in the S.S. Circle

Major U.S. multi-nationals were also very well represented in the later Heinrich Himmler Circle and made cash contributions to the S.S. (the Sonder Konto S) up to 1944 — while World War II was in progress.

Almost a quarter of the 1944 Sonder Konto S contributions came from subsidiaries of International Telephone and Telegraph, represented by Kurt von Schröder. The 1943 payments from I.T.T. subsidiaries to the Special Account were as follows:

Mix & Genest A.G.	5,000 RM
C. Lorenz AG	20,000 RM
Felten & Guilleaume	25,000 RM
Kurt von Schroder	16,000 RM

And the 1944 payments were:

Mix & Genest A.G.	5,000 RM
C. Lorenz AG	20,000 RM
Felten & Guilleaume	20,000 RM
Kurt von Schroder	16,000 RM

Sosthenes Behn of International Telephone and Telegraph transferred wartime control of Mix & Genest, C. Lorenz, and the other Standard Telephone interests in Germany to Kurt von Schroder — who was a founding member of the Keppler Circle and organizer and treasurer of Himmler's Circle of Friends. Emil H. Meyer, S.S. Untersturmfuehrer, member of the Vorstand of the Dresdner Bank, A.E.G., and a director of all the I.T.T. subsidiaries in Germany, was also a member of the Himmler Circle of Friends — giving I.T.T. two powerful representatives at the heart of the S.S.

A letter to fellow member Emil Meyer from Baron von Schroder dated February 25, 1936 describes the purposes and requirements of the Himmler Circle and the long-standing nature of the Special Account 'S' with funds at Schroder's own bank — the J,H. Stein Bank of Cologne:

Berlin, 25
February 1936
(Illegible
handwriting)

To Prof. Dr. Emil H. Meyer
S.S. (Untersturmfuchrer) (second lieutenant) Member of the Managing Board (Vorstand) of the Dresdner Bank
Berlin W. 56,
Behrenstr. 38

Personal!

To the Circle of Friends of the Reich Leader SS

At the end of the 2 day's inspection tour of Munich to which the Reich Leader SS had invited us last January, the Circle of Friends agreed to put — each one according to his means — at the Reich Leader's disposal into "Special Account S" (Sonder Konto S), to be established at the banking firm J.H. Stein in Cologne, funds which are to be used for certain tasks outside of the budget. This should enable the Reich Leader to rely on all his friends. In Munich it was decided that the undersigned would make themselves available for setting up and handling this account. In the meantime the account was set up and we want every participant to know that in case he wants to make contributions to the Reich Leader for the aforementioned tasks — either on behalf of his firm or the Circle of Friends — payments may be made to the banking firm J.H. Stein, Cologne (Clearing Account of the Reich Bank, Postal Checking Acount No. 1392) to the Special Account S.

: Heil Hitler!

(Signed) Kurt
Baron von
Sehroder
(Signed)
Steinbrinck[3]

This letter also explains why U.S. Army Colonel Bogdan, formerly of the Schroder Banking Corporation in New York, was anxious to divert the attention of post-war U.S. Army investigators away from the J. H. Stein Bank in Cologne to the *"bigger* banks" of Nazi Germany. It was the Stein Bank that held the secrets of the associations of American subsidiaries with Nazi authorities while World War II was in progress. The New York financial interests could not know the precise nature of these transactions (and particularly the nature of any records that may have been kept by their German associates), but they knew that *some* record could well exist of their war-time dealings — enough to embarrass them with the American public. It was this possibility that Colonel Bogdan tried unsuccessfully to head off.

German General Electric profited greatly from its association with Himmler and other leading Nazis. Several members of the Schroder clique were directors of A.E.G., the most prominent being Robert Pferdmenges, who was not only a member of the Keppler or Himmler Circles but was a partner in the aryanized banking house Pferdmenges & Company, the successor to the former Jewish banking house Sal Oppenheim of Cologne. Waldemar von Oppenheim achieved the dubious distinction (for a German Jew) of

"honorary Aryan" and was able to continue his old established banking house under Hitler in partnership with Pferdmenges.

MEMBERS OF THE HIMMLER CIRCLE OF FRIENDS WHO WERE ALSO DIRECTORS OF AMERICAN-AFFILIATED FIRMS:

	I.G. Farben	**I.T.T.**	**A.E.G.**	**Standard Oil of New Jersey**
KRANEFUSS, Fritz	x			
KEPPLER, Wilhelm	x			
SCHRODER, Kurt Von	x	x		
BUETEFISCH, Heinrich	x			
RASCHE, Dr. Karl	x			
FLICK, Friedrich	x		x	
LINDEMANN, Karl				x
SCHMIDT, Heinrich	x			
ROEHNERT, Kellmuth			x	
SCHMIDT, Kurt			x	
MEYER, Dr. Emil		x		
SCHMITZ, Hermann	x			

Pferdmenges was also a director of A.E.G. and used his Nazi influence to good advantage.[4]

Two other directors of German General Electric were members of Himmler's Circle of Friends and made 1943 and 1944 monetary contributions to the Sonder Konto S. These were:

Friedrich Flick	100,000 RM
Otto Steinbrinck (a Flick associate)	100,000 RM

Kurt Schmitt was chairman of the board of directors of A.E.G. and a member of the Himmler Circle of Friends, but Schmitt's name is not recorded in the list of payments for 1943 or 1944.

Standard Oil of New Jersey also made a significant contribution to Himmler's Special Account through its wholly owned (94 percent) German subsidiary, Deutsche-Amerikanische Gesellschaft (DAG). In 1943 and 1944 DAG contributed as follows:

Staatsrat Helfferich of Deutsch-	10,000 RM

Amerikanische Petroleum A.G.	
Staatsrat Lindemann of Deutsch-Amerikanische Petroleum A.G. and personally	10,000 RM 4,000 RM

It is important to note that Staatsrat Lindemann contributed 4,000 RM *personally,* thus making a clear distinction between the corporate contribution of 10,000 RM from Standard Oil of New Jersey's wholly owned subsidiary and the personal contribution from director Linde-mann. In the case of Staatsrat Hellfrich, the only contribution was the Standard Oil contribution of 10,000 RM; there is no recorded personal donation.

I.G. Farben, parent company of American I.G. (see Chapter Two), was another significant contributor to Heinrich Himmler's Sonder Konto S. There were four I.G. Farben directors within the inner circle: Karl Rasehe, Fritz Kranefuss, Heinrich Schmidt, and Heinrich Buetefisch. Karl Rasche was a member of the management committee of the Dresdner Bank and a specialist in international law and banking. Under Hitler Karl Rasche became a prominent director of many German corporations, including Accumulatoren-Fabrik A.G. in Berlin, which financed Hitler; the Metallgesellschaft; and Felten & Guilleame, an I.T.T. company. Fritz Kranefuss was a member of the board of directors of Dresdner Bank and a director of several corporations besides I.G. Farben. Kranefuss, nephew of Wilhelm Keppler, was a lawyer and prominent in many Nazi public organizations. Heinrich Schmidt, a director of I.G. Farben and several other German companies, was also a director of the Dresdner Bank.

It is important to note that all three of the above — Rasche, Kranefuss, and Schmidt — were directors of an I.G. Farben subsidiary, Braunkohle-Benzin A.G. — the manufacturer of German synthetic gasoline using Standard Oil technology, a result of the I.G. Farben-Standard Oil agreements of the early 1930s.

In brief, the Wall Street financial elite was well represented in both the early Keppler Circle and the later Himmler Circle.[5]

Footnotes:

[1]From the affidavit of Wilhem Keppler, *NMT,* Volume VI, p. 285.

[2]*Elimination of German Resources,* p. 869.

[3]*NMT,* Volume VII, p. 238. "Translation of Document N1-10103, Prosecution Exhibit 788." Letter from von Schroder and Defendant Steinbrinck to Dr. Meyer, Dresdner Bank official, 25 February 1936, noting that the Circle of Friends would put funds at Himmler's disposal "For Certain Tasks outside of the Budget" and had established a "Special Account for this purpose."

[4]*Elimination of German Resources,* p. 857.

[5]The significant nature of this representation is reflected in Chart 8-1, "Wall Street representation in the Keppler and Himmler Circles, 1933 and 1944."

BACK

CHAPTER TEN

The Myth of "Sidney Warburg"

A vital question, only partly resolved, is the extent to which Hitler's accession to power in 1933 was aided *directly* by Wall Street financiers. We have shown with original documentary evidence that there was *indirect* American participation and support through German affiliated firms, and (as for example in the case of I.T.T.) there was a knowledgeable and deliberate effort to benefit from the support of the Nazi regime. Was this indirect financing extended to direct financing?

After Hitler gained power, U.S. firms and individuals worked on behalf of Naziism and certainly profited from the Nazi state. We know from the diaries of William Dodd, the American Ambassador to Germany, that in 1933 a stream of Wall Street bankers and industrialists filed through the U.S. Embassy in Berlin, expressing their admiration for Adolf Hitler — and anxious to find ways to do business with the new totalitarian regime. For example, on September 1, 1933 Dodd recorded that Henry Mann of the National City Bank and Winthrop W. Aldrich of the Chase Bank both met with Hitler and "these bankers feel they can work with him."[1] Ivy Lee, the Rockefeller public relations agent, according to Dodd "showed himself at once a capitalist and an advocate of Fascism."[2]

So at least we can identify a sympathetic response to the new Nazi dictatorship, reminiscent of the manner in which Wall Street international bankers greeted the new Russia of Lenin and Trotsky in 1917.

Who Was "Sidney Warburg"?

The question posed in this chapter is the accusation that some Wall Street financiers (the Rockefellers and Warburgs specifically have been accused) directly planned and financed Hitler's takeover in 1933, and that they did this from Wall Street. On this question the so-called myth of "Sidney Warburg" is relevant. Prominent Nazi Franz von Papen has stated in his *Memoirs:*[3]

> *... the most documented account of the National Socialists' sudden acquisition of funds was contained in a book published in Holland in 1933, by the old established Amsterdam publishing house of Van Holkema & Warendorf, called* De Geldbronnen van Het Nationaal-Socialisme (Drie Gesprekken Met Hitler) *under the name "Sidney Warburg."*

A book with this title in Dutch by "Sidney Warburg" was indeed published in 1933, but remained on the book stalls in Holland only for a matter of days. The book was purged.[4] One of three surviving original copies was translated into English. The translation was at one time deposited in the British Museum, but is now withdrawn from public circulation and is unavailable for research. Nothing is now known of the original Dutch copy upon which this English translation was based.

The second Dutch copy was owned by Chancellor Schussnigg in Austria, and nothing is known of its present whereabouts. The third Dutch copy found its way to Switzerland and was translated into German. The German translation has survived down to the present day in the Schweizerischen Sozialarchiv in Zurich, Switzerland. A certified copy of the authenticated German translation of this Swiss survivor was purchased by the author in 1971 and translated into English. It is upon this English translation of the German translation that the text in this chapter is based.

Publication of the *"Sidney* Warburg" book was duly reported in the *New York Times* (November 24, 1933) under the title "Hoax on Nazis Feared." A brief article noted that a "Sidney Warburg" pamphlet has appeared in Holland, and the author is not the son of Felix Warburg. The translator is J. G. Shoup, a Belgian newspaperman living in Holland. The publishers and Shoup "are wondering if they have not been the victims of a hoax." The *Times* account adds:

> *The pamphlet repeats an old story to the effect that leading Americans, including John D. Rockefeller, financed Hitler from 1929 to 1932 to the extent of $32,000,000, their motive being"to liberate Germany from the financial grip of France by bringing about a revolution·" Many readers of the pamphlet have pointed out that it contains many inaccuracies.*

Why was the Dutch original withdrawn from circulation in 1933? Because "Sidney Warburg" did not exist and a "Sidney Warburg" was claimed as the author. Since 1933 the "Sidney Warburg" book has been promoted by various parties both as a forgery and as a genuine document. The Warburg family itself has gone to some pains to substantiate its falsity.

What does the book report? What does the book claim happened in Germany in the early 1930s? And do these events have any resemblance to facts we know to be true from other evidence?

From the viewpoint of research methodology it is much more preferable to assume that the "Sidney Warburg" book *is* a forgery, unless we can prove the contrary. This is the procedure we shall adopt. The reader may well ask — then why bother to look closely at a possible forgery? There are at least two good reasons, apart from academic curiosity.

First, the Warburg claim that the book is a forgery has a curious and vital flaw. The Warburgs deny as false a book they admit not to have read t nor even seen. The Warburg denial is limited specifically to non-authorship by a Warburg. This denial is acceptable; but it does not deny or reject the validity of the *contents.* The denial merely repudiates authorship.

Second, we have already identified I.G. Farben as a key financier and backer of Hitler. We have provided photographic evidence (page 64) of the bank transfer slip for 400,000 marks from I.G. Farben to Hitler's *"Nationale* Treuhand" political slush fund account administered by Rudolf Hess. Now it is probable, almost certain, that "Sidney Warburg" did not exist. On the other hand, it *is* a matter of public record that the Warburgs were closely connected with I.G. Farben in Germany and the United States. In Germany Max Warburg was a director of I.G. Farben and in the United States brother Paul Warburg (father of James Paul Warburg) was a director of American I.G. Farben. In brief, we have incontrovertible evidence that

some Warburgs, including the father of James Paul, the denouncer of the "Sidney Warburg" book, *were* directors of I.G. Farben. And I.G. Farben is known to have financed Hitler. *"Sidney* Warburg" was a myth, but I.G. Farben directors Max Warburg and Paul Warburg were not myths. This is reason enough to push further.

Let us first summarize the book which James Paul Warburg claims is a forgery.

A Synopsis of the Suppressed "Sidney Warburg" Book

The Financial Sources of National Socialism opens with an alleged conversation between "Sidney Warburg" and joint author/translator I. G. Shoup. "Warburg" relates why he was handing Shoup an English language manuscript for translation into Dutch and publication in Holland In the words of the mythical "Sidney Warburg":

> *There are moments when I want to turn away from a world of such intrigue, trickery, swindling and tampering with the stock exchange .... Do you know what I can never under stand? How it is possible that people of good and honest character — for which I have ample proof — participate in swindling and fraud, knowing full well that it will affect thousands.*

Shoup then describes "Sidney Warburg" as "son of one of the largest bankers in the United States, member of the banking firm Kuhn, Loeb & Co., New York." "Sidney Warburg" then tells Shoup that he ("Warburg") wants to record for history how national socialism was financed by New York financiers.

The first section of the book is entitled simply *"1929."* It relates that in 1929 Wall Street had enormous credits outstanding in Germany and Austria, and that these claims had, for the most part, been frozen. While France was economically weak and feared Germany, France was also getting the "lion's share" of reparations funds which were actually financed from the United States. In June 1929, a meeting took place between the members of the Federal Reserve Bank and leading American bankers to decide what to do about France, and particularly to cheek her call on German reparations. This meeting was attended (according to the "Warburg" book) by the directors of Guaranty Trust Company, the "Presidents" of the Federal Reserve Banks, in addition to five independent bankers, "young Rockefeller," and Glean from Royal Dutch Shell. Carter and Rockefeller according to the text "dominated the proceedings. The others listened and nodded their heads."

The general consensus at the bankers' meeting was that the only way to free Germany from French financial clutches was by revolution, either Communist or German Nationalist. At an earlier meeting it had previously been agreed to contact Hitler to "try to find out if he were amenable to American financial support." Now Rockefeller reportedly had more recently seen a German-American leaflet about the Hitler national socialist movement and the purpose of this second meeting was to determine if "Sidney Warburg" was prepared to go to Germany as a courier to make personal contact with Hitler.

In return for proferred financial support, Hitler would be expected to conduct an "aggressive foreign policy and stir up the idea of revenge against France." This policy, it was anticipated, would result in a French appeal to the United States and England for assistance in "international questions involving the eventual German aggression." Hitler was not to

know about the purpose of Wall Street's assistance. It would be left *"*to his reason and resourcefulness to discover the motives behind the proposal." "Warburg" accepted the proposed mission and left New York for Cherbourg on the *Ile de France,* "with a diplomatic passport and letters of recommendation from Carter, Tommy Walker, Rockefeller, Glean and Herbert Hoover."

Apparently, "Sidney Warburg" had some difficulty in meeting Hitler. The American Consul in Munich did not succeed in making contact with the Nazis, and finally Warburg went directly to Mayor Deutzberg of Munich, "with a recommendation from the American Consul," and a plea to guide Warburg to Hitler. Shoup then presents extracts from Hitler's statements at this initial meeting. These extracts include the usual Hitlerian anti-Semitic rantings, and it should be noted that all the anti, Semitic parts in the "Sidney Warburg" book are spoken by Hitler. (This is important because James Paul Warburg claims the Shoup book is totally anti-Semitic.) Funding of the Nazis was discussed at this meeting and Hitler is reported to insist that funds could not be deposited in a German bank but only in a foreign bank at his disposal. Hitler asked for 100 million marks and suggested that "Sidney Warburg" report on the Wall Street reaction through von Heydt at Lutzowufer, 18 Berlin.[5]

After reporting back to Wall Street, Warburg learned that $24 million was too much for the American bankers; they offered $10 million. Warburg contacted von Heydt and a further meeting was arranged, this time with an *"undistinguished* looking man, introduced to me under the name Frey." Instructions were given to make $10 million available at the Mendelsohn & Co. Bank in Amsterdam, Holland. Warburg was to ask the Mendelsohn Bank to make out checks in marks payable to named Nazis in ten German cities. Subsequently, Warburg travelled to Amsterdam, completed his mission with Mendelsohn & Co., then went to Southampton, England and took the *Olympia* back to New York where he reported to Carter at Guaranty Trust Company. Two days later Warburg gave his report to the entire Wall Street group, but "this time an English representative was there sitting next to Glean from Royal Dutch, a man named Angell, one of the heads of the Asiatic Petroleum Co." Warburg was questioned about Hitler, and "Rockefeller showed unusual interest in Hitler's statements about the Communists."

A few weeks after Warburg's return from Europe the Hearst newspapers showed "unusual interest" in the new German Nazi Party and even the *New York Times* carried regular short reports of Hitler's speeches. Previously these newspapers had not shown too much interest, but that now changed.[6] Also, in December 1929 a long study of the German National Socialist movement appeared *"in* a monthly publication at Harvard University."

Part II of the suppressed "Financial Sources of National Socialism" is entitled "1931" and opens with a discussion of French influence on international politics. It avers that Herbert Hoover promised Pierre Laval of France not to resolve the debt question without first consulting the French government and [writes Shoup]:

> *When Wall Street found out about this Hoover lost the respect of this circle at one blow. Even the subsequent elections were affected — many believed that Hoover's failure to get reelected can be traced back to the issue.*[7]

In October 1931, Warburg received a letter from Hitler which he passed on to Carter at Guaranty Trust Company, and subsequently another bankers' meeting was called at the Guaranty Trust Company of-rices. Opinions at this meeting were divided. "Sidney

Warburg" reported that Rockefeller, Carter, and McBean were for Hitler, while the other financiers were uncertain. Montague Norman of the Bank of England and Glean of Royal Dutch Shell argued that the $10 million already spent on Hitler was too much, that Hitler would never act. The meeting finally agreed in principle to assist Hitler further, and Warburg again undertook a courier assignment and went back to Germany.

On this trip Warburg reportedly discussed German affairs with "a Jewish banker" in Hamburg, with an industrial magnate, and other Hitler supporters. One meeting was with banker von Heydt and a "Luetgebrunn." The latter stated that the Nazi storm troopers were incompletely equipped and the S.S. badly needed machine guns, revolvers, and carbines.

In the next Warburg-Hitler meeting, Hitler argued that "the Soviets cannot miss our industrial products yet. We will give credit, and if I am not able to deflate France myself, then the Soviets will help me." Hitler said he had two plans for takeover in Germany: (a) the revolution plan, and (b), the legal takeover plan. The first plan would be a matter of three months, the second plan a matter of three years. Hitler was quoted as saying, "revolution costs five hundred million marks, legal takeover costs two hundred million marks — what will your bankers decide?" After five days a cable from Guaranty Trust arrived for Warburg and is cited in the book as follows:

> *Suggested amounts are out of the question. We don't want to and cannot. Explain to man that such a transfer to Europe will shatter financial market. Absolutely unknown on international territory. Expect long report, before decision is made. Stay there. Continue investigation. Persuade man of impossible demands. Don't forget to include in report own opinion of possibilities for future of man.*

Warburg cabled his report back to New York and three days later received a second cablegram reading:

> *Report received. Prepare to deliver ten, maximum fifteen million dollars. Advise man necessity of aggression against foreign danger.*

The $15 million was accepted for the legal takeover road, not for the revolutionary plan. The money was transferred from Wall Street to Hitler via Warburg as follows — $5 million to be paid at Mendelsohn & Company, Amsterdam; $5 million at the Rotterdamsehe Bankvereinigung in Rotterdam; and $5 million at "Banca Italiana."

Warburg travelled to each of these banks, where he reportedly met Heydt, Strasser and Hermann Goering. The groups arranged for cheeks to be made out to different names in various towns in Germany. In other words, the funds were "laundered" in the modern tradition to disguise their Wall Street origins. In Italy the payment group was reportedly received at the main building of the bank by its president and while waiting in his office two Italian fascists, Rossi and Balbo, were introduced to Warburg, Heydt, Strasser, and Goering. Three days after payment, Warburg returned to New York from Genoa on the *Savoya.* Again, he reported to Carter, Rockefeller, and the other bankers.

The third section of "Financial Sources of National Soeialism" is entitled simply "1933." The section records "Sidney Warburg's" third and last meeting with Hitler — on the night the Reichstag was burned. (We noted in Chapter Eight the presence of Roosevelt's friend

Putzi Hanfstaengl in the Reichstag.) At this meeting Hitler informed Warburg of Nazi progress towards legal takeover. Since 1931 the Nationalist Socialist party had tripled in size. Massive deposits of weapons had been made near the German border in Belgium, Holland, and Austria — but these weapons required cash payments before delivery. Hitler asked for a minimum of 100 million marks to take care of the final step in the takeover program. Guaranty Trust wired Warburg offering $7 million at most, to be paid as follows — $2 million to the Renania Joint Stock Company in Dusseldorf (the German branch of Royal Dutch), and $5 million to other banks. Warburg reported this offer to Hitler, who requested the $5 million should be sent to the Banca Italiana in Rome and (although the report does not say so) presumably the other $2 million was paid to Dusseldorf. The book concludes with the following statement from Warburg:

> *I carried out my assignment strictly down to the last detail. Hitler is dictator of the largest European country. The world has now observed him at work for several months. My opinion of him means nothing now. His actions will prove if he is bad, which I believe he is. For the sake of the German people I hope in my heart that I am wrong. The world continues to suffer under a system that has to bow to a Hitler to keep itself on its feet. Poor world, poor humanity.*

This is a synopsis of "Sidney Warburg's" suppressed book on the financial origins of national socialism in Germany. Some of the information in the book is now common knowledge — although only part was generally known in the early 1930s. It is extraordinary to note that the unknown author had access to information that only surfaced many years later — for example, the identity of the von Heydt bank as a Hitler financial conduit. Why was the book taken off the bookstands and suppressed? The stated reason for withdrawal was that "Sidney Warburg" did not exist, that the book was a forgery, and that the Warburg family claimed it contained anti-Semitic and libelous statements.

The information in the book was resurrected after World War II and published in other books in an anti-Semitic context which does not exist in the original 1933 book. Two of these post-war books were Rene Sonderegger's *Spanischer Sommer* and Werner Zimmerman's *Liebet Eure Feinde.*

Most importantly James P. Warburg of New York signed an affidavit in 1949, which was published as an appendix in von Papen's *Memoirs.* This Warburg affidavit emphatically denied the authenticity of the "Sidney Warburg" book and claimed it was a hoax, Unfortunately, James P. Warburg focuses on the 1947 Sonderegger anti-Semitic book *Spanischer Sommer*, not the original suppressed "Sidney Warburg" book published in 1933 — where the only anti-Semitism stems from Hitler's alleged statements.

In other words, the Warburg affidavit raised far more questions than it resolved. We should therefore look at Warburg's 1949 affidavit denying the authenticity of *Financial Sources of National Socialism.*

James Paul Warburg's Affidavit

In 1953 Nazi Franz von Papen published his *Memoirs.*[8] This was the same Franz von Papen who had been active in the United States on behalf of German espionage in World War I. In his *Memoirs*, Franz von Papen discusses the question of financing Hitler and places the

blame squarely on industrialist Fritz Thyssen and banker Kurt von Sehroder. Papen denies that he (Papen) financed Hitler, and indeed no credible evidence has been forthcoming to link von Papen with Hitler's funds (although Zimmerman in *Liebert Eure Feinde* accuses Papen of donating 14 million marks). In this context von Papen mentions "Sidney Warburg's" *The Financial Sources of National Socialism,* together with the two more recent post-World War II books by Werner Zimmerman and Rene Sonderegger (alias Severin Reinhardt).[9] Papen adds that:

> *James P. Warburg is able to refute the whole falsification in his affidavit .... For my own part I am most grateful to Mr. Warburg for disposing once and for all of this malicious libel. It is almost impossible to refute accusations of this sort by simple negation, and his authoritative denial has enabled me to give body to my own protestations.*[10]

There are two sections to Appendix II of Papen's book. First is a statement by James P. Warburg; second is the affidavit, dated July 15, 1949.

The opening paragraph of the statement records that in 1933 the Dutch publishing house of Holkema and Warendorf published *De Geldbronnen van Het Nationaal-Socialisme. Drie Gesprekken Met Hitler,* and adds that,

> *This book was allegedly written by "Sidney Warburg." A partner in the Amsterdam firm of Warburg & Co. informed James P. Warburg of the book and Holkema and Warendorf were informed that no such person as "Sidney Warburg" existed. They thereupon withdrew the book from circulation.*

James Warburg then makes two sequential and seemingly contradictory statements:

> **...** *the book contained a mass of libelous material against various members of my family and against a number of prominent banking houses and individuals in New York· I have never to this day seen a copy of the book. Apparently only a handful of copies escaped the publisher's withdrawal.*

Now on the one hand Warburg claims he has never seen a copy of the "Sidney Warburg" book, and on the other hand says it is *"libelous"* and proceeds to construct a detailed affidavit on a sentence by sentence basis to refute the information supposedly in a book he claims not to have seen! It is very difficult to accept the validity of Warburg's claim he has "never to this day seen a copy of the book." Or if indeed he had not, then the affidavit is worthless.

James Warburg adds that the "Sidney Warburg" book is "obvious anti-Semitism," and the thrust of Warburg's statement is that the *"Sidney* Warburg" story is pure anti-Semitic propaganda. In fact (and Warburg would have discovered this fact if he had read the book), the *only* anti-Semitic statements in the 1933 book are those attributed to Adolf Hitler, whose anti-Semitic feelings are hardly any great discovery. Apart from Hitler's ravings there is nothing in the original "Sidney Warburg" book remotely connected with anti-Semitism, unless we classify Rockefeller, Glean, Carter, McBean, *etc.* as Jewish. *In fact, it is notable that not a single Jewish banker is named in the book — except for the mythical "Sidney Warburg" who is a courier, not one of the alleged money givers.* Yet we know from an authentic source (Ambassador Dodd) that the Jewish banker Eberhard von Oppenheim did

indeed give 200,000 marks to Hitler,[11] and it is unlikely "Sidney Warburg" would have missed this observation if he was deliberately purveying false anti-Semitic propaganda.

The first page of James Warburg's statement concerns the 1933 book. After the first page lames Warburg introduces Rene Sonderegger and another book written in 1947. Careful analysis of Warburg's statement and affidavit point up that his denials and assertions essentially refer to Sonderegger and *not* to Sidney Warburg. Now Sonderegger was anti-Semitic and probably was part of a neo-Nazi movement after World War II, but this claim of anti-Semitism cannot be laid to the 1933 book — and that is the crux of the question at issue. In brief, James Paul Warburg starts out by claiming to discuss a book he has never seen but knows to be libelous and anti-Semitic, then without warning shifts the accusation to another book which was certainly anti-Semitic but was published a decade later. Thus, the Warburg affidavit so thoroughly confuses the two books that the reader is lead to condemn the mythical" Sidney Warburg" along with Sonderegger.[12] Let us look at some of J.P. Warburg's statements:

James P. Warburg's Sworn Affidavit New York City, July 15, 1949	**Author's Comments on James P. Warburg Affidavit**
1. Concerning the wholly false and malicious allegations made by Rene Sonderegger of Zurich, Switzerland, *et al.,* as set forth in the foregoing part of this statement, I, James Paul Warburg, of Greenwich, Connecticut, U.S.A., depose as follows:	Note that the affidavit concerns Rene Sonderegger, *not* the book published by J.G. Shoup in 1933.
2. No such person as "Sidney Warburg" existed in New York City in 1933, nor elsewhere, as far as I know, then or at any other time.	We can assume that the name "Sidney Warburg" is a pseudonym, or used falsely.
3. I never gave any manuscript, diary, notes, cables, or any other documents to any person for translation and publication in Holland, and, specifically, I never gave any such documents to the alleged J.G. Shoup of Antwerp. To the best of my knowledge and recollection I never at any time met any such person.	The affidavit confines itself to grant of materials "for translation and publication in Holland."
4. The telephone conversation between Roger Baldwin and myself, reported by Sonderegger, never took place at all and is pure invention.	Reported by Sonderegger, not "Sidney Warburg."

5. I did not go to Germany at the request of the President of the Guaranty Trust Company in 1929, or at any other time.	But Warburg *did* go to Germany in 1929 and 1930 for the International Acceptance Bank, Inc.
6. I did go to Germany on business for my own bank, The International Acceptance Bank Inc., of New York, in both 1929 and 1930. On neither of these occasions did I have anything to do with investigating the possible prevention of a Communist revolution in Germany by the promotion of a Nazi counter-revolution. As a matter of recorded fact, my opinion at the time was that there was relatively little danger of a Communist revolution in Germany and a considerable danger of a Nazi seizure of power, I am in a position to prove that, on my return from Germany after the Reichstag elections of 1930, I warned my associates that Hitler would very likely come to power in Germany and that the result would be either a Nazi- dominated Europe or a second world war — perhaps both. This can be corroborated as well as the fact that, as a consequence of my warning, my bank proceeded to reduce its German commitments as rapidly as possible.	Note that Warburg, by his own statement, told his banking associates that Hitler would come to power. This claim was made *in 1930 — and* the Warburgs continued as *directors* with I.G. Farben and other pro-Nazi firms.
7. I had no discussions anywhere, at any time, with Hitler, with any Nazi officials, or with anyone else about providing funds for the Nazi Party. Specifically, I had no dealing of this sort with Mendelssohn & Co., or the Rotterdamsche Bankvereiniging or the Banca Italiana. (The latter is probably meant to read Banca d'Italia, with which I likewise had no such dealings.)	There is no evidence to contradict this statement. So far as can be traced Warburgs were not connected with these banking firms except that the Italian correspondent of Warburg's Bank of Manhattan was *"Banca* Commerciale Italiana" — which is close to "Banca Italiana."
8. In February 1933 (see pages 191 and 192 of *Spanischer Sommer)* when I am alleged to	There is no evidence to contradict these statements. "Sidney Warburg" provides no supporting

have brought Hitler the last installment of American funds and to have been received by Goering and Goebbels as well as by Hitler himself, I can prove that I was not in Germany at all. I never set foot in Germany after the Nazis had come to power in January 1933. In January and February I was in New York and Washington, working both with my bank and with President-elect Roosevelt on the then-acute banking crisis. After Mr. Roosevelt's inauguration, on March 3, 1933, I was working with him continuously helping to prepare the agenda for the World Economic Conference, to which I was sent as Financial Adviser in early June. This is a matter of public record.

evidence for his claims.

See *Wall Street and FDR,* (New York: Arlington House Publishers, 1975), for details of FDR's German associations.

9. The foregoing statements should suffice to demonstrate that the whole "Sidney Warburg" myth and the subsequent spurious identification of myself with the non-existent" Sidney" are fabrications of malicious falsehood without the slightest foundation in truth.

No. James P. Warburg states he has never seen the original "Sidney Warburg" book published in Holland in 1933. Therefore his affidavit only applies to the Sonderegger book which *is* inaccurate. Sidney Warburg may well be a myth, but the association of Max Warburg and Paul Warburg with I.G. Farben and Hitler is *not* a myth.

Does James Warburg intend to mislead?

It is true that" Sidney Warburg" may well have been an invention, in the sense that" Sidney Warburg" never existed. We *assume* the name is a fake; but *someone* wrote the book. Zimmerman and Sonderegger may or may not have committed libel to the Warburg name, but unfortunately when we examine James P. Warburg's affidavit as published in von Papen's *Memoirs* we are left as much in the dark as ever. There are three important and unanswered questions: (1) why would James P. Warburg claim as a forgery a book he has not read; (2) why does Warburg's affidavit avoid the key question and divert discussion away from "Sidney Warburg" to the anti-Semitic Sonderegger book published in 1947; and (3) why would James P. Warburg be so insensitive to Jewish suffering in World War II to publish his affidavit in the *Memoirs* of Franz von Papen, who was a prominent Nazi at the heart of the Hitler movement since the early days of 1933?

Not only were the German Warburgs persecuted by Hitler in 1938, but millions of Jews lost

their lives to Nazi barbarism. It seems elementary that anyone who has suffered and was sensitive to the past sufferings of German Jews would avoid Nazis, Naziism, and neo-Nazi books like the plague. Yet here we have Nazi von Papen acting as a genial literary host to self-described anti-Nazi James P. Warburg, who apparently welcomes the opportunity. Moreover, the Warburgs had ample opportunity to release such an affidavit with wide publicity without utilizing neo-Nazi channels.

The reader will profit from pondering this situation. The only logical explanation is that some of the facts in the "Sidney Warburg" book are either true, come close to the truth, or are embarrassing to James P. Warburg. One cannot say that Warburg *intends* to mislead (although this might seem an obvious conclusion), because businessmen are notoriously illogical writers and reasoners, and there is certainly nothing to exempt Warburg from this categorization.

Some Conclusions from the "Sidney Warburg" Story

"Sidney Warburg" never existed; in this sense the original 1933 book is a work of fiction. However, many of the then-little-known facts recorded in the book are curate; and the James Warburg affidavit is not aimed at the original boo but rather at an anti-Semitic book circulated over a decade later.

Paul Warburg was a director of American I.G. Farben and thus connected with the financing of Hitler. Max Warburg, a director of German I.G. Farben, signed — along with Hitler himself — the document which appointed Hjalmar Schacht to the Reichsbank. These verifiable connections between the Warburgs and Hitler suggest the "Sidney Warburg" story cannot be abandoned as a total forgery without close examination.

Who wrote the 1933 book, and why? I.G. Shoup says the notes were written by a Warburg in England and given to him to translate. The War-burg motive was alleged to be genuine remorse at the amoral behavior of Warburgs and their Wall Street associates. Does this sound like a plausible motive? It has not gone unnoticed that those same Wall Streeters who plot war and revolution are often in their private lives genuinely decent citizens; it is not beyond the realm of reason that one of them had a change of heart or a heavy conscience. But this is not proven.

If the book was a forgery, then by whom was it written? James War-burg admits he does not know the answer, and he writes: "The original purpose of the forgery remains somewhat obscure even today.[13]

Would any government forge the document? Certainly not the British or U.S. governments, which are both indirectly implicated by the book. Certainly not the Nazi government in Germany, although James Warburg appears to suggest this unlikely possibility. Could it be France, or the Soviet Union, or perhaps Austria? France, possibly because France feared the rise of Nazi Germany. Austria is a similar possibility. The Soviet Union is a possibility because the Soviets also had much to fear from Hitler. So it is plausible that France, Austria, or the Soviet Union had some hand in the preparation of the book.

Any private citizen who forged such a book without inside government materials would have to be remarkably well informed. Guaranty Trust is not a particularly well-known bank

outside New York, yet there is an extraordinary degree of plausibility about the involvement of Guaranty Trust, because it was the Morgan vehicle used for financing and infiltrating the Bolshevik revolution.[14] Whoever named Guaranty Trust as the vehicle for funding Hitler either knew a great deal more than the man in the street, or had authentic government information. What would be the motive behind such a book?

The only motive that seems acceptable is that the unknown author had knowledge a war was in preparation and hoped for a public reaction against the Wall Street fanatics and their industrialist friends in Germany — before it was too late. Clearly, *whoever* wrote the book, his motive almost certainly was to warn against Hitlerian aggression and to point to its Wall Street source, because the technical assistance of American companies controlled by Wall Street was still needed to build Hitler's war machine. The Standard Oil hydrogenation patents and financing for the oil from coal plants, the bomb sights, and the other necessary technology had not been fully transferred when the "Sidney Warburg" book was written. Consequently, this could have been a book designed to break the back of Hitler's supporters abroad, to inhibit the planned transfer of U.S. war-making potential, and to eliminate financial and diplomatic support of the Nazi state. If this was the goal, it is regrettable that the book failed to achieve any of these purposes.

Footnotes:

[1]William E. Dodd, *Ambassador Dodd's Diary, op.* cit., p. 31.

[2]Ibid., p. 74.

[3]Franz von Papen, *Memoirs,* (New York: E.P. Dutton & Co., 1953), p. 229.

[4]The English text for this chapter is translated from an authenticated surviving German translation of a copy of the Dutch edition of *De Geldbronnen van Het Nationaal-Socialisme (Drie Gesprekken Met Hitler),* or *The Financial Sources of National Socialism (Three conversations with Hitler.* The original Dutch author is given as "Door Sidney Warburg, vertaald door I.G. Shoup" (By Sidney Warburg, as told by I.G. Shoup).

The copy used here was translated from the Dutch by Dr. Walter Nelz, Wilhelm Peter, and Rene Sonderegger in Zurich, February 11, 1947, and the German translation bears an affidavit to the effect that: "The undersigned three witnesses do verify that the accompanying document is none other than a true and literal translation from Dutch into German of the book by Sidney Warburg, a copy of which was constantly at their disposal during the complete process of translation. They testify that they held this original in their hands, and that to the best of their ability they read it sentence by sentence, translating it into German, comparing then the content of the accompanying translation to the original conscientiously until complete agreement was reached."

[5]Note that "von Heydt" was the original name for the Dutch Bank voor Handel en Seheepvaart N.V., a subsidiary of the Thyssen interests and now known to

have been used as a funnel for Nazi funds. See *Elimination of German Resources.*

[6]Examination of the Index for the *New York Times* confirms the accuracy of the latter part of this statement. See for example the sudden rush of interest by the *New York Times,* September 15, 1930 and the feature article on "Hitler, Driving Force in Germany's Fascism" in the September 21, 1930 issue of the *New York Times.* In 1929 the *New York Times* listed only one brief item on Adolf Hitler. In 1931 it ran a score of substantial entries, in-eluding no fewer than three "Portraits."

[7]Hoover said he lost the support of Wall Street in 1931 because he would not go along with its plan for a New Deal: see Antony C. Sutton, *Wall Street and FDR, op. cit.*

[8]Franz von Papen, *Memoirs,* (New York: E.P. Dutton & Co., Inc., 1958). Translated by Brian Connell.

[9]Werner Zimmerman, *Liebet Eure Feinde,* (Frankhauser Verlag: Thielle-Neuchatel, 1948), which contains a chapter, "Hitler's geheime Geldgeber" (Hitler's secret financial supporters) and Rene Sonderegger, *Spanischer Sommer,* (Afroltern, Switzerland: Aehren Verlag, 1948).

[10]Franz von Papen, *Memoirs, op.* cit., p. 23.

[11]William E. Dodd, *Ambassador Dodd,s Diary, op. cit.* pp, 593-602.

[12]The reader should examine the complete Warburg statement and affidavit; see Franz von Papen, *Memoirs, op. cit.* pp. 593-602,

[13]Franz von Papen, *Memoirs, op.* cit., p. 594.

[14]See Antony C. Sutton, *Wall Street and the Bolshevik Revolution, op. cit,*

BACK

CHAPTER ELEVEN

Wall Street-Nazi Collaboration in World War II

Behind the battle fronts in World War II, through intermediaries in Switzerland and North Africa, the New York financial elite collaborated with the Nazi regime, Captured files after the war yielded a mass of evidence demonstrating that for some elements of Big Business, the period 1941-5 was "business as usual." For instance, correspondence between U.S. firms and their French subsidiaries reveals the aid given to the Axis military machine — while the United States was at war with Germany and Italy. Letters between Ford of France and Ford of the U.S. between 1940 and July 1942 were analyzed by the Foreign Funds Control section of the Treasury Department. Their initial report concluded that until mid-1942:

> *(1) the business of the Ford subsidiaries in France substantially increased; (2) their production was solely for the benefit of the Germans and the countries under its occupation; (3) the Germans have "shown clearly their wish to protect the Ford interests" because of the attitude of strict neutrality maintained by Henry Ford and the late Edsel Ford; and (4) the increased activity of the French Ford subsidiaries on behalf of the Germans received the commendation of the Ford family in America.*[1]

Similarly, the Rockefeller Chase Bank was accused of collaborating with the Nazis in World War II France, while Nelson Rockefeller had a soft job in Washington D.C.:

> *Substantially the same pattern of behavior was pursued by the Paris office of the Chase Bank during German occupation, An examination of the correspondence between Chase, New York, and Chase, France, from the date of the fall of France to May, 1942 discloses that: (1) the manager of the Paris office appeased and collaborated with the Germans to place the Chase banks in a "privileged position;" (2) the Germans held the Chase Bank in a very special esteem — owing to the international activities of our (Chase) head office and the pleasant relations which the Paris branch has been maintaining with many of their (German) banks and their (German) local organizations and higher officers; (3)the Paris manager was "very vigorous in enforcing restrictions against Jewish property, even going so far as to refuse to release funds belonging to Jews in anticipation that a decree with retroactive provisions prohibiting such release might be published in the near future by the occupying authorities;" (4)the New York office despite the above information took no direct steps to remove the undesirable manager from the Paris office since it "might react against our (Chase) interests as we are dealing, not with a theory but with a situation."*[2]

An official report to then-Secretary of the Treasury Morgenthau concluded that:

> *These two situations* [i.e., *Ford and Chase Bank] convince us that it is imperative to investigate immediately on the spot the activities of subsidiaries of at least some of the larger American firms which were operating in France*

during German occupation ....[3]

Treasury officials urged that an investigation be started with the French subsidiaries of several American banks — that is, Chase, Morgan, National City, Guaranty, Bankers Trust, and American Express. Although Chase and Morgan were the only two banks to maintain French offices throughout the Nazi occupation, in September 1944 all the major New York banks were pressing the U.S. Government for permission to re-open pre-war branches. Subsequent Treasury investigation produced documentary evidence of collaboration between both Chase Bank and J.P. Morgan with the Nazis in World War II. The recommendation for a full investigation is cited in full as follows:

TREASURY DEPARTMENT
INTER-OFFICE COMMUNICATION

Date: December 20, 1944
To: Secretary Morgenthau From: Mr. Saxon
Examination of the records of the Chase Bank, Paris, and of Morgan and Company, France, have progressed only far enough to permit tentative conclusions and the revelation of a few interesting facts:

CHASE BANK, PARIS

a. Niederman, of Swiss nationality, manager of Chase, Paris, was unquestionably a collaborator;

b. The Chase Head Office in New York was informed of Nieder-man's collaborationist policy but took no steps to remove him. Indeed there is ample evidence to show that the Head Office in New York viewed Niederman's good relations with the Germans as an excellent means of preserving, unimpaired, the position of the Chase Bank in France;

c. The German authorities were anxious to keep the Chase open and indeed took exceptional measures to provide sources of revenue;

d. The German authorities desired *"to* be friends" with the important American banks because they expected that these banks would be useful after the war as an instrument of German policy in the United States;

e. The Chase, Paris showed itself most anxious to please the German authorities in every possible way. For example, the Chase zealously maintained the account of the German Embassy in Paris, "as every little thing helps" (to maintain the excellent relations between Chase and the German authorities);

f. The whole objective of the Chase policy and operation was to maintain the position of the bank at any cost.

MORGAN AND COMPANY, FRANCE

a. Morgan and Company regarded itself as a French bank, and therefore

> obligated to observe French banking laws and regulations, whether Nazi-inspired or not; and did actually do so;
>
> b. Morgan and Company was most anxious to preserve the continuity of its house in France, and, in order to achieve this security, worked out a modus vivendi with the German authorities;
>
> c. Morgan and Company had tremendous prestige with the German authorities, and the Germans boasted of the splendid cooperation of Morgan and Company;
>
> d. Morgan continued its prewar relations with the great French industrial and commercial concerns which were working for Germany, including the Renault Works, since confiscated by the French Government, Puegeqt [sic], Citroen, and many others.
>
> e. The power of Morgan and Company in France bears no relation to the small financial resources of the firm, and the enquiry now in progress will be of real value in allowing us for the first time to study the Morgan pattern in Europe and the manner in which Morgan has used its great power;
>
> f. Morgan and Company constantly sought its ends by playing one government against another in the coldest and most unscrupulous manner.
>
> Mr. Jefferson Caffery, U.S. Ambassador to France, has been kept informed of the progress of this investigation and at all times gave me full support and encouragement, in principle and in fact. Indeed, it was Mr. Caffery himself who asked me how the Ford and General Motors subsidiaries in France had acted during the occupation, and expressed the desire that we should look into these companies after the bank investigation was completed.
>
> **RECOMMENDATION**
>
> I recommend that this investigation, which, for unavoidable reasons, has progressed slowly up to this time, should now be pressed urgently and that additional needed personnel be sent to Paris as soon as possible.[4]

The full investigation was never undertaken, and no investigation has been made of this presumably treasonable activity down to the present day.

American I.G. in World War II

Collaboration between American businessmen and Nazis in Axis Europe was paralleled by protection of Nazi interests in the United States. In 1939 American I.G. was renamed General Aniline & Film, with General Dyestuffs acting as its exclusive sales agent in the U.S. These names effectively disguised the fact that American I.G. (or General Aniline & Film) was an important producer of major war materials, including atabrine, magnesium, and synthetic rubber. Restrictive agreements with its German parent I.G. Farben reduced American supplies of these military products during World War II.

An American citizen, Halbach, became president of General Dyestuffs in 1930 and acquired majority control in 1939 from Dietrich A. Schmitz, a director of American I.G. and brother of Hermann Schmitz, director of I.G. Farben in Germany and chairman of the board of American I.G. until the outbreak of war in 1939. After Pearl Harbor, the U.S. Treasury blocked Halbach's bank accounts. In June 1942 the Alien Property Custodian seized Halbach's stock in General Dyestuffs and took over the firm as an enemy corporation under the Trading with the Enemy Act. Subsequently, the Alien Property Custodian appointed a new board of directors to act as trustee for the duration of the war. These actions were reasonable and usual practice, but when we probe under the surface another and quite abnormal story emerges.

Between 1942 and 1945 Halbach was nominally a consultant to General Dyestuffs. In fact Halbach ran the company, at $82,000 per year, Louis Johnson, former Assistant Secretary of War, was appointed president of General Dyestuffs by the 'U.S. Government, for which he received $75,000 a year. Louis Johnson attempted to bring pressure to bear on the U.S. Treasury to unblock Halbach's blocked funds and allow Halbach to develop policies contrary to the interests of the U.S., then at war with Germany. The argument used to get Halbach's bank accounts unblocked was that Halbach was running the company and that the Government-appointed board of directors "would have been lost without Mr. Halbach's knowledge."

During the war Halbach filed suit against the Alien Property Custodian, through the Establishment law firm of Sullivan and Cromwell, to oust the U.S. Government from its control of I.G. Farben companies. These suits were unsuccessful, but Halbach was successful in keeping the Farben cartel agreements intact throughout World War II; the Alien Property Custodian never did go into court during World War II on the pending anti-trust suits. Why not? Leo T. Crowley, head of the Alien Property Custodian's office, had John Foster Dulles as his advisor, and John Foster Dulles was a partner in the above-mentioned Sullivan and Cromwell firm, which was acting on behalf of Halbach in its suit against the Alien Property Custodian.

There were other conflict of interest situations we should note. Leo T. Crowley, the Alien Property Custodian, appointed Victor Emanuel to the boards of both General Aniline & Film and General Dyestuffs. Before the war Victor Emanuel was director of the J. Schroder Banking Corporation. Schroder, as we have already seen, was a prominent financier of Hitler and the Nazi party — *and at that very time was a member of Himmler's Circle of Friends, making substantial contributions to S.S. organizations in Germany.*

In turn Victor Emanuel appointed Leo Crowley head of Standard Gas & Electric (controlled by Emanuel) at $75,000 per annum. This sum was in addition to Crowley's salary from the Alien Property Custodian and $10,000 a year as head of the U.S. Government Federal Deposit Insurance Corporation. By 1945 James E. Markham had replaced Crowley as A.P.C. and was also appointed by Emanuel as a director of Standard Gas at $4,850 per year, in addition to the $10,000 he drew as Alien Property Custodian.

The wartime influence of General Dyestuffs and this cozy government-business coterie on behalf of I.G. Farben is exemplified in the ease of American Cyanamid. Before the war I.G. Farben controlled the drug, chemical, and dyestuffs industries in Mexico. During World War II it was proposed to Washington that American Cyanamid take over this Mexican industry and develop an "independent" chemical industry with the old I.G. Farben firms seized by the Mexican Alien Property Custodian.

As hired hands of Schroder banker Victor Emanuel, Crowley and Markham, who were also employees of the U.S. Government, attempted to deal with the question of these I.G. Farben interests in the United States and Mexico. On April 13, 1943 James Markham sent a letter to Secretary of State Cordell Hull objecting to the proposed Cyanamid deal on the grounds it was contrary to the Atlantic Charter and would interfere with the aim of establishing independent firms in Latin America. The Markham position was supported by Henry A. Wallace and Attorney General Francis Biddle.

The forces aligned against the Cyanamid deal were Sterling Drug, Inc. and Winthrop. Both Sterling and Winthrop stood to lose their drug market in Mexico if the Cyanamid deal went through. Also hostile to the Cyanamid deal of course was I.G. Farben's General Aniline and General Dyestuffs, dominated by Victor Emanuel, banker Sehroder's former associate.

On the other hand, the State Department and the Office of the Coordinator of Inter-American affairs — which happened to be Nelson Rockefeller's wartime baby — *supported* the proposed Cyanamid deal. The Rockefellers are, of course, also interested in the drug and chemical industries in Latin America. In brief, an American monopoly under influence of Rockefeller would have replaced a Nazi I.G. Farben monopoly.

I.G. Farben won this round in Washington, but more ominous questions are raised when we look at the bombing of Germany in wartime by the U.S.A.A.F. It has long been rumored, but never proven, that Farben received favored treatment — i.e., that it was not bombed. James Stewart Martin comments as follows on favored treatment received by I.G. Farben in the bombing of Germany:

> *Shortly after the armies reached the Rhine at Cologne, we were driving along the west bank within sight of the undamaged I.G. Farben plant at Leverkusen across the river. Without knowing anything about me or my business he (the jeep driver) began to give me a lecture about I.G. Farben and to point at the con. trast between the bombed-out city of Cologne and the trio of untouched plants on the fringe: the Ford works and the United Rayon works on the west bank, and the Farben works on the east bank..*[5]

While this accusation is very much of an open question, requiring a great deal of skilled research into the U.S.A.A.F. bombing records, other aspects of favoritism for the Nazis are well recorded.

At the end of World War II, Wall Street moved into Germany through the Control Council to protect their old cartel friends and limit the extent to which the denazification fervor would damage old business relationships. General Lucius Clay, the deputy military governor for Germany, appointed businessmen who opposed denazification to positions of control over the denazification proceeds. *William H. Draper of Dill. on, Read, the firm which financed the German cartels back in the 1920s, became General Clay's deputy.*

Banker William Draper, as Brigadier General William Draper, put his control team together from businessmen who had represented American business in pre-war Germany. The General Motors representation in-eluded Louis Douglas, a former director of G.M., and Edward S. Zdunke, a pre-war head of General Motors in Antwerp, appointed to supervise the Engineering Section of the Control Council. Peter Hoglund, an expert on German auto industry, was given leave from General Motors. The personnel selection for the Council

was undertaken by Colonel Graeme K. Howard — former G,M. representative in Germany and author of a book which "praises totalitarian practices [and] justifies German aggression .... "[6]

Treasury Secretary Morgenthau was deeply disturbed at the implications of this Wall Street monopoly of the fate of Nazi Germany and prepared a memorandum to present to President Roosevelt. The complete Morgenthau memorandum, dated May 29, 1945, reads as follows:

MEMORANDUM

May 29, 1945

> Lieutenant-General Lucius D. Clay, as Deputy to General Eisenhower, actively runs the American element of the Control Council for Germany. General Clay's three principal advisers on the Control Council staff are.
>
> 1. Ambassador Robert D. Murphy, who is in charge of the Political Division.
>
> 2. Louis Douglas, whom General Clay describes as my personal adviser on economical, financial and governmental matters." Douglas resigned as Director of the Budget in 1934; and for the following eight years he attacked the government's fiscal policies. Since 1940, Douglas has been president of the Mutual Life Insurance Company, and since December 1944, *he has been a director of the General Motors Corporation.*
>
> 3. Brigadier-General William Draper, who is the director of the Economics Division of the Control Council. General Draper is a partner of the banking firm of Dillon, Read and Company,
>
> Sunday's *New York Times* contained the announcement of key personnel who have been appointed by General Clay and General Draper to the Economic Division of the Control Council. The appointments include the following:
>
> 1. R.J. Wysor is to be in charge of the metallurgical matters. Wysor was president of the Republic Steel Corporation from 1937 until a recent date, and prior thereto, he was associated with the Bethlehem Steel, Jones and Laughlin Steel Corporation and the Republic Steel Corporation.
>
> 2. Edward X. Zdunke is to supervise the engineering section. Prior to the war, Mr. Zdunke was head of General Motors at Antwerp.
>
> 3. Philip Gaethke is to be in charge of mining operations. Gaethke was formerly connected with Anaconda Copper and was manager of its smelters and mines in Upper Silesia before the war.
>
> 4. Philip P. Clover is to be in charge of handling oil matters. He was formerly a representative of the Socony Vacuum Oil Company in Germany.
>
> 5. Peter Hoglund is to deal with industrial production problems. Hoglund is on leave from General Motors and is said to be an expert on German production.

6. Calvin B. Hoover is to be in charge of the Intelligence Group on the Control Council and is also to be a special advisor to General Draper. In a letter to the Editor of the *New York Times* on October 9, 1944, Hoover wrote as follows:

> *The publication of Secretary Morgenthau's plan for dealing with Germany has disturbed me deeply ... such a Carthaginian peace would leave a legacy of hate to poison international relations for generations to come... the void in the economy of Europe which would exist through the destruction of all German industry is something which is difficult to contemplate.*

7. Laird Bell is to be Chief Counsel of the Economic Division. He is a well-known Chicago lawyer and in May 1944, was elected the president of the *Chicago Daily News*, after the death of Frank Knox.

One of the men who helped General Draper in the selection of personnel for the Economics Division was Colonel Graeme Howard, a vice-president of General Motors, who was in charge of their overseas business and who was a leading representative of General Motors in Germany prior to the war. Howard is the author of a book in which he praises totalitarian practices, justifies German aggression and the Munich policy of appeasement, and blames Roosevelt for precipitating the war.

So when we examine the Control Council for Germany under General Lucius D. Clay we find that the head of the finance division was Louis Douglas, director of the Morgan-controlled General Motors and president of Mutual Life Insurance. (Opel, the General Motors German subsidiary, had been Hitler's biggest tank producer.) The head of the Control Council's Economics Division was William Draper, a partner in the Dillon, Read firm that had so much to do with building Nazi Germany in the first place. All three men were, not surprisingly in the light of more recent findings, members of the Council on Foreign Relations.

Were American Industrialists and Financiers Guilty of War Crimes?

The Nuremburg War Crimes Trials proposed to select those responsible for World War II preparations and atrocities and place them on trial. Whether. such a procedure is morally justifiable is a debatable matter; there is some justification for holding that Nuremburg was a political farce far removed from legal principle.[7] However, if we assume that there *is* such legal and moral justification, then surely any such trial should apply to *all*, irrespective of nationality. What for example should exempt Franklin D. Roosevelt and Winston Churchill, but not exempt Adolf Hitler and Goering? If the offense is preparation for war, and not blind vengeance, then justice should be impartial.

The directives prepared by the U.S. Control Council in Germany for the arrest and detention of war criminals refers to "Nazis" and "Nazi sympathizers," not "Germans." The relevant extracts are as follows:

> *a. You will search out, arrest, and hold, pending receipt by you of further instructions as to their disposition, Adolph Hitler, his chief Nazi associates,*

> *other war criminals and all persons who have participated in planning or carrying out Nazi enterprises involving or resulting in atrocities or war crimes.*

Then follows a list of the categories of persons to be arrested, including:

> *(8) Nazis and Nazi sympathizers holding important and key positions in (a) National and Gau Civic and economic organizations; (b) corporations and other organizations in which the government has a major financial interest; (c) industry, commerce, agriculture, and finance; (d) education; (e) the judicial; and (f) the press, publishing houses and other agencies disseminating news and propaganda.*

Top American industrialists and financiers named in this book are covered by the categories listed above. Henry Ford and Edsel Ford respectively contributed money to Hitler and profited from German wartime production. Standard Oil of New Jersey, General Electric, General Motors, and I.T.T. certainly made financial or technical contributions which comprise *prima facie* evidence of "participating in planning or carrying out Nazi enterprises."

There is, in brief, evidence which suggests:

(a) cooperation with the Wehrmacht (Ford Motor Company, Chase Bank, Morgan Bank);

(b) aid to the Nazi Four Year Plan and economic mobilization for war (Standard Oil of New Jersey);

(c) creating and equipping the Nazi war machine (I.T.T.);

(d) stockpiling critical materials for the Nazis (Ethyl Corporation);

(e) weakening the Nazis' potential enemies (American I.G. Farben);

and,

(f) carrying on of propaganda, intelligence, and espionage (American I.G. Farben and Rockefeller public-relations man Ivy Lee).

At the very least there is sufficient evidence to demand a thorough and impartial investigation. However, as we have noted previously, these same firms and financiers were prominent in the 1933 election of Roosevelt and consequently had sufficient political pull to squelch threats of investigation. Extracts from the Morgenthau diary demonstrate that Wall Street political power was sufficient even to control the appointment of officers responsible for the denazification and eventual government of post-war Germany.

Did these American firms know of their assistance to Hitler's military machine? According to the firms themselves, emphatically not. They claim innocence of any intent to aid Hitler's Germany. Witness a telegram sent by the chairman of the board of Standard Oil of New Jersey to Secretary of War Patterson after World War II, when preliminary investigation of Wall Street assistance was under way:

During the entire period of our business contacts, we had no inkling of Farben's conniving part in Hitler's brutal politics, We offer any help we can give to see that complete truth is brought to light, and that rigid justice is done.

F.W. Abrams,
Chairman of
Board

Unfortunately, the evidence presented is contrary to Abrams' telegraphed assertions. Standard Oil of New Jersey not only aided Hitler's war machine, but had knowledge of this assistance. Emil Helfferich, the board chairman of a Standard of New Jersey subsidiary, was a member of the Keppler Circle *before* Hitler came to power; he continued to give financial contributions to Himmler's Circle as late as 1944.

Accordingly, it is not at all difficult to visualize why Nazi industrialists were puzzled by *"investigation"* and assumed at the end of the war that their Wall Street friends would bail them out and protect them from the wrath of those who had suffered. These attitudes were presented to the Kilgore Committee in 1946:

You might also be interested in knowing, Mr. Chairman, that the top I.G. Farben people and others, when we questioned them about these activities, were inclined at times to be very in. dignant. Their general attitude and expectation was that the war was over and we ought now to be assisting them in helping to get I.G. Farben and German industry back on its feet. Some of them have outwardly said that this questioning and investigation was, in their estimation, only a phenomenon of short duration, because as soon as things got a little settled they would expect their friends in the United States and in England to be coming over. Their friends, so they said, would put a stop to activities such as these investigations and would see that they got the treatment which they regarded as proper and that assistance would be given to them to help reestablish their industry.[8]

Footnotes:

[1]*Morgenthau Diary (Germany).*

[2]*Ibid.*

[3]*Ibid.*

[4]*Ibid., pp. 800-2.*

[5]*James Stewart Martin, All Honorable Men, op. cit., p. 75.*

[6]*Morgenthau Diary (Germany), p. 1543. Colonel Graeme K. Howard's book was entitled, America and a New World Order, (New York: Scribners, 1940).*

[7]*The reader should examine the essay, "The Return to War Crimes," in James J. Martin, Revisionist Viewpoints, (Colorado: Ralph Mules, 1971).*

[8]*Elimination of German Resources, p. 652.*

BACK

CHAPTER TWELVE

Conclusions

We have demonstrated with documentary evidence a number of critical associations between Wall Street international bankers and the rise of Hitler and Naziism in Germany.

First: that Wall Street financed the German cartels in the mid-1920s which in turn proceeded to bring Hitler to power.

Second: that the financing for Hitler and his S.S. street thugs came in part from affiliates or subsidiaries of U.S. firms, including Henry Ford in 1922, payments by I.G. Farben and General Electric in 1933, followed by the Standard Oil of New Jersey and I.T.T. subsidiary payments to Heinrich Himmler up to 1944.

Third: that U.S. multi-nationals under the control of Wall Street profited handsomely from Hitler's military construction program in the 1930s and at least until 1942.

Fourth: that these same international bankers used political influence in the U.S. to cover up their wartime collaboration and to do this infiltrated the U.S. Control Commission for Germany.

Our evidence for these four major assertions can be summarized as follows:

In Chapter One we presented evidence that the Dawes and Young Plans for German reparations were formulated by Wall Streeters, temporarily wearing the hats of statesmen, and these loans generated a rain of profits for these international bankers. Owen Young of General Electric, Hjalmar Schacht, A. Voegler, and others intimately connected with Hitler's accession to power had earlier been the negotiators for the U.S. and German sides, respectively. Three Wall Street houses — Dillon, Read; Harris, Forbes; and, National City Company — handled three-quarters of the reparations loans used to create the German cartel system, including the dominant I.G. Farben and Vereinigte Stahlwerke, which together produced 95 percent of the explosives for the Nazi side in World War II.

The central role of I.G. Farben in Hitler's *coup d' état* was reviewed in Chapter Two. The directors of American I.G. (Farben) were identified as prominent American businessmen: Walter Teagle, a dose Roosevelt associate and backer and an NRA administrator; banker Paul Warburg (his brother Max Warburg was on the board of I.G. Farben in Germany); and Edsel Ford. Farben contributed 400,000 RM directly to Schacht and Hess for use in the crucial 1933 elections and Farben was subsequently in the forefront of military development in Nazi Germany.

A donation of 60,000 RM was made to Hitler by German General Electric (A.E.G.), which had four directors and a 25-30 percent interest held by the U.S. General Electric parent company. This role was described in Chapter Three, and we found that Gerard Swope, an originator of Roosevelt's New Deal (its National Recovery Administration segment), together with Owen Young of the Federal Reserve Bank of New York and Clark Minor of

International General Electric, were the dominant Wall Streeters in A.E.G. and the most significant single influence.

We also found no evidence to indict the German electrical firm Siemens, which was *not* under Wall Street control. In contrast, there is documentary evidence that both A.E.G. and Osram, the other units of the German electrical industry — both of which had U.S. participation and control — *did* finance Hitler. In fact, almost all directors of German General Electric were Hitler backers, either directly through A.E.G. or indirectly through other German firms, G.E. rounded out its Hitler support by technical cooperation with Krupp, aimed at restricting U.S. development of tungsten carbide, which worked to the detriment of the U.S. in World War II. We concluded that A.E.G. plants in Germany managed, by a yet unknown maneuver, to avoid bombing by the Allies.

An examination of the role of Standard Oil of New Jersey (which was and is controlled by the Rockefeller interests) was undertaken in Chapter Four. Standard Oil apparently did not finance Hitler's accession to power in 1933 (that part of the "myth of Sidney Warburg" is not proven). On the other hand, payments were made up to 1944 by Standard Oil of New Jersey, to develop synthetic gasoline for war purposes on behalf of the Nazis and, through its wholly owned subsidiary, to Heinrich Himmler's S.S. Circle of Friends for political purposes. Standard Oil's role was technical aid to Nazi development of synthetic rubber and gasoline through a U.S. research company under the management control of Standard Oil. The Ethyl Gasoline Company, jointly owned by Standard Oil of New Jersey and General Motors, was instrumental in supplying vital ethyl lead to Nazi Germany — over the written protests of the U.S. War Department — with the clear knowledge that the ethyl lead was for Nazi military purposes.

In Chapter Five we demonstrated that International Telephone and Telegraph Company, one of the more notorious multi-nationals, worked both sides of World War II through Baron Kurt von Schroder, of the Schroder banking group. I.T.T. also held a 28-percent interest in Focke-Wolfe aircraft, which manufactured excellent German fighter planes. We also found that Texaco (Texas Oil Company) was involved in Nazi endeavors through German attorney Westrick, but dropped its chairman of the board Rieber when these endeavors were publicized.

Henry Ford was an early (1922) Hitler backer and Edsel Ford continued the family tradition in 1942 by encouraging French Ford to profit from arming the German Wehrmacht, Subsequently, these Ford-produced vehicles were used against American soldiers as they landed in France in 1944. For his early recognition of, and timely assistance to, the Nazis, Henry Ford received a Nazi medal in 1938. The records of French Ford suggest Ford Motor received kid glove treatment from the Nazis after 1940.

The provable threads of Hitler financing are drawn together in Chapter Seven and answer with precise names and figures the question, who financed Adolf Hitler? This chapter indicts Wall Street and, incidentally, no one else of consequence in the United States except the Ford family. The Ford family is not normally associated with Wall Street but is certainly a part of the "power elite."

In earlier chapters we cited several Roosevelt associates, including Teagle of Standard Oil, the Warburg family, and Gerard Swope. In Chapter Eight the role of Putzi Hanfstaengl, another Roosevelt friend and a participant in the Reichstag fire, is traced. The composition of the Nazi inner circle during World War II, and the financial contributions of Standard Oil

of New Jersey and I.T.T. subsidiaries, are traced in Chapter Nine. Documentary proof of these monetary contributions is presented. Kurt yon Schrader is identified as the key intermediary in this S.S. "slush fund."

Finally, in Chapter Ten we reviewed a book suppressed in 1934 and the "myth of 'Sidney Warburg.'" The suppressed book accused the Rockefellers, the Warburgs, and the major oil companies of financing Hitler. While the name "Sidney Warburg" was no doubt an invention, the extraordinary fact remains that the argument in the suppressed "Sidney Warburg" book is remarkably close to the evidence presented now. It also remains a puzzle why James Paul Warburg, fifteen years later, would want to attempt, in a rather transparently slipshod manner, to refute the contents of the "Warburg" book, a book he claims not to have seen. It is perhaps even more of a puzzle why Warburg would choose Nazi von Papen's *Memoirs* as the vehicle to present his refutation.

Finally, in Chapter Eleven we examined the roles of the Morgan and Chase Banks in World War II, specifically their collaboration with the Nazis in France while a major war was raging.

In other words, as in our two previous examinations of the links between New York international bankers and major historical events, we find a provable pattern of subsidy and political manipulation.

The Pervasive Influence of International Bankers

Looking at the broad array of facts presented in the three volumes of the Wall Street series, we find persistent recurrence of the same names: Owen Young, Gerard Swope, Hjalmar Schacht, Bernard Baruch, *etc.;* the same international banks: J.P. Morgan, Guaranty Trust, Chase Bank; and the same location in New York: usually 120 Broadway.

This group of international bankers backed the Bolshevik Revolution and subsequently profited from the establishment of a Soviet Russia. This group backed Roosevelt and profited from New Deal socialism. This group also backed Hitler and certainly profited from German armament in the 1930s. When Big Business should have been running its business operations at Ford Motor, Standard of New Jersey, and so on, we find it actively and deeply involved in political upheavals, war, and revolutions in three major countries.

The version of history presented here is that the financial elite knowingly and with premeditation assisted the Bolshevik Revolution of 1917 in concert with German bankers. After profiting handsomely from the German hyper-inflationary distress of 1923, and planning to place the German reparations burden onto the backs of American investors, Wall Street found it had brought about the 1929 financial crisis.

Two men were then backed as leaders for major Western countries: Franklin D. Roosevelt in the United States and Adolf Hitler in Germany. The Roosevelt New Deal and Hitler's Four Year Plan had great similarities. The Roosevelt and Hitler plans were plans for fascist takeovers of their respective countries. While Roosevelt's NRA failed, due to then-operating constitutional constraints, Hitler's Plan succeeded.

Why did the Wall Street elite, the international bankers, want Roosevelt and Hitler in

power? This is an aspect we have not explored. According to the "myth of 'Sidney Warburg,'" Wall Street wanted a policy of revenge; that is, it wanted war in Europe between France and Germany. We know even from Establishment history that both Hitler and Roosevelt acted out policies leading to war.

The link-ups between persons and events in this three-book series would require another book. But a single example will perhaps indicate the remarkable concentration of power within a relatively few organizations, and the use of this power.

On May 1st, 1918, when the Bolsheviks controlled only a small fraction of Russia (and were to come near to losing even that fraction in the summer of 1918), the American League to Aid and Cooperate with Russia was organized in Washington, D.C. to support the Bolsheviks. This was not a "Hands off Russia" type of committee formed by the Communist Party U.S.A. or its allies. It was a committee *created by Wall Street* with George P. Whalen of Vacuum Oil Company as Treasurer and Coffin and Oudin of General Electric, along with Thompson of the Federal Reserve System, Willard of the Baltimore & Ohio Railroad, and assorted socialists.

When we look at the rise of Hitler and Naziism we find Vacuum Oil and General Electric well represented. Ambassador Dodd in Germany was struck by the monetary and technical contribution by the Rockefeller-controlled Vacuum Oil Company in building up military gasoline facilities for the Nazis. The Ambassador tried to warn Roosevelt. Dodd believed, in his apparent naiveté of world affairs, that Roosevelt would intervene, but Roosevelt himself was backed by these same oil interests and Walter Teagle of Standard Oil of New Jersey and the NRA was on the board of Roosevelt's Warm Springs Foundation. So, in but one of many examples, we find the Rockefeller-controlled Vacuum Oil Company prominently assisting in the creation of Bolshevik Russia, the military build-up of Nazi Germany, and backing Roosevelt's New Deal.

Is the United States Ruled by a Dictatorial Elite?

Within the last decade or so, certainly since the 1960s, a steady flow of literature has presented a thesis that the United States is ruled by a self-perpetuating and unelected power elite. Even further, most of these books aver that this elite controls, or at the least heavily influences, all foreign and domestic policy decisions, and that no idea becomes respectable or is published in the United States without the tacit approval, or perhaps lack of disapproval, of this elitist circle.

Obviously the very flow of anti-establishment literature by itself testifies that the United States cannot be wholly under the thumb of any single group or elite. On the other hand, anti-establishment literature is not fully recognized or reasonably discussed in academic or media circles. More often than not it consists of a limited edition, privately produced, almost hand-to-hand circulated. There are *some* exceptions, true; but not enough to dispute the observation that anti-establishment critics do not easily enter normal information/distribution channels.

Whereas in the early and mid-1960s, any concept of rule by a conspiratorial elite, or indeed any kind of elite, was reason enough to dismiss the proponent out of hand as a "nut case," the atmosphere for such concepts has changed radically. The Watergate affair probably

added the final touches to a long-developing environment of skepticism and doubt. We are almost at the point where anyone who accepts, for example, the Warren Commission report, or believes that that the decline and fall of Mr. Nixon did not have some conspiratorial aspects, is suspect. In brief, no one any longer really believes the Establishment information process. And there is a wide variety of alternative presentations of events now available for the curious.

Several hundred books, from the full range of the political and philosophical spectrum, add bits and pieces of evidence, more hypotheses, and more accusations. What was not too long ago a kooky idea, talked about at midnight behind closed doors, in hushed and almost conspiratorial whispers, is now openly debated — not, to be sure, in Establishment newspapers but certainly on non-network radio talk shows, the underground press, and even from time to time in books from respectable Establishment publishing houses.

So let us ask the question again: Is there an unelected power elite behind the U.S. Government?

A substantive and often-cited source of information is Carroll Quigley, Professor of International Relations at Georgetown University, who in 1966 had published a monumental modern history entitled *Tragedy and Hope.*[1] Quigley's book is apart from others in this revisionist vein, by virtue of the fact that it was based on a two-year study of the internal documents of one of the power centers. Quigley traces the history of the power elite:

> *... the powers of financial capitalism had another far reaching aim, nothing less than to create a world system of financial control in private hands able to dominate the political system of each country and the economy of the world as a whole.*

Quigley also demonstrates that the Council on Foreign Relations, the National Planning Association, and other groups are "semi-secret" policy-making bodies under the control of this power elite.

In the following tabular presentation we have listed five such revisionist books, including Quigley's. Their essential theses and compatibility with the three volumes of the "Wall Street" series are summarized. It is surprising that in the three major historical events noted, Carroll Quigley is not at all consistent with the "Wall Street" series evidence. Quigley goes a long way to provide evidence for the *existence* of the power elite, but does not penetrate the *operations* of the elite.

Possibly, the papers used by Quigley had been vetted, and did not include documentation on elitist manipulation of such events as the Bolshevik Revolution, Hitler's accession to power, and the election of Roosevelt in 1933. More likely, these political manipulations may not be recorded at all in the files of the power groups. They may have been unrecorded actions by a small *ad hoc* segment of the elite. It is noteworthy that the documents used by this author came from government sources, recording the day-to-day actions of Trotsky, Lenin, Roosevelt, Hitler, J.P. Morgan and the various firms and banks involved.

On the other hand, such authors as Jules Archer, Gary Allen, Helen P. Lasell, and William Domhoff, writing from widely different political standpoints[2] *are* consistent with the "Wall

Street" evidence. These writers present a hypothesis of a power elite manipulating the U.S. Government. The "Wall Street" series demonstrates how this hypothesized "power elite" has manipulated specific historical events.

Obviously any such exercise of unconstrained and supra-legal power is unconstitutional, even though wrapped in the fabric of law-abiding actions. We can therefore legitimately raise the question of the existence of a subversive force operating to remove constitutionally guaranteed rights.

The New York Elite as a Subversive Force

Twentieth-century history, as recorded in Establishment textbooks and journals, is inaccurate. It is a history which is based solely upon those official documents which various Administrations have seen fit to release for public consumption.

Table: IS THE EVIDENCE IN THE "WALL STREET" SERIES CONSISTENT WITH RELATED REVISIONIST ARGUMENTS PRESENTED ELSEWHERE?

But an accurate history cannot be based on a selective release of documentary archives. Accuracy requires access to all documents. In practice, as previously classified documents in the U.S. State Department files, the British Foreign Office, and the German Foreign Ministry archives and other depositories are acquired, a new version of history has emerged; the prevailing Establishment version is seen to be, not only inaccurate, but designed to hide a pervasive fabric of deceit and immoral conduct.

The center of political power, as authorized by the U.S. Constitution, is with an elected Congress and an elected President, working within the framework and under the constraints of a Constitution, as interpreted by an unbiased Supreme Court. We have in the past *assumed* that political power is consequently carefully exercised by the Executive and legislative branch, after due deliberation and assessment of the wishes of the electorate. In fact, nothing could be further from this assumption. The electorate has long suspected, but now knows, that political promises are worth nothing. Lies are the order of the day for policy implementors. Wars are started (and stopped) with no shred of coherent explanation. Political words have never matched political deeds. Why not? Apparently because the center of political power has been elsewhere than with elected and presumably responsive representatives in Washington, and this power elite has its own objectives, which are inconsistent with those of the public at large.

In this three-volume series we have identified for three historical events the seat of political power in the United States — the power behind the scenes, the hidden influence on Washington — as that of the financial establishment in New York: the private international bankers, more specifically the financial houses of J.P. Morgan, the Rockefeller-controlled Chase Manhattan Bank, and in earlier days (before amalgamation of their Manhattan Bank with the former Chase Bank), the Warburgs.

The United States has, in spite of the Constitution and its supposed constraints, become a

quasi-totalitarian state. While we do not (yet) have. the overt trappings of dictatorship, the concentration camps and the knock on the door at midnight, we most certainly do have threats and actions aimed at the survival of non-Establishment critics, use of the Internal Revenue Service to bring dissidents in line, and manipulation of the Constitution by a court system that is politically subservient to the Establishment.

It is in the pecuniary interests of the international bankers to centralize political power — and this centralization can best be achieved within a collectivist society, such as socialist Russia, national socialist Germany, or a Fabian socialist United States.

There can be no full understanding and appreciation of twentieth-century American politics and foreign policy without the realization that this financial elite effectively monopolizes Washington policy.

In case after case, newly released documentation implicates this elite and confirms this hypothesis. The revisionist versions of the entry of the United States into World Wars I and II, Korea, and Vietnam reveal the influence and objectives of this elite.

For most of the twentieth century the Federal Reserve System, particularly the Federal Reserve Bank of New York (which is outside the control of Congress, unaudited and uncontrolled, with the power to print money and create credit at will), has exercised a virtual monopoly over the direction of the American economy. In foreign affairs the Council on Foreign Relations, superficially an innocent forum for academics, businessmen, and politicians, contains within its shell, perhaps unknown to many of its members, a power center that unilaterally determines U.S. foreign policy. The major objective of this submerged — and obviously subversive — foreign. policy is the acquisition of markets and economic power *(profits,* if you will), for a small group of giant multi-nationals under the virtual control of a few banking investment houses and controlling families.

Through foundations controlled by this elite, research by compliant and spineless academics, "conservatives" as well as "liberals," has been directed into channels useful for the objectives of the elite essentially to maintain this subversive and unconstitutional power apparatus.

Through publishing houses controlled by this same financial elite unwelcome books have been squashed and useful books promoted; fortunately publishing has few barriers to entry and is almost atomistically competitive. Through control of a dozen or so major newspapers, run by editors who think alike, public information can be almost orchestrated at will. Yesterday, the space program; today, an energy crisis or a campaign for ecology; tomorrow, a war in the Middle East or some other manufactured "crisis."

The total result of this manipulation of society by the Establishment elite has been four major wars in sixty years, a crippling national debt, abandonment of the Constitution, suppression of freedom and opportunity, and creation of a vast credibility gulf between the man in the street and Washington, D.C. While the transparent device of two major parties trumpeting artificial differences, circus-like conventions, and the cliche of "bipartisan foreign policy" no longer carries credibility, and the financial elite itself recognizes that its policies lack public acceptance, it is obviously prepared to go it alone without even nominal public support.

In brief, we now have to consider and debate whether this New York-based elitist Establishment is a subversive force operating with deliberation and knowledge to suppress the Constitution and a free society. That will be the task ahead in the next decade.

The Slowly Emerging Revisionist Truth

The arena for this debate and the basis for our charges of subversion is the evidence provided by the revisionist historian. Slowly, over decades, book by book, almost line by line, the truth of recent history has emerged as documents are released, probed, analyzed, and set within a more valid historical framework.

Let us consider a few examples. American entry into World War II was supposedly precipitated, according to the Establishment version, by the Japanese attack on Pearl Harbor. Revisionists have established that Franklin D. Roosevelt and General Marshall *knew* of the impending Japanese attack and did nothing to warn the Pearl Harbor military authorities. The Establishment wanted war with Japan. Subsequently, the Establishment made certain that Congressional investigation of Pearl Harbor would fit the Roosevelt whitewash. In the words of Percy Greaves, chief research expert for the Republican minority on the Joint Congressional Committee investigating Pearl Harbor:

> *The complete facts will never be known. Most of the so-called investigations have been attempts to suppress, mislead, or confuse those who seek the truth. From the beginning to the end, facts and files have been withheld so as to reveal only those items of information which benefit the administration under investigation. Those seeking the truth are told that other facts or documents cannot be revealed because they are intermingled in personal diaries, pertain to our relations with foreign countries, or are sworn to contain no information of value.*[3]

But this was not the first attempt to bring the United States into war, or the last. The Morgan interests, in concert with Winston Churchill, tried to bring the U.S. into World War I as early as 1915 and succeeded in doing so in 1917. Colin Thompson's *Lusitania* implicates President Woodrow Wilson in the sinking of the *Lusitania* — a horror device to generate a public backlash to draw the United States into war with Germany. Thompson demonstrates that Woodrow Wilson knew *four darts beforehand* that the *Lusitania* was carrying six-million rounds of ammunition plus explosives, and therefore, "passengers who proposed to sail on that vessel were sailing in violation of statute of this country."[4]

The British Board of Inquiry under Lord Mersey was *instructed* by the British Government "that it is considered politically expedient that Captain Turner, the master of the *Lusitania,* be most prominently blamed for the disaster."

In retrospect, given Colin Thompson's evidence, the blame is more fairly to be attributed to President Wilson, "Colonel" House, J.P. Morgan, and Winston Churchill; this conspiratorial elite should have been brought to trial for willful negligence, if not treason. It is to Lord Mersey's eternal credit that after performing his "duty" under instructions from His Majesty's government, and placing the blame on Captain Turner, he resigned, rejected his fee, and from that date on refused to handle British government commissions. To his friends Lord Mersey would only say about the *Lusitania* case that it was a "dirty business."

Then in 1933-4 came the attempt by the Morgan firm to install a fascist dictatorship in the United States. In the words of Jules Archer, it was planned to be a Fascist *putsch* to take over the government and *"run* it under a dictator on behalf of America's bankers and industrialists."[5] Again, a single courageous individual emerged — General Smedley Darlington Butler, who blew the whistle on the Wall Street conspiracy. And once again Congress stands out, particularly Congressmen Dickstein and MacCormack, by its gutless refusal to do no more than conduct a token whitewash investigation.

Since World War II we have seen the Korean War and the Vietnamese War — meaningless, meandering no-win wars costly in dollars and lives, with no other major purpose but to generate multibillion-dollar armaments contracts. Certainly these wars were not fought to restrain communism, because for fifty years the Establishment has been nurturing and subsidizing the Soviet Union which supplied armaments to the other sides in both wars — Korea and Vietnam. So our revisionist history will show that the United States directly or indirectly armed both sides in at least Korea and Vietnam.

In the assassination of President Kennedy, to take a domestic example, it is difficult to find anyone who today accepts the findings of the Warren Commission — except perhaps the members of that Commission. Yet key evidence is still hidden from public eyes for 50 to 75 years. The Watergate affair demonstrated even to the man in the street that the White House can be a vicious nest of intrigue and deception.

Of all recent history the story of Operation Keelhaul[6] is perhaps the most disgusting. Operation Keelhaul was the forced repatriation of millions of Russians at the orders of President (then General) Dwight D. Eisenhower, in direct violation of the Geneva Convention of 1929 and the long-standing American tradition of political refuge. Operation Keelhaul, which contravenes all our ideas of elementary decency and individual freedom, was undertaken at the direct orders of General Eisenhower and, we may now presume, was a part of a long-range program of nurturing collectivism, whether it be Soviet communism' Hitler's Naziism, or FDR's New Deal. Yet until recent publication of documentary evidence by Julius Epstein, anyone who dared to suggest Eisenhower would betray millions of innocent individuals for political purposes was viciously and mercilessly attacked.[7]

What this revisionist history really teaches us is that our willingness as individual citizens to surrender political power to an elite has cost the world approximately two-hundred-million persons killed from 1820 to 1975. Add to that untold misery the concentration camps, the political prisoners, the suppression and oppression of those who try to bring the truth to light.

When will it all stop? It will not stop until we act upon one simple axiom: that the power system continues only so long as *individuals* want it to continue, and it will continue only so long as *individuals* try to get something for nothing. The day when a majority of individuals declares or acts as if it wants nothing from government, declares it will look after its own welfare and interests, then on *that* day power elites are doomed. The attraction to *"go* along" with power elites is the attraction of something for nothing. That is the bait. The Establishment always offers something for nothing; but the something is taken from someone else, as taxes or plunder, and awarded elsewhere in exchange for political support.

Periodic crises and wars are used to whip up support for other plunder-reward cycles which in effect tighten the noose around our individual liberties. And of course we have hordes of

academic sponges, amoral businessmen, and just plain hangers-on, to act as non-productive recipients for the plunder.

Stop the circle of plunder and immoral reward and elitist structures collapse. But not until a majority finds the moral courage and the internal fortitude to reject the something-for-nothing con game and replace it by voluntary associations, voluntary communes, or local rule and decentralized societies, will the killing and the plunder cease.

Footnotes:

[1]Carroll Quigley, *Tragedy and Hope, op. cit.*

[2]There are many others; the author selected more or less at random two conservatives (Allen and Lasell) and two liberals (Archer and Domhoff),

[3]Percy L. Greaves, Jr., "The Pearl Harbor Investigation," in Harry Elmer Harnes, *Perpetual War for Perpetual Peace,* (Caldwell: Caxton Printers, 1953), p, 13-20.

[4]Colin Simpson, *Lusitania,* (London: Longman, 1972), p, 252.

[5]Jules Archer, *The Plot to Seize the White House,* (New York: Hawthorn Book, 1973), p. 202.

[6]See Julius Epstein, *Operation Keelhaul,* (Old Greenwich: Devin Adair, 1973).

[7]See for example Robert Welch, *The Politician,* (Belmont, Mass.: Belmont Publishing Co., 1963).

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APPENDIX A

Program of the National Socialist German Workers Party

Note: This program is important because it demonstrates that the nature of Naziism was known publicly as early as 1920.

THE PROGRAM

The program of the German Workers' Party is limited as to period. The leaders have no intention, once the aims announced in it have been achieved, of setting up fresh ones, merely in order to increase the discontent of the masses artificially, and so ensure the continued existence of the Party.

1. We demand the union of all Germans to form a Great Germany on the basis of the right of the self-determination enjoyed by nations.

2. We demand equality of rights for the German People in its dealings with other nations, and abolition of the Peace Treaties of Versailles and St. Germain.

3. We demand land and territory (colonies) for the nourishment of our people and for settling our superfluous population.

4. None but members of the nation may be citizens of the State. None but those of German blood, whatever their creed, may be members of the nation. No Jew, therefore, may be a member of the nation.

5. Any one who is not a citizen of the State may live in Germany only as a guest and must be regarded as being subject to foreign laws.

6. The right of voting on the State's government and legislation is to be enjoyed by the citizen of the State alone. We demand therefore that all official appointments, of whatever kind, whether in the Reich, in the country, or in the smaller localities, shall be granted to citizens of the State alone.

We oppose the corrupting custom of Parliament of filling posts merely with a view to party considerations, and without reference to character or capability.

7. We demand that the State shall make it its first duty to promote the industry and livelihood of citizens of the State. If it is not possible to nourish the entire population of the State, foreign nationals (non-citizens of the State) must be excluded from the Reich.

8. All non-German immigration must be prevented. We demand that all non-Germans, who entered Germany subsequent to August 2nd, 1914, shall be required forthwith to depart

from the Reich.

9. All citizens of the State shall be equal as regards rights and duties.

10. It must be the first duty of each citizen of the State to work with his mind or with his body. The activities of the individual may not clash with the interests of the whole, but must proceed within the frame of the community and be for the general good.

We demand therefore:

11, Abolition of incomes unearned by work.

ABOLITION OF THE THRALDOM OF INTEREST

12. In view of the enormous sacrifice of life and property demanded of a nation by every war, personal enrichment due to a war must be regarded as a crime against the nation. We demand therefore ruthless confiscation of all war gains,

13. We demand nationalisation of all businesses which have been up to the present formed into companies (Trusts).

14. We demand that the profits from wholesale trade shall be shared out.

15. We demand extensive development of provision for old age.

16. We demand creation and maintenance of a healthy middle class, immediate communalisation of wholesale business premises, and their lease at a cheap rate to small traders, and that extreme consideration shall be shown to all small purveyors to the State, district authorities and smaller localities.

17. We demand land-reform suitable to our national requirements, passing of a law for confiscation without compensation of land for communal purposes; abolition of interest on land loans, and prevention of all speculation in land.

18. We demand ruthless prosecution of those whose activities are injurious to the common interest. Sordid criminals against the nation, usurers, profiteers, etc. must be punished with death, whatever their creed or race.

19. We demand that the Roman Law, which serves the materialistic world order, shall be replaced by a legal system for all Germany.

20. With the aim of opening to every capable and industrious German the possibility of higher education and of thus obtaining advancement, the State must consider a thorough re-construction of our national system of education. The curriculum of all educational establishments must be brought into line with the requirements of practical life. Comprehension of the State idea (State sociology) must be the school objective, beginning with the first dawn of intelligence in the pupil. We demand development of the gifted children of poor parents, whatever their class or occupation, at the expense of the State.

21. The State must see to raising the standard of health in the nation by protecting mothers and infants, prohibiting child labour, increasing bodily efficiency by obligatory gymnastics and sports laid down by law, and by extensive support of clubs engaged in the bodily development of the young.

22. We demand abolition of a paid army and formation of a national army.

23. We demand legal warfare against conscious political lying and its dissemination in the Press. In order to facilitate creation of a German national Press we demand:

(a) that all editors of newspapers and their assistants, employing the German language, must be members of the nation;

(b) that special permission from the State shall be necessary before non-German newspapers may appear. These are not necessarily printed in the German language;

(c) that non-Germans shall be prohibited by law from participating financially in or influencing German newspapers, and that the penalty for contravention of the law shall be suppression of any such newspaper, and immediate deportation of the non-German concerned in it.

It must be forbidden to publish papers which do not conduce to the national welfare. We demand legal prosecution of all tendencies in art and literature of a kind likely to disintegrate our life as a nation, and the suppression of institutions which militate against the requirements above-mentioned.

24. We demand liberty for all religious denominations in the State, so far as they are not a danger to it and do not militate against the moral feelings of the German race.

The Party, as such, stands for positive Christianity, but does not bind itself in the matter of creed to any particular confession. It combats the Jewish-materialist spirit within us and without us, and is convinced that our nation can only achieve permanent health from within on the principle:

THE COMMON INTEREST BEFORE SELF

25. That all the foregoing may be realised we demand the creation of a strong central power of the State. Unquestioned authority of the politically centralised Parliament over the entire Reich and its organisation; and formation of Chambers for classes and occupations for the purpose of carrying out the general laws promulgated by the Reich in the various States of the confederation.

The leaders of the Party swear to go straight forward — if necessary to sacrifice their lives — in securing fulfillment of the foregoing Points.

Munich, February 24th, 1920.

> *Source:* Official English translation by E. Dugdale, reprinted from Kurt G, W. Ludecke, *I Knew Hitler* (New York: Charles Scribner's Sons, 1937),

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APPENDIX B

Affidavit of Hjalmar Schacht

I, Dr. Hjalmar Schacht, after having been warned that I will be liable to punishment for making false statements, state herewith under oath, of my own free will and without coercion, the following:

The amounts contributed by the participants in the meeting of 20 February 1933 at Goering's house were paid by them to the bankers. Delbruck, Schickler & Co., Berlin, to the credit of an account "Nationale Treuhand" (which may be translated as National Trusteeship). It was arranged that I was entitled to dispose of this account, which I administered as a trustee, and that in case of my death, or that in case the trusteeship should be terminated in any other way, Rudolf Hess should be entitled to dispose of the account.

I disposed of the amounts of this account by writing out checks to Mr. Hess. I do not know what Mr. Hess actually did with the money.

On 4 April 1933, I closed the account with Delbruck, Schickler & Co. and had the balance transferred to the "Account Ic" with the Reichsbank which read in my name. Later on I was ordered directly by Hitler, who was authorized by the assembly of 20 February 1933 to dispose of the amounts collected, or through Hess, his deputy, to pay the balance of about 600,000 marks to Ribbentrop.

I have carefully read this affidavit (one page) and have signed it. I have made the necessary corrections in my own handwriting and initialed each correction in the margin of the page. I declare herewith under oath that I have stated the full truth to the best of my knowledge and belief.

(Signed) Dr. Hjalmar Schacht

12 August 1947

In a subsequent affidavit of 18 August 1947 (N1-9764, Pros. Ex 54), Schacht declared the following with regard to the above interrogation: "I made all of the statements appearing in this interrogation to Clifford Hyanning, a financial investigator of the American Forces of my own free will and without coercion. I have reread this interrogation today and can state that all of the facts contained therein are true to my best knowledge and belief. I declare herewith under oath and I have stated the full truth to the best of my knowledge and belief."

Source: Copy of Document Prosecution Exhibit 55. *Trials of War Criminals before the Nuremburg Military Tribunals under Control Council Law No. 10,* Nuremburg, October 1946-April 1949,

Volume VII, I.G. Farben, (Washington: U.S. Government Printing Office, 1952).

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APPENDIX C

Entries in the "National Trusteeship" Account Found in the Files of the Delbruck, Schickler Co. Bank

NATIONAL TRUSTEESHIP

REICHSBANK PRESIDENT DR. HJALMAR SCHACHT,
BERLIN-ZEHLENDORF

Feb. 23	Debibk (Deutsche Bank Diskonto-Gesellschaft) Verein fuer die bergbaulichen Interessen, Essen		Feb. 23	200,000.00
24	Transfer to account Rudolf Hess, at present in Berlin	100,000.00	24	
24	Karl Herrmann Automobile Exhibition, Berlin		25 25	150,000.00 100,000.00
25	Director A. Steinke		27	200,000.00
25	Demag A.G., Duisberg		27	50,000.00
27	Telefunken Gesellschaft ruer draht lose Telegraphie Berlin		28	85,000.00
	Osram G.m.b.H., Berlin		28	40,000.00
27	Bayerische Hypotheken- und Wech selbank, branch office Munich, Kauflingerstr. In favor of Verlag Franz Eher Nachf, Munich	100,000.00	28	
27	Transfer to account Rudolf Hess, Berlin	100,000.00	27	
28	I.G. Farbenindustrie A.G. Frankfurt/M		Mar. 1	400,000.00
28	Telegraph expenses for transfer to Munich	8.00	Feb. 28	
Mar. 1	Your Payment		Mar. 2	125,000.00
2	Telegr. transfer to			

	Bayerische Hypotheken- und Wechselbank, Munich branch office, Bayerstr.			
	for account Josef Jung	400,000.00	2	
	Telegr. transfer expenses	23.00	2	
	Account transfer Rudolf Hess	300,000.00		
2	Reimbursement from Director Karl Lange, Berlin		3	30,000.00
3	Reimbursement from Dir. Karl Lange, 'Maschinen-industrie' Account		4	20,000.00
	Reimbursement from Verein ruer die bergbaulichen Interessen, Essen		4	100,000.00
	Reimbursement from Karl Herrmann, Berlin, Dessauerstr. 28/9		4	150,000.00
	Reimbursement from Allgemeine Elektrizitaetsgesellschaft, Berlin		4	60,000.00
7	Reimbursement from General-direktor Dr. F. Springorum, Dortmund		8	36,000.00
8	Reichsbank transfer: Bayerische Hypotheken- und Wechselbank,			
	branch office Kauffingerstr.	100,000.00	8	
		1,100,031.00		1,696,000.00
		1,100,031.00	Mar.	1,696,000.00
Mar. 8	Bayerische Hypotheken- und Wechselbank, Munich, branch office Bayerstr.	100,000.00	8	

	Transfer to account Rudolf Hess	250,000.00	7	
10	Accumulatoren-Fabrik A.G. Berlin		11	25,000.00
13	Verein f.d. bergbaulichen Interessen, Essen		14	300,000.00
14	Reimbursement Rudolf Hess	200,000.00	14	
29	Reimbursement Rudolf Hess	200,000.00	29	
April 4	Commerz-und Privatbank Dep. Kasse N. Berlin W.9 Potsdamerstr. 1 f. Special			
	Account S 29	99,000.00	Apr. 4	
5	Interests according to list 1			
	percent		5	404.50
	Phone bills	1.00	5	
	Postage	2.50	5	
	Balance	72,370.00	5	
	Balance carried over	2,021,404.50		2,021,404.50
			Apr. 5	72,370.00

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APPENDIX D

Letter from U.S. War Department to Ethyl Corporation

December 15, 1934

Exhibit No, 144

(Handwritten) Mr, Webb sent copies for other Directors

Copy to: Mr. Alfred P. Sloan, Jr., General Motors Corp,, New York City, Mr. Donaldson Brown, General Motors Corp., New York City.

December 15, 1934.

Mr. E. W. Webb,

President Ethyl Gasoline Corporation, 185 E, 42nd Street, New York City. Dear Mr. Webb: I learned through our Organic Chemicals Division today that the Ethyl Gasoline Corporation has in mind forming a German company with the I.G. to manufacture Ethyl lead in that country.

I have just had two weeks in Washington, no inconsiderable part of which was devoted to criticising the interchanging with foreign companies of chemical knowledge which might have a military value. Such giving of information by an industrial company might have the gravest repercussions on it. The Ethyl Gasoline Corporation would be no exception, in fact, would probably be singled out for special attack because of the ownership of its stock.

It should seem. on the face of it, that the quantity of Ethyl lead used for commercial purposes in Germany would be too small to go after. It has been claimed that Germany is secretly arming. Ethyl lead would doubtless be a valuable aid to military aeroplanes.

I am writing you this to say that in my opinion under no conditions should you or the Board of Directors of the Ethyl Gasoline Corporation disclose any secrets or 'know how' in connection with the manufacture of tetraethyl lead to Germany.

I am informed that you will be advised through the Dyestuffs Division of the necessity of disclosing the information which you have received from Germany to appropriate War Department officials.

Yours very truly,

Source: United States Senate, Hearings before a Subcommittee of the

Committee on Military Affairs, *Scientific and Technical Mobilization*, 78th Congress, Second Session, Part 16, (Washington D.C.: Government Printing Office, 1944), p. 939.

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APPENDIX E

Extract from Morgenthau Diary (Germany)
Regarding Sosthenes Behn of I.T.T.

March 16, 1945
11:30 a.m.

GROUP MEETING
Bretton Woods — I.T.&T. — Reparations

Present:
Mr. White
Mr. Fussell
Mr. Feltus
Mr. Coe
Mr. DuBois
Mrs. Klotz

H.M., Jr.: Frank, can you boil *down* this business on I.T.&T.?

Mr. Coe: Yes, sir. I.T. &T. by the way did transfer or did get $15 million yesterday or a few days ago of their debts in dollars paid to them by the Spanish Government and that they are allowed to do under our general license, so that's all right. However, it is in part in their representation to us, part of a deal for the sale of the company in Spain, so they are trying thereby to force our hand. Now, the proposition which they have had up over some years in different forms now takes this form. They can get their receivables paid off in dollars, which they say they have not been able to do hitherto — either $15 million now and $10 million or $11 million later. They will sell the company to Spain and take in return $30 million worth of bonds — Spanish Government bonds — which are to be amortized over a number of years and roughly at the rate of $2 million per annum, and they are to receive 90% of those exports in order to amortize bonds faster, if they are to export it to the United States.

H. M. Jr.: Like the match dealer I mentioned in my speech.

Mr. Coe: That's right. The Spanish Government. They are willing, they say — they are able to get from the Spanish Government assurances, that these will not be, that the shares which the Spanish Government intends to resell will not go to anybody on the black list, and so forth. In some negotiations we have had with them over the last few weeks, they have been willing to come further on that. Our hesitation on the matter relates to two things; First, that you can't trust Franco, and that if they are able — if Franco is able to sell $50 million worth of shares Of this company in Spain in the next period of time, he may very well sell it to pro-German interests. It seems doubtful that he would be able to dispose of it to the Spaniards, so that is the first thing. The second thing we can't document too well, but I think it is more pronounced in my mind than in the minds of the Foreign Funds and legal people.

I don't think we can really trust Behn either.

Mr. White: I'm sure you can't.

Mr. Coe: We have records here of interviews, going far back, that some of your men had with Behn — Klaus was one — in which Behn said that he had had conversations with Goering with the proposition that Goering was to hold I.T. &T.'s property in Germany, and as you recall, I.T. &T. here did try to purchase General Aniline and make it an American company thereby and that was part of the deal which Behn told State and our lawyers very frankly he had discussed. He thought it was perfectly all right protecting property: That was before we entered the war,

H. M., Jr.: I don't remember that,

Mr. Coe: The man in charge of their properties now is Westrick who you recall came over here and was mixed up with Texaco. They tried in every way to cook up deals earlier to escape. They are tied up with top German group and etc. On the other hand, Colonel Behn has been used several times as an emissary by the State Department, and I believe he is personally on very good terms with Stettinius. We have heard from State on this letter saying they have no objections. We proposed to you earlier — the letter which I sent in to you suggesting that you ask State, if in view of our safe haven objectives, they still said yes. I am confident from talking with them on the phone the last day or two, they will write back and say yes, they still think it is a good deal.

H. M., Jr.: This is the position I am in. As you gentlemen know I am overextended now and I can't go into this thing personally, and I think that we are just going to have to throw the thing in the lap of the State Department, and if they want to clear it, all right. I just haven't got the time or the energy to fight them on that basis.

Mr. Coe: Then we ought to license it now.

Mr. White: First you ought to get a letter. I agree with the Secretary on this point of view that this fellow Behn is not to be trusted around the corner. There is something about this deal that looks suspicious and has been for the last couple of years we have been dealing with him. However, it is one thing to believe that and another thing to defend that before the pressure that will be brought in here that they are trying to deprive this company of the business deal, but I think that what we might do is get the State Department on record that in view of a safe haven project they don't think that there is any danger that any of these assets — I would cite some of them, spell the letter out. Get them down on record and even make them a little frightened and hold out or they will at least have had the record and you will have called their attention to these dangers. This fellow Behn hates our guts anyway. We have been standing between him and deals for 4 years, at least.

H. M., Jr.: Follow what White said. Something along that line. "Dear Mr, Stettinius; I am bothered about these things due to the following facts, and I would like you to advise me whether we should or should not .... "

Mr. White: "In view of the danger that German assets may be cloaked here, the future —" and let him come back and say, "No," and we'll watch him.

Mr. Coe: We said we wanted to give Acheson something Monday.

H. M., Jr.: And if you get that ready for me by tomorrow morning, I'll sign it. *Mr. Coe:* O.K.

Source: United States Senate, Subcommittee to Investigate the Administration of the Internal Security Act. Committee on the Judiciary, *Morgenthau Diarty (Germany)*, Volume 1, 90th Congress, 1st Session, November 20, 1967, (Washington D.C.: U.S. Government Printing Office, 1967), p. 320 of Book 828. (Page 976 of U,S. Senate print.)

Note: "Mr. White" is Harry Dexter White. "Dr. Dubois" is Josiah E. Dubois, Jr., author of the book, *Generals in Grey Suits* (London: The Bodley Head, 1953). "H.M., Jr." is Henry Morgenthau, Jr., Secretary of the Treasury.

This memorandum is important because it accuses Sosthenes Behn of attempting to make behind-the-scenes deals in Nazi Germany "for 4 years, at least" — *i.e.* while the rest of the U.S. was at war, Behn and his friends were still doing business as usual with Germany. This memorandum supports the evidence presented in Chapters Five and Nine concerning the influence of I.T.T. in the Himmler inner circle and adds Herman Goering to the list of I T T. contacts.

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BACK

WALL STREET
AND THE
BOLSHEVIK REVOLUTION

By
Antony C. Sutton

TABLE OF CONTENTS

*****

TO

those unknown Russian libertarians, also known as Greens, who in 1919 fought both the Reds and the Whites in their attempt to gain a free and voluntary Russia

*****

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PREFACE

Since the early 1920s, numerous pamphlets and articles, even a few books, have sought to forge a link between "international bankers" and "Bolshevik revolutionaries." Rarely have these attempts been supported by hard evidence, and never have such attempts been argued within the framework of a scientific methodology. Indeed, some of the "evidence" used in these efforts has been fraudulent, some has been irrelevant, much cannot be checked. Examination of the topic by academic writers has been studiously avoided; probably because the hypothesis offends the neat dichotomy of capitalists versus Communists (and everyone knows, of course, that these are bitter enemies). Moreover, because a great deal that has been written borders on the absurd, a sound academic reputation could easily be wrecked on the shoals of ridicule. Reason enough to avoid the topic.

Fortunately, the State Department Decimal File, particularly the 861.00 section, contains extensive documentation on the hypothesized link. When the evidence in these official papers is merged with nonofficial evidence from biographies, personal papers, and conventional histories, a truly fascinating story emerges.

We find there was a link between *some* New York international bankers and *many* revolutionaries, including Bolsheviks. These banking gentlemen — who are here identified — had a financial stake in, and were rooting for, the success of the Bolshevik Revolution.

Who, why — and for how much — is the story in this book.

Antony C. Sutton

March 1974

BACK

Chapter I

THE ACTORS ON THE REVOLUTIONARY STAGE

Dear Mr. President:

I am in sympathy with the Soviet form of government as that best suited for the Russian people...

Letter to President Woodrow Wilson (October 17, 1918) from William Lawrence Saunders, chairman, Ingersoll-Rand Corp.; director, American International Corp.; and deputy chairman, Federal Reserve Bank of New York

The frontispiece in this book was drawn by cartoonist Robert Minor in 1911 for the *St. Louis Post-Dispatch.* Minor was a talented artist and writer who doubled as a Bolshevik revolutionary, got himself arrested in Russia in 1915 for alleged subversion, and was later bank-rolled by prominent Wall Street financiers. Minor's cartoon portrays a bearded, beaming Karl Marx standing in Wall Street with *Socialism* tucked under his arm and accepting the congratulations of financial luminaries J.P. Morgan, Morgan partner George W. Perkins, a smug John D. Rockefeller, John D. Ryan of National City Bank, and Teddy Roosevelt — prominently identified by his famous teeth — in the background. Wall Street is decorated by Red flags. The cheering crowd and the airborne hats suggest that Karl Marx must have been a fairly popular sort of fellow in the New York financial district.

Was Robert Minor dreaming? On the contrary, we shall see that Minor was on firm ground in depicting an enthusiastic alliance of Wall Street and Marxist socialism. The characters in Minor's cartoon — Karl Marx (symbolizing the future revolutionaries Lenin and Trotsky), J. P. Morgan, John D. Rockefeller — and indeed Robert Minor himself, are also prominent characters in this book.

The contradictions suggested by Minor's cartoon have been brushed under the rug of history because they do not fit the accepted conceptual spectrum of political left and political right. Bolsheviks are at the left end of the political spectrum and Wall Street financiers are at the right end; *therefore,* we implicitly reason, the two groups have nothing in common and any alliance between the two is absurd. Factors contrary to this neat conceptual arrangement are usually rejected as bizarre observations or unfortunate errors. Modern history possesses such a built-in duality and certainly if too many uncomfortable facts have been rejected and brushed under the rug, it is an inaccurate history.

On the other hand, it may be observed that both the extreme right and the extreme left of the conventional political spectrum are absolutely collectivist. The national socialist (for example, the fascist) and the international socialist (for example, the Communist) both recommend totalitarian politico-economic systems based on naked, unfettered political power and individual coercion. Both systems require monopoly control of society. While monopoly

control of industries was once the objective of J. P. Morgan and J. D. Rockefeller, by the late nineteenth century the inner sanctums of Wall Street understood that the most efficient way to gain an unchallenged monopoly was to "go political" and make society go to work for the monopolists — under the name of the public good and the public interest. This strategy was detailed in 1906 by Frederick C. Howe in his *Confessions of a Monopolist.*[1] Howe, by the way, is also a figure in the story of the Bolshevik Revolution.

Therefore, an alternative conceptual packaging of political ideas and politico-economic systems would be that of ranking the degree of individual freedom versus the degree of centralized political control. Under such an ordering the corporate welfare state and socialism are at the same end of the spectrum. Hence we see that attempts at monopoly control of society can have different labels while owning common features.

Consequently, one barrier to mature understanding of recent history is the notion that all capitalists are the bitter and unswerving enemies of all Marxists and socialists. This erroneous idea originated with Karl Marx and was undoubtedly useful to his purposes. In fact, the idea is nonsense. There has been a continuing, albeit concealed, alliance between international political capitalists and international revolutionary socialists — to their mutual benefit. This alliance has gone unobserved largely because historians — with a few notable exceptions — have an unconscious Marxian bias and are thus locked into the impossibility of any such alliance existing. The open-minded reader should bear two clues in mind: monopoly capitalists are the bitter enemies of laissez-faire entrepreneurs; and, given the weaknesses of socialist central planning, the totalitarian socialist state is a perfect captive market for monopoly capitalists, if an alliance can be made with the socialist powerbrokers. Suppose — and it is only hypothesis at this point — that American monopoly capitalists were able to reduce a planned socialist Russia to the status of a captive technical colony? Would not this be the logical twentieth-century internationalist extension of the Morgan railroad monopolies and the Rockefeller petroleum trust of the late nineteenth century?

Apart from Gabriel Kolko, Murray Rothbard, and the revisionists, historians have not been alert for such a combination of events. Historical reporting, with rare exceptions, has been forced into a dichotomy of capitalists versus socialists. George Kennan's monumental and readable study of the Russian Revolution consistently maintains this fiction of a Wall Street-Bolshevik dichotomy.[2] *Russia Leaves the War* has a single incidental reference to the J.P. Morgan firm and no reference at all to Guaranty Trust Company. Yet both organizations are prominently mentioned in the State Department files, to which frequent reference is made in this book, and both are part of the core of the evidence presented here. Neither self-admitted "Bolshevik banker" Olof Aschberg nor Nya Banken in Stockholm is mentioned in Kennan yet both were central to Bolshevik funding. Moreover, in minor yet crucial circumstances, at least crucial for *our* argument, Kennan is factually in error. For example, Kennan cites Federal Reserve Bank director William Boyce Thompson as leaving Russia on November 27, 1917. This departure date would make it physically impossible for Thompson to be in Petrograd on December 2, 1917, to transmit a cable request for $1 million to Morgan in New York. Thompson in fact left Petrograd on December 4, 1918, two days after sending the cable to New York. Then again, Kennan states that on November 30, 1917, Trotsky delivered a speech before the Petrograd Soviet in which he observed, "Today I had here in the Smolny Institute two Americans closely connected with American Capitalist elements "According to Kennan, it "is difficult to imagine" who these two Americans "could have been, if not Robins and Gumberg." But in [act Alexander Gumberg was Russian, not American. Further, as Thompson

was still in Russia on November 30, 1917, then the two Americans who visited Trotsky were more than likely Raymond Robins, a mining promoter turned do-gooder, and Thompson, of the Federal Reserve Bank of New York.

The Bolshevization of Wall Street was known among well informed circles as early as 1919. The financial journalist Barron recorded a conversation with oil magnate E. H. Doheny in 1919 and specifically named three prominent financiers, William Boyce Thompson, Thomas Lamont and Charles R. Crane:

> Aboard S.S. Aquitania, Friday Evening, February 1, 1919.
>
> Spent the evening with the Dohenys in their suite. Mr. Doheny said: If you believe in democracy you cannot believe in Socialism. Socialism is the poison that destroys democracy. Democracy means opportunity for all. Socialism holds out the hope that a man can quit work and be better off. Bolshevism is the true fruit of socialism and if you will read the interesting testimony before the Senate Committee about the middle of January that showed up all these pacifists and peace-makers as German sympathizers, Socialists, and Bolsheviks, you will see that a majority of the college professors in the United States are teaching socialism and Bolshevism and that fifty-two college professors were on so-called peace committees in 1914. President Eliot of Harvard is teaching Bolshevism. The worst Bolshevists in the United States are not only college professors, of whom President Wilson is one, but capitalists and the wives of capitalists and neither seem to know what they are talking about. William Boyce Thompson is teaching Bolshevism and he may yet convert Lamont of J.P. Morgan & Company. Vanderlip is a Bolshevist, so is Charles R. Crane. Many women are joining the movement and neither they, nor their husbands, know what it is, or what it leads to. Henry Ford is another and so are most of those one hundred historians Wilson took abroad with him in the foolish idea that history can teach youth proper demarcations of races, peoples, and nations geographically.[3]

In brief, this is a story of the Bolshevik Revolution and its aftermath, but a story that departs from the usual conceptual straitjacket approach of capitalists versus Communists. Our story postulates a partnership between international monopoly capitalism and international revolutionary socialism for their mutual benefit. The final human cost of this alliance has fallen upon the shoulders of the individual Russian and the individual American. Entrepreneurship has been brought into disrepute and the world has been propelled toward inefficient socialist planning as a result of these monopoly maneuverings in the world of politics and revolution.

This is also a story reflecting the betrayal of the Russian Revolution. The tsars and their corrupt political system were ejected only to be replaced by the new powerbrokers of another corrupt political system. Where the United States could have exerted its dominant influence to bring about a free Russia it truckled to the ambitions of a few Wall Street financiers who, for their own purposes, could accept a centralized tsarist Russia or a centralized Marxist Russia but not a decentralized free Russia. And the reasons for these assertions will unfold as we develop the underlying and, so far, untold history of the Russian Revolution and its aftermath.[4]

Footnotes:

[1]"These are the rules of big business. They have superseded the teachings of our parents and are reducible to a simple maxim: Get a monopoly; let Society work for you: and remember that the best of all business is politics, for a legislative grant, franchise, subsidy or tax exemption is worth more than a Kimberly or Comstock lode, since it does not require any labor, either mental or physical, lot its exploitation" (Chicago: Public Publishing, 1906), p. 157.

2George F. Kennan, *Russia Leaves the War* (New York: Atheneum, 1967); and *Decision to Intervene.. Soviet-American Relations*, *1917-1920* (Princeton, N.J.: Princeton University Press, 1958).

3Arthur Pound and Samuel Taylor Moore, *They Told Barron* (New York: Harper & Brothers, 1930), pp. 13-14.

4There is a parallel, and also unknown, history with respect to the Makhanovite movement that fought both the "Whites" and the "Reds" in the Civil War of 1919-20 (see Voline, *The Unknown Revolution* [New York: Libertarian Book Club, 1953]). There was also the "Green" movement, which fought both Whites and Reds. The author has never seen even one isolated mention of the Greens in any history of the Bolshevik Revolution. Yet the Green Army was at least 700,000 strong!

BACK

Chapter II

TROTSKY LEAVES NEW YORK TO COMPLETE THE REVOLUTION

> You will have a revolution, a terrible revolution. What course it takes will depend much on what Mr. Rockefeller tells Mr. Hague to do. Mr. Rockefeller is a symbol of the American ruling class and Mr. Hague is a symbol of its political tools.
>
> *Leon Trotsky, in* New York Times, *December 13, 1938. (Hague was a New Jersey politician)*

In 1916, the year preceding the Russian Revolution, internationalist Leon Trotsky was expelled from France, officially because of his participation in the Zimmerwald conference but also no doubt because of inflammatory articles written for *Nashe Slovo,* a Russian-language newspaper printed in Paris. In September 1916 Trotsky was politely escorted across the Spanish border by French police. A few days later Madrid police arrested the internationalist and lodged him in a "first-class cell" at a charge of one-and-one-haft pesetas per day. Subsequently Trotsky was taken to Cadiz, then to Barcelona finally to be placed on board the Spanish Transatlantic Company steamer *Monserrat.* Trotsky and family crossed the Atlantic Ocean and landed in New York on January 13, 1917.

Other Trotskyites also made their way westward across the Atlantic. Indeed, one Trotskyite group acquired sufficient immediate influence in Mexico to write the Constitution of Querétaro for the revolutionary 1917 Carranza government, giving Mexico the dubious distinction of being the first government in the world to adopt a Soviet-type constitution.

How did Trotsky, who knew only German and Russian, survive in capitalist America? According to his autobiography, *My Life,* "My only profession in New York was that of a revolutionary socialist." In other words, Trotsky wrote occasional articles for *Novy Mir,* the New York Russian socialist journal. Yet we know that the Trotsky family apartment in New York had a refrigerator and a telephone, and, according to Trotsky, that the family occasionally traveled in a chauffeured limousine. This mode of living puzzled the two young Trotsky boys. When they went into a tearoom, the boys would anxiously demand of their mother, "Why doesn't the chauffeur come in?"[1] The stylish living standard is also at odds with Trotsky's reported income. The only funds that Trotsky admits receiving in 1916 and 1917 are $310, and, said Trotsky, "I distributed the $310 among five emigrants who were returning to Russia." Yet Trotsky had paid for a first-class cell in Spain, the Trotsky family had traveled across Europe to the United States, they had acquired an excellent apartment in New York —paying rent three months in advance —and they had use of a chauffeured limousine. All this on the earnings of an impoverished revolutionary for a few articles for the low-circulation Russian-language newspaper *Nashe* Slovo in Paris and *Novy Mir* in New York!

Joseph Nedava estimates Trotsky's 1917 income at $12.00 per week, "supplemented by some

lecture fees."[2] Trotsky was in New York in 1917 for three months, from January to March, so that makes $144.00 in income from *Novy Mir* and, say, another $100.00 in lecture fees, for a total of $244.00. Of this $244.00 Trotsky was able to give away $310.00 to his friends, pay for the New York apartment, provide for his family —and find the $10,000 that was taken from him in April 1917 by Canadian authorities in Halifax. Trotsky claims that those who said he had other sources of income are "slanderers" spreading "stupid calumnies" and "lies," but unless Trotsky was playing the horses at the Jamaica racetrack, it can't be done. Obviously Trotsky had an unreported source of income.

What was that source? In *The Road to Safety*, author Arthur Willert says Trotsky earned a living by working as an electrician for Fox Film Studios. Other writers have cited other occupations, but there is no evidence that Trotsky occupied himself for remuneration otherwise than by writing and speaking.

Most investigation has centered on the verifiable fact that when Trotsky left New York in 1917 for Petrograd, to organize the Bolshevik phase of the revolution, he left with $10,000. In 1919 the U.S. Senate Overman Committee investigated Bolshevik propaganda and German money in the United States and incidentally touched on the source of Trotsky's $10,000. Examination of Colonel Hurban, Washington attaché to the Czech legation, by the Overman Committee yielded the following:

> COL. HURBAN: Trotsky, perhaps, took money from Germany, but Trotsky will deny it. Lenin would not deny it. Miliukov proved that he got $10,000 from some Germans while he was in America. Miliukov had the proof, but he denied it. Trotsky did, although Miliukov had the proof.
>
> SENATOR OVERMAN: It was charged that Trotsky got $10,000 here.
>
> COL. HURBAN: I do not remember how much it was, but I know it was a question between him and Miliukov.
>
> SENATOR OVERMAN: Miliukov proved it, did he?
>
> COL. HURBAN: Yes, sir.
>
> SENATOR OVERMAN: Do you know where he got it from?
>
> COL. HURBAN: I remember it was $10,000; but it is no matter. I will speak about their propaganda. The German Government knew Russia better than anybody, and they knew that with the help of those people they could destroy the Russian army.
>
> (At 5:45 o'clock p.m. the subcommittee adjourned until tomorrow, Wednesday, February 19, at 10:30 o'clock a.m.)[3]

It is quite remarkable that the committee adjourned abruptly before the *source* of Trotsky's

funds could be placed into the Senate record. When questioning resumed the next day, Trotsky and his $10,000 were no longer of interest to the Overman Committee. We shall later develop evidence concerning the financing of German and revolutionary activities in the United States by New York financial houses; the origins of Trotsky's $10,000 will then come into focus.

An amount of $10,000 of German origin is also mentioned in the official British telegram to Canadian naval authorities in Halifax, who requested that Trotsky and party en route to the revolution be taken off the S.S. *Kristianiafjord* (see page 28). We also learn from a British Directorate of Intelligence report[4] that Gregory Weinstein, who in 1919 was to become a prominent member of the Soviet Bureau in New York, collected funds for Trotsky in New York. These funds originated in Germany and were channeled through the V*olks-zeitung,* a German daily newspaper in New York and subsidized by the German government.

While Trotsky's funds are officially reported as German, Trotsky was actively engaged in American politics immediately prior to leaving New York for Russia and the revolution. On March 5, 1917, American newspapers headlined the increasing possibility of war with Germany; the same evening Trotsky proposed a resolution at the meeting of the New York County Socialist Party "pledging Socialists to encourage strikes and resist recruiting in the event of war with Germany."[5] Leon Trotsky was called by the *New York Times* "an exiled Russian revolutionist." Louis C. Fraina, who cosponsored the Trotsky resolution, later —under an alias —wrote an uncritical book on the Morgan financial empire entitled *House of Morgan.*[6] The Trotsky-Fraina proposal was opposed by the Morris Hillquit faction, and the Socialist Party subsequently voted opposition to the resolution.[7]

More than a week later, on March 16, at the time of the deposition of the tsar, Leon Trotsky was interviewed in the offices of *Novy Mir.*. The interview contained a prophetic statement on the Russian revolution:

> *"*... the committee which has taken the place of the deposed Ministry in Russia did not represent the interests or the aims of the revolutionists, that it would probably be shortlived and step down in favor of men who would be more sure to carry forward the democratization of Russia."[8]

The "men who would be more sure to carry forward the democratization of Russia," that is, the Mensheviks and the Bolsheviks, were then in exile abroad and needed first to return to Russia. The temporary "committee" was therefore dubbed the Provisional Government, a title, it should be noted, that was used from the start of the revolution in March and not applied ex post facto by historians.

WOODROW WILSON AND A PASSPORT FOR TROTSKY

President Woodrow Wilson was the fairy godmother who provided Trotsky with a passport to return to Russia to "carry forward" the revolution. This American passport was accompanied by a Russian entry permit and a British transit visa. Jennings C. Wise, in *Woodrow Wilson: Disciple of Revolution,* makes the pertinent comment, "Historians must never forget that Woodrow Wilson, despite the efforts of the British police, made it possible for Leon Trotsky to

enter Russia with an American passport."

President Wilson facilitated Trotsky's passage to Russia at the same time careful State Department bureaucrats, concerned about such revolutionaries entering Russia, were unilaterally attempting to tighten up passport procedures. The Stockholm legation cabled the State Department on June 13, 1917, just *after* Trotsky crossed the Finnish-Russian border, "Legation confidentially informed Russian, English and French passport offices at Russian frontier, Tornea, considerably worried by passage of suspicious persons bearing American passports."[9]

To this cable the State Department replied, on the same day, "Department is exercising special care in issuance of passports for Russia"; the department also authorized expenditures by the legation to establish a passport-control office in Stockholm and to hire an "absolutely dependable American citizen" for employment on control work.[10] But the bird had flown the coop. Menshevik Trotsky with Lenin's Bolsheviks were already in Russia preparing to "carry forward" the revolution. The passport net erected caught only more legitimate birds. For example, on June 26, 1917, Herman Bernstein, a reputable New York newspaperman on his way to Petrograd to represent the *New York Herald,* was held at the border and refused entry to Russia. Somewhat tardily, in mid-August 1917 the Russian embassy in Washington requested the State Department (and State agreed) to "prevent the entry into Russia of criminals and anarchists... numbers of whom have already gone to Russia."[11]

Consequently, by virtue of preferential treatment for Trotsky, when the S.S. *Kristianiafjord* left New York on March 26, 1917, Trotsky was aboard and holding a U.S. passport —and in company with other Trotskyire revolutionaries, Wall Street financiers, American Communists, and other interesting persons, few of whom had embarked for legitimate business. This mixed bag of passengers has been described by Lincoln Steffens, the American Communist:

> The passenger list was long and mysterious. Trotsky was in the steerage with a group of revolutionaries; there was a Japanese revolutionist in my cabin. There were a lot of Dutch hurrying home from Java, the only innocent people aboard. The rest were war messengers, two from Wall Street to Germany....[12]

Notably, Lincoln Steffens was on board en route to Russia at the specific invitation of Charles Richard Crane, a backer and a former chairman of the Democratic Party's finance committee. Charles Crane, vice president of the Crane Company, had organized the Westinghouse Company in Russia, was a member of the Root mission to Russia, and had made no fewer than twenty-three visits to Russia between 1890 and 1930. Richard Crane, his son, was confidential assistant to then Secretary of State Robert Lansing. According to the former ambassador to Germany William Dodd, Crane "did much to bring on the Kerensky revolution which gave way to Communism."[13] And so Steffens' comments in his diary about conversations aboard the S.S. *Kristianiafjord* are highly pertinent:" . . . all agree that the revolution is in its first phase only, that it must grow. Crane and Russian radicals on the ship think we shall be in Petrograd for the re-revolution.[14]

Crane returned to the United States when the Bolshevik Revolution (that is, "the re-revolution") had been completed and, although a private citizen, was given firsthand reports of the progress

of the Bolshevik Revolution as cables were received at the State Department. For example, one memorandum, dated December 11, 1917, is entitled "Copy of report on Maximalist uprising for Mr Crane." It originated with Maddin Summers, U.S. consul general in Moscow, and the covering letter from Summers reads in part:

> I have the honor to enclose herewith a copy of same [above report] with the request that it be sent for the confidential information of Mr. Charles R. Crane. It is assumed that the Department will have no objection to Mr. Crane seeing the report ....[15]

In brief, the unlikely and puzzling picture that emerges is that Charles Crane, a friend and backer of Woodrow Wilson and a prominent financier and politician, had a known role in the "first" revolution and traveled to Russia in mid-1917 in company with the American Communist Lincoln Steffens, who was in touch with both Woodrow Wilson and Trotsky. The latter in turn was carrying a passport issued at the orders of Wilson and $10,000 from supposed German sources. On his return to the U.S. after the "re-revolution," Crane was granted access to official documents concerning consolidation of the Bolshevik regime: This is a pattern of interlocking —if puzzling —events that warrants further investigation and suggests, though without at this point providing evidence, some link between the financier Crane and the revolutionary Trotsky.

CANADIAN GOVERNMENT DOCUMENTS ON TROTSKY'S RELEASE[16]

Documents on Trotsky's brief stay in Canadian custody are now de-classified and available from the Canadian government archives. According to these archives, Trotsky was removed by Canadian and British naval personnel from the S.S. *Kristianiafjord* at Halifax, Nova Scotia, on April 3, 1917, listed as a German prisoner of war, and interned at the Amherst, Nova Scotia, internment station for German prisoners. Mrs. Trotsky, the two Trotsky boys, and five other men described as "Russian Socialists" were also taken off and interned. Their names are recorded by the Canadian files as: Nickita Muchin, Leiba Fisheleff, Konstantin Romanchanco, Gregor Teheodnovski, Gerchon Melintchansky and Leon Bronstein Trotsky (all spellings from original Canadian documents).

Canadian Army form LB-l, under serial number 1098 (including thumb prints), was completed for Trotsky, with a description as follows: "37 years old, a political exile, occupation journalist, born in Gromskty, Chuson, Russia, Russian citizen." The form was signed by Leon Trotsky and his full name given as Leon Bromstein *(sic)* Trotsky.

The Trotsky party was removed from the S.S. *Kristianiafjord* under official instructions received by cablegram of March 29, 1917, London, presumably originating in the Admiralty with the naval control officer, Halifax. The cablegram reported that the Trotsky party was on the *"Christianiafjord" (sic)* and should be "taken off and retained pending instructions." The reason given to the naval control officer at Halifax was that "these are Russian Socialists leaving for purposes of starting revolution against present Russian government for which Trotsky is reported to have 10,000 dollars subscribed by Socialists and Germans."

On April 1, 1917, the naval control officer, Captain O. M. Makins, sent a confidential memorandum to the general officer commanding at Halifax, to the effect that he had "examined all Russian passengers" aboard the S.S. *Kristianiafjord* and found six men in the second-class section: "They are all avowed Socialists, and though professing a desire to help the new Russian Govt., might well be in league with German Socialists in America, and quite likely to be a great hindrance to the Govt. in Russia just at present." Captain Makins added that he was going to remove the group, as well as Trotsky's wife and two sons, in order to intern them at Halifax. A copy of this report was forwarded from Halifax to the chief of the General Staff in Ottawa on April 2, 1917.

The next document in the Canadian files is dated April 7, from the chief of the General Staff, Ottawa, to the director of internment operations, and acknowledges a previous letter (not in the files) about the internment of Russian socialists at Amherst, Nova Scotia: *"*. . . in this connection, have to inform you of the receipt of a long telegram yesterday from the Russian Consul General, MONTREAL, protesting against the arrest of these men as they were in possession of passports issued by the Russian Consul General, NEW YORK, U.S.A."

The reply to this Montreal telegram was to the effect that the men were interned "on suspicion of being German," and would be released only upon definite proof of their nationality and loyalty to the Allies. No telegrams from the Russian consul general in New York are in the Canadian files, and it is known that this office was reluctant to issue Russian passports to Russian political exiles. However, there *is* a telegram in the files from a New York attorney, N. Aleinikoff, to R. M. Coulter, then deputy postmaster general of Canada. The postmaster general's office in Canada had no connection with either internment of prisoners of war or military activities. Accordingly, this telegram was in the nature of a personal, nonofficial intervention. It reads:

> DR. R. M. COULTER, Postmaster Genl. OTTAWA Russian political exiles returning to Russia detained Halifax interned Amherst camp. Kindly investigate and advise cause of the detention and names of all detained. Trust as champion of freedom you will intercede on their behalf. Please wire collect. NICHOLAS ALEINIKOFF

On April 11, Coulter wired Aleinikoff, "Telegram received. Writing you this afternoon. You should receive it tomorrow evening. R. M. Coulter." This telegram was sent by the Canadian Pacific Railway Telegraph but charged to the Canadian Post Office Department. Normally a private business telegram would be charged to the recipient and this was not official business. The follow-up Coulter letter to Aleinikoff is interesting because, after confirming that the Trotsky party was held at Amherst, it states that they were suspected of propaganda against the present Russian government and "are supposed to be agents of Germany." Coulter then adds," . . . they are not what they represent themselves to be"; the Trotsky group is "...not detained by Canada, but by the Imperial authorities." After assuring Aleinikoff that the detainees would be made comfortable, Coulter adds that any information "in their favour" would be transmitted to the military authorities. The general impression of the letter is that while Coulter is sympathetic and fully aware of Trotsky's pro-German links, he is unwilling to get involved. On April 11 Arthur Wolf of 134 East Broadway, New York, sent a telegram to Coulter. Though sent from New York, this telegram, after being acknowledged, was also charged to the Canadian Post Office Department.

Coulter's reactions, however, reflect more than the detached sympathy evident in his letter to Aleinikoff. They must be considered in the light of the fact that these letters in behalf of Trotsky came from two American residents of New York City and involved a Canadian or Imperial military matter of international importance. Further, Coulter, as deputy postmaster general, was a Canadian government official of some standing. Ponder, for a moment, what would happen to someone who similarly intervened in United States affairs! In the Trotsky affair we have two American residents corresponding with a Canadian deputy postmaster general in order to intervene in behalf of an interned Russian revolutionary.

Coulter's subsequent action also suggests something more than casual intervention. After Coulter acknowledged the Aleinikoff and Wolf telegrams, he wrote to Major General Willoughby Gwatkin of the Department of Militia and Defense in Ottawa —a man of significant influence in the Canadian military —and attached copies of the Aleinikoff and Wolf telegrams:

> These men have been hostile to Russia because of the way the Jews have been treated, and are now strongly in favor of the present Administration, so far as I know. Both are responsible men. Both are reputable men, and I am sending their telegrams to you for what they may be worth, and so that you may represent them to the English authorities if you deem it wise.

Obviously Coulter knows —or intimates that he knows —a great deal about Aleinikoff and Wolf. His letter was in effect a character reference, and aimed at the root of the internment problem —London. Gwatkin was well known in London, and in fact was on loan to Canada from the War Office in London.[17]

Aleinikoff then sent a letter to Coulter to thank him

> most heartily for the interest you have taken in the fate of the Russian Political Exiles .... You know me, esteemed Dr. Coulter, and you also know my devotion to the cause of Russian freedom .... Happily I know Mr. Trotsky, Mr. Melnichahnsky, and Mr. Chudnowsky . . . intimately.

It might be noted as an aside that if Aleinikoff knew Trotsky "intimately," then he would also probably be aware that Trotsky had declared his intention to return to Russia to overthrow the Provisional Government and institute the "re-revolution." On receipt of Aleinikoff's letter, Coulter immediately (April 16) forwarded it to Major General Gwatkin, adding that he became acquainted with Aleinikoff "in connection with Departmental action on United States papers in the Russian language" and that Aleinikoff was working "on the same lines as Mr. Wolf . . . who was an escaped prisoner from Siberia."

Previously, on April 14, Gwatkin sent a memorandum to his naval counterpart on the Canadian Military Interdepartmental Committee repeating that the internees were Russian socialists with *"10,000* dollars subscribed by socialists and Germans." The concluding paragraph stated: *"On* the other hand there are those who declare that an act of high-handed injustice has been done." Then on April 16, Vice Admiral C. E. Kingsmill, director of the Naval Service, took Gwatkin's intervention at face value. In a letter to Captain Makins, the naval control officer at Halifax, he

stated, "The Militia authorities request that a decision as to their (that is, the six Russians) disposal may be hastened." A copy of this instruction was relayed to Gwatkin who in turn informed Deputy Postmaster General Coulter. Three days later Gwatkin applied pressure. In a memorandum of April 20 to the naval secretary, he wrote, "Can you say, please, whether or not the Naval Control Office has given a decision?"

On the same day (April 20) Captain Makins wrote Admiral Kingsmill explaining his reasons for removing Trotsky; he refused to be pressured into making a decision, stating, "I will cable to the Admiralty informing them that the Militia authorities are requesting an early decision as to their disposal." However, the next day, April 21, Gwatkin wrote Coulter: "Our friends the Russian socialists are to be released; and arrangements are being made for their passage to Europe." The order to Makins for Trotsky's release originated in the Admiralty, London. Coulter acknowledged the information, "which will please our New York correspondents immensely."

While we can, on the one hand, conclude that Coulter and Gwatkin were intensely interested in the release of Trotsky, we do not, on the other hand, know why. There was little in the career of either Deputy Postmaster General Coulter or Major General Gwatkin that would explain an urge to release the Menshevik Leon Trotsky.

Dr. Robert Miller Coulter was a medical doctor of Scottish and Irish parents, a liberal, a Freemason, and an Odd Fellow. He was appointed deputy postmaster general of Canada in 1897. His sole claim to fame derived from being a delegate to the Universal Postal Union Convention in 1906 and a delegate to New Zealand and Australia in 1908 for the "All Red" project. All Red had nothing to do with Red revolutionaries; it was only a plan for all-red or all-British fast steamships between Great Britain, Canada, and Australia.

Major General Willoughby Gwatkin stemmed from a long British military tradition (Cambridge and then Staff College). A specialist in mobilization, he served in Canada from 1905 to 1918. Given only the documents in the Canadian files, we can but conclude that their intervention in behalf of Trotsky is a mystery.

CANADIAN MILITARY INTELLIGENCE VIEWS TROTSKY

We can approach the Trotsky release case from another angle: Canadian intelligence. Lieutenant Colonel John Bayne MacLean, a prominent Canadian publisher and businessman, founder and president of MacLean Publishing Company, Toronto, operated numerous Canadian trade journals, including the *Financial Post.* MacLean also had a long-time association with Canadian Army Intelligence.[18]

In 1918 Colonel MacLean wrote for his own *MacLean's* magazine an article entitled "Why Did We Let Trotsky Go? How Canada Lost an Opportunity to Shorten the War."[19] The article contained detailed and unusual information about Leon Trotsky, although the last half of the piece wanders off into space remarking about barely related matters. We have two clues to the authenticity of the information. First, Colonel MacLean was a man of integrity with excellent connections in Canadian government intelligence. Second, government records since released

by Canada, Great Britain, and the United States confirm MacLean's statement to a significant degree. Some MacLean statements remain to be confirmed, but information available in the early 1970s is not necessarily inconsistent with Colonel MacLean's article.

MacLean's opening argument is that "some Canadian politicians or officials were chiefly responsible for the prolongation of the war [World War I], for the great loss of life, the wounds and sufferings of the winter of 1917 and the great drives of 1918."

Further, states MacLean, these persons were (in 1919)doing everything possible to prevent Parliament and the Canadian people from getting the related facts. Official reports, including those of Sir Douglas Haig, demonstrate that but for the Russian break in 1917 the war would have been over a year earlier, and that "the man chiefly responsible for the defection of Russia was Trotsky... acting under German instructions."

Who was Trotsky? According to MacLean, Trotsky was not Russian, but German. Odd as this assertion may appear it does coincide with other scraps of intelligence information: to wit, that Trotsky spoke better German than Russian, and that he was the Russian executive of the German "Black Bond." According to MacLean, Trotsky in August 1914 had been "ostentatiously" expelled from Berlin;[20] he finally arrived in the United States where he organized Russian revolutionaries, as well as revolutionaries in Western Canada, who "were largely Germans and Austrians traveling as Russians." MacLean continues:

> Originally the British found through Russian associates that Kerensky,[21] Lenin and some lesser leaders were practically in German pay as early as 1915 and they uncovered in 1916 the connections with Trotsky then living in New York. From that time he was closely watched by... the Bomb Squad. In the early part of 1916 a German official sailed for New York. British Intelligence officials accompanied him. He was held up at Halifax; but on their instruction he was passed on with profuse apologies for the necessary delay. After much manoeuvering he arrived in a dirty little newspaper office in the slums and there found Trotsky, to whom he bore important instructions. From June 1916, until they passed him on [to] the British, the N.Y. Bomb Squad never lost touch with Trotsky. They discovered that his real name was Braunstein and that he was a German, not a Russian.[22]

Such German activity in neutral countries is confirmed in a State Department report (316-9-764-9) describing organization of Russian refugees for revolutionary purposes.

Continuing, MacLean states that Trotsky and four associates sailed on the "S.S. *Christiania" (sic),* and on April 3 reported to "Captain Making" *(sic)* and were taken off the ship at Halifax under the direction of Lieutenant Jones. (Actually a party of nine, including six men, were taken off the S.S. *Kristianiafjord.* The name of the naval control officer at Halifax was Captain O. M. Makins, R.N. The name of the officer who removed the Trotsky party from the ship is not in the Canadian government documents; Trotsky said it was "Machen.") Again, according to MacLean, Trotsky's money came "from German sources in New York." Also:

> generally the explanation given is that the release was done at the request of

> Kerensky but months before this British officers and one Canadian serving in Russia, who could speak the Russian language, reported to London and Washington that Kerensky was in German service.[23]

Trotsky was released "at the request of the British Embassy at Washington . . . [which] acted on the request of the U.S. State Department, who were acting for someone else." Canadian officials "were instructed to inform the press that Trotsky was an American citizen travelling on an American passport; that his release was specially demanded by the Washington State Department." Moreover, writes MacLean, in Ottawa "Trotsky had, and continues to have, strong underground influence. There his power was so great that orders were issued that he must be given every consideration."

The theme of MacLean's reporting is, quite evidently, that Trotsky had intimate relations with, and probably worked for, the German General Staff. While such relations have been established regarding Lenin — to the extent that Lenin was subsidized and his return to Russia facilitated by the Germans — it appears certain that Trotsky was similarly aided. The $10,000 Trotsky fund in New York was from German sources, and a recently declassified document in the U.S. State Department files reads as follows:

> March 9, 1918 to: American Consul, Vladivostok from Polk, Acting Secretary of State, Washington D.C.
>
> For your confidential information and prompt attention: Following is substance of message of January twelfth from Von Schanz of German Imperial Bank to Trotsky, quote Consent imperial bank to appropriation from credit general staff of five million roubles for sending assistant chief naval commissioner Kudrisheff to Far East.

This message suggests some liaison between Trotsky and the Germans in January 1918, a time when Trotsky was proposing an alliance with the West. The State Department does not give the provenance of the telegram, only that it originated with the War College Staff. The State Department did treat the message as authentic and acted on the basis of assumed authenticity. It is consistent with the general theme of Colonel MacLean's article.

TROTSKY'S INTENTIONS AND OBJECTIVES

Consequently, we can derive the following sequence of events: Trotsky traveled from New York to Petrograd on a passport supplied by the intervention of Woodrow Wilson, and with the declared intention to "carry forward" the revolution. The British government was the immediate source of Trotsky's release from Canadian custody in April 1917, but there may well have been "pressures." Lincoln Steffens, an American Communist, acted as a link between Wilson and Charles R. Crane and between Crane and Trotsky. Further, while Crane had no official position, his son Richard was confidential assistant to Secretary of State Robert Lansing, and Crane senior was provided with prompt and detailed reports on the progress of the Bolshevik Revolution. Moreover, Ambassador William Dodd (U.S. ambassador to Germany in the Hitler era) said that Crane had an active role in the Kerensky phase of the revolution; the Steffens letters confirm that Crane saw the Kerensky phase as only one step in a continuing

revolution.

The interesting point, however, is not so much the communication among dissimilar persons like Crane, Steffens, Trotsky, and Woodrow Wilson as the existence of at least a measure of agreement on the procedure to be followed — that is, the Provisional Government was seen as "provisional," and the "re-revolution" was to follow.

On the other side of the coin, interpretation of Trotsky's intentions should be cautious: he was adept at double games. Official documentation clearly demonstrates contradictory actions. For example, the Division of Far Eastern Affairs in the U.S. State Department received on March 23, 1918, two reports stemming from Trotsky; one is inconsistent with the other. One report, dated March 20 and from Moscow, originated in the Russian newspaper *Russkoe Slovo.* The report cited an interview with Trotsky in which he stated that any alliance with the United States was impossible:

> The Russia of the Soviet cannot align itself... with capitalistic America for this would be a betrayal It is possible that Americans seek such an rapprochement with us, driven by its antagonism towards Japan, but in any case there can be no question of an alliance by us of any nature with a bourgeoisie nation.[24]

The other report, also originating in Moscow, is a message dated March 17, 1918, three days earlier, and from Ambassador Francis: "Trotsky requests five American officers as inspectors of army being organized for defense also requests railroad operating men and equipment."[25]

This request to the U.S. is of course inconsistent with rejection of an "alliance."

Before we leave Trotsky some mention should be made of the Stalinist show trials of the 1930s and, in particular, the 1938 accusations and trial of the "Anti-Soviet bloc of rightists and Trotskyites." These forced parodies of the judicial process, almost unanimously rejected in the West, may throw light on Trotsky's intentions.

The crux of the Stalinist accusation was that Trotskyites were paid agents of international capitalism. K. G. Rakovsky, one of the 1938 defendants, said, or was induced to say, "We were the vanguard of foreign aggression, of international fascism, and not only in the USSR but also in Spain, China, throughout the world." The summation of the "court" contains the statement, "There is not a single man in the world who brought so much sorrow and misfortune to people as Trotsky. He is the vilest agent of fascism .... "[26]

Now while this may be no more than verbal insults routinely traded among the international Communists of the 1930s and 40s, it is also notable that the threads behind the self-accusation are consistent with the evidence in this chapter. And further, as we shall see later, Trotsky was able to generate support among international capitalists, who, incidentally, were also supporters of Mussolini and Hitler.[27]

So long as we see all international revolutionaries and all international capitalists as implacable enemies of one another, then we miss a crucial point — that there has indeed been some

operational cooperation between international capitalists, including fascists. And there is no a priori reason why we should reject Trotsky as a part of this alliance.

This tentative, limited reassessment will be brought into sharp focus when we review the story o£ Michael Gruzenberg, the chief Bolshevik agent in Scandinavia who under the alias of Alexander Gumberg was also a confidential adviser to the Chase National Bank in New York and later to Floyd Odium of Atlas Corporation. This dual role was known to and accepted by both the Soviets and his American employers. The Gruzenberg story is a case history of international revolution allied with international capitalism.

Colonel MacLean's observations that Trotsky had "strong underground influence" and that his "power was so great that orders were issued that he must be given every consideration" are not at all inconsistent with the Coulter-Gwatkin intervention in Trotsky's behalf; or, for that matter, with those later occurrences, the Stalinist accusations in the Trotskyite show trials of the 1930s. Nor are they inconsistent with the Gruzenberg case. On the other hand, the only known direct link between Trotsky and international banking is through his cousin Abram Givatovzo, who was a private banker in Kiev before the Russian Revolution and in Stockholm after the revolution. While Givatovzo professed antibolshevism, he was in fact acting in behalf of the Soviets in 1918 in currency transactions.[28]

Is it possible an international web (:an be spun from these events? First there's Trotsky, a Russian internationalist revolutionary with German connections who sparks assistance from two supposed supporters of Prince Lvov's government in Russia (Aleinikoff and Wolf, Russians resident in New York). These two ignite the action of a liberal Canadian deputy postmaster general, who in turn intercedes with a prominent British Army major general on the Canadian military staff. These are all verifiable links.

In brief, allegiances may not always be what they are called, or appear. We can, however, *surmise* that Trotsky, Aleinikoff, Wolf, Coulter, and Gwatkin in acting for a common limited objective also had some common higher goal than national allegiance or political label. To emphasize, there is no absolute proof that this is so. It is, at the moment, only a logical supposition from the facts. A loyalty higher than that forged by a common immediate goal need have been no more than that of friendship, although that strains the imagination when we ponder such a polyglot combination. It may also have been promoted by other motives. The picture is yet incomplete.

Footnotes:

[1]Leon Trotsky, *My Life* (New York: Scribner's, 1930), chap. 22.

[2]Joseph Nedava, *Trotsky and the Jews* (Philadelphia: Jewish Publication Society of America, 1972), p. 163.

[3]United States, Senate, *Brewing and Liquor Interests and German and*

Bolshevik Propaganda (Subcommittee on the Judiciary), 65th Cong., 1919.

[4]Special Report No. 5, *The Russian Soviet Bureau in the United States,* July 14, 1919, Scotland House, London S.W.I. Copy in U.S. State Dept. Decimal File, 316-23-1145.

[5]*New York Times,* March 5, 1917.

[6]Lewis Corey, *House of Morgan: A Social Biography of the Masters of Money* (New York: G. W. Watt, 1930).

[7]Morris Hillquit. (formerly Hillkowitz) had been defense attorney for Johann Most, alter the assassination of President McKinley, and in 1917 was a leader of the New York Socialist Party. In the 1920s Hillquit established himself in the New York banking world by becoming a director of, and attorney for, the International Union Bank. Under President Franklin D. Roosevelt, Hillquit helped draw up the NRA codes for the garment industry.

[8]*New York Times,* March 16, 1917.

[9]U.S. State Dept. Decimal File, 316-85-1002.

[10]Ibid.

[11]Ibid., 861.111/315.

[12]Lincoln Steffens, *Autobiography* (New York: Harcourt, Brace, 1931), p. 764. Steffens was the "go-between" for Crane and Woodrow Wilson.

[13]William Edward Dodd, *Ambassador Dodd's Diary, 1933-1938* (New York: Harcourt, Brace, 1941), pp. 42-43.

[14]Lincoln Steffens, *The Letters of Lincoln Steffens* (New York: Harcourt, Brace, 1941), p. 396.

[15]U.S. State Dept. Decimal File, 861.00/1026.

[16]This section is based on Canadian government records.

[17]Gwatkin's memoramada in the Canadian government files are not signed, but initialed with a cryptic mark or symbol. The mark has been identified as Gwatkin's because one Gwatkin letter (that o[April 21) with that cryptic mark was acknowledged.

[18]H.J. Morgan, *Canadian Men and Women of the Times, 1912*, 2 vols. (Toronto: W. Briggs, 1898-1912).

[19]June 1919, pp. 66a-666. Toronto Public Library has a copy; the issue of *MacLean's* in which Colonel MacLean's article appeared is not easy to find and a frill summary is provided below.

[20]See also Trotsky, *My Life*, p. 236.

[21]See Appendix 3.

[22]According to his own account, Trotsky did not arrive in the U.S. until January 1917. Trotsky's real name was Bronstein; he invented the name "Trotsky." "Bronstein" is German and "Trotsky" is Polish rather than Russian. His first name is usually given as "Leon"; however, Trotsky's first book, which was published in Geneva, has the initial "N," not "L."

[23]See Appendix 3; this document was obtained in 1971 from the British Foreign Office but apparently was known to MacLean.

[24]U.S. State Dept. Decimal File, 861.00/1351.

[25]U.S. State Dept. Decimal File, 861.00/1341.

[26]*Report of Court Proceedings in the Case of the Anti-Soviet "Bloc of Rightists and Trotskyites" Heard Before the Military Collegium of the Supreme Court of the USSR* (Moscow: People's Commissariat of Justice of the USSR, 1938), p. 293.

[27]See p. 174. Thomas Lamont of the Morgans was an early supporter of Mussolini.

[28]See p. 122.

BACK

Chapter III

LENIN AND GERMAN ASSISTANCE FOR THE BOLSHEVIK REVOLUTION

> **It was not until the Bolsheviks had received from us a steady flow of funds through various channels and under varying labels that they were in a position to be able to build up their main organ *Pravda,* to conduct energetic propaganda and appreciably to extend the originally narrow *base* of their party.**
>
> *Von Kühlmann, minister of foreign affairs, to the kaiser, December 3, 1917*

In April 1917 Lenin and a party of 32 Russian revolutionaries, mostly Bolsheviks, journeyed by train from Switzerland across Germany through Sweden to Petrograd, Russia. They were on their way to join Leon Trotsky to "complete the revolution." Their trans-Germany transit was approved, facilitated, and financed by the German General Staff. Lenin's transit to Russia was part of a plan approved by the German Supreme Command, apparently not immediately known to the kaiser, to aid in the disintegration of the Russian army and so eliminate Russia from World War I. The possibility that the Bolsheviks might be turned against Germany and Europe did not occur to the German General Staff. Major General Hoffman has written, *"We* neither knew nor foresaw the danger to humanity from the consequences of this journey of the Bolsheviks to Russia."[1]

At the highest level the German political officer who approved Lenin's journey to Russia was Chancellor Theobald von Bethmann-Hollweg, a descendant of the Frankfurt banking family Bethmann, which achieved great prosperity in the nineteenth century. Bethmann-Hollweg was appointed chancellor in 1909 and in November 1913 became the subject of the first vote of censure ever passed by the German Reichstag on a chancellor. It was Bethmann-Hollweg who in 1914 told the world that the German guarantee to Belgium was a mere "scrap of paper." Yet on other war matters —such as the use of unrestricted submarine warfare —Bethmann-Hollweg was ambivalent; in January 1917 he told the kaiser, "I can give Your Majesty neither my assent to the unrestricted submarine warfare nor my refusal." By 1917 Bethmann-Hollweg had lost the Reichstag's support and resigned —but not before approving transit of Bolshevik revolutionaries to Russia. The transit instructions from Bethmann-Hollweg went through the state secretary Arthur Zimmermann —who was immediately under Bethmann-Hollweg and who handled day-to-day operational details with the German ministers in both Bern and Copenhagen —to the German minister to Bern in early April 1917. The kaiser himself was not aware of the revolutionary movement until after Lenin had passed into Russia.

While Lenin himself did not know the precise source of the assistance, he certainly knew that the German government was providing some funding. There were, however, intermediate links between the German foreign ministry and Lenin, as the following shows:

LENIN'S TRANSFER TO RUSSIA IN APRIL 1917

Final decision	BETHMANN-HOLLWEG (Chancellor)
Intermediary I	ARTHUR ZIMMERMANN (State Secretary)
Intermediary II	BROCKDORFF-RANTZAU (German Minister in Copenhagen)
Intermediary III	ALEXANDER ISRAEL HELPHAND (alias PARVUS)
Intermediary IV	JACOB FURSTENBERG (alias GANETSKY) LENIN, in Switzerland

From Berlin Zimmermann and Bethmann-Hollweg communicated with the German minister in Copenhagen, Brockdorff-Rantzau. In turn, Brockdorff-Rantzau was in touch with Alexander Israel Helphand (more commonly known by his alias, Parvus), who was located in Copenhagen.[2] Parvus was the connection to Jacob Furstenberg, a Pole descended from a wealthy family but better known by his alias, Ganetsky. And Jacob Furstenberg was the immediate link to Lenin.

Although Chancellor Bethmann-Hollweg was the final authority for Lenin's transfer, and although Lenin was probably aware of the German origins of the assistance, Lenin cannot be termed a German agent. The German Foreign Ministry assessed Lenin's probable actions in Russia as being consistent with their own objectives in the dissolution of the existing power structure in Russia. Yet both parties also had hidden objectives: Germany wanted priority access to the postwar markets in Russia, and Lenin intended to establish a Marxist dictatorship.

The idea of using Russian revolutionaries in this way can be traced back to 1915. On August 14 of that year, Brockdorff-Rantzau wrote the German state undersecretary about a conversation with Helphand (Parvus), and made a strong recommendation to employ Helphand, *"an* extraordinarily important man whose unusual powers I feel we *must* employ for duration of the war .... "[3] Included in the report was a warning: *"It might perhaps be* risky to want to use the powers ranged behind Helphand, but it would certainly be an admission of our own weakness if we were to refuse their services out of fear of not being able to *direct* them."[4]

Brockdorff-Rantzau's ideas of directing or controlling the revolutionaries parallel, as we shall see, those of the Wall Street financiers. It was J.P. Morgan and the American International Corporation that attempted to control both domestic and foreign revolutionaries in the United States for their own purposes.

A subsequent document[5] outlined the terms demanded by Lenin, of which the most interesting was point number seven, which allowed "Russian troops to move into India"; this suggested that Lenin intended to continue the tsarist expansionist program. Zeman also records the role of

Max Warburg in establishing a Russian publishing house and adverts to an agreement dated August 12, 1916, in which the German industrialist Stinnes agreed to contribute two million rubles for financing a publishing house in Russia.[6]

Consequently, on April 16, 1917, a trainload of thirty-two, including Lenin, his wife Nadezhda Krupskaya, Grigori Zinoviev, Sokolnikov, and Karl Radek, left the Central Station in Bern en route to Stockholm. When the party reached the Russian frontier only Fritz Plattan and Radek were denied entrance into Russia. The remainder of the party was allowed to enter. Several months later they were followed by almost 200 Mensheviks, including Martov and Axelrod.

It is worth noting that Trotsky, at that time in New York, also had funds traceable to German sources. Further, Von Kuhlmann alludes to Lenin's inability to broaden the base of his Bolshevik party until the Germans supplied funds. Trotsky was a Menshevik who turned Bolshevik only in 1917. This suggests that German funds were perhaps related to Trotsky's change of party label.

THE SISSON DOCUMENTS

In early 1918 Edgar Sisson, the Petrograd representative of the U.S. Committee on Public Information, bought a batch of Russian documents purporting to prove that Trotsky, Lenin, and the other Bolshevik revolutionaries were not only in the pay of, but also agents of, the German government.

These documents, later dubbed the "Sisson Documents," were shipped to the United States in great haste and secrecy. In Washington, D.C. they were submitted to the National Board for Historical Service for authentication. Two prominent historians, J. Franklin Jameson and Samuel N. Harper, testified to their genuineness. These historians divided the Sisson papers into three groups. Regarding Group I, they concluded:

> We have subjected them with great care to all the applicable tests to which historical students are accustomed and . . . upon the basis of these investigations, we have no hesitation in declaring that we see no reason to doubt the genuineness or authenticity of these fifty-three documents.[7]

The historians were less confident about material in Group II. This group was not rejected as. outright forgeries, but it was suggested that they were copies of original documents. Although the historians made "no confident declaration" on Group III, they were not prepared to reject the documents as outright forgeries.

The Sisson Documents were published by the Committee on Public Information, whose chairman was George Creel, a former contributor to the pro-Bolshevik *Masses.* The American press in general accepted the documents as authentic. The notable exception was the *New York Evening Post,* at that time owned by Thomas W. Lamont, a partner in the Morgan firm. When only a few installments had been published, the *Post* challenged the authenticity of all the documents.[8]

We now know that the Sisson Documents were almost all forgeries: only one or two of the minor German circulars were genuine. Even casual examination of the German letterhead suggests that the forgers were unusually careless forgers perhaps working for the gullible American market. The German text was strewn with terms verging on the ridiculous: for example, *Bureau* instead of the German word *Büro; Central* for the German *Zentral;* etc.

That the documents are forgeries is the conclusion of an exhaustive study by George Kennan[9] and of studies made in the 1920s by the British government. Some documents were based on authentic information and, as Kennan observes, those who forged them certainly had access to some unusually good information. For example, Documents 1, 54, 61, and 67 mention that the Nya Banken in Stockholm served as the conduit for Bolshevik funds from Germany. This conduit has been confirmed in more reliable sources. Documents 54, 63, and 64 mention Furstenberg as the banker-intermediary between the Germans and the Bolshevists; Furstenberg's name appears elsewhere in authentic documents. Sisson's Document 54 mentions Olof Aschberg, and Olof Aschberg by his own statements was the "Bolshevik Banker." Aschberg in 1917 was the director of Nya Banken. Other documents in the Sisson series list names and institutions, such as the German Naptha-Industrial Bank, the Disconto Gesellschaft, and Max Warburg, the Hamburg banker, but hard supportive evidence is more elusive. In general, the Sisson Documents, while themselves outright forgeries, are nonetheless based partly on generally authentic information.

One puzzling aspect in the light of the story in this book is that the documents came to Edgar Sisson from Alexander Gumberg (alias Berg, real name Michael Gruzenberg), the Bolshevik agent in Scandinavia and later a confidential assistant to Chase National Bank and Floyd Odium of Atlas Corporation. The Bolshevists, on the other hand, stridently repudiated the Sisson material. So did John Reed, the American representative on the executive of the Third International and whose paycheck came from *Metropolitan* magazine, which was owned by J.P. Morgan interests.[10] So did Thomas Lamont, the Morgan partner who owned the *New York Evening Post.* There are several possible explanations. Probably the connections between the Morgan interests in New York and such agents as John Reed and Alexander Gumberg were highly flexible. This *could* have been a Gumberg maneuver to discredit Sisson and Creel by planting forged documents; or perhaps Gumberg was working in his own interest.

The Sisson Documents "prove" exclusive German involvement with the Bolsheviks. They also have been used to "prove" a Jewish-Bolshevik conspiracy theory along the lines of that of the Protocols of Zion. In 1918 the U.S. government wanted to unite American opinion behind an unpopular war with Germany, and the Sisson Documents dramatically "proved" the exclusive complicity of Germany with the Bolshevists. The documents also provided a smoke screen against public knowledge of the events to be described in this book.

THE TUG-OF-WAR IN WASHINGTON[11]

A review of documents in the State Department Decimal File suggests that the State Department and Ambassador Francis in Petrograd were quite well informed about the intentions and progress of the Bolshevik movement. In the summer of 1917, for example, the State Department wanted to stop the departure from the U.S. of "injurious persons" (that is, returning Russian revolutionaries) but was unable to do so because they were using new

Russian and American passports. The preparations for the Bolshevik Revolution itself were well known at least six weeks before it came about. One report in the State Department files states, in regard to the Kerensky forces, that it was "doubtful whether government . . . [can] suppress outbreak." Disintegration of the Kerensky government was reported throughout September and October as were Bolshevik preparations for a coup. The British government warned British residents in Russia to leave at least six weeks before the Bolshevik phase of the revolution.

The first full report of the events of early November reached Washington on December 9, 1917. This report described the low-key nature of the revolution itself, mentioned that General William V. Judson had made an unauthorized visit to Trotsky, and pointed out the presence of Germans in Smolny — the Soviet headquarters.

On November 28, 1917, President Woodrow Wilson ordered no interference with the Bolshevik Revolution. This instruction was apparently in response to a request by Ambassador Francis for an Allied conference, to which Britain had already agreed. The State Department argued that such a conference was impractical. There were discussions in Paris between the Allies and Colonel Edward M. House, who reported these to Woodrow Wilson as "long and frequent discussions on Russia." Regarding such a conference, House stated that England was "passively willing," France *"in*differently against," and Italy "actively so." Woodrow Wilson, shortly thereafter, approved a cable authored by Secretary of State Robert Lansing, which provided financial assistance for the Kaledin movement (December 12, 1917). There were also rumors filtering into Washington that "monarchists working with the Bolsheviks and same supported by various occurrences and circumstances"; that the Smolny government was absolutely under control of the German General Staff; and rumors elsewhere that "many or most of them [that is, Bolshevists] are from America."

In December, General Judson again visited Trotsky; this was looked upon as a step towards recognition by the U.S., although a report dated February 5, 1918, from Ambassador Francis to Washington, recommended against recognition. A memorandum originating with Basil Miles in Washington argued that "we should deal with all authorities in Russia including Bolsheviks." And on February 15, 1918, the State Department cabled Ambassador Francis in Petrograd, stating that the "department desires you gradually to keep in somewhat closer and informal touch with the Bolshevik authorities using such channels as will avoid any official recognition."

The next day Secretary of State Lansing conveyed the following to the French ambassador J. J. Jusserand in Washington: *"It* is considered inadvisable to take any action which will antagonize at this time any of the various elements of the people which now control the power in Russia .... "[12]

On February 20, Ambassador Francis cabled Washington to report the approaching end of the Bolshevik government. Two weeks later, on March 7, 1918, Arthur Bullard reported to Colonel House that German money was subsidizing the Bolsheviks and that this subsidy was more substantial than previously thought. Arthur Bullard (of the U.S. Committee on Public Information) argued: *"we* ought to be ready to help any honest national government. But men or money or equipment sent to the present rulers of Russia will be used against Russians at least as much as against Germans."[13]

This was followed by another message from Bullard to Colonel House: "I strongly advise against giving material help to the present Russian government. Sinister elements in Soviets seem to be gaining control."

But there were influential counterforces at work. As early as November 28, 1917, Colonel House cabled President Woodrow Wilson from Paris that it was "exceedingly important" that U.S. newspaper comments advocating that "Russia should be treated as an enemy" be "suppressed." Then next month William Franklin Sands, executive secretary of the Morgan-controlled American International Corporation and a friend of the previously mentioned Basil Miles, submitted a memorandum that described Lenin and Trotsky as appealing to the masses and that urged the U.S. to recognize Russia. Even American socialist Walling complained to the Department of State about the pro-Soviet attitude of George Creel (of the U.S. Committee on Public Information), Herbert Swope, and William Boyce Thompson (of the Federal Reserve Bank of New York).

On December 17, 1917, there appeared in a Moscow newspaper an attack on Red Cross colonel Raymond Robins and Thompson, alleging a link between the Russian Revolution and American bankers:

> Why are they so interested in enlightenment? Why was the money given the socialist revolutionaries and not to the constitutional democrats? One would suppose the latter nearer and dearer to hearts of bankers.

The article goes on to argue that this was because American capital viewed Russia as a future market and thus wanted to get a firm foothold. The money was given to the revolutionaries because

> the backward working men and peasants trust the social revolutionaries. At the time when the money was passed the social revolutionaries were in power and it was supposed they would remain in control in Russia for some time.

Another report, dated December 12, 1917, and relating to Raymond Robins, details "negotiation with a group of American bankers of the American Red Cross Mission"; the "negotiation" related to a payment of two million dollars. On January 22, 1918, Robert L Owen, chairman of the U.S. Senate Committee on Banking and Currency and linked to Wall Street interests, sent a letter to Woodrow Wilson recommending de facto recognition of Russia, permission for a shipload of goods urgently needed in Russia, the appointment of representatives to Russia to offset German influence, and the establishment of a career-service group in Russia.

This approach was consistently aided by Raymond Robins in Russia. For example, on February 15, 1918, a cable from Robins in Petrograd to Davison in the Red Cross in Washington (and to be forwarded to William Boyce Thompson) argued that support be given to the Bolshevik authority for as long as possible, and that the new revolutionary Russia will turn to the United States as it has "broken with the German imperialism." According to Robins, the Bolsheviks wanted United States assistance and cooperation together with railroad reorganization, because

"by generous assistance and technical advice in reorganizing commerce and industry America may entirely exclude German commerce during balance of war."

In brief, the tug-of-war in Washington reflected a struggle between, on one side, old-line diplomats (such as Ambassador Francis) and lower-level departmental officials, and, on the other, financiers like Robins, Thompson, and Sands with allies such as Lansing and Miles in the State Department and Senator Owen in the Congress.

Footnotes:

[1]Max Hoffman, *War Diaries and Other Papers (London:* M. Secker, 1929), 2:177.

[2]Z. A. B. Zeman and W. B. Scharlau, *The Merchant of Revolution.. The Life of A1exander Israel Helphand (Parvus), 1867-1924* (New York: Oxford University Press, 1965).

[3]Z. A. B. Zeman, *Germany and the Revolution in Russia, 1915-1918. Documents from the Archives of the German Foreign Ministry* (London: Oxford University Press, 1958), p. ????5.

[4]Ibid.

[5]Ibid., p. 6, doc. 6, reporting a conversation with the Fstonian intermediary Keskula.

[6]Ibid., p. 92, n. 3.

[7]U.S., Committee on Public Information, *The German-Bolshevik Conspiracy,* War Information Series, no. 20, October 1918.

[8]*New York Evening Post,* September 16-18, 21; October 4, 1918. It is also interesting, but not conclusive of anything, that the Bolsheviks also stoutly questioned the authenticity of the documents.

[9]George F. Kennan, "The Sisson Documents," *Journal of Modern History* 27-28 (1955-56): 130-154.

[10]John Reed, *The Sisson Documents* (New York: Liberator Publishing, n.d.).

[11]This part is based on section 861.00 o[the U.S. State Dept. Decimal File, also available as National Archives rolls 10 and 11 of microcopy 316.

[12]U.S. State Dept. Decimal File, 861.00/1117a. The same message was conveyed to the Italian ambassador.

[13]See Arthur Bullard papers at Princeton University.

BACK

Chapter IV

WALL STREET AND WORLD REVOLUTION

> **What you Radicals and we who hold opposing views differ about, is not so much the end as the means, not so much what should be brought about as how it should, and can, be brought about ....**
>
> *Otto H. Kahn, director, American International Corp., and partner, Kuhn, Loeb & Co., speaking to the League/or Industrial Democracy, New York, December 30, 1924*

Before World War I, the financial and business structure of the United States was dominated by two conglomerates: Standard Oil, or the Rockefeller enterprise, and the Morgan complex of industries — finance and transportation companies. Rockefeller and Morgan trust alliances dominated not only Wall Street but, through interlocking directorships, almost the entire economic fabric of the United States.[1] Rockefeller interests monopolized the petroleum and allied industries, and controlled the copper trust, the smelters trust, and the gigantic tobacco trust, in addition to having influence in some Morgan properties such as the U.S. Steel Corporation as well as in hundreds of smaller industrial trusts, public service operations, railroads, and banking institutions. National City Bank was the largest of the banks influenced by Standard Oil-Rockefeller, but financial control extended to the United States Trust Company and Hanover National Bank as well as to major life insurance companies — Equitable Life and Mutual of New York.

The great Morgan enterprises were in steel, shipping, and the electrical industry; they included General Electric, the rubber trust, and railroads. Like Rockefeller, Morgan controlled financial corporations — the National Bank of Commerce and the Chase National Bank, New York Life Insurance, and the Guaranty Trust Company. The names J.P. Morgan and Guaranty Trust Company occur repeatedly throughout this book. In the early part of the twentieth century the Guaranty Trust Company was dominated by the Harriman interests. When the elder Harriman (Edward Henry) died in 1909, Morgan and associates bought into Guaranty Trust as well as into Mutual Life and New York Life. In 1919 Morgan also bought control of Equitable Life, and the Guaranty Trust Company absorbed an additional six lesser trust companies. Therefore, at the end of World War I the Guaranty Trust and Bankers Trust were, respectively, the first and second largest trust companies in the United States, both dominated by Morgan interests.[2]

American financiers associated with these groups were involved in financing revolution even before 1917. Intervention by the Wall Street law firm of Sullivan & Cromwell into the Panama Canal controversy is recorded in 1913 congressional hearings. The episode is summarized by Congressman Rainey:

> It is my contention that the representatives of this Government [United States] made possible the revolution on the isthmus of Panama. That had it not been

> for the interference of this Government a successful revolution could not possibly have occurred, and I contend that this Government violated the treaty of 1846. I will be able to produce evidence to show that the declaration of independence which was promulgated in Panama on the 3rd day of November, 1903, was prepared right here in New York City and carried down there — prepared in the office of Wilson (sic) Nelson Cromwell ....[3]

Congressman Rainey went on to state that only ten or twelve of the top Panamanian revolutionists plus "the officers of the Panama Railroad & Steamship Co., who were under the control of William Nelson Cromwell, of New York and the State Department officials in Washington," knew about the impending revolution.[4] The purpose of the revolution was to deprive Colombia, of which Panama was then a part, of $40 million and to acquire control of the Panama Canal.

The best-documented example of Wall Street intervention in revolution is the operation of a New York syndicate in the Chinese revolution of 1912, which was led by Sun Yat-sen. Although the final gains of the syndicate remain unclear, the intention and role of the New York financing group are fully documented down to amounts of money, information on affiliated Chinese secret societies, and shipping lists of armaments to be purchased. The New York bankers syndicate for the Sun Yat-sen revolution included Charles B. Hill, an attorney with the law firm of Hunt, Hill & Betts. In 1912 the firm was located at 165 Broadway, New York, but in 1917 it moved to 120 Broadway (see chapter eight for the significance of this address). Charles B. Hill was director of several Westinghouse subsidiaries, including Bryant Electric, Perkins Electric Switch, and Westinghouse Lamp —all affiliated with Westinghouse Electric whose New York office was also located at 120 Broadway. Charles R. Crane, organizer of Westinghouse subsidiaries in Russia, had a known role in the first and second phases of the Bolshevik Revolution (see page 26).

The work of the 1910 Hill syndicate in China is recorded in the Laurence Boothe Papers at the Hoover Institution.[5] These papers contain over 110 related items, including letters of Sun Yat-sen to and from his American backers. In return for financial support, Sun Yat-sen promised the Hill syndicate railroad, banking, and commercial concessions in the new revolutionary China.

Another case of revolution supported by New York financial institutions concerned that of Mexico in 1915-16. Von Rintelen, a German espionage agent in the United States,[6] was accused during his May 1917 trial in New York City of attempting to "embroil" the U.S. with Mexico and Japan in order to divert ammunition then flowing to the Allies in Europe.[7] Payment for the ammunition that was shipped from the United States to the Mexican revolutionary Pancho Villa, was made through Guaranty Trust Company. Von Rintelen's adviser, Sommerfeld, paid $380,000 via Guaranty Trust and Mississippi Valley Trust Company to the Western Cartridge Company of Alton, Illinois, for ammunition shipped to El Paso, for forwarding to Villa. This was in mid-1915. On January 10, 1916, Villa murdered seventeen American miners at Santa Isabel and on March 9, 1916, Villa raided Columbus, New Mexico, and killed eighteen more Americans.

Wall Street involvement in these Mexican border raids was the subject of a letter (October 6, 1916) from Lincoln Steffens, an American Communist, to Colonel House, an aide' to Woodrow

Wilson:

> My dear Colonel House:
>
> Just before I left New York last Monday, I was told convincingly that "Wall Street" had completed arrangements for one more raid of Mexican bandits into the United States: to be so timed and so atrocious that it would settle the election ....[8]

Once in power in Mexico, the Carranza government purchased additional arms in the United States. The American Gun Company contracted to ship 5,000 Mausers and a shipment license was issued by the War Trade Board for 15,000 guns and 15,000,000 rounds of ammunition. The American ambassador to Mexico, Fletcher, "flatly refused to recommend or sanction the shipment of any munitions, rifles, etc., to Carranza."[9] However, intervention by Secretary of State Robert Lansing reduced the barrier to one of a temporary delay, and "in a short while . . . [the American Gun Company] would be permitted to make the shipment and deliver."[10]

The raids upon the U.S. by the Villa and the Carranza forces were reported in the *New York Times* as the "Texas Revolution" (a kind of dry run for the Bolshevik Revolution) and were undertaken jointly by Germans and Bolsheviks. The testimony of John A. Walls, district attorney of Brownsville, Texas, before the 1919 Fall Committee yielded documentary evidence of the link between Bolshevik interests in the United States, German activity, and the Carranza forces in Mexico.[11] Consequently, the Carranza government, the first in the world with a Soviet-type constitution (which was written by Trotskyites), was a government with support on Wall Street. The Carranza revolution probably could not have succeeded without American munitions and Carranza would not have remained in power as long as he did without American help.[12]

Similar intervention in the 1917 Bolshevik Revolution in Russia revolves around Swedish banker and intermediary Olof Aschberg. Logically the story begins with prerevolutionary tsarist loans by Wall Street bank syndicates.

AMERICAN BANKERS AND TSARIST LOANS

In August 1914 Europe went to war. Under international law neutral countries (and the United States was neutral until April 1917) could not raise loans for belligerent countries. This was a question of law as well as morality.

When the Morgan house floated war loans for Britain and France in 1915, J.P. Morgan argued that these were not war loans at all but merely a means of facilitating international trade. Such a distinction had indeed been elaborately made by President Wilson in October 1914; he explained that the sale of bonds in the U.S. for foreign governments was in effect a loan of savings to belligerent governments and did not finance a war. On the other hand, acceptance of Treasury notes or other evidence of debt in payment for articles was only a means of facilitating trade and not of financing a war effort.[13]

Documents in the State Department files demonstrate that the National City Bank, controlled by Stillman and Rockefeller interests, and the Guaranty Trust, controlled by Morgan interests, jointly raised substantial loans for the belligerent Russia before U.S. entry into the war, and that these loans were raised *alter* the State Department pointed out to these firms that they were contrary to international law. Further, negotiations for the loans were undertaken through official U.S. government communications facilities under cover of the top-level "Green Cipher" of the State Department. Below are extracts from State Department cables that will make the case.

On May 94, 1916, Ambassador Francis in Petrograd sent the following cable to the State Department in Washington for forwardin to Frank Arthur Vanderlip, then chairman of the National City Bank in New York. The cable was sent in Green Cipher and was enciphered and deciphered by U.S. State Department officers in Petrograd and Washington at the taxpayers' expense (file 861.51/110).

> 563, May 94, 1 p.m.
>
> For Vanderlip National City Bank New York. Five. Our previous opinions credit strengthened. We endorse plan cabled as safe investment plus very attractive speculation in roubles. In view of guarantee of exchange rate have placed rate somewhat above present market. Owing unfavorable opinion created by long delay have on own responsibility offered take twenty-five million dollars. We think large portion of all should be retained by bank and allied institutions. With clause respect customs bonds become practical lien on more than one hundred and fifty million dollars per annum customs making absolute security and secures market even if *defect.* We consider three [years?] option on bonds very valuable and for that reason amount of rouble credit should be enlarged by group or by distribution to close friends. American International should take block and we would inform Government. Think group should be formed at once to take and issue of bonds . . . should secure full cooperation guaranty. Suggest you see Jack personally, use every endeavor to get them really work otherwise cooperate guarantee form new group. Opportunities here during the next ten years very great along state and industrial financiering and if this transaction consummated doubtless should be established. In answering bear in mind situation regarding cable. MacRoberts Rich.

FRANCIS, AMERICAN AMBASSADOR[14]

There are several points to note about the above cable to understand the story that follows. First, note the reference to American International Corporation, a Morgan firm, and a name that turns up again and again in this story. Second, "guarantee" refers to Guaranty Trust Company. Third, *"MacRoberts"* was Samuel MacRoberts, a vice president and the executive manager of National City Bank.

On May 24, 1916, Ambassador Francis cabled a message from Rolph Marsh of Guaranty Trust in Petrograd to Guaranty Trust in New York, again in the special Green Cipher and again using

the facilities of the State Department. This cable reads as follows:

> 565, May 24, 6 p.m.
> for Guaranty Trust Company New York:
> Three.
>
> Olof and self consider the new proposition takes care Olof and will help rather than harm your prestige. Situation such co-operation necessary if big things are to be accomplished here. Strongly urge your arranging with City to consider and act jointly in all big propositions here. Decided advantages for both and prevents playing one against other. City representatives here desire (hand written) such co-operation. Proposition being considered eliminates our credit in name also option but we both consider the rouble credit with the bond option in propositions. Second paragraph offers wonderful profitable opportunity, strongly urge your acceptance. Please cable me full authority to act in connection with City. Consider our entertaining proposition satisfactory situation for us and permits doing big things. Again strongly urge your taking twenty-five million of rouble credit. No possibility loss and decided speculative advantages. Again urge having Vice President upon the ground. Effect here will be decidedly good. Resident Attorney does not carry same prestige and weight. This goes through Embassy by code answer same way. See cable on possibilities.
>
> ROLPH MARSH.
> FRANCIS,
> AMERICAN AMBASSADOR
>
> Note:—
>
> Entire Message in Green Cipher.
> TELEGRAPH ROOM[15]

"Olof" in the cable was Olof Aschberg, Swedish banker and head of the Nya Banken in Stockholm. Aschberg had been in New York in 1915 conferring with the Morgan firm on these Russian loans. Now, in 1916, he was in Petrograd with Rolph Marsh of Guaranty Trust and Samuel MacRoberts and Rich of National City Bank ("City" in cable) arranging loans for a Morgan-Rockefeller consortium. The following year, Aschberg, as we shall see later, would be known as the "Bolshevik Banker," and his own memoirs reproduce evidence of his right to the title.

The State Department files also contain a series of cables between Ambassador Francis, Acting Secretary Frank Polk, and Secretary of State Robert Lansing concerning the legality and propriety of transmitting National City Bank and Guaranty Trust cables at public expense. On May 25, 1916, Ambassador Francis cabled Washington as follows and referred to the two previous cables:

569, May 25, one p.m.

My telegram 563 and 565 May twenty-fourth are sent for local representatives of institutions addressed in the hope of consummating loan which would largely increase international trade and greatly benefit [diplomatic relations?]. Prospect for success promising. Petrograd representatives consider terms submitted very satisfactory but fear such representations to their institutions would prevent consummation loan if Government here acquainted these proposals.

FRANCIS, AMERICAN AMBASSADOR.[16]

The basic reason cited by Francis for facilitating the cables is "the hope of consummating loan which would largely increase international trade." Transmission of commercial messages using State Department facilities had been prohibited, and on June 1, 1916, Polk cabled Francis:

842

In view of Department's regulation contained in its circular telegraphic instruction of March fifteenth, (discontinuance of forwarding Commercial messages)[17] 1915, please explain why messages in your 563, 565 and 575, should be communicated.

Hereafter please follow closely Department's instructions.

Acting.
Polk

861.51/112
/110

Then on June 8, 1916, Secretary of State Lansing expanded the prohibition and clearly stated that the proposed loans were illegal:

860 Your 563, 565, May 24, g: 569 May 25.1 pm Before delivering messages to Vanderlip and Guaranty Trust Company, I must inquire whether they refer to Russian Government loans of any description. If they do, I regret that the Department can not be a party to their transmission, as such action would submit it to justifiable criticism because of participation by this Government in loan transaction by a belligerent for the purpose of carrying on its hostile operations. Such participation is contrary to the accepted rule of international law that neutral Governments should not lend their assistance to the raising of war loans by belligerents.

The last line of the Lansing cable as written, was not transmitted to Petrograd. The line read: "Cannot arrangements be made to send these messages through Russian channels?"

How can we assess these cables and the parties involved?

Clearly the Morgan-Rockefeller interests were not interested in abiding by international law. There is obvious intent in these cables to supply loans to belligerents. There was no hesitation on the part of these firms to use State Department facilities for the negotiations. Further, in spite of protests, the State Department allowed the messages to go through. Finally, and most interesting for subsequent events, Olof Aschberg, the Swedish banker, was a prominent participant and intermediary in the negotiations on behalf of Guaranty Trust. Let us therefore take a closer look at Olof Aschberg.

OLOF ASCHBERG IN NEW YORK, 1916

Olof Aschberg, the "Bolshevik Banker" (or "Bankier der Weltrevolution," as he has been called in the German press), was owner of the Nya Banken, founded 1912 in Stockholm. His codirectors included prominent members of Swedish cooperatives and Swedish socialists, including G. W. Dahl, K. G. Rosling, and C. Gerhard Magnusson.[18] In 1918 Nya Banken was placed on the Allied black-list for its financial operations in behalf of Germany. In response to the blacklisting, Nya Banken changed its name to Svensk Ekonomiebolaget. The bank remained under the control of Aschberg, and was mainly owned by him. The bank's London agent was the British Bank of North Commerce, whose chairman was Earl Grey, former associate of Cecil Rhodes. Others in Aschberg's interesting circle of business associates included Krassin, who was until the Bolshevik Revolution (when he changed color to emerge as a leading Bolshevik) Russian manager of Siemens-Schukert in Petrograd; Carl Furstenberg, minister of finance in the first Bolshevik government; and Max May, vice president in charge of foreign operations for Guaranty Trust of New York. Olof Aschberg thought so highly of Max May that a photograph of May is included in Aschberg's book.[19]

In the summer of 1916 Olof Aschberg was in New York representing both Nya Banken and Pierre Bark, the tsarist minister of finance. Aschberg's prime business in New York, according to the *New York Times* (August 4, 1916), was to negotiate a $50 million loan for Russia with an American banking syndicate headed by Stillman's National City Bank. This business was concluded on June 5, 1916; the results were a Russian credit of $50 million in New York at a bank charge of 7 1/2 percent per annum, and a corresponding 150-million-ruble credit for the NCB syndicate in Russia. The New York syndicate then turned around and issued 6 1/2 percent certificates in its own name in the U.S. market to the amount of $50 million. Thus, the NCB syndicate made a profit on the $50 million loan to Russia, floated it on the American market for another profit, and obtained a 150-million-ruble credit in Russia.

During his New York visit on behalf of the tsarist Russian government, Aschberg made some prophetic comments concerning the future for America in Russia:

> The opening for American capital and American initiative, with the awakening brought by the war, will be country-wide when the struggle is over. There are

> now many Americans in Petrograd, representatives of business firms, keeping in touch with the situation, and as soon as the change comes a huge American trade with Russia should spring up.[20]

OLOF ASCHBERG IN THE BOLSHEVIK REVOLUTION

While this tsarist loan operation was being floated in New York, Nya Banken and Olof Aschberg were funneling funds from the German government to Russian revolutionaries, who would eventually bring down the "Kerensky committee" and establish the Bolshevik regime.

The evidence for Olof Aschberg's intimate connection with financing the Bolshevik Revolution comes from several sources, some of greater value than others. The Nya Banken and Olof Aschberg are prominently cited in the Sisson papers (see chapter three); however, George Kennan has systematically analyzed these papers and shown them to be forged, although they are probably based in part on authentic material. Other evidence originates with Colonel B. V. Nikitine, in charge of counterintelligence in the Kerensky government, and consists of twenty-nine telegrams transmitted from Stockholm to Petrograd, and vice versa, regarding financing of the Bolsheviks. Three of these telegrams refer to banks — telegrams 10 and 11 refer to Nya Banken, and telegram 14 refers to the Russo-Asiatic Bank in Petrograd. Telegram 10 reads as follows:

> Gisa Furstenberg Saltsjobaden. Funds very low cannot assist if really urgent give 500 as last payment pencils huge loss original hopeless instruct Nya Banken cable further 100 thousand Sumenson.

Telegram 11 reads:

> Kozlovsky Sergievskaya 81. First letters received Nya Banken telegraphed cable who Soloman offering local telegraphic agency refers to Bronck Savelievich Avilov.

Fürstenberg was the intermediary between Parvus (Alexander I. Helphand) and the German government. About these transfers, Michael Futrell concludes:

> It was discovered that during the last few months she [Evegeniya Sumenson] had received nearly a million rubles from Furstenberg through the Nya Banken in Stockholm, and that this money came from German sources.[21]

Telegram 14 of the Nikitine series reads: "Furstenberg Saltsjöbaden. Number 90 period hundred thousand into Russo-Asiatic Sumenson." The U.S. representative for Russo-Asiatic was MacGregor Grant Company at 120 Broadway, New York City, and the bank was financed by Guaranty Trust in the U.S. and Nya Banken in Sweden.

Another mention of the Nya Banken is in the material "The Charges Against the Bolsheviks," which was published in the Kerensky period. Particularly noteworthy in that material is a

document signed by Gregory Alexinsky, a former member of the Second State Duma, in reference to monetary transfers to the Bolsheviks. The document, in part, reads as follows:

> In accordance with the information just received these trusted persons in Stockholm were: the Bolshevik Jacob Furstenberg, better known under the name of "Hanecki" (Ganetskii), and Parvus (Dr. Helfand); in Petrograd: the Bolshevik attorney, M. U. Kozlovsky, a woman relative of Hanecki — Sumenson, engaged in speculation together with Hanecki, and others. Kozlovsky is the chief receiver of German money, which is transferred from Berlin through the "Disconto-Gesellschaft" to the Stockholm "Via Bank," and thence to the Siberian Bank in Petrograd, where his account at present has a balance of over 2,000,000 rubles. The military censorship has unearthed an uninterrupted exchange of telegrams of a political and financial nature between the German agents and Bolshevik leaders [Stockholm-Petrograd].[22]

Further, there is in the State Dept. files a Green Cipher message from the U.S. embassy in Christiania (named Oslo, 1925), Norway, dated February 21, 1918, that reads: "Am informed that Bolshevik funds are deposited in Nya Banken, Stockholm, Legation Stockholm advised. Schmedeman."[23]

Finally, Michael Furtell, who interviewed Olof Aschberg just before his death, concludes that Bolshevik funds were indeed transferred from Germany through Nya Banken and Jacob Furstenberg in the guise of payment for goods shipped. According to Futrell, Aschberg confirmed to him that Furstenberg had a commercial business with Nya Banken and that Furstenberg had also sent funds to Petrograd. These statements are authenticated in Aschberg's memoirs (see page 70). In sum, Aschberg, through his Nya Banken, was undoubtedly a channel for funds used in the Bolshevik Revolution, and Guaranty Trust was indirectly linked through its association with Aschberg and its interest in MacGregor Grant Co., New York, agent of the Russo-Asiatic Bank, another transfer vehicle.

NYA BANKEN AND GUARANTY TRUST JOIN RUSKOMBANK

Several years later, in the fall of 1922, the Soviets formed their first international bank. It was based on a syndicate that involved the former Russian private bankers and some new investment from German, Swedish, American, and British bankers. Known as the Ruskombank (Foreign Commercial Bank or the Bank of Foreign Commerce), it was headed by Olof Aschberg; its board consisted of tsarist private bankers, representatives of German, Swedish, and American banks, and, of course, representatives of the Soviet Union. The U.S. Stockholm legation reported to Washington on this question and noted, in a reference to Aschberg, that "his reputation is poor. He was referred to in Document 54 of the Sisson documents and Dispatch No. 138 of January 4, 1921 from a legation in Copenhagen."[24]

The foreign banking consortium involved in the Ruskombank represented mainly British capital. It included Russo-Asiatic Consolidated Limited, which was one of the largest private creditors of Russia, and which was granted £3 million by the Soviets to compensate for damage to its properties in the Soviet Union by nationalization. The British government itself had already purchased substantial interests in the Russian private banks; according to a State

Department report, "The British Government is heavily invested in the consortium in question."[25]

The consortium was granted extensive concessions in Russia and the bank had a share capital of ten million gold rubles. A report in the Danish newspaper *National Titende* stated that "possibilities have been created for cooperation with the Soviet government where this, by political negotiations, would have been impossible."[26] In other words, as the newspaper goes on to say, the politicians had failed to achieve cooperation with the Soviets, but "it may be taken for granted that the capitalistic exploitation of Russia is beginning to assume more definite forms."[27]

In early October 1922 Olof Aschberg met in Berlin with Emil Wittenberg, director of the Nationalbank fur Deutschland, and Scheinmann, head of the Russian State Bank. After discussions concerning German involvement in the Ruskombank, the three bankers went to Stockholm and there met with Max May, vice president of the Guaranty Trust Company. Max May was then designated director of the Foreign Division of the Ruskombank, in addition to Schlesinger, former head of the Moscow Merchant Bank; Kalaschkin, former head of the Junker Bank; and Ternoffsky, former head of the Siberian Bank. The last bank had been partly purchased by the British government in 1918. Professor Gustav Cassell of Sweden agreed to act as adviser to Ruskombank. Cassell was quoted in a Swedish newspaper *(Svenskadagbladet* of October 17, 1922) as follows:

> That a bank has now been started in Russia to take care of purely banking matters is a great step forward, and it seems to me that this bank was established in order to do something to create a new economic life in Russia. What Russia needs is a bank to create internal and external commerce. If there is to be any business between Russia and other countries there must be a bank to handle it. This step forward should be supported in every way by other countries, and when I was asked my advice I stated that I was prepared to give it. I am not in favor of a negative policy and believe that every opportunity should be seized to help in a positive reconstruction. The great question is how to bring the Russian exchange back to normal. It is a complicated question and will necessitate thorough investigation. To solve this problem I am naturally more than willing to take part in the work. To leave Russia to her own resources and her own fate is folly.[28]

The former Siberian Bank building in Petrograd was used as the head office of the Ruskombank, whose objectives were to raise short-term loans in foreign countries, to introduce foreign capital into the Soviet Union, and generally to facilitate Russian overseas trade. It opened on December 1, 1922, in Moscow and employed about 300 persons.

In Sweden Ruskombank was represented by the Svenska Ekonomibolaget of Stockholm, Olof Aschberg's Nya Banken under a new name, and in Germany by the Garantie und Creditbank fur Den Osten of Berlin. In the United States the bank was represented by the Guaranty Trust Company of New York. On opening the bank, Olof Aschberg commented:

> The new bank will look after the purchasing of machinery and raw material

> from England and the United States and it will give guarantees for the completion of contracts. The question of purchases in Sweden has not yet arisen, but it is hoped that such will be the case later on.[29]

On joining Ruskombank, Max May of Guaranty Trust made a similar statement:

> The United States, being a rich country with well developed industries, does not need to import anything from foreign countries, but... it is greatly interested in exporting its products to other countries and considers Russia the most suitable market for that purpose, taking into consideration the vast requirements of Russia in all lines of its economic life.[30]

May stated that the Russian Commercial Bank was "very important" and that it would "largely finance all lines of Russian industries."

From the very beginning the operations of the Ruskombank were restricted by the Soviet foreign-trade monopoly. The bank had difficulties in obtaining advances on Russian goods deposited abroad. Because they were transmitted in the name of Soviet trade delegations, a great deal of Ruskombank funds were locked up in deposits with the Russian State Bank. Finally, in early 1924 the Russian Commercial Bank was fused with the Soviet foreign-trade commissariat, and Olof Aschberg was dismissed from his position at the bank because, it was claimed in Moscow, he had misused bank funds. His original connection with the bank was because of his friendship with Maxim Litvinov. Through this association, so runs a State Department report, Olof Aschberg had access to large sums of money for the purpose of meeting payments on goods ordered by Soviets in Europe:

> These sums apparently were placed in the Ekonomibolaget, a private banking company, owned by Mr. Aschberg. It is now alledged [*sic*] that a large portion of these funds were employed by Mr. Aschberg for making investments for his personal account and that he is now endeavoring to maintain his position in the bank through his possession of this money. According to my informant Mr. Aschberg has not been the sole one to profit by his operations with the Soviet funds, but has divided the gains with those who are responsible for his appointment in the Russian Commerce Bank, among them being Litvinoff.[31]

Ruskombank then became Vneshtorg, by which it is known today.

We now have to retrace our steps and look at the activities of Aschberg's New York associate, Guaranty Trust Company, during World War I, to lay the foundation for examination of its role in the revolutionary era in Russia.

GUARANTY TRUST AND GERMAN ESPIONAGE IN THE UNITED STATES, 1914-1917[32]

During World War I Germany raised considerable funds in New York for espionage and covert operations in North America and South America. It is important to record the flow of these

funds because it runs from the same firms — Guaranty Trust and American International Corporation — that were involved in the Bolshevik Revolution and its aftermath. Not to mention the fact (outlined in chapter three) that the German government also financed Lenin's revolutionary activities.

A summary of the loans granted by American banks to German interests in World War I was given to the 1919 Overman Committee of the United States Senate by U.S. Military Intelligence. The summary was based on the deposition of Karl Heynen, who came to the United States in April 1915 to assist Dr. Albert with the commercial and financial affairs of the German government. Heynen's official work was the transportation of goods from the United States to Germany by way of Sweden, Switzerland, and Holland. In fact, he was up to his ears in covert operations.

The major German loans raised in the United States between 1915 and 1918, according to Heynen, were as follows: The first loan, of $400,000, was made about September 1914 by the investment bankers Kuhn, Loeb & Co. Collateral of 25 million marks was deposited with Max M. Warburg in Hamburg, the German affiliate of Kuhn, Loeb & Co. Captain George B. Lester of U.S. Military Intelligence told the Senate that Heynen's reply to the question "Why did you go to Kuhn, Loeb & Co?" was, "Kuhn, Loeb & Co. we considered the natural bankers of the German government and the Reichsbank."

The second loan, of $1.3 million, did not come directly from the United States but was negotiated by John Simon, an agent of the Suedeutsche Disconto-Gesellschaft, to secure funds for making shipments to Germany.

The third loan was from the Chase National Bank (in the Morgan group) in the amount of three million dollars. The fourth loan was from the Mechanics and Metals National Bank in the amount of one million dollars. These loans financed German espionage activities in the United States and Mexico. Some funds were traced to Sommerfeld, who was an adviser to Von Rintelen (another German espionage agent) and who was later associated with Hjalmar Schacht and Emil Wittenberg. Sommerfeld was to purchase ammunition for use in Mexico. He had an account with the Guaranty Trust Company and from this payments were made to Western Cartridge Co. of Alton, Illinois, for ammunition that was shipped to El Paso for use in Mexico by Pancho Villa's bandits. About $400,000 was expended on ammunition, Mexican propaganda, and similar activities.

The then German ambassador Count Von Bernstorff has recounted his friendship with Adolph von Pavenstedt, a senior partner of Amsinck & Co., which was controlled and in November 1917 owned by American International Corporation. American International figures prominently in later chapters; its board of directors contained the key names on Wall Street: Rockefeller, Kahn, Stillman, du Pont, Winthrop, etc. According to Von Bernstorff, Von Pavenstedt was "intimately acquainted with all the members of the Embassy."[33] Von Bernstorff himself regarded Von Pavenstedt as one of the most respected, "if not *the* most respected imperial German in New York."[34] Indeed, Von Pavenstedt was "for many years a Chief pay master of the German spy system in this country."[35] In other words, there is no question that Armsinck & Co., controlled by American International Corporation, was intimately associated with the funding of German wartime espionage in the United States. To clinch Von Bernstorff's last statement, there exists a photograph of a check in favor of Amsinck & Co., dated

December 8, 1917 — just four weeks after the start of the Bolshevik Revolution in Russia — signed Von Papen (another German espionage operator), and having a counterfoil bearing the notation "travelling expenses on Von W [i.e., Von Wedell]." French Strothers,[36] who published the photograph, has stated that this check is evidence that Von Papen "became an accessory after the fact to a crime against American laws"; it also makes Amsinck & Co. subject to a similar charge.

Paul Bolo-Pasha, yet another German espionage agent, and a prominent French financier formerly in the service of the Egyptian government, arrived in New York in March 1916 with a letter of introduction to Von Pavenstedt. Through the latter, Bolo-Pasha met Hugo Schmidt, director of the Deutsche Bank in Berlin and its representative in the United States. One of Bolo-Pasha's projects was to purchase foreign newspapers so as to slant their editorials in favor of Germany. Funds for this program were arranged in Berlin in the form of credit with Guaranty Trust Company, with the credit subsequently made available to Amsinck & Co. Adolph von Pavenstedt, of Amsinck, in turn made the funds available to Bolo-Pasha.

In other words, both Guaranty Trust Company and Amsinck & Co., a subsidiary of American International Corporation, were directly involved in the implementation of German espionage and other activities in the United States. Some links can be established from these firms to each of the major German operators in the U.S. — Dr. Albert, Karl Heynen, Von Rintelen, Von Papan, Count Jacques Minotto (see below), and Paul Bolo-Pasha.

In 1919 the Senate Overman Committee also established that Guaranty Trust had an active role in financing German World War I efforts in an "unneutral" manner. The testimony of the U.S. intelligence officer Becker makes this clear:

> In this mission Hugo Schmidt [of Deutsche Bank] was very largely assisted by certain American banking institutions. It was while we were neutral, but they acted to the detriment of the British interests, and I have considerable data on the activity of the Guaranty Trust Co. in that respect, and would like to know whether the committee wishes me to go into it.
>
> SENATOR NELSON: That is a branch of the City Bank, is it not?
>
> MR. BECKER: No.
>
> SENATOR OVERMAN: If it was inimical to British interests it was unneutral, and I think you had better let it come out.
>
> SENATOR KING: Was it an ordinary banking transaction?
>
> MR. BECKER: That would be a matter of opinion. It has to do with camouflaging exchange so as to make it appear to be neutral exchange, when it was really German exchange on London. As a result of those operations in which the Guaranty Trust Co. mainly participated between August 1, 1914, and the time America entered the war, the Deutsche Banke in its branches in South America succeeded in negotiating £4,670,000 of London exchange in

war time.

SENATOR OVERMAN: I think that is competent.[37]

What is really important is not so much that financial assistance was given to Germany, which was only illegal, as that directors of Guaranty Trust were financially assisting the Allies at the same time. In other words, Guaranty Trust was financing both sides of The conflict. This raises the question of morality.

THE GUARANTY TRUST-MINOTTO-CAILLAUX THREADS. [38]

Count Jacques Minotto is a most unlikely but verifiable and persistent thread that links the Bolshevik Revolution in Russia with German banks, German World War I espionage in the United States, the Guaranty Trust Company in New York, the abortive French Bolshevik revolution, and the related Caillaux-Malvy espionage trials in France.

Jacques Minotto was born February 17, 1891, in Berlin, the son of an Austrian father descended from Italian nobility, and a German mother. Young Minotto was educated in Berlin and then entered employment with the Deutsche Bank in Berlin in 1912. Almost immediately Minotto was sent to the United States as assistant to Hugo Schmidt, deputy director of the Deutsche Bank and its New York representative. After a year in New York, Minotto was sent by the Deutsche Bank to London, where he circulated in prominent political and diplomatic circles. At the outbreak of World War I, Minotto returned to the United States and immediately met with the German ambassador Count Von Bernstorff, after which he entered the employ of Guaranty Trust Company in New York. At Guaranty Trust, Minotto was under the direct orders of Max May, director of its foreign department and an associate of Swedish banker Olof Aschberg. Minotto was no minor bank official. The interrogatories of the Caillaux trials in Paris in 1919 established that Minotto worked directly under Max May.[39] On October 25, 1914, Guaranty Trust sent Jacques Minotto to South America to make a report on the political, financial, and commercial situation. As he did in London, Washington, and New York, so Minotto moved in the highest diplomatic and political circles here. One purpose of Minotto's mission in Latin America was to establish the mechanism by which Guaranty Trust could be used as an intermediary for the previously mentioned German fund raising on the London money market, which was then denied to Germany because of World War I. Minotto returned to the United States, renewed his association with Count Von Bernstorff and Count Luxberg, and subsequently, in 1916, attempted to obtain a position with U.S. Naval Intelligence. After this he was arrested on charges of pro-German activities. When arrested Minotto was working at the Chicago plant of his father-in-law Louis Swift, of Swift & Co., meatpackers. Swift put up the security for the $50,000 bond required to free Minotto, who was represented by Henry Veeder, the Swift & Co. attorney. Louis Swift was himself arrested for pro-German activities at a later date. As an interesting and not unimportant coincidence, "Major" Harold H. Swift, brother of Louis Swift, was a member of the William Boyce Thompson 1917 Red Cross Mission to Petrograd —that is, one of the group of Wall Street lawyers and businessmen whose intimate connections with the Russian Revolution are to be described later. Helen Swift Neilson, sister of Louis and Harold Swift, was later connected with the pro-Communist Abraham Lincoln Center "Unity." This established a minor link between German banks, American. banks, German espionage, and, as we shall see later, the Bolshevik Revolution.[40]

Joseph Caillaux was a famous (sometimes called notorious) French politician. He was also associated with Count Minotto in the latter's Latin America operations for Guaranty Trust, and was later implicated in the famous French espionage cases of 1919, which had Bolshevik connections. In 1911, Caillaux became minister of finance and later in the same year became premier of France. John Louis Malvy became undersecretary of state in the Caillaux government. Several years later Madame Caillaux murdered Gaston Calmette, editor of the prominent Paris newspaper *Figaro.* The prosecution charged that Madame Caillaux murdered Calmette to prevent publication of certain compromising documents. This affair resulted in the departure of Caillaux and his wife from France. The couple went to Latin America and there met with Count Minotto, the agent of the Guaranty Trust Company who was in Latin America to establish intermediaries for German finance. Count Minotto was socially connected with the Caillaux couple in Rio de Janeiro and Sao Paulo, Brazil, in Montevideo, Uruguay, and in Buenos Aires, Argentina. In other words, Count Minotto was a constant companion of the Caillaux couple while they were in Latin America.[41] On returning to France, Caillaux and his wife stayed at Biarritz as guests of Paul Bolo-Pasha, who was, as we have seen, also a German espionage operator in the United States and France.[42] Later, in July 1915, Count Minotto arrived in France from Italy, met with the Caillaux couple; the same year the Caillaux couple also visited Bolo-Pasha again in Biarritz. In other words, in 1915 and 1916 Caillaux established a continuing social relationship with Count Minotto and Bolo-Pasha, both of whom were German espionage agents in the United States.

Bolo-Pasha's work in France was to gain influence for Germany in the Paris newspapers *Le Temps* and *Figaro.* Bolo-Pasha then went to New York, arriving February 24, 1916. Here he was to negotiate a loan of $2 million —and here he was associated with Von Pavenstedt, the prominent German agent with Amsinck & Co.[43] Severance Johnson, in *The Enemy Within,* has connected Caillaux and Malvy to the 1918 abortive French Bolshevik revolution, and states that if the revolution had succeeded, "Malvy would have been the Trotsky of France had Caillaux been its Lenin."[44] Caillaux and Malvy formed a radical socialist party in France using German funds and were brought to trial for these subversive efforts. The court interrogatories in the 1919 French espionage trials introduce testimony concerning New York bankers and their relationship with these German espionage operators. They also set forth the links between Count Minotto and Caillaux, as well as the relationship of the Guaranty Trust Company to the Deutsche Bank and the cooperation between Hugo Schmidt of Deutsche Bank and Max May of Guaranty Trust Company. The French interrogatory (page 940) has the following extract from the New York deposition of Count Minotto (page 10, and retranslated from the French):

> QUESTION: Under whose orders were you at Guaranty Trust?
>
> REPLY: Under the orders of Mr. Max May.
>
> QUESTION: He was a Vice President?
>
> ANSWER: He was Vice President and Director of the Foreign Department.

Later, in 1922, Max May became a director of the Soviet Ruskom-bank and represented the interests of Guaranty Trust in that bank. The French interrogatory establishes that Count

Minotto, a German espionage agent, was in the employ of Guaranty Trust Company; that Max May was his superior officer; and that Max May was also closely associated with Bolshevik banker Olof Aschberg. In brief: Max May of Guaranty Trust was linked to illegal fund raising and German espionage in the United States during World War I; he was linked indirectly to the Bolshevik Revolution and directly to the establishment of Ruskombank, the first international bank in the Soviet Union.

It is too early to attempt an explanation for this seemingly inconsistent, illegal, and sometimes immoral international activity. In general, there are two plausible explanations: the first, a relentless search for profits; the second —which agrees with the words of Otto Kahn of Kuhn, Loeb & Co. and of American International Corporation in the epigraph to this chapter —the realization of socialist aims, aims which "should, and can, be brought about" by nonsocialist means.

Footnotes:

[1]John Moody, *The Truth about the Trusts* (New York: Moody Publishing, 1904).

[2]The J. P. Morgan Company was originally founded in London as George Peabody and Co. in 1838. It was not incorporated until March 21, 1940. The company ceased to exist in April 1954 when it merged with the Guaranty Trust Company, then its most important commercial bank subsidiary, and is today known as the Morgan Guarantee Trust Company of New York.

[3]United States, House, Committee on Foreign Affairs, *The Story of Panama*, Hearings on the Rainey Resolution, 1913. p. 53.

[4]Ibid., p. 60.

[5]Stanford, Calif. See also the Los Angeles Times, October 13, 1966.

[6]Later codirector with Hjalmar Schacht (Hitler's banker) and Emil Wittenberg, of the Nationalbank für Deutschland.

[7]United States, Senate, Committee on Foreign Relations, *Investigation of Mexican Affairs*, 1920.

[8]Lincoln Steffens, *The Letters of Lincoln Steffens* (New York: Harcourt, Brace, 1941, I:386

[9]U.S., Senate, Committee on Foreign Relations, *Investigation of Mexican Affairs*, 1920, pts. 2, 18, p. 681.

[10]Ibid.

[11]*New York Times*, January 23, 1919.

[12]U.S., Senate, Committee on Foreign Relations, op. cit., pp. 795-96.

[13]U.S., Senate, *Hearings Before the Special Committee Investigating the Munitions Industry*, 73-74th Cong., 1934-37, pt. 25, p. 7666.

[14]U.S. State Dept. Decimal File, 861.51/110 (316-116-682).

[15]U.S. State Dept. Decimal File, 861.51/112.

[16]U.S. State Dept. Decimal File, 861.51/111.

[17]Handwritten in parentheses.

[18]Olof Aschberg, *En Vandrande Jude Frän Glasbruksgatan* (Stockholm: Albert Bonniers Förlag, n.d.), pp. 98-99, which is included in *Memoarer* (Stockholm: Albert Bonniers Förlag, 1946). See also Gästboken (Stockholm: Tidens Förlag, 1955) for further material on Aschberg.

[19]Aschberg, p. 123.

[20]*New York Times*, August 4, 1916.

[21]Michael Futrell, *Northern Underground* (London: Faber and Faber, 1963), p. 162.

[22]See Robert Paul Browder and Alexander F. Kerensky, *The Russian Provisional government, 1917* (Stanford, Calif.: Stanford University Perss, 1961), 3: 1365. "Via Bank" is obviously Nya Banken.

[23]U.S. State Dept. Decimal File, 861.00/1130.

[24]U.S. State Dept. Decimal File, 861.516/129, August 28, 1922. A State Dept. report from Stockholm, dated October 9, 1922 (861.516/137), states in regard to Aschberg, "I met Mr. Aschberg some weeks ago and in the conversation with him he substantially stated all that appeared in this report. He also asked me to inquire whether he could visit the United States and gave as references some of the prominent banks. In connection with this, however, I desire to call the department's attention to Document 54 of the Sisson Documents, and also to many other dispatches which this legation wrote concerning this man during

the war, whose reputation and standing is not good. He is undoubtedly working closely in connection with the Soviets, and during the entire war he was in close cooperation with the Germans" (U.S. State Dept. Decimal File, 861.516/137, Stockholm, October 9, 1922. The report was signed by Ira N. Morris).

[25]Ibid., 861.516/130, September 13, 1922.

[26]Ibid.

[27]Ibid.

[28]Ibid., 861.516/140, Stockholm, October 23, 1922.

[29]Ibid., 861.516/147, December 8, 1922.

[30]Ibid., 861.516/144, November 18, 1922.

[31]Ibid., 861.316/197, Stockholm, March 7, 1924.

[32]This section is based on the Overman Committee hearings, U.S., Senate, *Brewing and Liquor Interests and German and Bolshevik Propaganda*, Hearings before the Subcommittee on the Judiciary, 65th Cong., 1919, 2:2154-74.

[33]Count Von Bernstorff, *My Three Years in America* (New York: Scribner's, 1920), p. 261.

[34]Ibid.

[35]Ibid.

[36]French Strothers, *Fighting Germany's Spies* (Garden City, N.Y.: Doubleday, Page, 1918), p. 152.

[37] U.S., Senate, Overman Committee, 2:2009.

[38]This section is based on the following sources (as well as those cited elsewhere): Jean Bardanne, *Le Colonel Nicolai: espion de genie* (Paris: Editions Siboney, n.d.); Cours de Justice, *Affaire Caillaux, Loustalot et Comby: Procedure Generale Interrogatoires* (Paris, 1919), pp. 349-50, 937-46; Paul Vergnet, *L'Affaire Caillaux* (Paris 1918), especially the chapter titled "Marx de Mannheim"; Henri Guernut, Emile Kahn, and Camille M. Lemercier, *Etudes documentaires sur L'Affaire Caillaux* (Paris, n.d.), pp. 1012-

15; and George Adam, *Treason and Tragedy: An Account of French War Trials* (London: Jonathan Cape, 1929).

[39]See p. 70.

[40]This Interrelationship is dealt with extensively in the three-volume Overman Committee report of 1919. See bibliography.

[41]See Rudolph Binion, *Defeated Leaders* (New York: Columbia University Press, 1960).

[42]George Adam, *Treason and Tragedy: An Account of French War Trials* (London: Jonathan Cape, 1929).

[43]Ibid.

[44]*The Enemy Within* (London: George Allen & Unwin, 1920).

BACK

Chapter V

THE AMERICAN RED CROSS MISSION IN RUSSIA —1917

> **Poor Mr. Billings believed he was in charge of a scientific mission for the relief of Russia .... He was in reality nothing but a mask —the Red Cross complexion of the mission was nothing but a mask.**
>
> *Cornelius Kelleher, assistant to William Boyce Thompson (in George F. Kennan,* Russia Leaves the War)

The Wall Street project in Russia in 1917 used the Red Cross Mission as its operational vehicle. Both Guaranty Trust and National City Bank had representatives in Russia at the time of the revolution. Frederick M. Corse of the National City Bank branch in Petrograd was attached to the American Red Cross Mission, of which a great deal will be said later. Guaranty Trust was represented by Henry Crosby Emery. Emery was temporarily held by the Germans in 1918 and then moved on to represent Guaranty Trust 'in China.

Up to about 1915 the most influential person in the American Red Cross National Headquarters in Washington, D.C. was Miss Mabel Boardman. An active and energetic promoter, Miss Boardman had been the moving force behind the Red Cross enterprise, although its endowment came from wealthy and prominent persons including J. P. Morgan, Mrs. E. H. Harriman, Cleveland H. Dodge, and Mrs. Russell Sage. The 1910 fund-raising campaign for $2 million, for example, was successful only because it was supported by these wealthy residents of New York City. In fact, most of the money came from New York City. J.P. Morgan himself contributed $100,000 and seven other contributors in New York City amassed $300,000. Only one person outside New York City contributed over $10,000 and that was William J. Boardman, Miss Boardman's father. Henry P. Davison was chairman of the 1910 New York Fund-Raising Committee and later became chairman of the War Council of the American Red Cross. In other words, in World War I the Red Cross depended heavily on Wall Street, and specifically on the Morgan firm.

The Red Cross was unable to cope with the demands of World War I and in effect was taken over by these New York bankers. According to John Foster Dulles, these businessmen "viewed the American Red Cross as a virtual arm of government, they envisaged making an incalculable contribution to the winning of the war."[1] In so doing they made a mockery of the Red Cross motto: "Neutrality and Humanity."

In exchange for raising funds, Wall Street asked for the Red Cross War Council; and on the recommendation of Cleveland H. Dodge, one of Woodrow Wilson's financial backers, Henry P. Davison, a partner in J.P. Morgan Company, became chairman. The list of administrators of the Red Cross then began to take on the appearance of the New York Directory of Directors: John D. Ryan, president of Anaconda Copper Company (see frontispiece); George W. Hill, president of the American Tobacco Company; Grayson M.P. Murphy, vice president of the Guaranty Trust Company; and Ivy Lee, public relations expert for the Rockefellers. Harry Hopkins, later to achieve fame under President Roosevelt, became assistant to the general manager of the Red Cross in Washington, D.C.

The question of a Red Cross Mission to Russia came before the third meeting of this reconstructed War Council, which was held in the Red Cross Building, Washington, D.C., on Friday, May 29, 1917, at 11:00 A.M. Chairman Davison was deputed to explore the idea with Alexander Legge of the International

Harvester Company. Subsequently International Harvester, which had considerable interests in Russia, provided $200,000 to assist financing the Russian mission. At a later meeting it was made known that William Boyce Thompson, director of the Federal Reserve Bank of New York, had "offered to pay the entire expense of the commission"; this offer was accepted in a telegram: "Your desire to pay expenses of commission to Russia is very much appreciated and from our point of view very important."[2]

The members of the mission received no pay. All expenses were paid by William Boyce Thompson and the $200,000 from International Harvester was apparently used in Russia for political subsidies. We know from the files of the U.S. embassy in Petrograd that the U.S. Red Cross gave 4,000 rubles to Prince Lvoff, president of the Council of Ministers, for "relief of revolutionists" and 10,000 rubles in two payments to Kerensky for "relief of political refugees."

AMERICAN RED CROSS MISSION TO RUSSIA, 1917

In August 1917 the American Red Cross Mission to Russia had only a nominal relationship with the American Red Cross, and must truly have been the most unusual Red Cross Mission in history. All expenses, including those of the uniforms — the members were all colonels, majors, captains, or lieutenants — were paid out of the pocket of William Boyce Thompson. One contemporary observer dubbed the all-officer group an "Haytian Army":

> The American Red Cross delegation, about forty Colonels, Majors, Captains and Lieutenants, arrived yesterday. It is headed by Colonel (Doctor) Billings of Chicago, and includes Colonel William B. Thompson and many doctors and civilians, all with military titles; we dubbed the outfit the "Haytian Army" because there were no privates. They have come to fill no clearly defined mission, as far as I can find out, in fact Gov. Francis told me some time ago that he had urged they not be allowed to come, as there were already too many missions from the various allies in Russia. Apparently, this Commission imagined there was urgent call for doctors and nurses in Russia; as a matter of fact there is at present a surplus of medical talent and nurses, native and foreign in the country and many haft-empty hospitals in the large cities.[3]

The mission actually comprised only twenty-four (not forty), having military rank from lieutenant colonel down to lieutenant, and was supplemented by three orderlies, two motion-picture photographers, and two interpreters, without rank. Only five (out of twenty-four) were doctors; in addition, there were two medical researchers. The mission arrived by train in Petrograd via Siberia in August 1917. The five doctors and orderlies stayed one month, returning to the United States on September 11. Dr. Frank Billings, nominal head of the mission and professor of medicine at the University of Chicago, was reported to be disgusted with the overtly political activities of the majority of the mission. The other medical men were William S. Thayer, professor of medicine at Johns Hopkins University; D. J. McCarthy, Fellow of Phipps Institute for Study and Prevention of Tuberculosis, at Philadelphia; Henry C. Sherman, professor of food chemistry at Columbia University; C. E. A. Winslow, professor of bacteriology and hygiene at Yale Medical School; Wilbur E. Post, professor of medicine at Rush Medical College; Dr. Malcolm Grow, of the Medical Officers Reserve Corps of the U.S. Army; and Orrin Wightman, professor of clinical medicine, New York Polyclinic Hospital. George C. Whipple was listed as professor of sanitary engineering at Harvard University but in fact was partner of the New York firm of Hazen, Whipple & Fuller, engineering consultants. This is significant because Malcolm Pirnie — of whom more later — was listed as an assistant sanitary engineer and employed as an engineer by Hazen, Whipple & Fuller.

The majority of the mission, as seen from the table, was made up of lawyers, financiers, and their assistants, from the New York financial district. The mission was financed by William B. Thompson,

described in the official Red Cross circular as "Commissioner and Business Manager; Director United States Federal Bank of New York." Thompson brought along Cornelius Kelleher, described as an attache to the mission but actually secretary to Thompson and with the same address —14 Wall Street, New York City. Publicity for the mission was handled by Henry S. Brown, of the same address. Thomas Day Thacher was an attorney with Simpson, Thacher & Bartlett, a firm founded by his father, Thomas Thacher, in 1884 and prominently involved in railroad reorganization and mergers. Thomas as junior first worked for the family firm, became assistant U.S. attorney under Henry L. Stimson, and returned to the family firm in 1909. The young Thacher was a close friend of Felix Frankfurter and later became assistant to Raymond Robins, also on the Red Cross Mission. In 1925 he was appointed district judge under President Coolidge, became solicitor general under Herbert Hoover, and was a director of the William Boyce Thompson Institute.

THE 1917 AMERICAN RED CROSS MISSION TO RUSSIA

Members from Wall Street financial community and their affiliations	*Medical doctors*	*Orderlies, interpreters, etc.*
Andrews (Liggett & Myers Tobacco)	Billings (doctor)	Brooks (orderly)
Barr (Chase National Bank)	Grow (doctor)	Clark (orderly)
Brown (c/o William B. Thompson)	McCarthy (medical research; doctor)	Rocchia (orderly)
Cochran (McCann Co.)	Post (doctor)	
Kelleher (c/o William B. Thompson)	Sherman (food chemistry)	Travis (movies)
Nicholson (Swirl & Co.)	Thayer (doctor)	Wyckoff (movies)
Pirnie (Hazen, Whipple & Fuller)		
Redfield (Stetson, Jennings & Russell)	Wightman (medicine)	Hardy (justice)
Robins (mining promoter)	Winslow (hygiene)	Horn (transportation)
Swift (Swift & Co.)		
Thacher (Simpson, Thacher & Bartlett)		
Thompson (Federal Reserve Bank of N.Y.)		
Wardwell (Stetson, Jennings & Russell)		
Whipple (Hazen, Whipple & Fuller)		
Corse (National City Bank)		

Magnuson (recommended by confidential agent of Colonel Thompson)

Alan Wardwell, also a deputy commissioner and secretary to the chairman, was a lawyer with the law firm of Stetson, Jennings & Russell of 15 Broad Street, New York City, and H. B. Redfield was law secretary to Wardwell. Major Wardwell was the son of William Thomas Wardwell, long-time treasurer of Standard Oil of New Jersey and Standard Oil of New York. The elder Wardwell was one of the signers of the famous Standard Oil trust agreement, a member of the committee to organize Red Cross activities in the Spanish American War, and a director of the Greenwich Savings Bank. His son Alan was a director not only of Greenwich Savings, but also of Bank of New York and Trust Co. and the Georgian Manganese Company (along with W. Averell Harriman, a director of Guaranty Trust). In 1917 Alan Wardwell was affiliated with Stetson, Jennings 8c Russell and later joined Davis, Polk, Wardwell, Gardner & Read (Frank L. Polk was acting secretary of state during the Bolshevik Revolution period). The Senate Overman Committee noted that Wardwell was favorable to the Soviet regime although Poole, the State Department official on the spot, noted that "Major Wardwell has of all Americans the widest personal knowledge of the terror" (316-23-1449). In the 1920s Wardwell became active with the Russian-American Chamber of Commerce in promoting Soviet trade objectives.

The treasurer of the mission was James W. Andrews, auditor of Liggett & Myers Tobacco Company of St. Louis. Robert I. Barr, another member, was listed as a deputy commissioner; he was a vice president of Chase Securities Company (120 Broadway) and of the Chase National Bank. Listed as being in charge of advertising was William Cochran of 61 Broadway, New York City. Raymond Robins, a mining promoter, was included as a deputy commissioner and described as "a social economist." Finally, the mission included two members of Swift & Company of Union Stockyards, Chicago. The Swifts have been previously mentioned as being connected with German espionage in the United States during World War I. Harold H. Swift, deputy commissioner, was assistant to the vice president of Swift & Company; William G. Nicholson was also with Swift & Company, Union Stockyards.

Two persons were unofficially added to the mission after it arrived in Petrograd: Frederick M. Corse, representative of the National City Bank in Petrograd; and Herbert A. Magnuson, who was "very highly recommended by John W. Finch, the confidential agent in China of Colonel William B. Thompson."[4]

The Pirnie papers, deposited at the Hoover Institution, contain primary material on the mission. Malcolm Pirnie was an engineer employed by the firm of Hazen, Whipple & Fuller, consulting engineers, of 42 Street, New York City. Pirnie was a member of the mission, listed on a manifest as an assistant sanitary engineer. George C. Whipple, a partner in the firm, was also included in the group. The Pirnie papers include an original telegram from William B. Thompson, inviting assistant sanitary engineer Pirnie to meet with him and Henry P. Davison, chairman of the Red Cross War Council and partner in the J.P. Morgan firm, before leaving for Russia. The telegram reads as follows:

> WESTERN UNION TELEGRAM New York, June 21, 1917
>
> To Malcolm Pirnie
>
> I should very much like to have you dine with me at the Metropolitan Club, Sixteenth Street and Fifth Avenue New York City at eight o'clock tomorrow Friday evening to meet Mr. H. P. Davison.
>
> W. B. Thompson, 14 Wall Street

The files do not elucidate why Morgan partner Davison and Thompson, director of the Federal Reserve Bank — two of the most prominent financial men in New York — wished to have dinner with an assistant sanitary engineer about to leave for Russia. Neither do the files explain why Davison was subsequently unable to meet Dr. Billings and the commission itself, nor why it was necessary to advise Pirnie of his inability to do so. But we may surmise that the official cover of the mission — Red Cross activities — was of significantly less interest than the Thompson-Pirnie activities, whatever they may have been. We do know that Davison wrote to Dr. Billings on June 25, 1917:

> Dear Doctor Billings:
>
> It is a disappointment to me and to my associates on the War Council not have been able to meet in a body the members of your Commission ....

A copy of this letter was also mailed to assistant sanitary engineer Pirnie with a personal letter from Morgan banker Henry P. Davison, which read:

> My dear Mr. Pirnie:
>
> You will, I am sure, entirely understand the reason for the letter to Dr. Billings, copy of which is enclosed, and accept it in the spirit in which it is sent ....

The purpose of Davison's letter to Dr. Billings was to apologize to the commission and Billings for being unable to meet with them. We may then be justified in supposing that some deeper arrangements were made by Davison and Pirnie concerning the activities of the mission in Russia and that these arrangements were known to Thompson. The probable nature of these activities will be described later.[5]

The American Red Cross Mission (or perhaps we should call it the Wall Street Mission to Russia) also employed three Russian-English interpreters: Captain Ilovaisky, a Russian Bolshevik; Boris Reinstein, a Russian-American, later secretary to Lenin, and the head of Karl Radek's Bureau of International Revolutionary Propaganda, which also employed John Reed and Albert Rhys Williams; and Alexander Gumberg (alias Berg, real name Michael Gruzenberg), who was a brother of Zorin, a Bolshevik minister. Gumberg was also the chief Bolshevik agent in Scandinavia. He later became a confidential assistant to Floyd Odlum of Atlas Corporation in the United States as well as an adviser to Reeve Schley, a vice president of the Chase Bank.

It should be asked in passing: How useful were the translations supplied by these interpreters? On September 13, 1918, H. A. Doolittle, American vice consul at Stockholm, reported to the secretary of state on a conversation with Captain Ilovaisky (who was a "close personal friend" of Colonel Robins of the Red Cross Mission) concerning a meeting of the Murman Soviet and the Allies. The question of inviting the Allies to land at Murman was under discussion at the Soviet, with Major Thacher of the Red Cross Mission acting for the Allies. Ilovaisky interpreted Thacher's views for the Soviet. "Ilovaisky spoke at some length in Russian, supposedly translating for Thacher, but in reality for Trotsky .... "to the effect that "the United States would never permit such a landing to occur and urging the speedy recognition of the Soviets and their politics."[6] Apparently Thacher suspected he was being mistranslated and expressed his indignation. However, "Ilovaisky immediately telegraphed the substance to Bolshevik headquarters and through their press bureau had it appear in all the papers as emanating from the remarks of Major Thacher and as the general opinion of all truly accredited American representatives."[7]

Ilovaisky recounted to Maddin Summers, U.S. consul general in Moscow, several instances where he (Ilovaisky) and Raymond Robins of the Red Cross Mission had manipulated the Bolshevik press, especially "in regard to the recall of the Ambassador, Mr. Francis." He admitted that they had not been

scrupulous, "but had acted according to their ideas of right, regardless of how they might have conflicted with the politics of the accredited American representatives."[8]

This then was the American Red Cross Mission to Russia in 1917.

AMERICAN RED CROSS MISSION TO RUMANIA

In 1917 the American Red Cross also sent a medical assistance mission to Rumania, then fighting the Central Powers as an ally of Russia. A comparison of the American Red Cross Mission to Russia with that sent to Rumania suggests that the Red Cross Mission based in Petrograd had very little official connection with the Red Cross and even less connection with medical assistance. Whereas the Red Cross Mission to Rumania valiantly upheld the Red Cross twin principles of "humanity" and "neutrality," the Red Cross Mission in Petrograd flagrantly abused both.

The American Red Cross Mission to Rumania left the United States in July 1917 and located itself at Jassy. The mission consisted of thirty persons under Chairman Henry W. Anderson, a lawyer from Virginia. Of the thirty, sixteen were either doctors or surgeons. By comparison, out of twenty-nine individuals with the Red Cross Mission to Russia, only three were doctors, although another four members were from universities and specialized in medically related fields. At the most, seven could be classified as doctors with the mission to Russia compared with sixteen with the mission to Rumania. There was about the same number of orderlies and nurses with both missions. The significant comparison, however, is that the Rumanian mission had only two lawyers, one treasurer, and one engineer. The Russian mission had fifteen lawyers and businessmen. None of the Rumanian mission lawyers or doctors came from anywhere near the New York area but all, except one (an "observer" from the Department of Justice in Washington, D.C.), of the lawyers and businessmen with the Russian mission came from that area. Which is to say that more than half the total of the Russian mission came from the New York financial district. In other words, the relative composition of these missions confirms that the mission to Rumania had a legitimate purpose — to practice medicine — while the Russian mission had a non-medical and strictly political objective. From its personnel, it could be classified as a commercial or financial mission, but from its actions it was a subversive political action group.

PERSONNEL WITH THE AMERICAN RED CROSS MISSIONS TO RUSSIA AND RUMANIA, 1917

	AMERICAN RED CROSS MISSION TO	
Personnel	*Russia*	*Rumania*
Medical (doctors and surgeons)	*7*	*16*
Orderlies, nurses	*7*	*10*
Lawyers and businessmen	*15*	*4*
TOTAL	*29*	*30*

SOURCES:

American Red Cross, Washington, D.C.

U.S. Department of State, Petrograd embassy, Red Cross file, 1917.

The Red Cross Mission to Rumania remained at its post in Jassy for the remainder of 1917 and into 1918. The medical staff of the American Red Cross Mission in Russia — the seven doctors — quit in disgust in August 1917, protested the political activities of Colonel Thompson, and returned to the United States. Consequently, in September 1917, when the Rumanian mission appealed to Petrograd for American doctors and nurses to help out in the near crisis conditions in Jassy, there were no American doctors or nurses in Russia available to go to Rumania.

Whereas the bulk of the mission in Russia occupied its time in internal political maneuvering, the mission in Rumania threw itself into relief work as soon as it arrived. On September 17, 1917, a confidential cable from Henry W. Anderson, chairman of the Rumania mission, to the American ambassador Francis in Petrograd requested immediate and urgent help in the form of $5 million to meet an impending catastrophe in Rumania. Then followed a series of letters, cables, and communications from Anderson to Francis appealing, unsuccessfully, for help.

On September 28, 1917, Vopicka, American minister in Rumania, cabled Francis at length, for relay to Washington, and repeated Anderson's analysis of the Rumanian crisis and the danger of epidemics — and worse — as winter closed in:

> Considerable money and heroic measures required prevent far reaching disaster .... Useless try handle situation without someone with authority and access to government . . . With proper organization to look after transport receive and distribute supplies.

The hands of Vopicka and Anderson were tied as all Rumanian supplies and financial transactions were handled by the Red Cross Mission in Petrograd — and Thompson and his staff of fifteen Wall Street lawyers and businessmen apparently had matters of greater concern that Rumanian Red Cross affairs. There is no indication in the Petrograd embassy files at the U.S. State Department that Thompson, Robins, or Thacher concerned himself at any time in 1917 or 1918 with the urgent situation in Rumania. Communications from Rumania went to Ambassador Francis or to one of his embassy staff, and occasionally through the consulate in Moscow.

By October 1917 the Rumanian situation reached the crisis point. Vopicka cabled Davison in New York (via Petrograd) on October 5:

> Most urgent problem here .... Disastrous effect feared .... Could you possibly arrange special shipment .... Must rush or too late.

Then on November 5 Anderson cabled the Petrograd embassy saying that delays in sending help had already "cost several thousand lives." On November 13 Anderson cabled Ambassador Francis concerning Thompson's lack of interest in Rumanian conditions:

> Requested Thompson furnish details all shipments as received but have not obtained same .... Also requested him keep me posted as to transport conditions but received very little information.

Anderson then requested that Ambassador Francis intercede on his behalf in order to have funds for the Rumanian Red Cross handled in a separate account in London, directly under Anderson and removed from the control of Thompson's mission.

THOMPSON IN KERENSKY'S RUSSIA

What then was the Red Cross Mission doing? Thompson certainly acquired a reputation for opulent living in Petrograd, but apparently he undertook only two major projects in Kerensky's Russia: support for an American propaganda program and support for the Russian Liberty Loan. Soon after arriving in Russia Thompson met with Madame Breshko-Breshkovskaya and David Soskice, Kerensky's secretary, and agreed to contribute $2 million to a committee of popular education so that it could "have its own press and... engage a staff of lecturers, with cinematograph illustrations" (861.00/ 1032); this was for the propaganda purpose of urging Russia to continue in the war against Germany. According to Soskice, "a packet of 50,000 rubles" was given to Breshko-Breshkovskaya with the statement, "This is for you to expend according to your best judgment." A further 2,100,000 rubles was deposited into a current bank account. A letter from J. P. Morgan to the State Department (861.51/190) confirms that Morgan cabled 425,000 rubles to Thompson at his request for the Russian Liberty Loan; J. P. also conveyed the interest of the Morgan firm regarding "the wisdom of making an individual subscription through Mr. Thompson" to the Russian Liberty Loan. These sums were transmitted through the National City Bank branch in Petrograd.

THOMPSON GIVES THE BOLSHEVIKS $1 MILLION

Of greater historical significance, however, was the assistance given to the Bolsheviks first by Thompson, then, after December 4, 1917, by Raymond Robins.

Thompson's contribution to the Bolshevik cause was recorded in the contemporary American press. The *Washington Post* of February 2, 1918, carried the following paragraphs:

> GIVES BOLSHEVIKI A MILLION
>
> W. B. Thompson, Red Cross Donor, Believes Party Misrepresented. New York, Feb. 2 (1918). William B. Thompson, who was in Petrograd from July until November last, has made a personal contribution of $1,000,000 to the Bolsheviki for the purpose of spreading their doctrine in Germany and Austria.
>
> Mr. Thompson had an opportunity to study Russian conditions as head of the American Red Cross Mission, expenses of which also were largely defrayed by his personal contributions. He believes that the Bolsheviki constitute the greatest power against Pro-Germanism in Russia and that their propaganda has been undermining the militarist regimes of the General Empires.
>
> Mr. Thompson deprecates American criticism of the Bolsheviki. He believes they have been misrepresented and has made the financial contribution to the cause in the belief that it will be money well spent for the future of Russia as well as for the Allied cause.

Hermann Hagedorn's biography *The Magnate: William Boyce Thompson and His Time (1869-1930)* reproduces a photograph of a cablegram from J.P. Morgan in New York to W. B. Thompson, "Care

American Red Cross, Hotel Europe, Petrograd." The cable is date-stamped, showing it was received at Petrograd "8-Dek 1917" (8 December 1917), and reads:

> New York Y757/5 24W5 Nil — Your cable second received. We have paid National City Bank one million dollars as instructed — Morgan.

The National City Bank branch in Petrograd had been exempted from the Bolshevik nationalization decree — the only foreign or domestic Russian bank to have been so exempted. Hagedorn says that this million dollars paid into Thompson's NCB account was used for "political purposes."

SOCIALIST MINING PROMOTER RAYMOND ROBINS[9]

William B. Thompson left Russia in early December 1917 to return home. He traveled via London, where, in company with Thomas Lamont of the J.P. Morgan firm, he visited Prime Minister Lloyd George, an episode we pick up in the next chapter. His deputy, Raymond Robins, was left in charge of the Red Cross Mission to Russia. The general impression that Colonel Robins presented in the subsequent months was not overlooked by the press. In the words of the Russian newspaper *Russkoe Slovo*, Robins "on the one hand represents American labor and on the other hand American capital, which is endeavoring through the Soviets to gain their Russian markets."[10]

Raymond Robins started life as the manager of a Florida phosphate company commissary. From this base he developed a kaolin deposit, then prospected Texas and the Indian territories in the late nineteenth century. Moving north to Alaska, Robins made a fortune in the Klondike gold rush. Then, for no observable reason, he switched to socialism and the reform movement. By 1912 he was an active member of Roosevelt's Progressive Party. He joined the 1917 American Red Cross Mission to Russia as a "social economist."

There is considerable evidence, including Robins' own statements, that his reformist social-good appeals were little more than covers for the acquisition of further power and wealth, reminiscent of Frederick Howe's suggestions in *Confessions of a Monopolist.* For example, in February 1918 Arthur Bullard was in Petrograd with the U.S. Committee on Public Information and engaged in writing a long memorandum for Colonel Edward House. This memorandum was given to Robins by Bullard for comments and criticism before transmission to House in Washington, D.C. Robins' very unsocialistic and imperialistic comments were to the effect that the manuscript was "uncommonly discriminating, far-seeing and well done," but that he had one or two reservations — in particular, that recognition of the Bolsheviks was long overdue, that it should have been effected immediately, and that had the U.S. so recognized the Bolsheviks, "I believe that we would now be in control of the surplus resources of Russia and have control officers at all points on the frontier."[11]

This desire to gain "control of the surplus resources of Russia" was also obvious to Russians. Does this sound like a social reformer in the American Red Cross or a Wall Street mining promoter engaged in the practical exercise of imperialism?

In any event, Robins made no bones about his support for the Bolshevists.[12] Barely three weeks after the Bolshevik phase of the Revolution started, Robins cabled Henry Davison at Red Cross headquarters: "Please urge upon the President the necessity of our continued intercourse with the Bolshevik Government." Interestingly, this cable was in reply to a cable instructing Robins that the "President desires the withholding of direct communications by representatives of the United States with the Bolshevik Government."[13] Several State Department reports complained about the partisan nature of Robins' activities. For example, on March 27, 1919, Harris, the American consul at Vladivostok,

commented on a long conversation he had had with Robins and protested gross inaccuracies in the latter's reporting. Harris wrote, "Robins stated to me that no German and Austrian prisoners of war had joined the Bolshevik army up to May 1918. Robbins knew this statement was absolutely false." Harris then proceeded to provide the details of evidence available to Robins.[14]

Limit of Area Controlled by Bolsheviks, January 1918

Harris concluded, "Robbins deliberately misstated facts concerning Russia at that time and he has been doing it ever since."

On returning to the United States in 1918, Robins continued his efforts in behalf of the Bolsheviks. When the files of the Soviet Bureau were seized by the Lusk Committee, it was found that Robins had had "considerable correspondence" with Ludwig Martens and other members of the bureau. One of the more interesting documents seized was a letter from Santeri Nuorteva (alias Alexander Nyberg), the first Soviet representative in the U.S., to "Comrade Cahan," editor of the *New York Daily Forward.* The letter called on the party faithful to prepare the way for Raymond Robins:

> (To Daily) FORWARD July 6, 1918
>
> Dear Comrade Cahan:
>
> It is of the utmost importance that the Socialist press set up a clamor immediately that Col. Raymond Robins, who has just returned from Russia at the head of the Red Cross Mission, should be heard from in a public report to the American people. The armed intervention danger has greatly increased. The reactionists are using the Czecho-Slovak adventure to bring about invasion. Robins has all the facts about this and about the situation in Russia generally. He takes our point of view.
>
> I am enclosing copy of Call editorial which shows a general line of argument, also some facts about Czecho-Slovaks.

Fraternally,

PS&AU Santeri Nuorteva

THE INTERNATIONAL RED CROSS AND REVOLUTION

Unknown to its administrators, the Red Cross has been used from time to time as a vehicle or cover for revolutionary activities. The use of Red Cross markings for unauthorized purposes is not uncommon. When Tsar Nicholas was moved from Petrograd to Tobolsk allegedly for his safety (although this direction was towards danger rather than safety), the train carried Japanese Red Cross placards. The State Department files contain examples of revolutionary activity under cover of Red Cross activities. For example, a Russian Red Cross official (Chelgajnov) was arrested in Holland in 1919 for revolutionary acts (316-21-107). During the Hungarian Bolshevik revolution in 1918, led by Bela Kun, Russian members of the Red Cross (or revolutionaries operating as members of the Russian Red Cross) were

found in Vienna and Budapest. In 1919 the U.S. ambassador in London cabled Washington startling news; through the British government he had learned that "several Americans who had arrived in this country in the uniform of the Red Cross and who stated that they were Bolsheviks . . . were proceeding through France to Switzerland to spread Bolshevik propaganda." The ambassador noted that about 400 American Red Cross people had arrived in London in November and December 1918; of that number one quarter returned to the United States and "the remainder insisted on proceeding to France." There was a later report on January 15, 1918, to the effect that an editor of a labor newspaper in London had been approached on three different occasions by three different American Red Cross officials who offered to take commissions to Bolsheviks in Germany. The editor had suggested to the U.S. embassy that it watch American Red Cross personnel. The U.S. State Department took these reports seriously and Polk cabled for names, stating, "If true, I consider it of the greatest importance" (861.00/3602 and /3627).

To summarize: the picture we form of the 1917 American Red Cross Mission to Russia is remote from one of neutral humanitarianism. The mission was in fact a mission of Wall Street financiers to influence and pave the way for control, through either Kerensky or the Bolshevik revolutionaries, of the Russian market and resources. No other explanation will explain the actions of the mission. However, neither Thompson nor Robins was a Bolshevik. Nor was either even a consistent socialist. The writer is inclined to the interpretation that the socialist appeals of each man were covers for more prosaic objectives. Each man was intent upon the commercial; that is, each sought to use the political process in Russia for personal financial ends. Whether the Russian people wanted the Bolsheviks was of no concern. Whether the Bolshevik regime would act against the United States —as it consistently did later —was of no concern. The single overwhelming objective was to gain political and economic influence with the new regime, whatever its ideology. If William Boyce Thompson had acted alone, then his directorship of the Federal Reserve Bank would be inconsequential. However, the fact that his mission was dominated by representatives of Wall Street institutions raises a serious question —in effect, whether the mission was a planned, premeditated operation by a Wall Street syndicate. This the reader will have to judge for himself, as the rest of the story unfolds.

Footnotes:

[1]John Foster Dulles, *American Red Cross* (New York: Harper, 1950).

[2]Minutes of the War Council of the American National Red Cross (Washington, D.C., May 1917)

[3]Gibbs Diary, August 9, 1917. State Historical Society of Wisconsin.

[4] Billings report to Henry P. Davison, October 22, 1917, American Red Cross Archives.

[5]The Pirnie papers also enable us to fix exactly the dates that members of the mission left Russia. In the case of William B. Thompson, this date is critical to the argument of this book: Thompson left Petrograd for London on December 4, 1917. George F. Kennan states Thompson left Petrograd on November 27, 1917 *(Russia Leaves the War*, p. 1140).

[6]U.S. State Dept. Decimal File, 861.00/3644.

[7]Ibid.

[8]Ibid.

[9]Robins is the correct spelling. The name is consistently spelled "Robbins" in the Stale Department files.

[10]U.S. State Dept. Decimal File, 316-11-1265, March 19, 1918.

[11]Bullard ms., U.S. State Dept. Decimal File, 316-11-1265.

[12]The *New World Review* (fall 1967, p. 40) comments on Robins, noting that he was "in sympathy with the aims of the Revolution, although a capitalist "

[13]Petrograd embassy, Red Cross file.

[14]U.S. State Dept. Decimal File, 861.00/4168.

BACK

Chapter VI

CONSOLIDATION AND EXPORT OF THE REVOLUTION

> **Marx's great book *Das Kapital* is at once a monument of reasoning and a storehouse of facts.**
>
> *Lord Milner, member of the British War Cabinet, 1917, and director of the London Joint Stock Bank*

William Boyce Thompson is an unknown name in twentieth-century history, yet Thompson played a crucial role in the Bolshevik Revolution.[1] Indeed, if Thompson had not been in Russia in 1917, subsequent history might have followed a quite different course. Without the financial and, more important, the diplomatic and propaganda assistance given to Trotsky and Lenin by Thompson, Robins, and their New York associates, the Bolsheviks may well have withered away and Russia evolved into a socialist but constitutional society.

Who was William Boyce Thompson? Thompson was a promoter of mining stocks, one of the best in a high-risk business. Before World War I he handled stock-market operations for the Guggenheim copper interests. When the Guggenheims needed quick capital for a stock-market struggle with John D. Rockefeller, it was Thompson who promoted Yukon Consolidated Goldfields before an unsuspecting public to raise a $3.5 million war chest. Thompson was manager of the Kennecott syndicate, another Guggenheim operation, valued at $200 million. It was Guggenheim Exploration, on the other hand, that took up Thompson's options on the rich Nevada Consolidated Copper Company. About three quarters of the original Guggenheim Exploration Company was controlled by the Guggenheim family, the Whitney family (who owned *Metropolitan* magazine, which employed the Bolshevik John Reed), and John Ryan. In 1916 the Guggenheim interests reorganized into Guggenheim Brothers and brought in William C. Potter, who was formerly with Guggenheim's American Smelting and Refining Company but who was in 1916 first' vice president of Guaranty Trust.

Extraordinary skill in raising capital for risky mining promotions earned Thompson a personal fortune and directorships in Inspiration Consolidated Copper Company, Nevada Consolidated Copper Company, and Utah Copper Company —all major domestic copper producers. Copper is, of course, a major material in the manufacture of munitions. Thompson was also director of the Chicago Rock Island & Pacific Railroad, the Magma Arizona Railroad and the Metropolitan Life Insurance Company. And of particular interest for this book, Thompson was "one of the heaviest stockholders in the Chase National Bank." It was Albert H. Wiggin, president of the Chase Bank, who pushed Thompson for a post in the Federal Reserve System; and in 1914 Thompson became the first full-term director of the Federal Reserve Bank of New York —the most important bank in the Federal Reserve System.

By 1917, then, William Boyce Thompson was a financial operator of substantial means, demonstrated ability, with a flair for promotion and implementation of capitalist projects, and

with ready access to the centers of political and financial power. This was the same man who first supported Aleksandr Kerensky, and who then became an ardent supporter of the Bolsheviks, bequeathing a surviving symbol of this support — a laudatory pamphlet in Russian, "Pravda o Rossii i Bol'shevikakh."[2]

Before leaving Russia in early December 1917 Thompson handed over the American Red Cross Mission to his deputy Raymond Robins. Robins then organized Russian revolutionaries to implement the Thompson plan for spreading Bolshevik propaganda in Europe (see Appendix 3). A French government document confirms this: "It appeared that Colonel Robins . . . was able to send a subversive mission of Russian bolsheviks to Germany to start a revolution there."[3] This mission led to the abortive German Spartacist revolt of 1918. The overall plan also included schemes for dropping Bolshevik literature by airplane or for smuggling it across German lines.

Thompson made preparations in late 1917 to leave Petrograd and sell the Bolshevik Revolution to governments in Europe and to the U.S. With this in mind, Thompson cabled Thomas W. Lamont, a partner in the Morgan firm who was then in Paris with Colonel E. M. House. Lamont recorded the receipt of this cablegram in his biography:

> Just as the House Mission was completing its discussions in Paris in December 1917, I received an arresting cable from my old school and business friend, William Boyce Thompson, who was then in Petrograd in charge of the American Red Cross Mission there.[4]

Lamont journeyed to London and met with Thompson, who had left Petrograd on December 5, traveled via Bergen, Norway, and arrived in London on December 10. The most important achievement of Thompson and Lamont in London was to convince the British War Cabinet — then decidedly anti-Bolshevik — that the Bolshevik regime had come to stay, and that British policy should cease to be anti-Bolshevik, should accept the new realities, and should support Lenin and Trotsky. Thompson and Lamont left London on December 18 and arrived in New York on December 25, 1917. They attempted the same process of conversion in the United States.

A CONSULTATION WITH LLOYD GEORGE

The secret British War Cabinet papers are now available and record the argument used by Thompson to sell the British government on a pro-Bolshevik policy. The prime minister of Great Britain was David Lloyd George. Lloyd George's private and political machinations rivaled those of a Tammany Hall politician — yet in his lifetime and for decades after, biographers were unable, or unwilling, to come to grips with them. In 1970 Donald McCormick's *The Mask of Merlin* lifted the veil of secrecy. McCormick shows that by 1917 David Lloyd George had bogged *"too* deeply in the mesh of international armaments intrigues to be a free agent" and was beholden to Sir Basil Zaharoff, an international armaments dealer, whose considerable fortune was made by selling arms to both sides in several wars.[5] Zaharoff wielded enormous behind-the-scenes power and, according to McCormick, was consulted on war policies by the Allied leaders. On more than one occasion, reports McCormick, Woodrow Wilson, Lloyd George, and Georges Clemenceau met in Zaharoff's Paris home. McCormick

notes that "Allied statesmen and leaders were obliged to consult him before planning any great attack." British intelligence, according to McCormick, "discovered documents which incriminated servants of the Crown as secret agents of Sir Basil Zaharoff *with the knowledge of Lloyd George.*"[6] In 1917 Zaharoff was linked to the Bolsheviks; he sought to divert munitions away from anti-Bolsheviks and had already intervened in behalf of the Bolshevik regime in both London and Paris.

In late 1917, then —at the time Lamont and Thompson arrived in London —Prime Minister Lloyd George was indebted to powerful international armaments interests that were allied to the Bolsheviks and providing assistance to extend Bolshevik power in Russia. The British prime minister who met with William Thompson in 1917 was not then a free agent; Lord Milner was the power behind the scenes and, as the epigraph to this chapter suggests, favorably inclined towards socialism and Karl Marx.

The "secret" War Cabinet papers give the "Prime Minister's account of a conversation with Mr. Thompson, an American returned from Russia,"[7] and the report made by the prime minister to the War Cabinet after meeting with Thompson.[8] The cabinet paper reads as follows:

> The Prime Minister reported a conversation he had had with a Mr. Thompson —an American traveller and a man of considerable means —who had just returned from Russia, and who had given a somewhat different impression of affairs in that country from what was generally believed. The gist of his remarks was to the effect that the Revolution had come to stay; that the Allies had not shown themselves sufficiently sympathetic with the Revolution; and that MM. Trotzki and Lenin were not in German pay, the latter being a fairly distinguished Professor. Mr. Thompson had added that he considered the Allies should conduct in Russia an active propaganda, carried out by some form of Allied Council composed o[men especially selected [or the purpose; further, that on the whole, he considered, having regard to the character of the de facto Russian Government, the several Allied Governments were not suitably represented in Petrograd. In Mr. Thompson's opinion, it was necessary for the Allies to realise that the Russian army and people *were* out of the war, and that the Allies would have to choose between Russia as the friendly or a hostile neutral.
>
> The question was discussed as to whether the Allies ought not to change their policy in regard to the de facto Russian Government, the Bolsheviks being stated by Mr. Thompson to be and-German. In this connection Lord Robert Cecil drew attention to the conditions of the armistice between the German and Russian armies, which provided, inter alia, for trading between the two countries, and for the establishment of a Purchasing Commission in Odessa, the whole arrangement being obviously dictated by the Germans. Lord Robert Cecil expressed the view that the Germans would endeavour to continue the armistice until the Russian army had melted away.
>
> Sir Edward Carson read a communication, signed by M. Trotzki, which had been sent to him by a British subject, the manager of the Russian branch of the Vauxhall Motor Company, who had just returned from Russia [Paper G.T. —

> 3040]. This report indicated that M. Trotzki's policy was, ostensibly at any rate, one of hostility to the organisation of civilised society rather than pro-German. On the other hand, it was suggested that an assumed attitude of this kind was by no means inconsistent with Trotzki's being a German agent, whose object was to ruin Russia in order that Germany might do what she desired in that country.

After hearing Lloyd George's report and supporting arguments, the War Cabinet decided to go along with Thompson and the Bolsheviks. Milner had a former British consul in Russia — Bruce Lockhart — ready and waiting in the wings. Lockhart was briefed and sent to Russia with instructions to work informally with the Soviets.

The thoroughness of Thompson's work in London and the pressure he was able to bring to bear on the situation are suggested by subsequent reports coming into the hands of the War Cabinet, from authentic sources. The reports provide a quite different view of Trotsky and the Bolsheviks from that presented by Thompson, and yet they were ignored by the cabinet. In April 1918 General Jan Smuts reported to the War Cabinet his talk with General Nieffel, the head of the French Military Mission who had just returned from Russia:

> Trotski (sic) . . . was a consummate scoundrel who may not be pro-German, but is thoroughly pro-Trotski and pro-revolutionary and cannot in any way be trusted. His influence is shown by the way he has come to dominate Lockhart, Robins and the French representative. He [Nieffel] counsels great prudence in dealing with Trotski, who he admits is the only really able man in Russia.[9]

Several months later Thomas D. Thacher, Wall Street lawyer and another member of the American Red CrAss Mission to Russia, was in London. On April 13, 1918, Thacher wrote to the American ambassador in London to the effect that he had received a request from H. P. Davison, a Morgan partner, *"to* confer with Lord Northcliffe" concerning the situation in Russia and then to go on to Paris "for other conferences." Lord Northcliffe was ill and Thacher left with yet another Morgan partner, Dwight W. Morrow, a memorandum to be submitted to Northcliffe on his return to London.[10] This memorandum not only made explicit suggestions about Russian policy that supported Thompson's position but even stated that "the fullest assistance should be given to the Soviet government in its efforts to organize a volunteer revolutionary army." The four main proposals in this Thacher report are:

> First of all . . . the Allies should discourage Japanese intervention in Siberia.
>
> In the second place, the fullest assistance should be given to the Soviet Government in its efforts to organize a volunteer revolutionary army.
>
> Thirdly, the Allied Governments should give their moral support to the Russian people in their efforts to work out their own political systems free from the domination of any foreign power ....
>
> Fourthly, until the time when open conflict shall result between the German Government and the Soviet Government of Russia there will be opportunity

> for peaceful commercial penetration by German agencies in Russia. So long as there is no open break, it will probably be impossible to entirely prevent such commerce. Steps should, therefore, be taken to impede, so far as possible, the transport of grain and raw materials to Germany from Russia.[11]

THOMPSON'S INTENTIONS AND OBJECTIVES

Why would a prominent Wall Street financier, and director of the Federal Reserve Bank, want to organize and assist Bolshevik revolutionaries? Why would not one but several Morgan partners working in concert want to encourage the formation of a Soviet "volunteer revolutionary army" —an army supposedly dedicated to the overthrow of Wall Street, including Thompson, Thomas Lamont, Dwight Morrow, the Morgan firm, and all their associates?

Thompson at least was straightforward about his objectives in Russia: he wanted to keep Russia at war with Germany (yet he argued before the British War Cabinet that Russia was out of the war anyway) and to retain Russia as a market for postwar American enterprise. The December 1917 Thompson memorandum to Lloyd George describes these aims.[12] The memorandum begins, "The Russian situation is lost and Russia lies entirely open to unopposed German exploitation .... "and concludes, "I believe that intelligent and courageous work will still prevent Germany from occupying the field to itself and thus exploiting Russia at the expense of the Allies." Consequently, it was German commercial and industrial exploitation of Russia that Thompson feared (this is also reflected in the Thacher memorandum) and that brought Thompson and his New York friends into an alliance with the Bolsheviks. Moreover, this interpretation is reflected in a quasi-jocular statement made by Raymond Robins, Thompson's deputy, to Bruce Lockhart, the British agent:

> You will hear it said that I am the representative of Wall Street; that I am the servant of William B. Thompson to get Altai copper for him; that I have already got 500,000 acres of the best timber land in Russia for myself; that I have already copped off the Trans-Siberian Railway; that they have given me a monopoly of the platinum of Russia; that this explains my working for the soviet .... You will hear that talk. Now, I do not think it is true, Commissioner, but let us assume it is true. Let us assume that I am here to capture Russia for Wall Street and American business men. Let us assume that you are a British wolf and I am an American wolf, and that when this war is over we are going to eat each other up for the Russian market; let us do so in perfectly frank, man fashion, but let us assume at the same time that we are fairly intelligent wolves, and that we know that if we do not hunt together in this hour the German wolf will eat us both up, and then let us go to work.[13]

With this in mind let us take a look at Thompson's personal motivations. Thompson was a financier, a promoter, and, although without previous interest in Russia, had personally financed the Red Cross Mission to Russia and used the mission as a vehicle for political maneuvering. From the total picture we can deduce that Thompson's motives were primarily financial and commercial. Specifically, Thompson was interested in the Russian market, and how this market could be influenced, diverted; and captured for postwar exploitation by a Wall Street syndicate, or syndicates. Certainly Thompson viewed Germany as an enemy, but less a

political enemy than an economic or a commercial enemy. German industry and German banking were the real enemy. To outwit Germany, Thompson was willing to place seed money on any political power vehicle that would achieve his objective. In other words, Thompson was an American imperialist fighting against German imperialism, and this struggle was shrewdly recognized and exploited by Lenin and Trotsky.

The evidence supports this apolitical approach. In early August 1917, William Boyce Thompson lunched at the U.S. Petrograd embassy with Kerensky, Terestchenko, and the American ambassador Francis. Over lunch Thompson showed his Russian guests a cable he had just sent to the New York office of J.P. Morgan requesting transfer of 425,000 rubles to cover a personal subscription to the new Russian Liberty Loan. Thompson also asked Morgan to "inform my friends I recommend these bonds as the best war investment I know. Will be glad to look after their purchasing here without compensation"; he then offered personally to take up twenty percent of a New York syndicate buying five million rubles of the Russian loan. Not unexpectedly, Kerensky and Terestchenko indicated "great gratification" at support from Wall Street. And Ambassador Francis by cable promptly informed the State Department that the Red Cross commission was "working harmoniously with me," and that it would have an "excellent effect."[14] Other writers have recounted how Thompson attempted to convince the Russian peasants to support Kerensky by investing $1 million of his own money and U.S. government funds on the same order of magnitude in propaganda activities. Subsequently, the Committee on Civic Education in Free Russia, headed by the revolutionary "Grandmother" Breshkovskaya, with David Soskice (Kerensky's private secretary) as executive, established newspapers, news bureaus, printing plants, and speakers bureaus to promote the appeal — "Fight the kaiser and save the revolution." It is noteworthy that the Thompson-funded Kerensky campaign had the same appeal — "Keep Russia in the war" — as had his financial support of the Bolsheviks. The common link between Thompson's support of Kerensky and his support of Trotsky and Lenin was — "continue the war against Germany" and keep Germany out of Russia.

In brief, behind and below the military, diplomatic, and political aspects of World War I, there was another battle raging, namely, a maneuvering for postwar world economic power by international operators with significant muscle and influence. Thompson was not a Bolshevik; he was not even pro-Bolshevik. Neither was he pro-Kerensky. Nor was he even pro-American. *The overriding motivation was the capturing of the postwar Russian market.* This was a commercial, not an ideological, objective. Ideology could sway revolutionary operators like Kerensky, Trotsky, Lenin et al., but not financiers.

The Lloyd George memorandum demonstrates Thompson's partiality for neither Kerensky nor the Bolsheviks: "After the overthrow of the last Kerensky government we materially aided the dissemination of the Bolshevik literature, distributing it through agents and by aeroplanes to the Germany army."[15] This was written in mid-December 1917, only five weeks after the start of the Bolshevik Revolution, and less than four months after Thompson expressed his support of Kerensky over lunch in the American embassy.

THOMPSON RETURNS TO THE UNITED STATES

Thompson then returned and toured the United States with a public plea for recognition of the

Soviets. In a speech to the Rocky Mountain Club of New York in January 1918, Thompson called for assistance for the emerging Bolshevik government and, appealing to an audience composed largely of Westerners, evoked the spirit of the American pioneers:

> These men would not have hesitated very long about extending recognition and giving the fullest help and sympathy to the workingman's government of Russia, because in 1819 and the years following we had out there bolsheviki governments . . . and mighty good governments too....[16]

It strains the imagination to compare the pioneer experience of our Western frontier to the ruthless extermination of political opposition then under way in Russia. To Thompson, promoting this was no doubt looked upon as akin to his promotion of mining stocks in days gone by. As for those in Thompson's audience, we know not what they thought; however, no one raised a challenge. The speaker was a respected director of the Federal Reserve Bank of New York, a self-made millionaire (and that counts for much). And after all, had he not just returned from Russia? But all was not rosy. Thompson's biographer Hermann Hagedorn has written that Wall Street was "stunned" that his friends were "shocked" and "said he had lost his head, had turned Bolshevist himself."[17]

While Wall Street wondered whether he had indeed "turned Bolshevik," Thompson found sympathy among fellow directors on the board of the Federal Reserve Bank of New York. Codirector W. L. Saunders, chairman of Ingersoll-Rand Corporation and a director of the FRB, wrote President Wilson on October 17, 1918, stating that he was "in sympathy with the Soviet form of Government"; at the same time he disclaimed any ulterior motive such as "preparing now to get the trade of the world after the war.[18]

Most interesting of Thompson's fellow directors was George Foster Peabody, deputy chairman of the Federal Reserve Bank of New York and a close friend of socialist Henry George. Peabody had made a fortune in railroad manipulation, as Thompson had made his fortune in the manipulation of copper stocks. Peabody then became active in behalf of government ownership of railroads, and openly adopted socialization.[19] How did Peabody reconcile his private-enterprise success with promotion of government ownership? According to his biographer Louis Ware, "His reasoning told him that it was important for this form of transport to be operated as a public service rather than for the advantage of private interests." This high-sounding do-good reasoning hardly rings true. It would be more accurate to argue that given the dominant political influence of Peabody and his fellow financiers in Washington, they could by government control of railroads more easily avoid the rigors of competition. Through political influence they could manipulate the police power of the state to achieve what they had been unable, or what was too costly, to achieve under private enterprise. In other words, the police power of the state was a means of maintaining a private monopoly. This was exactly as Frederick C. Howe had proposed.[20] The idea of a centrally planned socialist Russia must have appealed to Peabody. Think of it — one gigantic state monopoly! And Thompson, his friend and fellow director, had the inside track with the boys running the operation![21]

THE UNOFFICIAL AMBASSADORS: ROBINS, LOCKHART, AND SADOUL

The Bolsheviks for their part correctly assessed a lack of sympathy among the Petrograd representatives of the three major Western powers: the United States, Britain and France. The United States was represented by Ambassador Francis, undisguisedly out of sympathy with the revolution. Great Britain was represented by Sir James Buchanan, who had strong ties to the tsarist monarchy and was suspected of having helped along the Kerensky phase of the revolution. France was represented by Ambassador Paleologue, overtly anti-Bolshevik. In early 1918 three additional personages made their appearance; they became *de facto* representatives of these Western countries and edged out the officially recognized representatives.

Raymond Robins took over the Red Cross Mission from W. B. Thompson in early December 1917 but concerned himself more with economic and political matters than obtaining relief and assistance for poverty-stricken Russia. On December 26, 1917, Robins cabled Morgan partner Henry Davison, temporarily the director general of the American Red Cross: "Please urge upon the President the necessity of our continued intercourse with the Bolshevik Government."[22] On January 23, 1918, Robins cabled Thompson, then in New York:

> Soviet Government stronger today than ever before. Its authority and power greatly consolidated by dissolution of Constituent Assembly .... Cannot urge too strongly importance of prompt recognition of Bolshevik authority .... Sisson approves this text and requests you to show this cable to Creel. Thacher and Wardwell concur.[23]

Later in 1918, on his return to the United States, Robins submitted a report to Secretary of State Robert Lansing containing this opening paragraph: "American economic cooperation with Russia; Russia will welcome American assistance in economic reconstruction."[24]

Robins' persistent efforts in behalf of the Bolshevik cause gave him a certain prestige in the Bolshevik camp, and perhaps even some political influence. The U.S. embassy in London claimed in November 1918 that "Salkind owe[s] his appointment, as Bolshevik Ambassador to Switzerland, to an American . . . no other than Mr. Raymond Robins."[25] About this time reports began filtering into Washington that Robins was himself a Bolshevik; for example, the following from Copenhagen, dated December 3, 1918:

> Confidential. According to a statement made by Radek to George de Patpourrie, late Austria Hungarian Consul General at Moscow, Colonel Robbins [*sic*], formerly thief of the American Red Cross Mission to Russia, is at present in Moscow negotiating with the Soviet Government and arts as the intermediary between the Bolsheviki and their friends in the United States. The impression seems to be in some quarters that Colonel Robbins is himself a Bolsheviki while others maintain that he is not but that his activities in Russia have been contrary to the interest of Associated Governments.[26]

Materials in the files of the Soviet Bureau in New York, and seized by the Lusk Committee in 1919, confirm that both Robins and his wife were closely associated with Bolshevik activities in the United States and with the formation of the Soviet Bureau in New York.[27]

The British government established unofficial relations with the Bolshevik regime by sending

to Russia a young Russian-speaking agent, Bruce Lockhart. Lockhart was, in effect, Robins' opposite number; but unlike Robins, Lockhart had direct channels to his Foreign Office. Lockhart was not selected by the foreign secretary or the Foreign Office; both were dismayed at the appointment. According to Richard Ullman, Lockhart was "selected for his mission by Milner and Lloyd George themselves .... "Maxim Litvinov, acting as unofficial Soviet representative in Great Britain, wrote for Lockhart a letter of introduction to Trotsky; in it he called the British agent "a thoroughly honest man who understands our position and sympathizes with us.[28]

We have already noted the pressures on Lloyd George to take a pro-Bolshevik position, especially those from William B. Thompson, and those indirectly from Sir Basil Zaharoff and Lord Milner. Milner was, as the epigraph to this chapter suggests, exceedingly prosocialist. Edward Crankshaw has succinctly outlined Milner's duality.

> Some of the passages [in Milner] on industry and society . . . are passages which any Socialist would be proud to have written. But they were not written by a Socialist. They were written by "the man who made the Boer War." Some of the passages on Imperialism and the white man's burden might have been written by a Tory diehard. They were written by the student of Karl Marx.[29]

According to Lockhart, the socialist bank director Milner was a man who inspired in him "the greatest affection and hero-worship."[30] Lockhart recounts how Milner personally sponsored his Russian appointment, pushed it to cabinet level, and after his appointment talked "almost daily" with Lockhart. While opening the way for recognition of the Bolsheviks, Milner also promoted financial support for their opponents in South Russia and elsewhere, as did Morgan in New York. This dual policy is consistent with the thesis that the *modus operandi* of the politicized internationalists — such as Milner and Thompson — was to place state money on any revolutionary or counterrevolutionary horse that looked a possible winner. The internationalists, of course, claimed any subsequent benefits. The clue is perhaps in Bruce Lockhart's observation that Milner was a man who "believed in the highly organized state."[31]

The French government appointed an even more openly Bolshevik sympathizer, Jacques Sadoul, an old friend of Trotsky.[32]

In sum, the Allied governments neutralized their own diplomatic representatives in Petrograd and replaced them with unofficial agents more or less sympathetic to the Bolshevists.

The reports of these unofficial ambassadors were in direct contrast to pleas for help addressed to the West from inside Russia. Maxim Gorky protested the betrayal of revolutionary ideals by the Lenin-Trotsky group, which had imposed the iron grip of a police state in Russia:

> We Russians make up a people that has never yet worked in freedom, that has never yet had a chance to develop all its powers and its talents. And when I think that the revolution gives us the possibility of free work, of a many-sided joy in creating, my heart is tilled with great hope and joy, even in these cursed days that are besmirched with blood and alcohol.

> There is where begins the line of my decided and irreconcilable separation [tom the insane actions of the People's Commissaries. I consider Maximalism in ideas very useful for the boundless Russian soul; its task is to develop in this soul great and bold needs, to call forth the so necessary fighting spirit and activity, to promote initiative in this indolent soul and to give it shape and life in general.
>
> But the practical Maximalism of the Anarcho-Communists and visionaries from the Smolny is ruinous for Russia and, above all, for the Russian working class. The People's Commissaries handle Russia like material for an experiment. The Russian people is for them what the Horse is for learned bacteriologists who inoculate the horse with typhus so that the anti-typhus lymph may develop in its blood. Now the Commissaries are trying such a predestined-to-failure experiment upon the Russian people without thinking that the tormented, half-starved horse may die.
>
> The reformers from the Smolny do not worry about Russia. They are cold-bloodedly sacrificing Russia in the name of their dream of the worldwide and European revolution. And just as long as I can, I shall impress this upon the Russian proletarian: "Thou art being led to destruction} Thou art being used as material for an inhuman experiment!"[33]

Also in contrast to the reports of the sympathetic unofficial ambassadors were the reports from the old-line diplomatic representatives. Typical o[many messages [lowing into Washington in early 1918 —particularly after Woodrow Wilson's expression of support for the Bolshevik governments —was the following cable [tom the U.S. legation in Bern, Switzerland:

> For Polk. President's message to Consul Moscow not understood here and people are asking why the President expresses support of Bolsheviki, in view of rapine, murder and anarchy of these bands.[34]

Continued support by the Wilson administration for the Bolsheviks led to the resignation of De Witt C. Poole, the capable American charge d'affaires in Archangel (Russia):

> It is my duty to explain frankly to the department the perplexity into which I have been thrown by the statement of Russian policy adopted by the Peace Conference, January 22, on the motion of the President. The announcement very happily recognizes the revolution and confirms again that entire absence of sympathy for any form of counter revolution which has always been a key note of American policy in Russia, but it contains not one [word] of condemnation for the other enemy of the revolution —the Bolshevik Government.[35]

Thus even in the early days of 1918 the betrayal of the libertarian revolution had been noted by such acute observers as Maxim Gorky and De Witt C. Poole. Poole's resignation shook the State Department, which requested the "utmost reticence regarding your desire to resign" and stated that "it will be necessary to replace you in a natural and normal manner in order to

prevent grave and perhaps disastrous effect upon the morale of American troops in the Archangel district which might lead to loss of American lives."[36]

So not only did Allied governments neutralize their own government representatives but the U.S. ignored pleas from within and without Russia to cease support of the Bolsheviks. Influential support of the Soviets came heavily from the New York financial area (little effective support emanated from domestic U.S. revolutionaries). In particular, it came from American International Corporation, a Morgan-controlled firm.

EXPORTING THE REVOLUTION: JACOB H. RUBIN

We are now in a position to compare two cases — not by any means the only such cases — in which American citizens Jacob Rubin and Robert Minor assisted in exporting the revolution to Europe and other parts of Russia.

Jacob H. Rubin was a banker who, in his own words, "helped to form the Soviet Government of Odessa."[37] Rubin was president, treasurer, and secretary of Rubin Brothers of 19 West 34 Street, New York City. In 1917 he was associated with the Union Bank of Milwaukee and the Provident Loan Society of New York. The trustees of the Provident Loan Society included persons mentioned elsewhere as having connection with the Bolshevik Revolution: P. A. Rockefeller, Mortimer L. Schiff, and James Speyer.

By some process — only vaguely recounted in his book *I Live to Tell*[38] — *Rubin* was in Odessa in February 1920 and became the subject of a message from Admiral McCully to the State Department (dated February 13, 1920, 861.00/6349). The message was to the effect that Jacob H. Rubin of Union Bank, Milwaukee, was in Odessa and desired to remain with the Bolshevists — "Rubin does not wish to leave, has offered his services to Bolsheviks and apparently sympathizes with them." Rubin later found his way back to the U.S. and gave testimony before the House Committee on Foreign Affairs in 1921:

> I had been with the American Red Cross people at Odessa. I was there when the Red Army took possession of Odessa. At that time I was favorably inclined toward the Soviet Government, because I was a socialist and had been a member of that party for 20 years. I must admit that to a certain extent I helped to form the Soviet Government of Odessa ....[39]

While adding that he had been arrested as a spy by the Denikin government of South Russia, we learn little more about Rubin. We do, however, know a great deal more about Robert Minor, who was caught in the act and released by a mechanism reminiscent of Trotsky's release from a Halifax prisoner-of-war camp.

EXPORTING THE REVOLUTION: ROBERT MINOR

Bolshevik propaganda work in Germany,[40] financed and organized by William Boyce Thompson and Raymond Robins, was implemented in the field by American citizens, under the

supervision of Trotsky's People's Commissariat for Foreign Affairs:

> One of Trotsky's earliest innovations in the Foreign Office had been to institute a Press Bureau under Karl Radek and a Bureau of International Revolutionary Propaganda under Boris Reinstein, among whose assistants were John Reed and Albert Rhys Williams, and the full blast of these power-houses was turned against the Germany army.
>
> A German newspaper, Die Fackel (The Torch), was printed in editions of half a million a day and sent by special train to Central Army Committees in Minsk, Kiev, and other cities, which in turn distributed them to other points along the front.[41]

Robert Minor was an operative in Reinstein's propaganda bureau. Minor's ancestors were prominent in early American history. General Sam Houston, first president of the Republic of Texas, was related to Minor's mother, Routez Houston. Other relatives were Mildred Washington, aunt of George Washington, and General John Minor, campaign manager for Thomas Jefferson. Minor's father was a Virginia lawyer who migrated to Texas. After hard years with few clients, he became a San Antonio judge.

Robert Minor was a talented cartoonist and a socialist. He left Texas to come East. Some of his contributions appeared in *Masses,* a pro-Bolshevik journal. In 1918 Minor was a cartoonist on the staff of the *Philadelphia Public Ledger.* Minor left New York in March 1918 to report the Bolshevik Revolution. While in Russia Minor joined Reinstein's Bureau of International Revolutionary Propaganda (see diagram), along with Philip Price, correspondent of the *Daily Herald* and *Manchester Guardian,* and Jacques Sadoul, the unofficial French ambassador and friend of Trotsky.

Excellent data on the activities of Price, Minor, and Sadoul have survived in the form of a Scotland Yard (London) Secret Special Report, No. 4, entitled, "The Case of Philip Price and Robert Minor," as well as in reports in the files of the State Department, Washington, D.C.[42] According to this Scotland Yard report, Philip Price was in Moscow in mid-1917, before the Bolshevik Revolution, and admitted, "I am up to my neck in the Revolutionary movement." Between the revolution and about the fall of 1918, Price worked with Robert Minor in the Commissariat for Foreign Affairs.

ORGANIZATION OF FOREIGN PROPAGANDA WORK IN 1918

PEOPLE'S COMMISSARIAT FOR FOREIGN AFFAIRS

(Trotsky)

PRESS BUREAU

(Radek)

BUREAU OF INTERNATIONAL REVOLUTIONARY PROPAGANDA

(Reinstein)

Field Operatives
John Reed
Louis Bryant
Albert Rhys Williams
Robert Minor
Philip Price
Jacques Sadoul

In November 1918 Minor and Price left Russia and went to Germany.[43] Their propaganda products were first used on the Russian Murman front; leaflets were dropped by Bolshevik airplanes amongst British, French, and American troops —according to William Thompson's program.[44] The decision to send Sadoul, Price, and Minor to Germany was made by the Central Executive Committee of the Communist Party. In Germany their activities came to the notice of British, French, and American intelligence. On February 15, 1919, Lieutenant J. Habas of the U.S. Army was sent to Düsseldorf, then under control of a Spartacist revolutionary group; he posed as a deserter from the American army and offered his services to the Spartacists. Habas got to know Philip Price and Robert Minor and suggested that some pamphlets be printed for distribution amongst American troops. The Scotland Yard report relates that Price and Minor had already written several pamphlets for British and American troops, that Price had translated some of Wilhelm Liebknecht's works into English, and that both were working on additional propaganda tracts. Habas reported that Minor and Price said they had worked together in Siberia printing an English-language Bolshevik newspaper for distribution by air among American and British troops.[45]

On June 8, 1919, Robert Minor was arrested in Paris by the French police and handed over to

the American military authorities in Coblenz. Simultaneously, German Spartacists were arrested by the British military authorities in the Cologne area. Subsequently, the Spartacists were convicted on charges of conspiracy to cause mutiny and sedition among Allied forces. Price was arrested but, like Minor, speedily liberated. This hasty release was noted in the State Department:

> Robert Minor has now been released, for reasons that are not quite clear, since the evidence against him appears to have been ample to secure conviction. The release will have an unfortunate effect, for Minor is believed to have been intimately connected with the IWW in America.[46]

The mechanism by which Robert Minor secured his release is recorded in the State Department files. The first relevant document, dated June 12, 1919, is from the U.S. Paris embassy to the secretary of state in Washington, D.C., and marked URGENT AND CONFIDENTIAL.[47] The French Foreign Office informed the embassy that on June 8, Robert Minor, "an American correspondent," had been arrested in Paris and turned over to the general headquarters of the Third American Army in Coblenz. Papers found on Minor appear "to confirm the reports furnished on his activities. It would therefore seem to be established that Minor has entered into relations in Paris with the avowed partisans of Bolshevism." The embassy regarded Minor as a "particularly dangerous man." Inquiries were being made of the American military authorities; the embassy believed this to be a matter within the jurisdiction of the military alone, so that it contemplated no action although instructions would be welcome.

On June 14, Judge R. B. Minor in San Antonio, Texas, telegraphed Frank L. Polk in the State Department:

> Press reports detention my son Robert Minor in Paris for unknown reasons. Please do all possible to protect him I refer to Senators from Texas.
>
> [sgd.] R. P. Minor, District Judge, San Antonio, Texas[48]

Polk telegraphed Judge Minor that neither the State Department nor the War Department had information on the detention of Robert Minor, and that the case was now before the military authorities at Coblenz. Late on June 13 the State Department received a "strictly confidential urgent" message from Paris reporting a statement made by the Office of Military Intelligence (Coblenz) in regard to the detention of Robert Minor: "Minor was arrested in Paris by French authorities upon request of British Military Intelligence and immediately turned over to American headquarters at Coblenz."[49] He was charged with writing and disseminating Bolshevik revolutionary literature, which had been printed in Dusseldorf, amongst British and American troops in the areas they occupied. The military authorities intended to examine the charges against Minor, and if substantiated, to try him by court-martial. If the charges were not substantiated, it was their intention to turn Minor over to the British authorities, "who originally requested that the French hand him over to them."[50] Judge Minor in Texas independently contacted Morris Sheppard, U.S. senator from Texas, and Sheppard contacted Colonel House in Paris. On June 17, 1919, Colonel House sent the following to Senator Sheppard:

> Both the American Ambassador and I are following Robert Minor's case. Am informed that he is detained by American Military authorities at Cologne on serious charges, the exact nature of which it is difficult to discover. Nevertheless, we will take every possible step to insure just consideration for him.[51]

Both Senator Sheppard and Congressman Carlos Bee (14th District, Texas) made their interest known to the State Department. On June 27, 1919, Congressman Bee requested facilities so that Judge Minor could send his son $350 and a message. On July 3 Senator Sheppard wrote Frank Polk, stating that he was "very much interested" in the Robert Minor case, and wondering whether State could ascertain its status, and whether Minor was properly under the jurisdiction of the military authorities. Then on July 8 the Paris embassy cabled Washington: "Confidential. Minor released by American authorities . . . returning to the United States on the first available boat." This sudden release intrigued the State Department, and on August 3 Secretary of State Lansing cabled Paris: "Secret. Referring to previous, am very anxious to obtain reasons for Minor's release by Military authorities."

Originally, U.S. Army authorities had wanted the British to try Robert Minor as "they feared politics might intervene in the United States to prevent a conviction if the prisoner was tried by American court-martial." However, the British government argued that Minor was a United States citizen, that the evidence showed he prepared propaganda against American troops in the first instance, and that, consequently —so the British Chief of Staff suggested —Minor should be tried before an American court. The British Chief of Staff did "consider it of the greatest importance to obtain a conviction if possible."[52]

Documents in the office of the Chief of Staff of the Third Army relate to the internal details of Minor's release.[53] A telegram of June 23, 1919, from Major General Harbord, Chief of Staff of the Third Army (later chairman of the Board of International General Electric, whose executive center, coincidentally, was also at 120 Broadway), to the commanding general, Third Army, stated that Commander in Chief John J. Pershing "directs that you suspend action in the case against Minor pending further orders." There is also a memorandum signed by Brigadier General W. A. Bethel in the office of the judge advocate, dated June 28, 1919, marked "Secret and Confidential," and entitled "Robert Minor, Awaiting Trial by a Military Commission at Headquarters, 3rd Army." The memo reviews the legal case against Minor. Among the points made by Bethel is that the British were obviously reluctant to handle the Minor case because "they fear American opinion in the event of trial by them of an American for a war offense in Europe," even though tire offense with which Minor is charged is as serious "as a man can commit." This is a significant statement; Minor, Price, and Sadoul were implementing a program designed by Federal Reserve Bank director Thompson, a fact confirmed by Thompson's own memorandum (see Appendix 3). Was not therefore Thompson (and Robins), to some degree, subject to the same charges?

After interviewing Siegfried, the witness against Minor, and reviewing the evidence, Bethel commented:

> I thoroughly believe Minor to be guilty, but if I was sitting in court, I would not put guilty on the evidence now available —the testimony of one man only and that man acting in the character of a detective and informer.

Bethel goes on to state that it would be known within a week or ten days whether substantial corroboration of Siegfried's testimony was available. If available, "I think Minor should be tried," but "if corroboration cannot be had, I think it would be better to dismiss the case."

This statement by Bethel was relayed in a different form by General Harbord in a telegram of July 5 to General Malin Craig (Chief of Staff, Third Army, Coblenz):

> With reference to the case against Minor, unless other witnesses than Siegfried have been located by this time C in C directs the case be dropped and Minor liberated. Please acknowledge and state action.

The reply from Craig to General Harbord (July 5) records that Minor was liberated in Paris and adds, "This is in accordance with his own wishes and suits our purposes." Craig also adds that other witnesses *had* been obtained.

This exchange of telegrams suggests a degree of haste in dropping the charges against Robert Minor, and haste suggests pressure. There was no significant attempt made to develop evidence. Intervention by Colonel House and General Pershing at the highest levels in Paris and the cablegram from Colonel House to Senator Morris Sheppard give weight to American newspaper reports that both House and President Wilson were responsible for Minor's hasty release without trial.[54]

Minor returned to the United States and, like Thompson and Robins before him, toured the U.S. promoting the wonders of Bolshevik Russia.

By way of summary, we find that Federal Reserve Bank director William Thompson was active in promoting Bolshevik interests in several ways — production of a pamphlet in Russian, financing Bolshevik operations, speeches, organizing (with Robins) a Bolshevik revolutionary mission to Germany (and perhaps France), and with Morgan partner Lamont influencing Lloyd George and the British War Cabinet to effect a change in British policy. Further, Raymond Robins was cited by the French government for organizing Russian Bolsheviks for the German revolution. We know that Robins was undisguisedly working for Soviet interests in Russia and the United States. Finally, we find that Robert Minor, one of the revolutionary propagandists used in Thompson's program, was released under circumstances suggesting intervention from the highest levels of the U.S. government.

Obviously, this is but a fraction of a much wider picture. These are hardly accidental or random events. They constitute a coherent, continuing pattern over several years. They suggest powerful influence at the summit levels of several governments.

Footnotes:

[1]For a biography see Hermann Hagedorn, *The Magnate: William Boyce*

Thompson and His Time (1869-1930) (New York: Reynal & Hitchcock, 1935).

[2]Polkovnik' Villiam' Boic' Thompson', "Pravda o Rossii i Bol'shevikakh" (New York: Russian-American Publication Society, 1918).

[3]John Bradley, *Allied Intervention in Russia* (London: Weidenfeld and Nicolson, 1968.)

[4]Thomas W. Lamont, *Across World Frontiers* (New York: Harcourt, Brace, 1959), p. 85. See also pp. 94-97 for massive breastbeating over the failure of President Wilson to act promptly to befriend the Soviet regime. Corliss Lamont, his son, became a [font-line domestic leftist in the U.S.

[5]Donald McCormick, *The Mask of Merlin* (London: MacDonald, 1963; New York: Holt, Rinehart and Winston, 1964), p. 208. Lloyd George's personal life would certainly leave him open to blackmail.

[6]Ibid. McCormick's italics.

[7]British War Cabinet papers, no. 302, sec. 2 (Public Records Office, London).

[8]The written memorandum that Thompson submitted to Lloyd George and that became the basis for the War Cabinet statement is available from U.S. archival sources and is printed in full in Appendix 3.

[9]War Cabinet papers, 24/49/7197 (G.T. 4322) Secret, April 24, 1918.

[10]Letter reproduced in full in Appendix 3. It should be noted that we have identified Thomas Lamont, Dwight Morrow, and H. P. Davison as being closely involved in developing policy towards the Bolsheviks. All were partners in the J.P. Morgan firm. Thacher was with the law firm Simpson, Thacher & Bartlett and was a close friend of Felix Frankfurter.

[11]Complete memorandum is in U.S. State Dept. Decimal File, 316-13-698.

[12]See Appendix 3.

[13]U.S., Senate, *Bolshevik Propaganda*, Hearings before a Subcommittee of the Committee on the Judiciary, 65th Cong., t919, p. 802.

[14]U.S. State Dept. Decimal File, 861.51/184.

[15]See Appendix 3.

[16]Inserted by Senator Calder into the *Congressional Record,* January 31, 1918, p. 1409.

[17]Hagedorn, op. tit., p. 263.

[18]U.S. State Dept. Decimal File, 861.00/3005.

[19]Louis Ware, *George Foster Peabody* (Athens: University of Georgia Press, 1951).

[20]Seep. 16.

[21]If this argument seems too farfetched, the reader should see Gabriel Kolko, *Railroads and Regulation 1877-1916* (New York: W. W. Norton, 1965), which describes how pressures for government control and formation of the Interstate Commerce Commission came from the railroad *owners,* not from farmers and users of railroad services.

[22]C. K. Cumming and Waller W. Pettit, *Russian-American Relations, Documents and Papers* (New York: Harcourt, Brace & Howe, 1920), doe. 44.

[23]Ibid., doc. 54.

[24]Ibid., doc. 92.

[25]U.S. State Dept. Decimal File, 861.00/3449. But see Kennan, *Russia Leaves the War,* pp. 401-5.

[26]Ibid., 861.00 3333.

[27]See chapter seven.

[28]Richard H. Ullman, *Intervention and the War* (Princeton, N.J.: Princeton University Press, 1961), t). 61.

[29]Edward Crankshaw, *The Forsaken Idea: A Study o! Viscount Milner* (London: Longmans Green, 1952), p. 269.

[30]Robert Hamilton Bruce Lockhart, *British Agent* (New York: Putnam's, 1933), p. 119.

[31]Ibid., p. 204.

[32]See Jacques Sadoul, *Notes sur la revolution bolchevique* (Paris: Editions de la sirene, 1919).

[34]U.S. State Dept. Decimal File, 861.00/1305, March 15, 1918.

[35]Ibid., 861.00/3804.

[36]Ibid.

[37]U.S., House, Committee on Foreign Affairs, *Conditions in Russia,* 66th Cong., 3d sess., 1921.

[38]Jacob H. Rubin, *1 Live to Tell: The Russian Adventures o! an American Socialist* (Indianapolis: Bobbs-Merrill, 1934).

[39]U.S., House, Committee on Foreign Affairs, op. cit.

[40]See George G. Bruntz*, Allied Propaganda and the Collapse o! the German Empire in 1918* (Stanford, Calif.: Stanford University Press, 1938), pp. 144-55; see also herein p. 82.

[41]John W. Wheeler-Bennett, *The Forgotten Peace* (New York: William Morrow, 1939).

[42]There is a copy of this Scotland Yard report in U.S. Start' Dept. Decimal File, 316-23-1184 9.

[43]Joseph North, *Robert Minor: Artist and Crusader* (New York: International Publishers, 1956).

[44]Samples of Minor's propaganda tracts are still in the U.S. State Dept. files. See p. 197-200 on Thompson.

[45]See Appendix 3.

[46]U.S. State Dept. Decimal File, 316-23-1184.

[47]Ibid., 861.00/4680 (316-22-0774).

[48]Ibid., 861.00/4685 (/783).

[49]U.S. State Dept. Decimal File, 861.00/4688 (/788).

[50]Ibid.

[51]Ibid., 316-33-0824.

[52]U.S. State Dept. Decimal File, 861.00/4874.

[53]Office of Chief of Staff, U.S. Army, National Archives, Washington, D.C.

[54]U.S., Senate, *Congressional Record, October* 1919, pp. 6430, 6664-66, 7353-54; and *New York Times,* October It, 1919. See also *Sacramento Bee,* July 17, 1919.

BACK

Chapter VI

THE BOLSHEVIKS RETURN TO NEW YORK

> **Martens is very much in the limelight. There appears to be no doubt about his connection with the Guarantee [*sic*] Trust Company, Though it is surprising that so large and influential an enterprise should have dealings with a Bolshevik concern.**
>
> *Scotland Yard Intelligence Report, London, 1919*[1]

Following on the initial successes of the revolution, the Soviets wasted little time in attempting through former U.S. residents to establish diplomatic relations with and propaganda outlets in the United States. In June 1918 the American consul in Harbin cabled Washington:

> Albert R. Williams, bearer Department passport 52,913 May 15, 1917 proceeding United States to establish information bureau for Soviet Government for which he has written authority. Shall I visa?[2]

Washington denied the visa and so Williams was unsuccessful in his attempt to establish an information bureau here. Williams was followed by Alexander Nyberg (alias Santeri Nuorteva), a former Finnish immigrant to the United States in January 1912, who became the first operative Soviet representative in the United States. Nyberg was an activtive propagandist. In fact, in 1919 be was, according to J. Edgar Hoover (in a letter to the U.S. Committee on Foreign Affairs), "the forerunner of LCAK Martens anti with Gregory Weinstein the most active individual of official Bolshevik propaganda in the United States."[3]

Nyberg was none too successful as a diplomatic representative or, ultimately, as a propagandist. The State Departmment files record an interview with Nyberg by the counselors' office, dated January *29*, 1919. Nyberg was accompanied by H. Kellogg, described as "an American citizen, graduate of Harvard," and, more surprisingly, by a Mr. McFarland, an attorney for the Hearst organization. The State Department records show that Nyberg made "many misstatements in regard to the attitude to the Bolshevik Government" and claimed that Peters, the Lett terrorist police chief in Petrograd, was merely a "kind-hearted poet." Nyberg requested the department to cable Lenin, "on the theory that it might be helpful in bringing about the conference proposed by the Allies at Paris."[4] The proposed message, a rambling appeal to Lenin to gain international acceptance appearing at the Paris Conference, was not sent.[5]

A RAID ON THE SOVIET BUREAU IN NEW YORK

Alexander Nyberg (Nuorteva) was then let go and replaced by the Soviet Bureau, which was

established in early 1919 in the World Tower Building, 110 West 40 Street, New York City. The bureau was headed by a German citizen, Ludwig C. A. K. Martens, who is usually billed as the first ambassador of the Soviet Union in the United States, and who, up to that time, had been vice president of Weinberg & Posner, an engineering firm located at 120 Broadway, New York City. Why the "ambassador" and his offices were located in New York rather than in Washington, D.C. was not explained; it does suggest that trade rather than diplomacy was its primary objective. In any event, the bureau promptly issued a call lot Russian trade with the United States. Industry had collapsed and Russia direly needed machinery, railway goods, clothing, chemicals, drugs — indeed, everything utilized by a modern civilization. In exchange the Soviets offered gold and raw materials. The Soviet Bureau then proceeded to arrange contracts with American firms, ignoring the facts of the embargo and nonrecognition. At the same time it was providing financial support for the emerging Communist Party U.S.A.[6]

On May 7, 1919, the State Department slapped down business intervention in behalf of the bureau (noted elsewhere),[7] and repudiated Ludwig Martens, the Soviet Bureau, and the Bolshevik government o1 Russia. This official rebuttal did not deter the eager order-hunters in American industry. When the Soviet Bureau offices were raided on June 12, 1919, by representatives of the Lusk Committee of the state of New York, files of letters to and from American businessmen, representing almost a thousand firms, were unearthed. The British Home Office Directorate of Intelligence "Special Report No. 5 (Secret)," issued from Scotland Yard, London, July 14, 1919, and written by Basil H. Thompson, was based on this seized material; the report noted:

> . . . Every effort was made from the first by Martens and his associates to arouse the interest of American capitalists and there are grounds tot believing that the Bureau has received financial support from some Russian export firms, as well as from the Guarantee [*sic*] Trust Company, although this firm has denied the allegation that it is financing Martens' organisation.[8]

It was noted by Thompson that the monthly rent of the Soviet Bureau offices was $300 and the office salaries came to about $4,000. Martens' funds to pay these bills came partly from Soviet couriers — such as John Reed and Michael Gruzenberg — who brought diamonds from Russia for sale in the U.S., and partly from American business firms, including the Guaranty Trust Company of New York. The British reports summarized the files seized by the Lusk investigators from the bureau offices, and this summary is worth quoting in full:

> (1) There was an intrigue afoot about the time the President first went to France to get the Administration to use Nuorteva as an intermediary with the Russian Soviet Government, with a view to bring about its recognition by America. Endeavour was made to bring Colonel House into it, and there is a long and interesting letter to Frederick C. Howe, on whose support and sympathy Nuorteva appeared to rely. There are other records connecting Howe with Martens and Nuorteva.
>
> (2) There is a file of correspondence with Eugene Debs.
>
> (3) A letter from Amos Pinchot to William Kent of the U.S. Tariff

> Commission in an envelope addressed to Senator Lenroot, introduces Evans Clark "now in the Bureau of the Russian Soviet Republic." "He wants to talk to you about the recognition of Kolchak and the raising of the blockade, etc."
>
> (4) A report to Felix Frankfurter, dated 27th May, 1919 speaks of the virulent campaign vilifying the Russian Government.
>
> (5) There is considerable correspondence between a Colonel and Mrs. Raymond Robbins *[sic]* and Nuorteva, both in 1918 and 1919. In July 1918 Mrs. Robbins asked Nuorteva for articles for "Life and Labour," the organ of the National Women's Trade League. In February and March, 1919, Nuorteva tried, through Robbins, to get invited to give evidence before the Overman Committee. He also wanted Robbins to denounce the Sisson documents.
>
> (6) In a letter from the Jansen Cloth Products Company, New York, to Nuorteva, dated March 30th, 1918, E. Werner Knudsen says that he understands that Nuorteva intends to make arrangements for the export of food-stuffs through Finland and he offers his services. We have a file on Knudsen, who passed information to and from Germany by way of Mexico with regard to British shipping.[9]

Ludwig Martens, the intelligence report continued, was in touch with all the leaders of "the left" in the United States, including John Reed, Ludwig Lore, and Harry J. Boland, the Irish rebel. A vigorous campaign against Aleksandr Kolchak in Siberia had been organized by Martens. The report concludes:

> [Martens'] organization is a powerful weapon for supporting the Bolshevik cause in the United States and... he is in close touch with the promoters of political unrest throughout the whole American continent.

The Scotland Yard list of personnel employed by the Soviet Bureau in New York coincides quite closely with a similar list in the Lusk Committee files in Albany, New York, which are today open for public inspection.[10] There is one essential difference between the two lists: the British analysis included the name "Julius Hammer" whereas Hammer was omitted from the Lusk Committee report.[11] The British report characterizes Julius Hammer as follows:

> In Julius Hammer, Martens has a real Bolshevik and ardent Left Wing adherent, who came not long ago from Russia. He was one of the organizers of the Left Wing movement in New York, and speaks at meetings on the same platform with such Left Wing leaders as Reed, Hourwich, Lore and Larkin.

There also exists other evidence of Hammer's work in behalf of the Soviets. A letter from National City Bank, New York, to the U.S. Treasury Department stated that documents received by the bank from Martens were "witnessed by a Dr. Julius Hammer for the Acting Director of the Financial Department" of the Soviet Bureau.[12]

The Hammer family has had close ties with Russia and the Soviet regime from 1917 to the present. Armand Hammer is today able to acquire the most lucrative of Soviet contracts. Jacob, grandfather of Armand Hammer, and Julius were born in Russia. Armand, Harry, and Victor, sons of Julius, were born in the United States and are U.S. citizens. Victor was a well-known artist; his son —also named Armand —and granddaughter are Soviet citizens and reside in the Soviet Union. Armand Hammer is chairman of Occidental Petroleum Corporation and has a son, Julian, who is director of advertising and publications for Occidental Petroleum.

Julius Hammer was a prominent member and financier of the left wing of the Socialist Party. At its 1919 convention Hammer served with Bertram D. Wolfe and Benjamin Gitlow on the steering committee that gave birth to the Communist Party of the U.S.

In 1920 Julius Hammer was given a sentence of three-and-one-half to fifteen years in Sing Sing for criminal abortion. Lenin suggested —with justification —that Julius was "imprisoned on the charge of practicing illegal abortions but in fact because of communism."[13] Other U.S. Communist Party members were sentenced to jail for sedition or deported to the Soviet Union. Soviet representatives in the United States made strenuous but unsuccessful efforts to have Julius and his fellow party members released.

Another prominent member of the Soviet Bureau was the assistant secretary, Kenneth Durant, a former aide to Colonel House. In 1920 Durant was identified as a Soviet courier. Appendix 3 reproduces a letter to Kenneth Durant that was seized by the U.S. Department of Justice in 1920 and that describes Durant's close relationship with the Soviet hierarchy. It was inserted into the record of a House committee's hearings in 1920, with the following commentary:

> MR. NEWTON: It is a mailer of interest to this committee to know what was the nature of that letter, and I have a copy of the letter that I Want inserted in the record in connection with the witness' testimony. MR. Mason: That letter has never been shown to the witness. He said that he never saw the letter, and had asked to see it, and that the department had refused to show it to him. We would not put any witness on the stand and ask him to testify to a letter without seeing it.
>
> MR. NEWTON: The witness testified that he has such a letter, and he testified that they found it in his coat in the trunk, I believe. That letter was addressed to a Mr. Kenneth Durant, and that letter had within it another envelope which was likewise sealed. They were opened by the Government officials and a photostatic copy made. The letter, I may say, is signed by a man by the name of *"Bill."* It refers specifically to soviet moneys on deposit in Christiania, Norway, a portion of which they waist turned over here to officials of the soviet government in this country.[14]

Kenneth Durant, who acted as Soviet courier in the transfer of funds, was treasurer lot the Soviet Bureau and press secretary and publisher of *Soviet Russia,* the official organ of the Soviet Bureau. Durant came from a well-to-do Philadelphia family. He spent most of his life in the service of the Soviets, first in charge of publicity work at the Soviet Bureau then from 1923 to 1944 as manager of the Soviet *Tass* bureau in the United States. J. Edgar Hoover described Durant as "at all times . . . particularly active in the interests of Martens and of the Soviet

government."[15]

Felix Frankfurter —later justice of the Supreme Courts —was also prominent in the Soviet Bureau files. A letter from Frankfurter to Soviet agent Nuorteva is reproduced in Appendix 3 and suggests that Frankfurter had some influence with the bureau.

In brief, the Soviet Bureau could not have been established without influential assistance from within the United States. Part of this assistance came from specific influential appointments to the Soviet Bureau staff and part came from business firms outside the bureau, firms that were reluctant to make their support publicly known.

CORPORATE ALLIES FOR THE SOVIET BUREAU

On February 1, 1920, the front page of the *New York Times* carried a boxed notation stating that Martens was to be arrested and deported to Russia. At the same time Martens was being sought as a witness to appear before a subcommittee of the Senate Foreign Relations Committee investigating Soviet activity in the United States. After lying low for a few days Martens appeared before the committee, claimed diplomatic privilege, and refused to give up "official" papers in his possession. Then after a flurry of publicity, Martens "relented," handed over his papers, and admitted to revolutionary activities in the United States with the ultimate aim of overthrowing the capitalist system.

Martens boasted to the news media and Congress that big corporations, the Chicago packers among them, were aiding the Soviets:

> Affording to Martens, instead of farthing on propaganda among the radicals and the proletariat he has addressed most of his efforts to winning to the side of Russia the big business and manufacturing interests of this country, the packers, the United States Steel Corporation, the Standard Oil Company and other big concerns engaged in international trade. Martens asserted that most of the big business houses of the country were aiding him in his effort to get the government to recognize the Soviet government.[16]

This claim was expanded by A. A. Heller, commercial attache at the Soviet Bureau:

> "Among the people helping us to get recognition from the State Department are the big Chit ago packers, Armour, Swift, Nelson Morris and Cudahy ..... Among the other firms are . . . the American Steel Export Company, the Lehigh Machine Company, the Adrian Knitting Company, the International Harvester Company, the Aluminum Goods Manufacturing Company, the Aluminum Company of America, the American Car and Foundry Export Company, M.C.D. Borden & Sons."[17]

The *New York Times* followed up these claims and reported comments of the firms named. "I have never heard of this man [Martens] before in my life," declared G. F. Swift, Jr., in charge of the export department of Swift & Co. "Most certainly I am sure that we have never had any

dealings with him of any kind."[18] The *Times* added that O. H. Swift, the only other member of the firm that could be contacted, "also denied any knowledge whatever of Martens or his bureau in New York." The Swift statement was evasive at best. When the Lusk Committee investigators seized the Soviet Bureau files, they found correspondence between the bureau and almost all the firms named by Martens and Heller. The "list of firms that offered to do business with Russian Soviet Bureau," compiled from these files, included an entry (page 16), "Swift and Company, Union Stock Yards, Chicago, Ill." In other words, Swift *had* been in communication with Martens despite its denial to the *New York Times.*

The *New York Times* contacted United States Steel and reported, "Judge Elbert H. Gary said last night that there was no foundation for the statement with the Soviet representative here had had any dealings with the United States Steel Corporation." This is technically correct. The United States Steel Corporation is not listed in the Soviet files, but the list *does* contain (page 16) an affiliate, "United States Steel Products Co., 30 Church Street, New York City."

The Lusk Committee list records the following about other firms mentioned by Martens and Heller: Standard Oil —not listed. Armour 8c Co., meatpackers —listed as "Armour Leather" and "Armour & Co. Union Stock Yards, Chicago." Morris Go., meatpackers, is listed on page 13. Cudahy —listed on page 6. American Steel Export Co. —listed on page 2 as located at the Woolworth Building; it had offered to trade with the USSR. Lehigh Machine Co. —not listed. Adrian Knitting Co. —listed on page 1. International Harvester Co. —listed on page 11. Aluminum Goods Manufacturing Co. —listed on page 1. Aluminum Company of America — not listed. American Car and Foundry Export —the closest listing is "American Car Co. — Philadelphia." M.C.D. Borden 8c Sons —listed as located at 90 Worth Street, on page 4.

Then on Saturday, June *21,* 1919, Santeri Nuorteva (Alexander Nyberg) confirmed in a press interview the role of International Harvester:

> Q: [by *New York T*imes reporter]: What is your business?
>
> A: Purchasing director tot Soviet Russia.
>
> Q: What did you do to accomplish this?
>
> A: Addressed myself to American manufacturers.
>
> Q: Name them.
>
> A: International Harvester Corporation is among them.
>
> Q: Whom did you see?
>
> A**:** Mr. Koenig.
>
> Q: Did you go to see him?

A: Yes.

Q: Give more names.

A: I went to see so many, about 500 people and I can't remember all the names. We have files in the office disclosing them.[19]

In brief, the claims by Heller and Martens relating to their widespread contacts among certain U.S. firms[20] were substantiated by the office files of the Soviet Bureau. On the other hand, for their own good reasons, these firms appeared unwilling to confirm their activities.

EUROPEAN BANKERS AID THE BOLSHEVIKS

In addition to Guaranty Trust and the private banker Boissevain in New York, some European bankers gave direct help to maintain and expand the Bolshevik hold on Russia. A 1918 State Department report from our Stockholm embassy details these financial transfers. The department commended its author, stating that his *"re*ports on conditions in Russia, the spread of Bolshevism in Europe, and financial questions . . . have proved most helpful to the Department. Department is much gratified by your capable handling of the legation's business."[21] According to this report, one of these "Bolshevik bankers" acting in behalf of the emerging Soviet regime was Dmitri Rubenstein, of the former Russo-French bank in Petrograd. Rubenstein, an associate of the notorious Grigori Rasputin, had been jailed in prerevolutionary Petrograd in connection with the sale of the Second Russian Life Insurance Company. The American manager and director of the Second Russian Life Insurance Company was John MacGregor Grant, who was located at 120 Broadway, New York City. Grant was also the New York representative of Putiloff's Banque Russo-Asiatique. In August 1918 Grant was (for unknown reasons) listed on the Military Intelligence Bureau "suspect list."[22] This may have occurred because Olof Aschberg in early 1918 reported opening a foreign credit in Petrograd "with the John MacGregor Grant Co., export concern, which it [Aschberg] finances in Sweden and which is financed in America by the Guarantee *[sic]* Trust Co."[23] After the revolution Dmitri Rubenstein moved to Stockholm and became financial agent for the Bolsheviks. The State Department noted that while Rubenstein was "not a Bolshevik, he has been unscrupulous in moneT' making, and it is suspected that he may be making the contemplated visit to America in Bolshevik interest and for Bolshevik pay.[24]

Another Stockholm "Bolshevik banker" was Abram Givatovzo, brother-in-law of Trotsky and Lev Kamenev. The State Department report asserted that while Givatovzo pretended to be "very anti-Bolshevik," he had in fact received "large sums" of moneT' from the Bolsheviks by courier for financing revolutionary operations. Givatovzo was part of a syndicate that included Denisoff of the former Siberian bank, Kamenka of the Asoff Don Bank, and Davidoff of the Bank of Foreign Commerce. This syndicate sold the assets of the former Siberian Bank to the British government.

Yet another tsarist private banker, Gregory Lessine, handled Bolshevik business through the firm of Dardel and Hagborg. Other "Bolshevik bankers" named in the report are stirrer and Jakob Berline, who previously controlled, through his wife, the Petrograd Nelkens Bank. Isidor

Kon was used by these bankers as an agent.

The most interesting of these Europe-based bankers operating in behalf of the Bolsheviks was Gregory Benenson, formerly chairman in Petrograd of the Russian and English Bank — a bank which included on its board of directors Lord Balfour (secretary of state for foreign affairs in England) and Sir I. M. H. Amory, as well as S. H. Cripps and H. Guedalla. Benenson traveled to Petrograd after the revolution, then on to Stockholm. He came. said one State Department official, "bringing to my knowledge ten million rubles with him as he offered them to me at a high price for the use of our Embassy Archangel." Benenson had an arrangement with the Bolsheviks to exchange sixty million rubles for £1.5 million sterling.

In January 1919 the private bankers in Copenhagen that were associated with Bolshevik institutions became alarmed by rumors that the Danish political police had marked the Soviet legation and those persons in contact with the Bolsheviks for expulsion from Denmark. These bankers and the legation hastily attempted to remove their funds from Danish banks — in particular, seven million rubles from the Revisionsbanken.[25] Also, confidential documents were hidden in the offices of the Martin Larsen Insurance Company.

Consequently, we can identify a pattern of assistance by capitalist bankers for the Soviet Union. Some of these were American bankers, some were tsarist bankers who were exiled and living in Europe, and some were European bankers. Their common objective was profit, not ideology.

The questionable aspects of the work of these "Bolshevik bankers," as they were called, arises from the framework of contemporary events in Russia. In 1919 French, British, and American troops were fighting Soviet troops in the Archangel region. In one clash in April 1919, for example, American casualties were one officer, .five men killed, and nine missing.[26] Indeed, at one point in 1919 General Tasker H. Bliss, the U.S. commander in Archangel, affirmed the British statement that "Allied troops in the Murmansk and Archangel districts were in danger of extermination unless they were speedily reinforced."[27] Reinforcements were then on the way under the command of Brigadier General W. P. Richardson.

In brief, while Guaranty Trust and first-rank American firms were assisting the formation of the Soviet Bureau in New York, American troops were in conflict with Soviet troops in North Russia. Moreover, these conflicts were daily reported in the *New York Times*, presumably read by these bankers and businessmen. Further, as we shall see in chapter ten, the financial circles that were supporting the Soviet Bureau in New York also formed in New York the "United Americans" — a virulently anti-Communist organization predicting bloody revolution, mass starvation, and panic in the streets of New York.

Footnotes:

[1]Copy in U.S. State Dept. Decimal File, 316-22-656.

[2]Ibid., 861.00/1970.

[3]U.S., House, Committee on Foreign Affairs, *Conditions in Russia*, 66th Cong., 3d sess., 1921, p. 78.

[4]U.S. State Dept. Decimal File, 316-19-1120.

[5]Ibid.

[6]See Benjamin Gitlow, [U.S., House, *Un-American Propaganda Activities* (Washington, 1939), vols. 7-8, p. 4539.

[7]See p. 119.

[8]Copy in [U.S. State Dept. Decimal File, 316-22-656. Confirmation of Guaranty Trust involvement tomes in later intelligence reports.

[9]On Frederick C. Howe see pp. 16, 177, for an early statement of the manner in which financiers use society and its problems for their own ends; on Felix Frankfurter, later Supreme Court justice, see Appendix 3 for an early Frankfurter letter to Nuorteva; on Raymond Robins see p. 100.

[10]The Lusk Committee list of personnel in the Soviet Bureau is printed in Appendix 3. The list includes Kenneth Durant, aide to Colonel House; Dudley Field Malone, appointed by President Wilson as collector of customs for the Port of New York; and Morris Hillquit, the financial intermediary between New York banker Eugene Boissevain on the one hand, and John Reed and Soviet agent Michael Gruzenberg on the other.

[11]Julius Hammer was the father of Armand Hammer, who today is chairman of the Occidental Petroleum Corp. of Los Angeles.

[12]See Appendix 3.

[13]V. I. Lenin, *Polnoe Sobranie Sochinenii,* 5th ed. (Moscow, 1958), 53:267.

[14]U.S., House, Committee. on Foreign Affairs, *Conditions in Russia,* 66th Cong., 3d sess., 1921, p. 75. "Bill" was William Bobroff, Soviet agent.

[15]Ibid., p. 78.

[16]*New York Times,* November 17, 1919.

[17]Ibid.

[18]Ibid.

[19]*New York Times,* June 21, 1919.

[20]See p. 119.

[21]U.S. State Dept. Decimal File, 861.51/411, November 23, 1918.

[22]Ibid., 316-125-1212.

[23]U.S., Department of State, *Foreign Relations o! the United States: 1918, Russia*, 1:373.

[24]U.S. State Dept. Decimal File, 861.00/4878, July,' 21, 1919.

[25]Ibid., 316-21-115/21.

[26]*New York Times*, April 5, 1919.

[27]Ibid.

BACK

Chapter VIII

120 BROADWAY, NEW YORK CITY

William B. Thompson, who was in Petrograd from July until November last, has made a personal contribution of $1,000,000 to the Bolsheviki for the purpose of spreading their doctrine in Germany and Austria ....

Washington Post, February 2, 1918

While collecting material for this book a single location and address in the Wall Street area came to the fore — 120 Broadway, New York City. Conceivably, this book could have been written incorporating only persons, firms, and organizations located at 120 Broadway in the year 1917. Although this research method would have been forced and unnatural, it would have excluded only a relatively small segment of the story.

The original building at 120 Broadway was destroyed by fire before World War I. Subsequently the site was sold to the Equitable Office Building Corporation, organized by General T. Coleman du Pont, president of du Pont de Nemours Powder Company.[1] A new building was completed in 1915 and the Equitable Life Assurance Company moved back to its old site.[2] In passing we should note an interesting interlock in Equitable history. In 1916 the cashier of the Berlin Equitable Life office was William Schacht, the father of Hjalmar Horace Greeley Schacht — later to become Hitler's banker, and financial genie. William Schacht was an American citizen, worked thirty years for Equitable in Germany, and owned a Berlin house known as "Equitable Villa." Before joining Hitler, young Hjalmar Schacht served as a member of the Workers and Soldiers Council (a soviet) of Zehlendoff; this he left in 1918 to join the board of the Nationalbank fur Deutschland. His codirector at DONAT was Emil Wittenberg, who, with Max May of Guaranty Trust Company of New York, was a director of the first Soviet international bank, Ruskombank.

In any event, the building at 120 Broadway was in 1917 known as the Equitable Life Building. A large building, although by no means the largest office building in New York City, it occupies a one-block area at Broadway and Pine, and has thirty-four floors. The Bankers Club was located on the thirty-fourth floor. The tenant list in 1917 in effect reflected American involvement in the Bolshevik Revolution and its aftermath. For example, the headquarters of the No. 2 District of the Federal Reserve System — the New York area — by far the most important of the Federal Reserve districts, was located at 120 Broadway. The offices of several individual directors of the Federal Reserve Bank of New York and, most important, the American International Corporation were also at 120 Broadway. By way of contrast, Ludwig Martens, appointed by the Soviets as the first Bolshevik "ambassador" to the United States and head of the Soviet Bureau, was in 1917 the vice president of Weinberg & Posner — and also had offices at 120 Broadway.[*]

Is this concentration an accident? Does the geographical contiguity have any significance? Before attempting to suggest an answer, we have to switch our frame of reference and abandon the left-right spectrum of political analysis.

With an almost unanimous lack of perception the academic world has described and analyzed international political relations in the context of an unrelenting conflict between capitalism and communism, and rigid adherence to this Marxian formula has distorted modern history. Tossed out from time to time are odd remarks to the effect that the polarity is indeed spurious, but these are quickly dispatched to limbo. For example, Carroll Quigley, professor of international relations at Georgetown University, made the following comment on the House of Morgan:

> More than fifty years ago the Morgan firm decided to infiltrate the Left-wing political movements in the United States. This was relatively easy to do, since these groups were starved for funds and eager for a voice to reach the people. Wall Street supplied both. The purpose was not to destroy, dominate or take over...[3]

Professor Quigley's comment, apparently based on confidential documentation, has all the ingredients of an historical bombshell if it can be supported. We suggest that the Morgan firm infiltrated not only the domestic left, as noted by Quigley, but also the foreign left —that is, the Bolshevik movement and the Third International. Even further, through friends in the U.S. State Department, Morgan and allied financial interests, particularly the Rockefeller family, have exerted a powerful influence on U.S.-Russian relations from World War I to the present. The evidence presented in this chapter will suggest that two of the operational vehicles for infiltrating or influencing foreign revolutionary movements were located at 120 Broadway: the first, the Federal Reserve Bank of New York, heavily laced with Morgan appointees; the second, the Morgan-controlled American International Corporation. Further, there was an important interlock between the Federal Reserve Bank of New York and the American International Corporation —C. A. Stone, the president of American International, was also a director of the Federal Reserve Bank.

The tentative hypothesis then is that this unusual concentration at a single address was a reflection of purposeful actions by specific firms and persons and that these actions and events cannot be analyzed within the usual spectrum of left-right political antagonism.

AMERICAN INTERNATIONAL CORPORATION

The American International Corporation (AIC) was organized in New York on November 22, 1915, by the J.P. Morgan interests, with major participation by Stillman's National City Bank and the Rockefeller interests. The general office of AIC was at 120 Broadway. The company's charter authorized it to engage in any kind of business, except banking and public utilities, in any country in the world. The stated purpose of the corporation was to develop domestic and foreign enterprises, to extend American activities abroad, and to promote the interests of American and foreign bankers, business and engineering.

Frank A. Vanderlip has described in his memoirs how American International was formed and

the excitement created on Wall Street over its business potential.[4] The original idea was generated by a discussion between Stone & Webster —the international railroad contractors who "were convinced there was not much more railroad building to be done in the United States" —and Jim Perkins and Frank A. Vanderlip of National City Bank (NCB).[5] The original capital authorization was $50 million and the board of directors represented the leading lights of the New York financial world. Vanderlip records that he wrote as follows to NCB president Stillman, enthusing over the enormous potential for American International Corporation:

> James A. Farrell and Albert Wiggin have been invited [to be on the board] but had to consult their committees before accepting. I also have in mind asking Henry Walters and Myron T. Herrick. Mr. Herrick is objected to by Mr. Rockefeller quite strongly but Mr. Stone wants him and I feel strongly that he would be particularly desirable in France. The whole thing has gone along with a smoothness that has been gratifying and the reception of it has been marked by an enthusiasm which has been surprising to me even though I was so strongly convinced we were on the right track.
>
> I saw James J. Hill today, for example. He said at first that he could not possibly think of extending his responsibilities, but after I had finished telling him what we expected to do, he said he would be glad to go on the board, would take a large amount of stock and particularly wanted a substantial interest in the City Bank and commissioned me to buy him the stock at the market.
>
> I talked with Ogden Armour about the matter today for the first time. He sat in perfect silence while I went through the story, and, without asking a single question, he said he would go on the board and wanted $500,000 stock.
>
> Mr. Coffin [of General Electric] is another man who is retiring from everything, but has 'become so enthusiastic over this that he was willing to go on the board, and offers the most active cooperation.
>
> I felt very good over getting Sabin. The Guaranty Trust is altogether the most active competitor we have in the field and it is of great value to get them into the fold in this way. They have been particularly enthusiastic at Kuhn, Loeb's. They want to take up to $2,500,000. There was really quite a little competition to see who should get on the board, but as I had happened to talk with Kahn and had invited him first, it was decided he should go on. He is perhaps the most enthusiastic of any one. They want half a million stock for Sir Ernest Castle** to whom they have cabled the plan and they have back from him approval of it.
>
> I explained the whole matter to the Board [of the City Bank] Tuesday and got nothing but favorable comments.[6]

Everybody coveted the AIC stock. Joe Grace (of W. R. Grace & Co.) wanted $600,000 in addition to his interest in National City Bank. Ambrose Monell wanted $500,000. George

Baker wanted $250,000. And "William Rockefeller tried, vainly, to get me to put him down for $5,000,000 of the common."[7]

By 1916 AIC investments overseas amounted to more than $23 million and in 1917 to more than $27 million. The company established representation in London, Paris, Buenos Aires, and Peking as well as in Petrograd, Russia. Less than two years after its formation AIC was operating on a substantial scale in Australia, Argentina, Uruguay, Paraguay, Colombia, Brazil, Chile, China, Japan, India, Ceylon, Italy, Switzerland, France, Spain, Cuba, Mexico, and other countries in Central America.

American International owned several subsidiary companies outright, had substantial interests in yet other companies, and operated still other firms in the United States and abroad. The Allied Machinery Company of America was founded in February 1916 and the entire share capital taken up by American International Corporation. The vice president of American International Corporation was Frederick Holbrook, an engineer and formerly head of the Holbrook Cabot & Rollins Corporation. In January 1917 the Grace Russian Company was formed, the joint owners being W. R. Grace & Co. and the San Galli Trading Company of Petrograd. American International Corporation had a substantial investment in the Grace Russian Company and through Holbrook an interlocking directorship.

AIC also invested in United Fruit Company, which was involved in Central American revolutions in the 1920s. The American International Shipbuilding Corporation was wholly owned by AIC and signed substantial contracts for war vessels with the Emergency Fleet Corporation: one contract called for fifty vessels, followed by another contract for forty vessels, followed by yet another contract for sixty cargo vessels. American International Shipbuilding was the largest single recipient of contracts awarded by the U.S. government Emergency Fleet Corporation. Another company operated by AIC was G. Amsinck & Co., Inc. of New York; control of the company was acquired in November 1917. Amsinck was the source of financing for German espionage in the United States (see page 66). In November 1917 the American International Corporation formed and wholly owned the Symington Forge Corporation, a major government contractor for shell forgings. Consequently, American International Corporation had significant interest in war contracts within the United States and overseas. It had, in a word, a vested interest in the continuance of World War I.

The directors of American International and some of their associations were (in 1917):

> J. OGDEN ARMOUR Meatpacker, of Armour & Company, Chicago; director of the National City Bank of New York; and mentioned by A. A. Heller in connection with the Soviet Bureau (see p. 119).
>
> GEORGE JOHNSON BALDWIN Of Stone & Webster, 120 Broadway. During World War I Baldwin was chairman of the board of American International Shipbuilding, senior vice president of American International Corporation, director of G. Amsinck (Von Pavenstedt of Amsinck was a German espionage paymaster in the U.S., see page 65), and a trustee of the Carnegie Foundation, which financed the Marburg Plan for international socialism to be controlled behind the scenes by world finance (see page 174-6).

C. A. COFFIN Chairman of General Electric (executive office: 120 Broadway), chairman of cooperation committee of the American Red Cross.

W. E. COREY (14 Wall Street) Director of American Bank Note Company, Mechanics and Metals Bank, Midvale Steel and Ordnance, and International Nickel Company; later director of National City Bank.

ROBERT DOLLAR San Francisco shipping magnate, who attempted in behalf of the Soviets to import tsarist gold rubles into U.S. in 1920, in contravention of U.S. regulations.

PIERRE S. DU PONT Of the du Pont family.

PHILIP A. S. FRANKLIN Director of National City Bank.

J.P. GRACE Director of National City Bank.

R. F. HERRICK Director, New York Life Insurance; former president of the American Bankers Association; trustee of Carnegie Foundation.

OTTO H. KAHN Partner in Kuhn, Loeb. Kahn's father came to America in 1948, "having taken part in the unsuccessful German revolution of that year." According to J. H. Thomas (British socialist, financed by the Soviets), "Otto Kahn's face is towards the light."

H. W. PRITCHETT Trustee of Carnegie Foundation.

PERCY A. ROCKEFELLER Son of John D. Rockefeller; married to Isabel, daughter of J. A. Stillman of National City Bank.

JOHN D. RYAN Director of copper-mining companies, National City Bank, and Mechanics and Metals Bank. (See frontispiece to this book.)

W. L. SAUNDERS Director the Federal Reserve Bank of New York, 120 Broadway, and chairman of Ingersoll-Rand. According to the *National Cyclopaedia* (26:81): "Throughout the war he was one of the President's most trusted advisers." See page 15 for his views on the Soviets.

J. A. STILLMAN President of National City Bank, after his father (J. Stillman, chairman of NCB) died in March 1918.

C. A. STONE Director (1920-22) of Federal Reserve Bank of New York, 120 Broadway; chairman of Stone & Webster, 120 Broadway; president (1916-23) of American International Corporation, 120 Broadway.

T. N. VAIL President of National City Bank of Troy, New York

F. A. VANDERLIP President of National City Bank.

E. S. WEBSTER Of Stone & Webster, 120 Broadway.

A. H. WIGGIN Director of Federal Reserve Bank of New York in the early 1930s.

BECKMAN WINTHROPE Director of National City Bank.

WILLIAM WOODWARD Director of Federal Reserve Bank of New York, 120 Broadway, and Hanover National Bank.

The interlock of the twenty-two directors of American International Corporation with other institutions is significant. The National City Bank had no fewer than ten directors on the board of AIC; Stillman of NCB was at that time an intermediary between the Rockefeller and Morgan interests, and both the Morgan and the Rockefeller interests were represented directly on AIC. Kuhn, Loeb and the du Ponts each had one director. Stone & Webster had three directors. No fewer than four directors of AIC (Saunders, Stone, Wiggin, Woodward) either were directors of or were later to join the Federal Reserve Bank of New York. We have noted in an earlier chapter that William Boyce Thompson, who contributed funds and his considerable prestige to the Bolshevik Revolution, was also a director of the Federal Reserve Bank of New York — the directorate of the FRB of New York comprised only nine members.

THE INFLUENCE OF AMERICAN INTERNATIONAL ON THE REVOLUTION

Having identified the directors of AIC we now have to identify their revolutionary influence.

As the Bolshevik Revolution took hold in central Russia, Secretary of State Robert Lansing requested the views of American International Corporation on the policy to be pursued towards the Soviet regime. On January 16, 1918 — barely two months after the takeover in Petrograd and Moscow, and before a fraction of Russia had come under Bolshevik control — William Franklin Sands, executive secretary of American International Corporation, submitted the requested memorandum on the Russian political situation to Secretary Lansing. Sands covering letter, headed 120 Broadway, began:

> To the Honourable Secretary of State Washington D.C. — January 16, 1918
>
> Sir
>
> I have the honor to enclose herewith the memorandum which you requested

me to make for you on my view of the political situation in Russia.

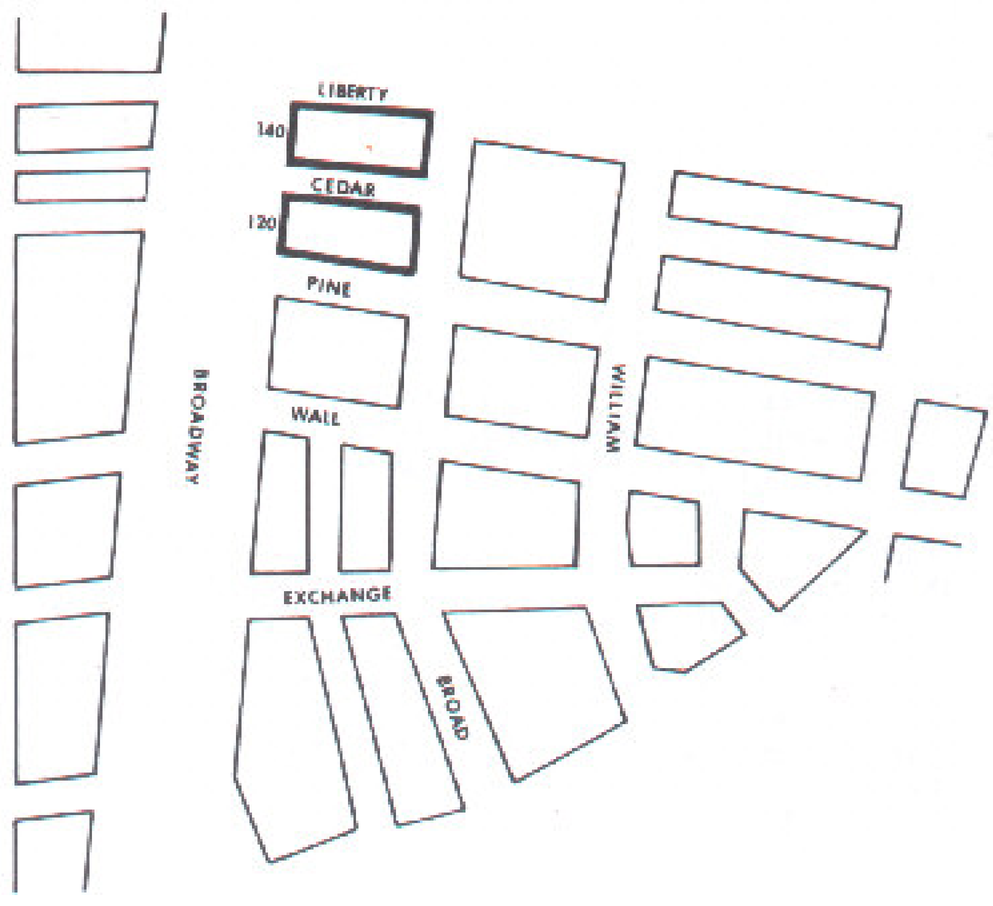
I have separated it into three parts; an explanation of the historical causes of the Revolution, told as briefly as possible; a suggestion as to policy and a recital of the various branches of American activity at work now in Russia ....[8]

Although the Bolsheviks had only precarious control in Russia — and indeed were to come near to losing even this in the spring of 1918 — Sands wrote that already (January 1918) the United States had delayed too long in recognizing "Trotzky." He added, "Whatever ground may have been lost, should be regained now, even at the cost of a slight personal triumph for Trotzky."[9]

Firms located at, or near, 120 Broadway:

American International Corp 120 Broadway
National City Bank 55 Wall Street
Bankers Trust Co Bldg 14 Wall Street
New York Stock Exchange 13 Wall Street/12 Broad
Morgan Building corner Wall & Broad
Federal Reserve Bank of NY 120 Broadway
Equitable Building 120 Broadway
Bankers Club 120 Broadway
Simpson, Thather & Bartlett 62 Cedar St
William Boyce Thompson 14 Wall Street
Hazen, Whipple & Fuller 42nd Street Building
Chase National Bank 57 Broadway
McCann Co 61 Broadway
Stetson, Jennings & Russell 15 Broad Street
Guggenheim Exploration 120 Broadway
Weinberg & Posner 120 Broadway
Soviet Bureau 110 West

40th Street
John MacGregor Grant Co
120 Broadway
Stone & Webster 120
Broadway
General Electric Co 120
Broadway
Morris Plan of NY 120
Broadway
Sinclair Gulf Corp 120
Broadway
Guaranty Securities 120
Broadway
Guaranty Trust 140
Broadway



Map of Wall Street Area Showing Office Locations

Sands then elaborates the manner in which the U.S. could make up for lost time, parallels the Bolshevik Revolution to "our own revolution," and concludes: "I have every reason to believe that the Administration plans for Russia will receive all possible support from Congress, and the hearty endorsement of public opinion in the United States."

In brief, Sands, as executive secretary of a corporation whose directors were the most prestigious on Wall Street, provided an emphatic endorsement of the Bolsheviks and the Bolshevik Revolution, and within a matter of weeks after the revolution started. And as a director of the Federal Reserve Bank of New York, Sands had just contributed $1 million to the Bolsheviks — such endorsement of the Bolsheviks by banking interests is at least consistent.

Moreover, William Sands of American International was a man with truly uncommon connections and influence in the State Department.

Sands' career had alternated between the State Department and Wall Street, In the late nineteenth and early twentieth century he held various U.S. diplomatic posts. In 1910 he left the department to join the banking firm of James Speyer to negotiate an Ecuadorian loan, and for the next two years represented the Central Aguirre Sugar Company in Puerto Rico. In 1916 he was in Russia on "Red Cross work" — actually a two-man "Special Mission" with Basil Miles — and returned to join the American International Corporation in New York.[10]

In early 1918 Sands became the known and intended recipient of certain Russian "secret treaties." If the State Department files are to be believed, it appears that Sands was also a courier, and that he had some prior access to official documents — prior, that is, to U.S. government officials. On January 14, 1918, just two days before Sands wrote his memo on policy towards the Bolsheviks, Secretary Lansing caused the following cable to be sent in Green Cipher to the American legation in Stockholm: "Important official papers for Sands to bring here were left at Legation. Have you forwarded them? Lansing." The reply of January 16 from Morris in Stockholm reads: "Your 460 January 14, 5 pm. Said documents forwarded Department in pouch number 34 on December 28th." To these documents is attached another memo, signed "BM" (Basil Miles, an associate of Sands): "Mr. Phillips. They failed to give Sands 1st installment of secret treaties wh. [which] he brought from Petrograd to Stockholm."[11]

Putting aside the question why a private citizen would be carrying Russian secret treaties and the question of the content of such secret treaties (probably an early version of the so-called Sisson Documents), we can at least deduce that the AIC executive secretary traveled from Petrograd to Stockholm in late 1917 and must indeed have been a privileged and influential citizen to have access to secret treaties.[12]

A few months later, on July 1, 1918, Sands wrote to Treasury Secretary McAdoo suggesting a commission for "economic assistance to Russia." He urged that since it would be difficult for a government commission to "provide the machinery" for any such assistance, "it seems, therefore, necessary to call in the financial, commercial and manufacturing interest of the United States to provide such machinery under the control of the Chief Commissioner or whatever official is selected by the President for this purpose."[13] In other words, Sands obviously intended that any commercial exploitation of Bolshevik Russia was going to include 120 Broadway.

THE FEDERAL RESERVE BANK OF NEW YORK

The certification of incorporation of the Federal Reserve Bank of New York was filed May 18, 1914. It provided for three Class A directors representing member banks in the district, three Class B directors representing commerce, agriculture, and industry, and three Class C directors representing the Federal Reserve Board. The original directors were elected in 1914; they proceeded to generate an energetic program. In the first year of organization the Federal Reserve Bank of New York held no fewer than 50 meetings.

From our viewpoint what is interesting is the association between, on the one hand, the directors of the Federal Reserve Bank (in the New York district) and of American International Corporation, and, on the other, the emerging Soviet Russia.

In 1917 the three Class A directors were Franklin D. Locke, William Woodward, and Robert H. Treman. William Woodward was a director of American International Corporation (120 Broadway) and of the Rockefeller-controlled Hanover National Bank. Neither Locke nor Treman enters our story. The three Class B directors in 1917 were William Boyce Thompson, Henry R. Towne, and Leslie R. Palmer. We have already noted William B. Thompson's substantial cash contribution to the Bolshevik cause. Henry R. Towne was chairman of the board of directors of the Morris Plan of New York, located at 120 Broadway; his seat was later taken by Charles A. Stone of American International Corporation (120 Broadway) and of Stone & Webster (120 Broadway). Leslie R. Palmer does not come into our story. The three Class C directors were Pierre Jay, W. L. Saunders, and George Foster Peabody. Nothing is known about Pierre Jay, except that his office was at 120 Broadway and he appeared to be significant only as the owner of Brearley School, Ltd. William Lawrence Saunders was also a director of American International Corporation; he openly avowed, as we have seen, pro-Bolshevik sympathies, disclosing them in a letter to President Woodrow Wilson (see page 15). George Foster Peabody was an active socialist (see page 99-100).

In brief, of the nine directors of the Federal Reserve Bank of New York, four were physically located at 120 Broadway and two were then connected with American International Corporation. And at least four members of AIC's board were at one time or another directors of the FRB of New York. We could term all of this significant, but regard it not necessarily as a dominant interest.

AMERICAN-RUSSIAN INDUSTRIAL SYNDICATE INC.

William Franklin Sands' proposal for an economic commission to Russia was not adopted. Instead, a private vehicle was put together to exploit Russian markets and the earlier support given the Bolsheviks. A group of industrialists from 120 Broadway formed the American-Russian Industrial Syndicate Inc. to develop and foster these opportunities. The financial backing for the new firm came from the Guggenheim Brothers, 120 Broadway, previously associated with William Boyce Thompson (Guggenheim controlled American Smelting and Refining, and the Kennecott and Utah copper companies); from Harry F. Sinclair, president of Sinclair Gulf Corp., also 120 Broadway; and from James G. White of J. G. White Engineering Corp. of 43 Exchange Place — the address of the American-Russian Industrial Syndicate.

In the fall of 1919 the U.S. embassy in London cabled Washington about Messrs. Lubovitch

and Rossi "representing American-Russian Industrial Syndicate Incorporated What is the reputation and the attitude of the Department toward the syndicate and the individuals?"[14]

To this cable State Department officer Basil Miles, a former associate of Sands, replied:

> . . . Gentlemen mentioned together with their corporation are of good standing being backed financially by the White, Sinclair and Guggenheim interests for the purpose of opening up business relations with Russia.[15]

So we may conclude that Wall Street interests had quite definite ideas of the manner in which the new Russian market was to be exploited. The assistance and advice proffered in behalf of the Bolsheviks by interested parties in Washington and elsewhere were not to remain unrewarded.

JOHN REED: ESTABLISHMENT REVOLUTIONARY

Quite apart from American International's influence in the State Department is its intimate relationship — which AIC itself called "control" — with a known Bolshevik: John Reed. Reed was a prolific, widely read author of the World War I era who contributed to the Bolshevik-oriented *Masses.*[16] and to the Morgan-controlled journal *Metropolitan.* Reed's book on the Bolshevik Revolution, *Ten Days That Shook the World,* sports an introduction by Nikolai Lenin, and became Reed's best-known and most widely read literary effort. Today the book reads like a superficial commentary on current events, is interspersed with Bolshevik proclamations and decrees, and is permeated with that mystic fervor the Bolsheviks know will arouse foreign sympathizers. After the revolution Reed became an American member of the executive committee of the Third International. He died of typhus in Russia in 1920.

The crucial issue that presents itself here is not Reed's known pro-Bolshevik tenor and activities, but how Reed who had the entire confidence of Lenin ("Here is a book I should like to see published in millions of copies and translated into all languages," commented Lenin in *Ten Days*), who was a member of the Third International, and who possessed a Military Revolutionary Committee pass (No. 955, issued November 16, 1917) giving him entry into the Smolny Institute (the revolutionary headquarters) at any time as the representative of the "American Socialist press," was also — despite these things — a puppet under the "control" of the Morgan financial interests through the American International Corporation. Documentary evidence exists for this seeming conflict (see below and Appendix 3).

Let's fill in the background. Articles for the *Metropolitan* and the *Masses* gave John Reed a wide audience for reporting the Mexican and the Russian Bolshevik revolutions. Reed's biographer Granville Hicks has suggested, in *John Reed,* that "he was . . . the spokesman of the Bolsheviks in the United States." On the other hand, Reed's financial support from 1913 to 1918 came heavily from the *Metropolitan* — owned by Harry Payne Whitney, a director of the Guaranty Trust, an institution cited in every chapter of this book — and also' from the New York private banker and merchant Eugene Boissevain, who channeled funds to Reed both directly and through the pro-Bolshevik *Masses.* In other words, John Reed's financial support came from two supposedly competing elements in the political spectrum. These funds were for

writing and may be classified as: payments from *Metropolitan* from 1913 onwards for articles; payments from *Masses* from 1913 onwards, which income at least in part originated with Eugene Boissevain. A third category should be mentioned: Reed received some minor and apparently unconnected payments from Red Cross commissioner Raymond Robins in Petrograd. Presumably he also received smaller sums for articles written for other journals, and book royalties; but no evidence has been found giving the amounts of such payments.

JOHN REED AND THE *METROPOLITAN* MAGAZINE

The *Metropolitan* supported contemporary establishment causes including, for example, war preparedness. The magazine was owned by Harry Payne Whitney (1872-1930), who founded the Navy League and was partner in the J.P. Morgan firm. In the late 1890s Whitney became a director of American Smelting and Refining and of Guggenheim Exploration. Upon his father's death in 1908, he became a director of numerous other companies, including Guaranty Trust Company. Reed began writing for Whitney's *Metropolitan* in July 1913 and contributed a half-dozen articles on the Mexican revolutions: "With Villa in Mexico," "The Causes Behind/Mexico's Revolution," "If We Enter Mexico," "With Villa on the March," etc. Reed's sympathies were with revolutionist Pancho Villa. You will recall the link (see page 65) between Guaranty Trust and Villa's ammunition supplies.

In any event, *Metropolitan* was Reed's main source of income. In the words of biographer Granville Hicks, "Money meant primarily work for the *Metropolitan* and incidentally articles and stories for other paying magazines." But employment by *Metropolitan* did not inhibit Reed from writing articles critical of the Morgan and Rockefeller interests. One such piece, *"At* the Throat of the Republic" *(Masses,* July 1916), traced the relationship between munitions industries, the national security-preparedness lobby, the interlocking directorates of the Morgan-Rockefeller interest, "and showed that they dominated both the preparedness societies and the newly formed American International Corporation, organized for the exploitation of backward countries."[17]

In 1915 John Reed was arrested in Russia by tsarist authorities, and the *Metropolitan* intervened with the State Department in Reed's behalf. On June 21, 1915, H. J. Whigham wrote Secretary of State Robert Lansing informing him that John Reed and Boardman Robinson (also arrested and also a contributor to the *Masses)* were in Russia "with commission from the *Metropolitan* magazine to write articles and to make illustrations in the Eastern field of the War." Whigham pointed out that neither had "any desire or authority from us to interfere with the operations of any belligerent powers that be." Whigham's letter continues:

> If Mr. Reed carried letters of introduction from Bucharest to people in Galicia of an anti-Russian frame of mind I am sure that it was done innocently with the simple intention of meeting as many people as possible ....

Whigham points out to Secretary Lansing that John Reed was known at the White House and had given "some assistance" to the administration on Mexican affairs; he concludes: *"We* have the highest regard for Reed's great qualities as a writer and thinker and we are very anxious as regards his safety."[18] The Whigham letter is not, let it be noted, from an establishment journal in support of a Bolshevik writer; it is from an establishment journal in support of a Bolshevik

writer for the *Masses* and similar revolutionary sheets, a writer who was also the author of trenchant attacks ("The Involuntary Ethics of Big Business: A Fable for Pessimists," for example) on the same Morgan interests that owned *Metropolitan.*

The evidence of finance by the private banker Boissevain is incontrovertible. On February 23, 1918, the American legation at Christiania, Norway, sent a cable to Washington in behalf of John Reed for delivery to Socialist Party leader Morris Hillquit. The cable stated in part: "Tell Boissevain must draw on him but carefully." A cryptic note by Basil Miles in the State Department files, dated April 3, 1918, states, "If Reed is coming home he might as well have money. I understand alternatives are ejection by Norway or polite return. If this so latter seems preferable." This protective note is followed by a cable dated April 1, 1918, and again from the American legation at Christiania: "John Reed urgently request Eugene Boissevain, 29 Williams Street, New York, telegraph care legation $300.00."[19] This cable was relayed to Eugene Boissevain by the State Department on April 3, 1918.

Reed apparently received his funds and arrived safely back in the United States. The next document in the State Department files is a letter to William Franklin Sands from John Reed, dated June 4, 1918, and written from Crotonon-Hudson, New York. In the letter Reed asserts that he has drawn up a memorandum for the State Department, and appeals to Sands to use his influence to get release of the boxes of papers brought back from Russia. Reed concludes, "Forgive me for bothering you, but I don't know where else to turn, and I can't afford another trip to Washington." Subsequently, Frank Polk, acting secretary of state, received a letter from Sands regarding the release of John Reed's papers. Sands' letter, dated June 5, 1918, from 120 Broadway, is here reproduced in full; it makes quite explicit statements about control of Reed:

120 BROADWAY NEW YORK

June fifth, 1918

My dear Mr. Polk:

I take the liberty of enclosing to you an appeal from John ("Jack") Reed to help him, if possible, to secure the release of the papers which he brought into the country with him from Russia.

I had a conversation with Mr. Reed when he first arrived, in which he sketched certain attempts by the Soviet Government to initiate constructive development, and expressed the desire to place whatever observations he had made or information he had obtained through his connection with Leon Trotzky, at the disposal of our Government. I suggested that he write a memorandum on this subject for you, and promised to telephone to Washington to ask you to give him an interview for this purpose. He brought home with him a mass of papers which were taken from him for examination, and on this subject also he wished to speak to someone in authority, in order to voluntarily offer an>, information they might contain to the Government, and to ask for the release of those which he needed for his newspaper and magazine work.

I do not believe that Mr. Reed is either a "Bolshevik" or a "dangerous anarchist," as I have heard him described. He is a sensational journalist, without doubt, but that is all. He is not trying to embarrass our Government, and for this reason refused the "protection" which I understand was offered to him by Trotzky, when he returned to New York to face the indictment against him in the "Masses" trial. He is liked by the Petrograd Bolsheviki, however, and, therefore, anything which our police may do which looks like "persecution" will be resented in Petrograd, which I believe to be undesirable because unnecessary. *He can be handled and controlled much better by other means than through the police.*

I have not seen the memorandum he gave to Mr. Bullitt —I *wanted him to let me see it first and perhaps to edit it,* but he had not the opportunity to do so.

I hope that you will not consider me to be intrusive in this matter or meddling with matters which do not concern me. I believe it to be wise not to offend the Bolshevik leaders *unless and until it may become necessary to do so —if it should become necessary —and* it is unwise to look on every one as a suspicious or even dangerous character, who has had friendly relations with the Bolsheviki in Russia. *I think it better policy to attempt to use such people for our own purposes in developing our policy toward Russia, if it is possible to do so.* The lecture which Reed was prevented by the police from delivering in Philadelphia (he lost his head, came into conflict with the police and was arrested) is the only lecture on Russia which I would have paid to hear, if I had not already seen his notes on the subject. It covered a subject which we might quite possibly find to be a point of contact with the Soviet Government, from which to begin constructive work!

Can we not use him, instead of embittering him and making him an enemy? He is not well balanced, but he is, unless I am very much mistaken, *susceptible to discreet guidance and might be quite useful.*

Sincerely yours,
William Franklin Sands

The Honourable
Frank Lyon Polk
Counselor for the Department of State
Washington, D.C.

WFS:AO
Enclosure[20]

The significance of this document is the hard revelation of direct intervention by an officer (executive secretary) of American International Corporation in behalf of a known Bolshevik. Ponder a few of Sands' statements about Reed: "He can be handled and controlled much better

by other means than through the police"; and, "Can we not use him, instead of embittering him and making him an enemy? . . . he is, unless I am very much mistaken, susceptible to discreet guidance and might be quite useful." Quite obviously, the American International Corporation viewed John Reed as an agent or a potential agent who could be, and probably had already been, brought under its control. The fact that Sands was in a position to request editing a memorandum by Reed (for Bullitt) suggests some degree of control had already been established.

Then note Sands' potentially hostile attitude towards —and barely veiled intent to provoke —the Bolsheviks: "I believe it to be wise not to offend the Bolshevik leaders unless and *until it may become necessary to do so* —if it should become necessary . . ." (italics added).

This is an extraordinary letter in behalf of a Soviet agent from a private U.S. citizen whose counsel the State Department had sought, and continued to seek.

A later memorandum, March 19, 1920, in the State files reported the arrest of John Reed by the Finnish authorities at Abo, and Reed's possession of English, American and German passports. Reed, traveling under the alias of Casgormlich, carried diamonds, a large sum of money, Soviet propaganda literature, and film. On April 21, 1920, the American legation at Helsingfors cabled the State Department:

> Am forwarding by the next pouch certified copies of letters from Emma Goldman, Trotsky, Lenin and Sirola found in Reed's possession. Foreign Office has promised to furnish complete record of the Court proceedings.

Once again Sands intervened: "I knew Mr. Reed personally."[21] And, as in 1915, *Metropolitan* magazine also came to Reed's aid. H. J. Whigham wrote on April 15, 1920, to Bainbridge Colby in the State Department: "Have heard John Reed in danger of being executed in Finland. Hope the State Dept. can take immediate steps to see that he gets proper trial. Urgently request prompt action."[22] This was in addition to an April 13, 1920 telegram from Harry Hopkins, who was destined for fame under President Roosevelt:

> Understand State Dept. has information Jack Reed arrested Finland, will be executed. As one of his friends and yours and on his wife's behalf urge you take prompt action prevent execution and secure release. Feel sure can rely your immediate and effective intervention.[23]

John Reed was subsequently released by the Finnish authorities.

This paradoxical account on intervention in behalf of a Soviet agent can have several explanations. One hypothesis that fits other evidence concerning Wall Street and the Bolshevik Revolution is that John Reed was in effect an agent of the Morgan interests —perhaps only half aware of his double role —that his anticapitalist writing maintained the valuable myth that *all* capitalists are in perpetual warfare with all socialist revolutionaries. Carroll Quigley, as we have already noted, reported that the Morgan interests financially supported domestic revolutionary organizations and anticapitalist writings.[24] And we have presented in this chapter irrefutable documentary evidence that the Morgan interests were also effecting control of a

Soviet agent, interceding on his behalf and, more important, generally intervening in behalf of Soviet interests with the U.S. government. These activities centered at a single address: 120 Broadway, New York City.

Footnotes:

[1]By a quirk the papers of incorporation for the Equitable Office Building were drawn up by Dwight W. Morrow, later a Morgan partner, but then a member of the law firm of Simpson, Thacher & Bartlett. The Thacher firm contributed two members to the 1917 American Red Cross Mission to Russia (see chapter five).

[3]Carroll Quigley, *Tragedy and Hope* (New York: Macmillan, 1966), p. 938. Quigley was writing in 1965, so this places the start of the infiltration at about 1915, a date consistent with the evidence here presented.

[4]Frank A. Vanderlip, *From Farm Boy to Financier* (New York: A. Appleton-Century, 1935).

[5]Ibid., p. 267.

[6]Ibid., pp. 268-69. It should be noted that several names mentioned by Vanderlip turn up elsewhere in this book: Rockefeller, Armour, Guaranty Trust, and (Otto) Kahn all had some connection more or less with the Bolshevik Revolution and its aftermath.

[7]Ibid., p. 269.

[8]U.S. Stale Dept. Decimal File, 861.00/961.

[9]Sands memorandum to Lansing, p. 9.

[10]William Franklin Sands wrote several books, including *Undiplomatic Memoirs* (New York: McGraw-Hill, 1930), a biography covering the years to 1904. Later he wrote *Our .Jungle Diplomacy* (Chapel Hill: University of North Carolina Press, 1941), an unremarkable treatise on imperialism in Latin America. The latter work is notable only for a minor point on page 102: the willingness to blame a particularly unsavory imperialistic adventure on Adolf Stahl, a New York banker, while pointing oust quite unnecessarily that Stahl was of "German-Jewish origin." In August 1918 he published an article, "Salvaging Russia," in *Asia, to* explain support of the Bolshevik regime.

[11]All the above in U.S. State Dept. Decimal File, 861.00/969.

[12]The author cannot forbear comparing the treatment of academic researchers. In 1973, for example, the writer was still denied access to some State Department files *dated 1919.*

[13]U.S. State Dept. Decimal File, 861.51/333.

[14]U.S. State Dept. Decimal File, 861.516 84, September 2, 1919.

[15]Ibid.

[16]Other contributors to the *Masses* mentioned in this book were journalist Robert Minor, chairman of the, U.S. Public Info, marion Committee; George Creel; Carl Sandburg, poet-historian; and Boardman Robinson, an artist.

[17]Granville Hicks, *John Reed, 1887-1920* (New York: Macmillan, 1936), p. 215.

[18]U.S. State Dept. Decimal File, 860d.1121 R 25/4.

[19]Ibid., 360d.1121/R25/18. According to Granville Hicks in *John Reed, "Masses* could not pay his [Reed's] expenses. Finally, friends of the magazine, notably Eugene Boissevain, raised the money" (p. 249).

[20]U.S. State Dept. Decimal File, 360. D. II21.R/20/221/2, /R25 (John Reed). The letter was transferred by Mr. Polk to the State Department archives on May 2, 1935. All italics added.

[21]Ibid., 360d.1121 R 25/72.

[22]Ibid.

[23]This was addressed to Bainbridge Colby, ibid., 360d.1121 R 25/30. Another letter, dated April 14, 1920, and addressed to the secretary of state from 100 Broadway, New York, was from W. Bourke Cochrane; it also pleaded for the release of John Reed.

[24]Quigley, op. cit.

*The John MacGregor Grant Co., agent for the Russo-Asiatic Bank (involved in financing the Bolsheviks), was at 120 Broadway —and financed by Guaranty Trust Company.

**Sir Ernest Cassel, prominent British financier.

BACK

Chapter IV

GUARANTY TRUST GOES TO RUSSIA

> **Soviet Govemment desire Guarantee [*sic*] Trust Company to become fiscal agent in United States for all Soviet operations and contemplates American purchase Eestibank with a view to complete linking of Soviet fortunes with American financial interests.**
>
> *William H. Coombs, reporting to the U.S. embassy in London, June 1, 1920 (U.S. State Dept. Decimal File, 861.51/752). ("Eestibank" was an Estonian bank)*

In 1918 the Soviets faced a bewildering array of internal and external problems. They occupied a mere fraction of Russia. To subdue the remainder, they needed foreign arms, imported food, outside financial support, diplomatic recognition, and — above all — foreign trade. To gain diplomatic recognition and foreign trade, the Soviets first needed representation abroad, and representation in turn required financing through gold or foreign currencies. As we have already seen, the first step was to establish the Soviet Bureau in New York under Ludwig Martens. At the same time, efforts were made to transfer funds to the United States and Europe for purchases of needed goods. Then influence was exerted in the U.S. to gain recognition or to obtain the export licenses needed to ship goods to Russia.

New York bankers and lawyers provided significant — in some cases, critical — assistance for each of these tasks. When Professor George V. Lomonossoff, the Russian technical expert in the Soviet Bureau, needed to transfer funds from the chief Soviet agent in Scandinavia, a prominant Wall Street attorney came to his assistance — using official State Department channels and the acting secretary of state as an intermediary. When gold had to be transferred to the United States, it was American International Corporation, Kuhn, Loeb & Co., and Guaranty Trust that requested the facilities and used their influence in Washington to smooth the way. And when it came to recognition, we find American firms pleading .with Congress and with the public to endorse the Soviet regime.

Lest the reader should deduce — too hastily — from these assertions that Wall Street was indeed tinged with Red, or that Red flags were flying in the street (see frontispiece), we also in a later chapter present evidence that the J.P. Morgan firm financed Admiral Kolchak in Siberia. Aleksandr Kolchak was fighting the Bolsheviks, to install his own brand of authoritarian rule. The firm also contributed to the anti-Communist United Americans organization.

WALL STREET COMES TO THE AID OF PROFESSOR LOMONOSSOFF

The case of Professor Lomonossoff is a detailed case history of Wall Street assistance to the early Soviet regime. In late 1918 George V. Lomonossoff, member of the Soviet Bureau in

New York and later first Soviet commissar of railroads, found himself stranded in the United States without funds. At this time Bolshevik funds were denied entry into the United States; indeed, there was no official recognition of the regime at all. Lomonossoff was the subject of a letter of October 24, 1918, from the U.S. Department of Justice to the Department of State.[1] The letter referred to Lomonossoff's Bolshevik attributes and pro-Bolshevik speeches. The investigator concluded, "Prof. Lomonossoff is not a Bolshevik although his speeches constitute unequivocal support for the Bolshevik cause." Yet Lomonossoff was able to pull strings at the highest levels of the administration to have $25,000 transferred from the Soviet Union through a Soviet espionage agent in Scandinavia (who was himself later to become confidential assistant to Reeve Schley, a vice president of Chase Bank). All this with the assistance of a member of a prominent Wall Street firm of attorneys![2]

The evidence is presented in detail because the details themselves point up the close relationship between certain interests that up to now have been thought of as bitter enemies. The first indication of Lornonossoff's problem is a letter dated January 7, 1919, from Thomas L. Chadbourne of Chadbourne, Babbitt 8e Wall of 14 Wall Street (same Address as William Boyce Thompson's) to Frank Polk, acting secretary of state. Note the friendly salutation and casual reference to Michael Gruzenberg, alias Alexander Gumberg, chief Soviet agent in Scandinavia and later Lomonossoff's assistant:

> Dear Frank: You were kind enough to say that if I could inform you of the status of the $25,000 item of personal funds belonging to Mr. & Mrs. Lomonossoff you would set in motion the machinery necessary to obtain it here for them.
>
> I have communicated with Mr. Lomonossoff with respect to it, and he tells me that Mr. Michael Gruzenberg, who went to Russia for Mr. Lomonossoff prior to the difficulties between Ambassador Bakhmeteff and Mr. Lomonossoff, transmitted the information to him respecting this money through three Russians who recently arrived from Sweden, and Mr. Lomonossoff believes that the money is held at the Russian embassy in Stockholm, Milmskilnad Gaten 37. If inquiry from the State Department should develop this to be not the place where the money is on deposit, then the Russian embassy in Stockholm can give the exact address of Mr. Gruzenberg, who can give the proper information respecting it. Mr. Lomonossoff does not receive letters from Mr. Gruzenberg, although he is informed that they have been written: nor have any of his letters to Mr. Gruzenberg been delivered, he is also informed. For this reason it is impossible to be more definite than I have been, but I hope something can be done to relieve his and his wife's embarrassment for lack of funds, and it only needs a little help to secure this money which belongs to them to aid them on this side of the water.
>
> Thanking you in advance for anything you can do, I beg to remain, as ever,
>
> Yours sincerely,
> Thomas L. Chadbourne.

In 1919, at the time this letter was written, Chadbourne was a dollar-a-year man in Washington,

counsel and director of the U.S. War Trade Board, and a director of the U.S. Russian Bureau Inc., an official front company of the U.S. government. Previously, in 1915, Chadbourne organized Midvale Steel and Ordnance to take advantage of war business. In 1916 he became chairman of the Democratic Finance Committee and later a director of Wright Aeronautical and o[Mack Trucks.

The reason Lomonossoff was not receiving letters from Gruzenberg is that they were, in all probability, being intercepted by one of several governments taking a keen interest in the latter's activities.

On January 11, 1919, Frank Polk cabled the American legation in Stockholm:

> Department is in receipt of information that $25,000, personal funds of .... Kindly inquire of the Russian Legation informally and personally if such funds are held thus. Ascertain, if not, address of Mr. Michael Gruzenberg, reported to be in possession of information on this subject. Department not concerned officially, merely undertaking inquiries on behalf of a former Russian official in this country.
>
> Polk, Acting

Polk appears in this letter to be unaware of Lomonossoff's Bolshevik connections, and refers to him as "a former Russian official in this country." Be that as it may, within three days Polk received a reply from Morris at the U.S. Legation in Stockholm:

> January 14, 3 p.m. 3492. Your January 12, 3 p.m., No. 1443.
>
> Sum of $25,000 of former president of Russian commission of ways of communication in United States not known to Russian legation; neither can address of Mr. Michael Gruzenberg be obtained.
>
> Morris

Apparently Frank Polk then wrote to Chadbourne (the letter is not included in the source) and indicated that State could find neither Lomonossoff nor Michael Gruzenberg. Chadbourne replied on January 21, 1919:

> Dear Frank: Many thanks for your letter of January 17. I understand that there are two Russian legations in Sweden, one being the soviet and the other the Kerensky, and I presume your inquiry was directed to the soviet legation as that was the address I gave you in my letter, namely, Milmskilnad Gaten 37, Stockholm.
>
> Michael Gruzenberg's address is, Holmenkollen Sanitarium, Christiania, Norway, and I think the soviet legation could find out all about the funds through Gruzenberg if they will communicate with him.

> Thanking you for taking this trouble and assuring you of my deep appreciation, I remain,
>
> Sincerely yours,
> Thomas L. Chadbourne

We should note that a Wall Street lawyer had the address of Gruzenberg, chief Bolshevik agent in Scandinavia, at a time when the acting secretary of state and the U.S. Stockholm legation had no record of the address; nor could the legation track it down. Chadbourne also presumed that the Soviets were the official government of Russia, although that government was not recognized by the United States, and Chadbourne's official government position on the War Trade Board would require him to know that.

Frank Polk then cabled the American legation at Christiania, Norway, with the address of Michael Gruzenberg. It is not known whether Polk knew he was passing on the address of an espionage agent, but his message was as follows:

> To American Legation, Christiania. January 25, 1919. It is reported that Michael Gruzenberg is at Holmenkollen Sanitarium. Is it possible for you to locate him and inquire if he has any knowledge respecting disposition of $25,000 fund belonging to former president of Russian mission of ways of communication in the United States, Professor Lomonossoff.
>
> Polk, Acting

The U.S. representative (Schmedeman) at Christiania knew Gruzenberg well. Indeed, the name had figured in reports from Schmedeman to Washington concerning Gruzenberg's pro-Soviet activities in Norway. Schmedeman replied:

> January 29, 8 p.m. 1543. Important. Your January 25, telegram No. 650.
>
> Before departing to-day for Russia, Michael Gruzenberg informed our naval attache that when in Russia some few months ago he had received, at Lomonossoff's request, $25,000 from the Russian Railway Experimental Institute, of which Prof. Lomonossoff was president. Gruzenberg claims that to-day he cabled attorney for Lomonossoff in New York, Morris Hillquitt *[sic]*, that he, Gruzenberg, is in possession of the money, and before forwarding it is awaiting further instructions from the United States, requesting in the cablegram that Lomonossoff be furnished with living expenses for himself and family by Hillquitt pending the receipt of the money.[3]
>
> As Minister Morris was traveling to Stockholm on the same train as Gruzenberg, the latter stated that he would advise further with Morris in reference to this subject.

Schmedeman

The U.S. minister traveled with Gruzenberg to Stockholm where he received the following cable from Polk:

> It is reported by legation at Christiania that Michael Gruzenberg, has for Prof. G. Lomonossoff, the . . . sum of $25,000, received from Russian Railway Experimental Institute. If you can do so without being involved with Bolshevik authorities, department will be glad for you to facilitate transfer of this money to Prof. Lomonossoff in this country. Kindly reply.
>
> Polk, Acting

This cable produced results, for on February 5, 1919, Frank Polk wrote to Chadbourne about a "dangerous bolshevik agitator," Gruzenberg:

> My Dear Tom: I have a telegram from Christiania indicating that Michael Gruzenberg has the $25,000 of Prof. Lomonossoff, and received it from the Russian Railway Experimental Institute, and that he had cabled Morris Hillquitt [*sic*], at New York, to furnish Prof. Lomonossoff money for living expenses until the fund in question can be transmitted to him. As Gruzenberg has just been deported from Norway as a dangerous bolshevik agitator, he may have had difficulties in telegraphing from that country. I understand he has now gone to Christiania, and while it is somewhat out of the department's line of action, I shall be glad, if you wish, to see if I can have Mr. Gruzenberg remit the money to Prof. Lomonossoff from Stockholm, and am telegraphing our minister there to find out if that can be done.
>
> Very sincerely, yours,
> Frank L. Polk

The telegram from Christiania referred to in Polk's letter reads as follows:

> February 3, 6 p.m., 3580. Important. Referring department's january 12, No. 1443, $10,000 has now been deposited in Stockholm to my order to be forwarded to Prof. Lomonossoff by Michael Gruzenberg, one of the former representatives of the bolsheviks in Norway. I informed him before accepting this money that I would communicate with you and inquire if it is your wish that this money be forwarded to Lomonossoff. Therefore I request instructions as to my course of action.
>
> Morris

Subsequently Morris, in Stockholm, requested disposal instructions for a $10,000 draft deposited in a Stockholm bank. His phrase "[this] has been my only connection with the affair" suggests that Morris was aware that the Soviets could, and probably would, claim this as an

officially expedited monetary transfer, since this action *implied* approval by the U.S. of such monetary transfers. Up to this time the Soviets had been required to smuggle money into the U.S.

> Four p.m. February 12, 3610, Routine.
>
> With reference to my February 3, 6 p.m., No. 3580, and your February 8, 7 p.m., No. 1501. It is not clear to me whether it is your wish for me to transfer through you the $10,000 referred to Prof. Lomonossoff. Being advised by Gruzenberg that he had deposited this money to the order of Lomonossoff in a Stockholm bank and has advised the bank that this draft could be sent to America through me, provided I so ordered, has been my only connection with the affair. Kindly wire instructions.
>
> Morris

Then follows a series of letters on the transfer of the $10,000 from A/B Nordisk Resebureau to Thomas L. Chadbourne at 520 Park Avenue, New York City, through the medium of the State Department. The first letter contains instructions from Polk, on the mechanics of the transfer; the second, from Morris to Polk, contains $10,000; the third, from Morris to A/B Nordisk Resebureau, requesting a draft; the fourth is a reply from the bank with a check; and the fifth is the acknowledgment.

> Your February 12, 4 p.m., No. 3610.
>
> Money may be transmitted direct to Thomas L. Chadbourne, 520 Park Avenue, New York City,
>
> Polk, Acting

* * * * *

> Dispatch, No. 1600, March 6, 1919:
>
> The Honorable the Secretary of State,
> Washington
>
> Sir: Referring to my telegram, No. 3610 of February 12, and to the department's reply, No. 1524 of February 19 in regard to the sum of $10,000 for Professor Lomonossoff, I have the honor herewith to inclose a copy of a letter which I addressed on February 25 to A. B. Nordisk Resebureau, the bankers with whom this money was deposited; a copy of the reply of A. B. Nordisk Resebureau, dated February 26; and a copy of my letter to the A. B. Nordisk Resebureau, dated February 27.
>
> It will be seen from this correspondence that the bank was desirous of having

this money forwarded to Professor Lomonossoff. I explained to them, however, as will be seen from my letter of February 27, that I had received authorization to forward it directly to Mr. Thomas L. Chadbourne, 520 Park Avenue, New York City. I also inclose herewith an envelope addressed to Mr. Chadbourne, in which are inclosed a letter to him, together with a check on the National City Bank of New York for $10,000.

I have the honor to be,
sir, Your obedient servant,
Ira N. Morris

* * * * *

A. B. Nordisk Reserbureau,

No. 4 Vestra Tradgardsgatan, Stockholm.

Gentlemen: Upon receipt of your letter of January 30, stating that you had received $10,000 to be paid out to Prof. G. V. Lomonossoff, upon my request, I immediately telegraphed to my Government asking whether they wished this money forwarded to Prof. Lomonossoff. I am to-day in receipt of a reply authorizing me to forward the money direct to Mr. Thomas L. Chadbourne, payable to Prof. Lomonossoff. I shall be glad to forward it as instructed by my Government.

I am, gentlemen,

Very truly, yours,
Ira N. Morris

* * * * *

Mr. I. N. Morris,

American Minister, Stockholm

Deal Sir: We beg to acknowledge the receipt of your favor of yesterday regarding payment of dollars 10,000 —to Professor G. V. Lomonossoff, and we hereby have the pleasure to inclose a check for said amount to the order of Professor G. V. Lomonossoff, which we understand that you are kindly forwarding to this gentleman. We shall be glad to have your receipt for same, arid beg to remain,

Yours, respectfully,
A. B. Nordisk Reserbureau
E. Molin

* * * * *

A. B. Nordisk Resebureau.

Stockholm

Gentlemen: I beg to acknowledge receipt of your letter of February 26, inclosing a check for $10,000 payable to Professor G. V. Lomonossoff. As I advised you in my letter of February 25, I have been authorized to forward this check to Mr. Thomas L. Chadbourne, 520 Park Avenue, New York City, and I shall forward it to this gentleman within the next few days, unless you indicate a wish to the contrary.

Very truly, yours,
Ira N. Morris

Then follow an internal State Department memorandum and Chadbourne's acknowledgment:

Mr. Phillips to Mr. Chadbourne, April 3, 1919.

Sir: Referring to previous correspondence regarding a remittance of ten thousand dollars from A. B. Norsdisk Resebureau to Professor G. V. Lomonossoff, which you requested to be transmitted through the American Legation at Stockholm, the department informs you that it is in receipt of a dispatch from the American minister at Stockholm dated March 6, 1919, covering the enclosed letter addressed to you, together with a check for the amount referred to, drawn to the order to Professor Lomonossoff.

I am, sir, your obedient servant
William Phillips,
Acting Secretary of State.

Inclosure: Sealed letter addressed Mr. Thomas L. Chadbourne, inclosed with 1,600 from Sweden.

* * * * *

Reply of Mr. Chadbourne, April 5, 1919.

Sir: I beg to acknowledge receipt of your letter of April 3, enclosing letter addressed to me, containing check for $10,000 drawn to the order of Professor Lomonossoff, which check I have to-day delivered.

I beg to remain, with great respect,

Very truly, yours,
Thomas L. Chadbourne

Subsequently the Stockholm legation enquired concerning Lomonossoff's address in the U.S. and was informed by the State Department that "as far as the department is aware Professor George V. Lomonossoff can be reached in care of Mr. Thomas L. Chadbourne, 520 Park Avenue, New York City."

It is evident that the State Department, for the reason either of personal friendship between Polk and Chadbourne or of political influence, felt it had to go along and act as bagman for a Bolshevik agent — just ejected from Norway. But why would a prestigious establishment law firm be so intimately interested in the health and welfare of a Bolshevik emissary? Perhaps a contemporary State Department report gives the clue:

> Martens, the Bolshevik representative, and Professor Lomonossoff are banking on the fact that Bullitt and his party will make a favorable report to the Mission and the President regarding conditions in Soviet Russia and that on the basis of this report the Government of the United States will favor dealing with the Soviet Government as, proposed by Martens. March 29, 1919.[4]

THE STAGE IS SET FOR COMMERCIAL EXPLOITATION OF RUSSIA

It was commercial exploitation of Russia that excited Wall Street, and Wall Street had lost no time in preparing its program. On May 1, 1918 — an auspicious date for Red revolutionaries — the American League to Aid and Cooperate with Russia was established, and its program approved in a conference held in the Senate Office Building, Washington, D.C. The officers and executive committee of the league represented some superficially dissimilar factions. Its president was Dr. Frank J. Goodnow, president of Johns Hopkins University. Vice presidents were the ever active William Boyce Thompson, Oscar S. Straus, James Duncan, and Frederick C. Howe, who wrote *Confessions of a Monopolist*, the rule book by which monopolists could control society. The Treasurer was George P. Whalen, vice president of Vacuum Oil Company. Congress was represented by Senator William Edgar Borah and Senator John Sharp Williams, of the Senate Foreign Relations Committee; Senator William N. Calder; and Senator Robert L. Owen, chairman of the Banking and Currency Committee. House members were Henry R. Cooper and Henry D. Flood, chairman of the House Foreign Affairs Committee. American business was represented by Henry Ford; Charles A. Coffin, chairman of the board of General Electric Company; and M. A. Oudin, then foreign manager of General Electric. George P. Whalen represented Vacuum Oil Company, and Daniel Willard was president of the Baltimore & Ohio Railroad. The more overtly revolutionary element was represented by Mrs. Raymond Robins, whose name was later found to be prominent in the Soviet Bureau files and in the Lusk Committee hearings; Henry L. Slobodin, described as a "prominent patriotic socialist"; and Lincoln Steffens, a domestic Communist of note.

In other words, this was a hybrid executive committee; it represented domestic revolutionary elements, the Congress of the United States, and financial interests prominently involved with Russian affairs.

Approved by the executive committee was a program that emphasized the establishment of an official Russian division in the U.S. government "directed by strong men." This division would enlist the aid of universities, scientific organizations, and other institutions to study the "Russian question," would coordinate and unite organizations within the United States "for the safeguarding of Russia," would arrange for a "special intelligence committee for the investigation of the Russian matter," and, generally, would itself study and investigate what was deemed to be the "Russian question." The executive committee then passed a resolution supporting President Woodrow Wilson's message to the Soviet congress in Moscow and the league affirmed its own support for the new Soviet Russia.

A few weeks later, on May 20, 1918, Frank J. Goodnow and Herbert A. Carpenter, representing the league, called upon Assistant Secretary of State William Phillips and impressed upon him the necessity for establishing an "official Russian Division of the Government to coordinate all Russian matters. They asked me [wrote Phillips] whether they should take this matter up with the President."[5]

Phillips reported this directly to the secretary of state and on the next day wrote Charles R. Crane in New York City requesting his views on the American League to Aid and Cooperate with Russia. Phillips besought Crane, "I really want your advice as to how we should treat the league .... We do not want to stir up trouble by refusing to cooperate with them. On the other hand it is a queer committee and I don't quite 'get it.'"[6]

In early June there arrived at the State Department a letter from William Franklin Sands of American International Corporation for Secretary of State Robert Lansing. Sands proposed that the United States appoint an administrator in Russia rather than a commission, and opined that "the suggestion of an allied military force in Russia at the present moment seems to me to be a very dangerous one."[7] Sands emphasized the possibility of trade with Russia and that this possibility could be advanced "by a well chosen administrator enjoying the full confidence of the government"; he indicated that "Mr. Hoover" might fit the role.[8] The letter was passed to Phillips by Basil Miles, a former associate of Sands, with the expression, "I think the Secretary would find it worthwhile to look through."

In early June the War Trade Board, subordinate to the State Department, passed a resolution, and a committee of the board comprising Thomas L. Chadbourne (Professor Lomonossoff's contact), Clarence M. Woolley, and John Foster Dulles submitted a memorandum to the Department of State, urging consideration of ways and means "to bring about closer and more friendly commercial relations between the United States and Russia." The board recommended a mission to Russia and reopened the question whether this should result from an invitation from the Soviet government.

Then on June 10, M. A. Oudin, foreign manager of General Electric Company, expressed his views on Russia and clearly favored a "constructive plan for the economic assistance" of Russia.[9] In August 1918 Cyrus M. McCormick of International Harvester wrote to Basil Miles at the State Department and praised the President's program for Russia, which McCormick thought would be "a golden opportunity."[10]

Consequently, we find in mid-1918 a concerted effort by a segment of American business —

obviously prepared to open up trade — to take advantage of its own preferred position regarding the Soviets.

GERMANY AND THE UNITED STATES STRUGGLE FOR RUSSIAN BUSINESS

In 1918 such assistance to the embryonic Bolshevik regime was justified on the grounds of defeating Germany and inhibiting German exploitation of Russia. This was the argument used by W. B. Thompson and Raymond Robins in sending Bolshevik revolutionaries and propaganda teams into Germany in 1918. The argument was also employed by Thompson in 1917 when conferring with Prime Minister Lloyd George about obtaining British support for the emerging Bolshevik regime. In June 1918 Ambassador Francis and his staff returned from Russia and urged President Wilson "to recognize and aid the Soviet government of Russia."[11] These reports made by the embassy staff to the State Department were leaked to the press and widely printed. Above all, it was claimed that delay in recognizing the Soviet Union would aid Germany "and helps the German plan to foster reaction and counter-revolution."[12] Exaggerated statistics were cited to support the proposal — for example, that the Soviet government represented ninety percent of the Russian people "and the other ten percent is the former propertied and governing class .... Naturally they are displeased."[13] A former American official was quoted as saying, "If we do nothing — that is, if we just let things drift — we help weaken the Russian Soviet Government. And that plays Germany's game."[14] So, it was recommended that "a commission armed with credit and good business advice could help much."

Meanwhile, inside Russia the economic situation had become critical and the inevitability of an embrace with capitalism dawned on the Communist Party and its planners. Lenin crystallized this awareness before the Tenth Congress of the Russian Communist Party:

> Without the assistance of capital it will be impossible for us to retain proletarian power in an incredibly ruined country in which the peasantry, also ruined, constitutes the overwhelming majority — and, of course, for this assistance capital will squeeze hundreds per cent out of us. This is what we have to understand. Hence, either this type of economic relations or nothing ....[15]

Then Leon Trotsky was quoted as saying, "What we need here is an organizer like Bernard M. Baruch."[16]

Soviet awareness of its impending economic doom suggests that American and German business was attracted by the opportunity of exploiting the Russian market for needed goods; the Germans, in fact, made an early start in 1918. The first deals made by the Soviet Bureau in New York indicate that earlier American financial and moral support of the Bolsheviks was paying off in the form of contracts.

The largest order in 1919-20 was contracted to Morris & Co., Chicago meatpackers, for fifty million pounds of food products, valued at approximately $10 million. The Morris meatpacking family was related to the Swift family. Helen Swift, later connected with the Abraham Lincoln Center "Unity," was married to Edward Morris (of the meatpacking firm) and was also the

brother of Harold H. Swift, a "major" in the 1917 Thompson Red Cross Mission to Russia.

Table: CONTRACTS MADE IN 1919 BY THE SOVIET BUREAU WITH U.S. FIRMS

Ludwig Martens was formerly vice president of Weinberg & Posner, located at 120 Broadway, New York City, and this firm was given a $3 million order.

SOVIET GOLD AND AMERICAN BANKS

Gold was the only practical means by which the Soviet Union could pay for its foreign purchases and the international bankers were quite willing to facilitate Soviet gold shipments. Russian gold exports, primarily imperial gold coins, started in early 1920, to Norway and Sweden. These were transshipped to Holland and Germany for other world destinations, including the United States.

In August 1920, a shipment of Russian gold coins was received at the Den Norske Handelsbank in Norway as a guarantee for payment of 3,000 tons of coal by Niels Juul and Company in the U.S. in behalf of the Soviet government. These coins were transferred to the Norges Bank for safekeeping. The coins were examined and weighed, were found to have been minted before the outbreak of war in 1914, and were therefore genuine imperial Russian coins.[17]

Shortly after this initial episode, the Robert Dollar Company of San Francisco received gold bars, valued at thirty-nine million Swedish kroner, in its Stockholm account; the gold "bore the stamp of the old Czar Government of Russia." The Dollar Company agent in Stockholm applied to the American Express Company for facilities to ship the gold to the United States. American Express refused to handle the shipment. Robert Dollar, it should be noted, was a director of American International Company; thus AIC was linked to the first attempt at shipping gold direct to America.[18]

Simultaneously it was reported that three ships had left Reval on the Baltic Sea with Soviet gold destined for the U.S. The S.S. *Gauthod* loaded 216 boxes of gold under the supervision of Professor Lomonossoff —now returning to the United States. The S.S. *Carl Line* loaded 216 boxes of gold under the supervision of three Russian agents. The S.S. *Ruheleva* was laden with 108 boxes of gold. Each box contained three poods of gold valued at sixty thousand gold rubles each. This was followed by a shipment on the S.S. *Wheeling Mold*.

Kuhn, Loeb & Company, apparently acting in behalf of Guaranty Trust Company, then inquired of the State Department concerning the official attitude towards the receipt of Soviet gold. In a report the department expressed concern because if acceptance was refused, then "the gold [would] probably come back on the hands of the War Department, causing thereby direct

governmental responsibility and increased embarrassment."[19] The report, written by Merle Smith in conference with Kelley and Gilbert, argues that unless the possessor has definite knowledge as to imperfect title, it would be impossible to refuse acceptance. It was anticipated that the U.S. would be requested to melt the gold in the assay office, and it was thereupon decided to telegraph Kuhn, Loeb & Company that no restrictions would be imposed on the importation of Soviet gold into the United States.

The gold arrived at the New York Assay Office and was deposited not by Kuhn, Loeb & Company —but by Guaranty Trust Company of New York City. Guaranty Trust then inquired of the Federal Reserve Board, which in turn inquired of the U.S. Treasury, concerning acceptance and payment. The superintendent of the New York Assay Office informed the Treasury that the approximately seven million dollars of gold had no identifying marks and that "the bars deposited have already been melted in United States mint bars." The Treasury suggested that the Federal Reserve Board determine whether Guaranty Trust Company had acted "for its own account, or the account of another in presenting the gold," and particularly "whether or not any transfer of credit or exchange transaction has resulted from the importation or deposit of the gold."[20]

On November 10, 1920, A. Breton, a vice president of the Guaranty Trust, wrote to Assistant Secretary Gilbert of the Treasury Department complaining that Guaranty had not received from the assay office the usual immediate advance against deposits of "yellow metal left with them for reduction." The letter states that Guaranty Trust had received satisfactory assurances that the bars were the product of melting French and Belgium coins, although it had purchased the metal in Holland. The letter requested that the Treasury expedite payment for the gold. In reply the Treasury argued that it "does not purchase gold tendered to the United States mint or assay offices which is known or suspected to be of Soviet origin," and in view of known Soviet sales of gold in Holland, the gold submitted by Guaranty Trust Company was held to be a "doubtful case, with suggestions of Soviet origin." It suggested that the Guaranty Trust Company could withdraw the gold from the assay office at any time it wished or could "present such further evidence to the Treasury, the Federal Reserve Bank of New York or the Department of State as may be necessary to clear the gold of any suspicion of Soviet origin."[21]

There is no file record concerning final disposition of this case but presumably the Guaranty Trust Company was paid for the shipment. Obviously this gold deposit was to implement the mid-1920 fiscal agreement between Guaranty Trust and the Soviet government under which the company became the Soviet agent in the United States (see epigraph to this chapter).

It was determined at a later date that Soviet gold was also being sent to the Swedish mint. The Swedish mint "melts Russian gold, assays it and affixes the Swedish mint stamp at the request of Swedish banks or other Swedish subjects owing the gold."[22] And at the same time Olof Aschberg, head of Svenska Ekonomie A/B (the Soviet intermediary and affiliate of Guaranty Trust), was offering "unlimited quantities of Russian gold" through Swedish banks.[23]

In brief, we can tie American International Corporation, the influential Professor Lomonossoff, Guaranty Trust, and Olof Aschberg (whom we've previously identified) to the first attempts to import Soviet gold into the United States.

MAX MAY OF GUARANTY TRUST BECOMES DIRECTOR OF RUSKOMBANK

Guaranty Trust's interest in Soviet Russia was renewed in 1920 in the form of a letter from Henry C. Emery, assistant manager of the Foreign Department of Guaranty Trust, to De Witt C. Poole in the State Department. The letter was dated January 21, 1920, just a few weeks before Allen Walker, the manager of the Foreign Department, became active in forming the virulent anti-Soviet organization United Americans (see page 165). Emery posed numerous questions about the legal basis of the Soviet government and banking in Russia and inquired whether the Soviet government was the de facto government in Russia.[24] "Revolt before 1922 planned by Reds," claimed United Americans in 1920, but Guaranty Trust had started negotiations with these same Reds and was acting as the Soviet agent in the U.S. in mid-1920.

In January 1922 Secretary of Commerce Herbert Hoover, interceded with the State Department in behalf of a Guaranty Trust scheme to set up exchange relations with the "New State Bank at Moscow." This scheme, wrote Herbert Hoover, "would not be objectionable if a stipulation were made that all monies coming into their possession should be used for the purchase of civilian commodities in the United States"; and after asserting that such relations appeared to be in line with general policy, Hoover added, "It might be advantageous to have these transactions organized in such a manner that we know what the movement is instead of disintegrated operations now current."[25] Of course, such "disintegrated operations" are consistent with the operations of a free market, but this approach Herbert Hoover rejected in favor of channeling the exchange through specified and controllable sources in New York. Secretary of State Charles E. Hughes expressed dislike of the Hoover-Guaranty Trust scheme, which he thought could be regarded as de facto recognition of the Soviets while the foreign credits acquired might be used to the disadvantage of the United States.[26] A noncommittal reply was sent by State to Guaranty Trust. However, Guaranty went ahead (with Herbert Hoover's support),[27] participated in formation of the first Soviet international bank, and Max May of Guaranty Trust became head of the foreign department of the new Ruskombank.[28]

Footnotes:

[1]U.S. State Dept. Decimal File, 861.00/3094.

[2]This section is from U.S., Senate, *Russian Propaganda*, hearings before a subcommittee of the Committee on Foreign Relations, 66th Cong., 2d sess., 1920.

[3]Morris Hillquit was the intermediary between New York banker Eugene Boissevain and John Reed in Petrograd.

[4]U.S. State Dept. Decimal File, 861.00/4214a.

[5]Ibid., 861.00/1938.

[6]Ibid.

[7]Ibid., 861.00/2003.

[8]Ibid.

[9]Ibid., 861.00/2002.

[10]Ibid.

[11]Ibid., M 316-18-1306.

[12]Ibid.

[13]Ibid.

[14]Ibid.

[15]V. 1. Lenin, Report to the Tenth Congress of the Russian Communist Party, (Bolshevik), March 15, 1921.

[16]William Reswick, *I Dreamt Revolution* (Chicago: Henry Regnery, 1952), p. 78.

[17]U.S. State Dept. Decimal File, 861.51/815.

[18]Ibid., 861.51/836.

[19]Ibid., 861.51,/837, October 4, 1920.

[20]Ibid., 861.51/837, October 24, 1920.

[21]Ibid., 861.51/853, November 11, 1920.

[22]Ibid., 316-119, 1132.

[23]Ibid., 316-119-785. This report has more data on transfers of Russian gold through other countries and intermediaries. See also 316-119-846.

[24]Ibid., 861.516/86.

BACK

Chapter X

J.P. MORGAN GIVES A LITTLE HELP TO THE OTHER SIDE

> **I would not sit down to lunch with a Morgan —except possibly to learn something of his motives and attitudes.**
>
> *William E. Dodd, Ambassador Dodd's Diary*, 1933-1938

So far our story has revolved around a single major financial house —Guaranty Trust Company, the largest trust company in the United States and controlled by the J.P. Morgan firm. Guaranty Trust used Olof Aschberg, the Bolshevik banker, as its intermediary in Russia before and after the revolution. Guaranty was a backer of Ludwig Martens and his Soviet Bureau, the first Soviet representatives in the United States. And in mid-1920 Guaranty was the Soviet fiscal agent in the U.S.; the first shipments of Soviet gold to the United States also traced back to Guaranty Trust.

There is a startling reverse side to this pro-Bolshevik activity —Guaranty Trust was a founder of United Americans, a virulent anti-Soviet organization which noisily threatened Red invasion by 1922, claimed that $20 million of Soviet funds were on the way to fund Red revolution, and forecast panic in the streets and mass starvation in New York City. This duplicity raises, of course, serious questions about the intentions of Guaranty Trust and its directors. Dealing with the Soviets, even backing them, can be explained by apolitical greed or simply profit motive. On the other hand, spreading propaganda designed to create fear and panic while at the same time encouraging the conditions that give rise to the fear and panic is a considerably more serious problem. It suggests utter moral depravity. Let's first look more closely at the anti-Communist United Americans.

UNITED AMERICANS FORMED TO FIGHT COMMUNISM[1]

In 1920 the organization United Americans was founded. It was limited to citizens of the United States and planned for five million members, "whose sole purpose would be to combat the teachings of the socialists, communists, I.W.W., Russian organizations and radical farmers societies."

In other words, United Americans was to fight all those institutions and groups believed to be anticapitalist.

The officer's of the preliminary organization established to build up United Americans were Allen Walker of the Guaranty Trust Company; Daniel Willard, president of the Baltimore 8c Ohio Railroad; H. H. Westinghouse, of Westinghouse Air Brake Company; and Otto H. Kahn, of Kuhn, Loeb 8c Company and American International Corporation. These Wall Streeters were backed up by assorted university presidents arid Newton W. Gilbert (former governor of

the Philippines). Obviously, United Americans was, at first glance, exactly the kind of organization that establishment capitalists would be expected to finance and join. Its formation should have brought no great surprise.

On the other hand, as we have already seen, these financiers were also deeply involved in *supporting* the new Soviet regime in Russia — although this support was behind the scenes, recorded only in government files, and not to be made public for 50 years. As part of United Americans, Walker, Willard, Westinghouse, and Kahn were playing a double game. Otto H. Kahn, a founder of the anti-Communist organization, was reported by the British socialist J. H. Thomas as having his "face towards the light." Kahn wrote the preface to Thomas's book. In 1924 Otto Kahn addressed the League for Industrial Democracy and professed common objectives with this activist socialist group (see page 49). The Baltimore & Ohio Railroad (Willard's employer) was active in the development of Russia during the 1920s. Westinghouse in 1920, the year United Americans was founded, was operating a plant in Russia that had been exempted from nationalization. And the role of Guaranty Trust has already been minutely described.

UNITED AMERICANS REVEALS "STARTLING DISCLOSURES" ON REDS

In March 1920 the *New York Times* headlined an extensive, detailed scare story about Red invasion of the United States within two years, an invasion which was to be financed by $20 million of Soviet funds "obtained by the murder and robbery of the Russian nobility."[2]

United Americans had, it was revealed, made a survey of "radical activities" in the United States, and had done so in its role as an organization formed to "preserve the Constitution of the United States with the representative form of government and the right of individual possession which the Constitution provides."

Further, the survey, it was proclaimed, had the backing of the executive board, "including Otto H. Kahn, Allen Walker of the Guaranty Trust Company, Daniel Willard," and others. The survey asserted that

> the radical leaders are confident of effecting a revolution within two years, that the start is to be made in New York City with a general strike, that Red leaders have predicted much bloodshed and that the Russian Soviet Government has contributed $20,000,000 to the American radical movement.

The Soviet gold shipments to Guaranty Trust in mid-1920 (540 boxes of three poods each) were worth roughly $15,000,000 (at $20 a troy ounce), and other gold shipments through Robert Dollar and Olof Aschberg brought the total very close to $20 million. The information about Soviet gold for the radical movement was called "thoroughly reliable" and was "being turned over to the Government." The Reds, it was asserted, planned to starve New York into submission within four days:

> Meanwhile the Reds count on a financial panic within the next few weeks to help their cause along. A panic would cause distress among the workingmen

and thus render them more susceptible to revolution doctrine.

The United Americans' report grossly overstated the number of radicals in the United States, at first tossing around figures like two or five million and then settling for precisely 3,465,000 members in four radical organizations. The report concluded by emphasizing the possibility of bloodshed and quoted "Skaczewski, President of the International Publishing Association, otherwise the Communist Party, [who] boasted that.the time was coming soon when the Communists would destroy utterly the present form of society."

In brief, United Americans published a report without substantiating evidence, designed to scare the man in the street into panic: The significant point of course is that this is the same group that was responsible for protecting and subsidizing, indeed assisting, the Soviets so they could undertake these same plans.

CONCLUSIONS CONCERNING UNITED AMERICANS

Is this a case of the right hand not knowing what the left hand was doing? Probably not. We are talking about heads of companies, eminently successful companies at that. So United Americans was probably a ruse to divert public —and official —attention from the subterranean efforts being made to gain entry to the Russian market.

United Americans is the only documented example known to this writer of an organization assisting the Soviet regime and also in the forefront of opposition to the Soviets. This is by no means an inconsistent course of action, and further research should at least focus on the following aspects:

(a) Are there other examples of double-dealing by influential groups generally known as the establishment?

(b) Can these examples be extended into other areas? For example, is there evidence that labor troubles have been instigated by these groups?

(c) What is the ultimate purpose of these pincer tactics? Can they be related to the Marxian axiom: thesis versus antithesis yields synthesis? It is a puzzle why the Marxist movement would attack capitalism head-on if its objective was a Communist world and if it truly accepted the dialectic. If the objective is a Communist world —that is, if communism is the desired synthesis —and capitalism is the thesis, then something apart from capitalism or communism has to be antithesis. Could therefore capitalism be the thesis and communism the antithesis, with the objective of the revolutionary groups and their backers being a synthesizing of these two systems into some world system yet undescribed?

MORGAN AND ROCKEFELLER AID KOLCHAK

Concurrently with these efforts to aid the Soviet Bureau and United Americans, the J.P. Morgan firm, which controlled Guaranty Trust, was providing financial assistance for one of the Bolshevik's primary opponents, Admiral Aleksandr Kolchak in Siberia. On June 23, 1919, Congressman Mason introduced House Resolution 132 instructing the State Department "to make inquiry as to all and singular as to the truth of . . . press reports" charging that Russian bondholders had used their influence to bring about the "retention of American troops in Russia" in order to ensure continued payment of interest on Russian bonds. According to a file memorandum by Basil Miles, an associate of William F. Sands, Congressman Mason charged that certain banks were attempting to secure recognition of Admiral Kolchak in Siberia to get payment on former Russian bonds.

Then in August 1919 the secretary of state, Robert Lansing, received from the Rockefeller-influenced National City Bank of New York a letter requesting official comment on a proposed loan of $5 million to Admiral Kolchak; and from J.P. Morgan & Co. and other bankers another letter requesting the views of the department concerning an additional proposed £10 million sterling loan to Kolchak by a consortium of British and American bankers.[3]

Secretary Lansing informed the bankers that the U.S. had not recognized Kolchak and, although prepared to render him assistance, "the Department did not feel it could assume the responsibility of encouraging such negotiations but that, nevertheless, there seemed to be no objection to the loan provided the bankers deemed it advisable to make it."[4]

Subsequently, on September 30, Lansing informed the American consul general at Omsk that the "loan has since gone through in regular course"[5] Two fifths was taken up by British banks and three fifths by American banks. Two thirds of the total was to be spent in Britain and the United States and the remaining one third wherever the Kolchak Government wished. The loan was secured by Russian gold (Kolchak's) that was shipped to San Francisco. The timing of the previously described Soviet exports of gold suggests that cooperation with the Soviets on gold sales was determined on the heels of the Kolchak gold-loan agreement.

The Soviet gold sales and the Kolchak loan also suggest that Carroll Quigley's statement that Morgan interests infiltrated the domestic left applied also to overseas revolutionary *and* counterrevolutionary movements. Summer 1919 was a time of Soviet military reverses in the Crimea and the Ukraine and this black picture may have induced British and American bankers to mend their fences with the anti-Bolshevik forces. The obvious rationale would be to have a foot in all camps, and so be in a favorable position to negotiate for concessions and business after the revolution or counterrevolution had succeeded and a new government stabilized. As the outcome of any conflict cannot be seen at the start, the idea is to place sizable bets on all the horses in the revolutionary race. Thus assistance was given on the one hand to the Soviets and on the other to Kolchak — while the British government was supporting Denikin in the Ukraine and the French government went to the aid of the Poles.

In autumn 1919 the Berlin newspaper *Berliner Zeitung am Mittak* (October 8 and 9) accused the Morgan firm of financing the West Russian government and the Russian-German forces in the Baltic fighting the Bolsheviks — both allied to Kolchak. The Morgan firm strenuously denied the charge: "This firm has had no discussion, or meeting, with the West Russian Government or with anyone pretending to represent it, at any time."[6] But if the financing charge was inaccurate there is evidence of collaboration. Documents found by Latvian

government intelligence among the papers of Colonel Bermondt, commander of the Western Volunteer Army, confirm "the relations claimed existing between Kolchak's London Agent and the German industrial ring which was back of Bermondt."[7]

In other words, we know that J.P. Morgan, London, and New. York bankers financed Kolchak. There is also evidence that connects Kolchak and his army with other anti-Bolshevik armies. And there seems to be little question that German industrial and banking circles were financing the all-Russian anti-Bolshevik army in the Baltic. Obviously bankers' funds have no national flag.

Footnotes:

[1]New York Times, June 21, 1919.

[2]Ibid., March 28, 1920.

[3]U.S. State Dept. Decimal File, 861.51/649.

[4]Ibid., 861.51/675

[5]Ibid., 861.51/656

[6]Ibid., 861.51/767 — a letter from J. P. Morgan to Department of State, November 11, 1919. The financing itself was a hoax (see AP report in State Department files following the Morgan letter).

[7]Ibid., 861.51/6172 and /6361.

BACK

Chapter XI

THE ALLIANCE OF BANKERS AND REVOLUTION

The name Rockefeller does not connote a revolutionary, and my life situation has fostered a careful and cautious attitude that verges on conservatism. I am not given to errant causes...

John D. Rockefeller III, The Second American Revolution *(New York: Harper & Row. 1973)*

THE EVIDENCE PRESENTED: A SYNOPSIS

Evidence already published by George Katkov, Stefan Possony, and Michael Futrell has established that the return to Russia of Lenin and his party of exiled Bolsheviks, followed a few weeks later by a party of Mensheviks, was financed and organized by the German government.[1] The necessary funds were transferred in part through the Nya Banken in Stockholm, owned by Olof Aschberg, and the dual German objectives were: (a) removal of Russia from the war, and (b) control of the postwar Russian market.[2]

We have now gone beyond this evidence to establish a continuing working relationship between Bolshevik banker Olof Aschberg and the Morgan-controlled Guaranty Trust Company in New York before, during, and after the Russian Revolution. In tsarist times Aschberg was the Morgan agent in Russia and negotiator for Russian loans in the United States; during 1917 Aschberg was financial intermediary for the revolutionaries; and after the revolution Aschberg became head of Ruskombank, the first Soviet international bank, while Max May, a vice president of the Morgan-controlled Guaranty Trust, became director and chief of the Ruskombank foreign department. We have presented documentary evidence of a continuing working relationship between the Guaranty Trust Company and the Bolsheviks. The directors of Guaranty Trust in 1917 are listed in Appendix 1.

Moreover, there is evidence of transfers of funds from Wall Street bankers to international revolutionary activities. For example, there is the statement (substantiated by a cablegram) by William Boyce Thompson — a director of the Federal Reserve Bank of New York, a large stockholder in the Rockefeller-controlled Chase Bank, and a financial associate of the Guggenheims and the Morgans — that he (Thompson) contributed $1 million to the Bolshevik Revolution for propaganda purposes. Another example is John Reed, the American member of the Third International executive committee who was financed and supported by Eugene Boissevain, a private New York banker, and who was employed by Harry Payne Whitney's *Metropolitan* magazine. Whitney was at that time a director of Guaranty Trust. We also established that Ludwig Martens, the first Soviet "ambassador" to the United States, was (according to British Intelligence chief Sir Basil Thompson) backed by funds from Guaranty Trust Company. In tracing Trotsky's funding in the U.S. we arrived at German sources, yet to be identified, in New York. And though we do not know the precise German sources of

Trotsky's funds, we *do* know that Von Pavenstedt, the chief German espionage paymaster in the U.S., was also senior partner of Amsinck & Co. Amsinck was owned by the ever-present American International Corporation —also controlled by the J.P. Morgan firm.

Further, Wall Street firms including Guaranty Trust were involved with Carranza's and Villa's wartime revolutionary activities in Mexico. We also identified documentary evidence concerning. a Wall Street syndicate's financing of the 1912 Sun Yat-sen revolution in China, a revolution that is today hailed by the Chinese Communists as the precursor of Mao's revolution in China. Charles B. Hill, New York attorney negotiating with Sun Yat-sen in behalf of this syndicate, was a director of three Westinghouse subsidiaries, and we have found that Charles R. Crane of Westinghouse in Russia was involved in the Russian Revolution.

Quite apart from finance, we identified other, and possibly more significant, evidence of Wall Street involvement in the Bolshevik cause. The American Red Cross Mission to Russia was a private venture of William B. Thompson, who publicly proffered partisan support to the Bolsheviks. British War Cabinet papers now available record that British policy was diverted towards the Lenin-Trotsky regime by the personal intervention of Thompson with Lloyd George in December 1917. We have reproduced statements by director Thompson and deputy chairman William Lawrence Saunders, both of the Federal Reserve Bank of New York, strongly favoring the Bolshevists. John Reed not only was financed from Wall Street, but had consistent support for his activities, even to the extent of intervention with the State Department from William Franklin Sands, executive secretary of American International Corporation. In the sedition case of Robert Minor there are strong indications and some circumstantial evidence that Colonel Edward House intervened to have Minor released. The significance of the Minor case is that William B. Thompson's program for Bolshevik revolution in Germany was the very program Minor was implementing when arrested in Germany.

Some international agents, for example Alexander Gumberg, worked for Wall Street *and* the Bolsheviks. In 1917 Gumberg was the representative of a U.S. firm in Petrograd, worked for Thompson's American Red Cross Mission, became chief Bolshevik agent in Scandinavia until he was deported from Norway, then became confidential assistant to Reeve Schley of Chase Bank in New York and later to Floyd Odium of Atlas Corporation.

This activity in behalf of the Bolsheviks originated in large part from a single address: 120 Broadway, New York City. The evidence for this observation is outlined but no conclusive reason is given for the unusual concentration of activity at a single address, except to state that it appears to be the foreign counterpart of Carroll Quigley's claim that J.P. Morgan infiltrated the domestic left. Morgan also infiltrated the international left.

The Federal Reserve Bank of New York was at 120 Broadway. The vehicle for this pro-Bolshevik activity was American International Corporation —at 120 Broadway. AIC views on the Bolshevik regime were requested by Secretary of State Robert Lansing only a few weeks after the revolution began, and Sands, executive secretary of AIC, could barely restrain his enthusiasm for the Bolshevik cause. Ludwig Martens, the Soviet's first ambassador, had been vice president of Weinberg & Posner, which was also located at 120-Broadway. Guaranty Trust Company was next door at 140 Broadway but Guaranty Securities Co. was at 120 Broadway. In 1917 Hunt, Hill & Betts was at 120 Broadway, and Charles B. Hill of this firm was the negotiator in the Sun Yat-sen dealings. John MacGregor Grant Co., which was

financed by Olof Aschberg in Sweden and Guaranty Trust in the United States, and which was on the Military Intelligence black list, was at 120 Broadway. The Guggenheims and the executive heart of General Electric (also interested in American International) were at 120 Broadway. We find it therefore hardly surprising that the Bankers Club was also at 120 Broadway, on the top floor (the thirty-fourth).

It is significant that support for the Bolsheviks did not cease with consolidation of the revolution; therefore, this support cannot be wholly explained in terms of the war with Germany. The American-Russian syndicate formed in 1918 to obtain concessions in Russia was backed by the White, Guggenheim, and Sinclair interests. Directors of companies controlled by these three financiers included Thomas W. Lamont (Guaranty Trust), William Boyce Thompson (Federal Reserve Bank), and John Reed's employer Harry Payne Whitney (Guaranty Trust). This strongly suggests that the syndicate was formed to cash in on earlier support for the Bolshevik cause in the revolutionary period. And then we found that Guaranty Trust financially backed the Soviet Bureau in New York in 1919.

The first really concrete signal that previous political and financial support was paying off came in 1923 when the Soviets formed their first international bank, Ruskombank. Morgan associate Olof Aschberg became nominal head of this Soviet bank; Max May, a vice president of Guaranty Trust, became a director of Ruskom-bank, and the Ruskombank promptly appointed Guaranty Trust Company its U.S. agent.

THE EXPLANATION FOR THE UNHOLY ALLIANCE

What motive explains this coalition of capitalists and Bolsheviks?

Russia was then —and is today —the largest untapped market in the world. Moreover, Russia, then and now, constituted the greatest potential competitive threat to American industrial and financial supremacy. (A glance at a world map is sufficient to spotlight the geographical difference between the vast land mass of Russia and the smaller United States.) Wall Street must have cold shivers when it visualizes Russia as a second super American industrial giant.

But why allow Russia to become a competitor and a challenge to U.S. supremacy? In the late nineteenth century, Morgan/Rockefeller, and Guggenheim had demonstrated their monopolistic proclivities. In *Railroads and Regulation 1877-1916* Gabriel Kolko has demonstrated how the railroad owners, not the farmers, wanted state control of railroads in order to preserve their monopoly and abolish competition. So the simplest explanation of our evidence is that a syndicate of Wall Street financiers enlarged their monopoly ambitions and broadened horizons on a global scale. *The gigantic Russian market was to be converted into a captive market and a technical colony to be exploited by a few high-powered American financiers and the corporations under their control.* What the Interstate Commerce Commission and the Federal Trade Commission under the thumb of American industry could achieve for that industry at home, a planned socialist government could achieve for it abroad —given suitable support and inducements from Wall Street and Washington, D.C.

Finally, lest this explanation seem too radical, remember that it was Trotsky who appointed tsarist generals to consolidate the Red Army; that it was Trotsky who appealed for American

officers to control revolutionary Russia and intervene in behalf of the Soviets; that it was Trotsky who squashed first the libertarian element in the Russian Revolution and then the workers and peasants; and that recorded history *totally* ignores the 700,000-man Green Army composed of ex-Bolsheviks, angered at betrayal of the revolution, who fought the Whites *and* the Reds. In other words, we are suggesting that the Bolshevik Revolution was an alliance of statists: statist revolutionaries and statist financiers aligned against the genuine revolutionary libertarian elements in Russia.[3]

'The question now in the readers' minds must be, were these bankers also secret Bolsheviks? No, of course not. The financiers were without ideology. It would be a gross misinterpretation to assume that assistance for the Bolshevists was ideologically motivated, in any narrow sense. The financiers were *power-motivated* and therefore assisted *any* political vehicle that would give them an entree to power: Trotsky, Lenin, the tsar, Kolchak, Denikin —all received aid, more or less. All, that is, but those who wanted a truly free individualist society.

Neither was aid restricted to statist Bolsheviks and statist counter-Bolsheviks. John P. Diggins, in *Mussolini and Fascism: The View from America,*[4] has noted in regard to Thomas Lamont of Guaranty Trust that

Of all American business leaders, the one who most vigorously patronized the cause of Fascism was Thomas W. Lamont. Head of the powerful J.P. Morgan banking network, Lamont served as something of a business consultant for the government of Fascist Italy.

Lamont secured a $100 million loan for Mussolini in 1926 at a particularly crucial time for the Italian dictator. We might remember too that the director of Guaranty Trust was the father of Corliss Lamont, a domestic Communist. This evenhanded approach to the twin totalitarian systems, communism and fascism, was not confined to the Lamont family. For example, Otto Kahn, director of American International Corporation and of Kuhn, Leob & Co., felt sure that "American capital invested in Italy will find safety, encouragement, opportunity and reward."[5] This is the same Otto Kahn who lectured the socialist League of Industrial Democracy in 1924 that *its* objectives were *his* objectives.[6] They differed only —according to Otto Kahn —over the means of achieving these objectives.

Ivy Lee, Rockefeller's public relations man, made similar pronouncements, and was responsible for selling the Soviet regime to the gullible American public in the late 1920s. We also have observed that Basil Miles, in charge of the Russian desk at the State Department and a former associate of William Franklin Sands, was decidedly helpful to the businessmen promoting Bolshevik causes; but in 1923 the same Miles authored a profascist article, "Italy's Black Shirts and Business."[7] "Success of the Fascists is an expression of Italy's youth," wrote Miles while glorifying the fascist movement and applauding its esteem for American business.

THE MARBURG PLAN

The Marburg Plan, financed by Andrew Carnegie's ample heritage, was produced in the early years of the twentieth century. It suggests premeditation for this kind of superficial schizophrenia, which in fact masks an integrated program of power acquisition: "What then if

Carnegie and his unlimited wealth, the international financiers and the Socialists could be organized in a movement to compel the formation of a league to enforce peace."[8]

The governments of the world, according to the Marburg Plan, were to be socialized while the ultimate power would remain in the hands of the international financiers "to control its councils and enforce peace [and so] provide a specific for all the political ills of mankind."[9]

This idea was knit with other elements with similar objectives. Lord Milner in England provides the transatlantic example of banking interests recognizing the virtues and possibilities of Marxism. Milner was a banker, influential in British wartime policy, and pro-Marxist.[10] In New York the socialist *"X"* club was founded in 1903. It counted among its members not only the Communist Lincoln Steffens, the socialist William English Walling, and the Communist banker Morris Hillquit, but also John Dewey, James T. Shotwell, Charles Edward Russell, and Rufus Weeks (vice president of New York Life Insurance Company). The annual meeting of the Economic Club in the Astor Hotel, New York, witnessed socialist speakers. In 1908, when A. Barton Hepburn, president of Chase National Bank, was president of the Economic Club, the main speaker was the aforementioned Morris Hillquit, who "had abundant opportunity to preach socialism to a gathering which represented wealth and financial interests."[11]

From these unlikely seeds grew the modern internationalist movement, which included not only the financiers Carnegie, Paul Warburg, Otto Kahn, Bernard Baruch, and Herbert Hoover, but also the Carnegie Foundation and its progeny *International Conciliation.* The trustees of Carnegie were, as we have seen, prominent on the board of American International Corporation. In 1910 Carnegie donated $10 million to found the Carnegie Endowment for International Peace, and among those on the board of trustees were Elihu Root (Root Mission to Russia, 1917), Cleveland H. Dodge (a financial backer of President Wilson), George W. Perkins (Morgan partner), G. J. Balch (AIC and Amsinck), R. F. Herrick (AIC), H. W. Pritchett (AIC), and other Wall Street luminaries. Woodrow Wilson came under the powerful influence of —and indeed was financially indebted to —this group of internationalists. As Jennings C. Wise has written, "Historians must never forget that Woodrow Wilson... made it possible for Leon Trotsky to enter Russia with an American passport."[12]

But Leon Trotsky also declared himself an internationalist. We have remarked with some interest his high-level internationalist connections, or at least friends, in Canada. Trotsky then was not pro-Russian, or pro-Allied, or pro-German, as many have tried to make him out to be. Trotsky was *for* world revolution, *for* world dictatorship; he was, in one word, an internationalist.[13] Bolshevists and bankers have then this significant common ground — internationalism. Revolution and international finance are not at all inconsistent if the result of revolution is to establish more centralized authority. International finance prefers to deal with central governments. The last thing the banking community wants is laissez-faire economy and decentralized power because these would disperse power.

This, therefore, is an explanation that fits the evidence. This handful of bankers and promoters was not Bolshevik, or Communist, or socialist, or Democrat, or even American. Above all else these men wanted markets, preferably captive international markets —and a monopoly of the captive world market as the ultimate goal. They wanted markets that could be exploited monopolistically without fear of competition from Russians, Germans, or anyone else — including American businessmen outside the charmed circle. This closed group was apolitical

and amoral. In 1917, it had a single-minded objective —a captive market in Russia, all presented under, and intellectually protected by, the shelter of a league to enforce the peace.

Wall Street did indeed achieve its goal. American firms controlled by this syndicate were later to go on and build the Soviet Union, and today are well on their way to bringing the Soviet military-industrial complex into the age of the computer.

Today the objective is still alive and well. John D. Rockefeller expounds it in his book *The Second American Revolution —which* sports a five-pointed star on the title page.[14] The book contains a naked plea for humanism, that is, a plea that our first priority is to work for others. In other words, a plea for collectivism. Humanism is collectivism. It is notable that the Rockefellers, who have promoted this humanistic idea for a century, have not turned their OWN property over to others.. Presumably it is implicit in their recommendation that *we* all work *for* the Rockefellers. Rockefeller's book promotes collectivism under the guises of "cautious conservatism" and "the public good." It is in effect a plea for the continuation of the earlier Morgan-Rockefeller support of collectivist enterprises and mass subversion of individual rights.

In brief, the public good has been, and is today, used as a device and an excuse for self-aggrandizement by an elitist circle that pleads for world peace and human decency. But so long as the reader looks at world history in terms of an inexorable Marxian conflict between capitalism and communism, the objectives of such an alliance between international finance and international revolution remain elusive. So will the ludicrousness of promotion of the public good by plunderers. If these alliances still elude the reader, then he should ponder the obvious fact that these same international interests and promoters are always willing to determine what *other* people should do, but are signally unwilling to be first in line to give up their own wealth and power. Their mouths are open, their pockets are closed.

This technique, used by the monopolists to gouge society, was set forth in the early twentieth century by Frederick C. Howe in *The Confessions of a Monopolist.*[15] First, says Howe, politics is a necessary part of business. To control industries it is necessary to control Congress and the regulators and thus make society go to work for you, the monopolist. So, according to Howe, the two principles of a successful monopolist are, "First, let Society work for you; and second, make a business of politics."[16] These, wrote Howe, are the basic "rules of big business."

Is there any evidence that this magnificently sweeping objective was also known to Congress and the academic world? Certainly the possibility was known and known publicly. For example, witness the testimony of Albert Rhys Williams, an astute commentator on the revolution, before the Senate Overman Committee:

. . . it is probably true that under the soviet government industrial life will perhaps be much slower in development than under the usual capitalistic system. But why should a great industrial country like America desire the creation and consequent competition of another great industrial rival? Are not the interests of America in this regard in line with the slow tempo of development which soviet Russia projects for herself?

Senator Wolcott: Then your argument is that it would be to the interest of America to have

Russia repressed?

MR. WILLIAMS: Not repressed ....

SENATOR WOLCOTT: You say. Why should America desire Russia to become an industrial competitor with her?

MR. WILLIAMS: This is speaking from a capitalistic standpoint. The whole interest of America is not, I think, to have another great industrial rival, like Germany, England, France, and Italy, thrown on the market in competition. I think another government over there besides the Soviet government would perhaps increase the tempo or rate of development of Russia, and we would have another rival. Of course, this is arguing from a capitalistic standpoint.

SENATOR WOLCOTT: So you are presenting an argument here which you think might appeal to the American people, your point being this, that if we recognize the Soviet government of Russia as it is constituted we will be recognizing a government that can not compete with us in industry for a great many years?

MR. WILLIAMS: That is a fact.

SENATOR WOLCOTT: That is an argument that under the Soviet government Russia is in no position, for a great many years at least, to approach America industrially?

MR. WILLIAMS: Absolutely.[17]

And in that forthright statement by Albert Rhys Williams is the basic clue to the revisionist interpretation of Russian history over the past half century.

Wall Street, or rather the Morgan-Rockefeller complex represented at 120 Broadway and 14 Wall Street, had something very close to Williams' argument in mind. Wall Street went to bat in Washington for the Bolsheviks. It succeeded. The Soviet totalitarian regime survived. In the 1930s foreign firms, mostly of the Morgan-Rockefeller group, built the five-year plans. They have continued to build Russia, economically and militarily.[18] On the other hand, Wall Street presumably did not foresee the Korean War and the Vietnam War — in which 100,000 Americans and countless allies lost their lives to Soviet armaments built with this same imported U.S. technology. What seemed a farsighted, and undoubtedly profitable, policy for a Wall Street syndicate, became a nightmare for millions outside the elitist power circle and the ruling class.

Footnotes:

[1]Michael Futrell, *Northern Underground* (London: Faber and Faber, 1963); Stefan Possony, *Lenin: The Compulsive Revolutionary* (London: George Allen & Unwin, 1966); and George Katkov, "German Foreign Office Documents on

Financial Support to the Bolsheviks in 1917," *International Affairs* 32 (Royal Institute of International Affairs, 1956).

[2]Ibid., especially Katkov.

[3]See also Voline (V.M. Eichenbaum), *Nineteen-Seventeen: The Russian Revolution Betrayed* (New York: Libertarian Book Club, n.d.).

[4]Princeton, N.J.: Princeton University Prss, 1972.

5Ibid., p. 149.

[6]See p. 49.

[7]Nation's Business, February 1923, pp. 22-23.

[8]Jennings C. Wise, *Woodrow Wilson: Disciple of Revolution* (New York: Paisley Press, 1938), p.45

[9]Ibid., p.46

[10]See p. 89.

[11]Morris Hillquit, *Loose Leaves from a Busy Life* (New York: Macmillan, 1934), p. 81.

[12]Wise, op. cit., p. 647

[13]Leon Trotsky, *The Bolsheviki and World Peace* (New York: Boni & Liveright, 1918).

[14]In May 1973 Chase Manhattan Bank (chairman, David Rockefeller) opened it Moscow office at 1 Karl Marx Square, Moscow. The New York office is at 1 Chase Manhattan Plaza.

[15]Chicago: Public Publishin, n.d.

[16]Ibid.

[17]U.S., Senate, *Bolshevik Propaganda*, hearings before a subcommittee of the Committee on the Judiciary, 65th Cong., pp. 679-80. See also herein p. 107 for the role of Williams in Radek's Press Bureau.

[18]See Antony C. Sutton, *Western Technology and Soviet Economic Development,* 3 vols. (Stanford, Calif.: Hoover Institution, 1968, 1971, 1973); see also *National Suicide: Military Aid to the Soviet Union* (New York: Arlington House, 1973).

BACK

Appendix I

DIRECTORS OF MAJOR BANKS,
FIRMS, AND INSTITUTIONS
MENTIONED IN THIS BOOK
(AS IN 1917-1918)

AMERICAN INTERNATIONAL CORPORATION (120 Broadway)

J. Ogden Armour	Percy A. Rockefeller
G. J. Baldwin	John D. Ryan
C. A. Coffin	W.L. Saunders
W. E. Corey	J.A. Stillman
Robert Dollar	C.A. Stone
Pierre S. du Pont	T.N. Vail
Philip A. S. Franklin	F.A. Vanderlip
J. P. Grace	E.S. Webster
R. F. Herrick	A.H. Wiggin
Otto H. Kahn	Beckman Winthrop
H. W. Pritchett	William Woodward

CHASE NATIONAL BANK

J. N. Hill	Newcomb Carlton
A. B. Hepburn	D.C. Jackling
S. H. Miller	E.R. Tinker
C. M. Schwab	A.H. Wiggin
H. Bendicott	John J. Mitchell

Guy E. Tripp

EQUITABLE TRUST COMPANY (37-43 Wall Street)

Charles B. Alexander	Henry E. Huntington
Albert B. Boardman	Edward T. Jeffrey
Robert.C. Clowry	Otto H. Kahn
Howard E. Cole	Alvin W. Krech

Henry E. Cooper	James W. Lane
Paul D. Cravath	Hunter S. Marston
Franklin Wm. Cutcheon	Charles G. Meyer
Bertram Cutler	George Welwood Murray
Thomas de Witt Cuyler	Henry H. Pierce
Frederick W. Fuller	Winslow S. Pierce
Robert Goelet	Lyman Rhoades
Carl R. Gray	Walter C. Teagle
Charles Hayden	Henry Rogers Winthrop

Bertram G. Work

FEDERAL ADVISORY COUNCIL (1916)

Daniel G. Wing, Boston, District No. 1
J. P. Morgan, New York, District No. 2
Levi L. Rue, Philadelphia, District No. 3
W. S. Rowe, Cincinnati, District No. 4
J. W. Norwood, Greenville, S.C., District No. 5
C. A. Lyerly, Chattanooga, District No. 6
J. B. Forgan, Chicago, Pres., District No. 7
Frank O. Watts, St. Louis, District No. 8
C. T. Jaffray, Minneapolis, District No. 9
E. F. Swinney, Kansas City, District No. 10
T. J. Record, Paris, District No. 11
Herbert Fleishhacker, San Francisco, District No. 12

FEDERAL RESERVE BANK OF NEW YORK (120 Broadway)

William Woodward (1917)
Robert H. Treman (1918) Class A
Franklin D. Locke (1919)

Charles A. Stone (1920)
Wm. B. Thompson (1918) Class B
L. R. Palmer (1919)

Pierre Jay (1917)	
George F. Peabody (1919)	Class C
William Lawrence Saunders (1920)	

FEDERAL RESERVE BOARD

William G. M'Adoo	Adolph C. Miller (1924)
Charles S. Hamlin (1916)	Frederic A. Delano (1920)
Paul M. Warburg (1918)	W.P.G. Harding (1922)

John Skelton Williams

GUARANTY TRUST COMPANY (140 Broadway)

Alexander J. Hemphill (Chairman)	
Charles H. Allen	Edgar L. Marston
A. C. Bedford	Grayson M-P Murphy
Edward J. Berwind	Charles A. Peabody
W. Murray Crane	William C. Potter
T. de Witt Cuyler	John S. Runnells
James B. Duke	Thomas F. Ryan
Caleb C. Dula	Charles H. Sabin
Robert W. Goelet	John W. Spoor
Daniel Guggenheim	Albert Straus
W. Averell Harriman	Harry P. Whitney
Albert H. Harris	Thomas E. Wilson
Walter D. Hines	*London Committee:*
Augustus D. Julliard	Arthur J. Fraser (Chairman)
Thomas W. Lamont	Cecil F. Parr
William C. Lane	Robert Callander

NATIONAL CITY BANK

P. A. S. Franklin	P.A. Rockefeller
J.P. Grace	James Stillman

G. H. Dodge	W. Rockefeller
H. A. C. Taylor	J. O. Armour
R. S. Lovett	J.W. Sterling
F. A. Vanderlip	J.A. Stillman
G. H. Miniken	M.T. Pyne
E. P. Swenson	E.D. Bapst
Frank Trumbull	J.H. Post
Edgar Palmer	W.C. Procter

NATIONALBANK FÜR DEUTSCHLAND
(As in 1914, Hjalmar Schacht joined board in 1918)

Emil Wittenberg	Hans Winterfeldt
Hjalmar Schacht	Th Marba
Martin Schiff	Paul Koch

Franz Rintelen

SINCLAIR CONSOLIDATED OIL CORPORATION (120 Broadway)

Harry F. Sinclair	James N. Wallace
H. P. Whitney	Edward H. Clark
Wm. E. Corey	Daniel C. Jackling
Wm. B. Thompson	Albert H. Wiggin

J. G. WHITE ENGINEERING CORPORATION

James Brown	C.E. Bailey
Douglas Campbell	J.G. White
G. C. Clark, Jr.	Gano Dunn
Bayard Dominick, Jr.	E.G. Williams
A. G. Hodenpyl	A.S. Crane
T. W. Lamont	H.A. Lardner
Marion McMillan	G.H. Kinniat
J. H. Pardee	A.F. Kountz
G. H. Walbridge	R.B. Marchant

E. N. Chilson Henry Parsons

A. N. Connett

BACK

Appendix II

THE JEWISH-CONSPIRACY THEORY OF THE BOLSHEVIK REVOLUTION

There is an extensive literature in English, French, and German reflecting the argument that the Bolshevik Revolution was the result of a "Jewish conspiracy"; more specifically, a conspiracy by Jewish world bankers. Generally, world control is seen as the ultimate objective; the Bolshevik Revolution was but one phase of a wider program that supposedly reflects an age-old religious struggle between Christianity and the "forces of darkness."

The argument and its variants can be found in the most surprising places and from quite surprising persons. In February 1920 Winston Churchill wrote an article —rarely cited today — for the *London Illustrated Sunday Herald* entitled *"Zionism* Versus Bolshevism." In this' article Churchill concluded that it was "particularly important... that the National Jews in every country who are loyal to the land of their adoption should come forward on every occasion . . . and take a prominent part in every measure for combatting the Bolshevik conspiracy." Churchill draws a line between "national Jews" and what he calls "international Jews." He argues that the "international and for the most atheistical Jews" certainly had a "very great" role in the creation of Bolshevism and bringing about the Russian Revolution. He asserts (contrary to fact) that with the exception of Lenin, "the majority" of the leading figures in the revolution were Jewish, and adds (also contrary to fact) that in many cases Jewish interests and Jewish places of worship were excepted by the Bolsheviks from their policies of seizure. Churchill calls the international Jews a "sinister confederacy" emergent from the persecuted populations of countries where Jews have been persecuted on account of their race. Winston Churchill traces this movement back to Spartacus-Weishaupt, throws his literary net around Trotsky, Bela Kun, Rosa Luxemburg, and Emma Goldman, and charges: "This world-wide conspiracy for the overthrow of civilisation and for the reconstitution of society on the basis of arrested development, of envious malevolence, and impossible equality, has been steadily growing."

Churchill then argues that this conspiratorial Spartacus-Weishaupt group has been the mainspring of every subversive movement in the nineteenth century. While pointing out that Zionism and Bolshevism are competing for the soul of the Jewish people, Churchill (in 1920) was preoccupied with the role of the Jew in the Bolshevik Revolution and the existence of a worldwide Jewish conspiracy.

Another well-known author in the 1920s, Henry Wickham Steed describes in the second volume of his *Through 30 Years 1892-1922* (p. 302) how he attempted to bring the Jewish-conspiracy concept to the attention of Colonel Edward M. House and President Woodrow Wilson. One day in March 1919 Wickham Steed called Colonel House and found him disturbed over Steed's recent criticism of U.S. recognition of the Bolsheviks. Steed pointed out to House that Wilson would be discredited among the many peoples and nations of Europe and "insisted that, unknown to him, the prime movers were Jacob Schiff, Warburg and other international financiers, who wished above all to bolster up the Jewish Bolshevists in order to secure a field for German and Jewish exploitation of Russia."[1] According to Steed, Colonel House argued for the establishment of economic relations with the Soviet Union.

Probably the most superficially damning collection of documents on the Jewish conspiracy is in the State Department Decimal File (861.00/5339). The central document is one entitled "Bolshevism and Judaism," dated November 13, 1918. The text is in the form of a report, which states that the revolution in Russia was engineered "in February 1916" and "it was found that the following persons and firms were engaged in this destructive work":

(1) Jacob Schiff	Jew
(2) Kuhn, Loeb & Company	Jewish Firm
Management: Jacob Schiff	Jew
Felix Warburg	Jew
Otto H. Kahn	Jew
Mortimer L. Schiff	Jew
Jerome J. Hanauer	Jew
(3) Guggenheim	Jew
(4) Max Breitung	Jew
(5) Isaac Seligman	Jew

The report goes on to assert that there can be no doubt that the Russian Revolution was started and engineered by this group and that in April 1917

> Jacob Schiff in fact made a public announcement and it was due to his financial influence that the Russian revolution was successfully accomplished and in the Spring 1917 Jacob Schitf started to finance Trotsky, a Jew, for the purpose of accomplishing a social revolution in Russia.

The report contains other miscellaneous information about Max Warburg's financing of Trotsky, the role of the Rheinish-Westphalian syndicate and Olof Aschberg of the Nya Banken (Stockholm) together with Jivotovsky. The anonymous author (actually employed by the U.S. War Trade Board)[2] states that the links between these organizations and their financing of the Bolshevik Revolution show how "the link between Jewish multi-millionaires and Jewish proletarians was forged." The report goes on to list a large number of Bolsheviks who were also Jews and then describes the actions of Paul Warburg, Judus Magnes, Kuhn, Loeb & Company, and Speyer & Company.

The report ends with a barb at "International Jewry" and places the argument into the context of a Christian-Jewish conflict backed up by quotations from the Protocols of Zion. Accompanying this report is a series of cables between the State Department in Washington and the American embassy in London concerning the steps to be taken with these documents:[3]

> 5399 Great Britain, TEL. 3253 i pm
>
> October 16, 1919 In Confidential File
> Secret for Winslow from Wright. Financial aid to Bolshevism & Bolshevik Revolution in Russia from prominent Am. Jews: Jacob Schiff, Felix Warburg,

> Otto Kahn, Mendell Schiff, Jerome Hanauer, Max Breitung & one of the Guggenheims. Document re- in possession of Brit. police authorities from French sources. Asks for any facts re-.

* * * * *

> Oct. 17 Great Britain TEL. 6084, noon r c-h 5399 Very secret. Wright from Winslow. Financial aid to Bolshevik revolution in Russia from prominent Am. Jews. No proof re- but investigating. Asks to urge Brit. authorities to suspend publication at least until receipt of document by Dept.

* * * * *

> Nov. 28 Great Britain TEL. 6223 R 5 pro. 5399
> FOR WRIGHT. Document re financial aid to Bolsheviki by prominent American jews. Reports —identified as French translation of a statement originally prepared in English by Russian citizen in Am. etc. Seem most unwise to give —the distinction of publicity.

It was agreed to suppress this material and the files conclude, "I think we have the whole thing in cold storage."

Another document marked "Most Secret" is included with this batch of material. The provenance of the document is unknown; it is perhaps FBI or military intelligence. It reviews a translation of the Protocols of the Meetings of the Wise Men of Zion, and concludes:

> In this connection a letter was sent to Mr. W. enclosing a memorandum from us with regard to certain information from the American Military Attache to the effect that the British authorities had letters intercepted from various groups of international Jews setting out a scheme for world dominion. Copies of this material will be very useful to us.

This information was apparently developed and a later British intelligence report makes the flat accusation:

> SUMMARY: There is now definite evidence that Bolshevism is an international movement controlled by Jews; communications are passing between the leaders in America, France, Russia and England with a view to concerted action....[4]

However, none of the above statements can be supported with hard empirical evidence. The most significant information is contained in the paragraph to the effect that the British authorities possessed "letters intercepted from various groups of international Jews setting out a scheme for world dominion." If indeed such letters exist, then they would provide support (or nonsupport) for a presently unsubstantiated hypothesis: to wit, that the Bolshevik Revolution and other revolutions are the work of a worldwide Jewish conspiracy.

Moveover, when statements and assertions are not supported by hard evidence and where attempts to unearth hard evidence lead in a circle back to the starting point —particularly when everyone is quoting everyone else —then we must reject the story as spurious. *There is no concrete evidence that Jews were involved in the Bolshevik Revolution because they were Jewish.* There may indeed have been a higher proportion of Jews involved, but given tsarist treatment of Jews, what else would we expect? There were probably many Englishmen or persons of English origin in the American Revolution fighting the redcoats. So what? Does that make the American Revolution an English conspiracy? Winston Churchill's statement that Jews had a "very great role" in the Bolshevik Revolution is supported only by distorted evidence. The list of Jews involved in the Bolshevik Revolution must be weighed against lists of non-Jews involved in the revolution. When this scientific procedure is adopted, the proportion of foreign Jewish Bolsheviks involved falls to less than twenty percent of the total number of revolutionaries —and these Jews were mostly deported, murdered, or sent to Siberia in the following years. Modern Russia has in fact maintained tsarist anti-Semitism.

It is significant that documents in the State Department files confirm that the investment banker Jacob Schiff, often cited as a source of funds for the Bolshevik Revolution, was in fact *against* support of the Bolshevik regime.[5] This position, as we shall see, was in direct contrast to the Morgan-Rockefeller promotion of the Bolsheviks.

The persistence with which the Jewish-conspiracy myth has been pushed suggests that it may well be a deliberate device to divert attention from the real issues and the real causes. The evidence provided in this book suggests that the New York bankers who were also Jewish had relatively minor roles in supporting the Bolsheviks, while the New York bankers who were also Gentiles (Morgan, Rockefeller, Thompson) had major roles.

What better way to divert attention from the *real* operators than by the medieval bogeyman of anti-Semitism?

Footnotes:

[1]See Appendix 3 for Schiff's actual role.

[2]The anonymous author was a Russian employed by the U.S. War Trade Board. One of the three directors of the U.S. War Trade Board at this time was John Foster Dulles.

[3]U.S. State Dept. Decimal File, 861.00/5399.

[4]Great Britain, Directorate of Intelligence, *A Monthly Review of the Progress of Revolutionary Movements Abroad,* no. 9, July 16, 1913 (861.99/5067).

[5]See Appendix 3.

BACK

Appendix III

SELECTED DOCUMENTS FROM
GOVERNMENT FILES OF THE
UNITED STATES AND GREAT BRITAIN

Note: Some documents comprise several papers that form a related group.

DOCUMENT NO. 1

Cable from Ambassador Francis in Petrograd to the Department of State in Washington, D.C., dated March 14, 1917, and reporting the first stage of the Russian Revolution (861.00/273).

Petrograd
Dated March 14, 1917,
Recd. 15th, 2:30 a.m.

Secretary of State,
Washington

1287. Unable to send a cablegram since the eleventh. Revolutionists have absolute control in Petrograd and are making strenuous efforts to preserve order, which successful except in rare instances. No cablegrams since your 1251 of the ninth, received March eleventh. Provisional government organized under the authority of the Douma which refused to obey the Emperor's order of the adjournment. Rodzianko, president of the Douma, issuing orders over his own signature. Ministry reported to have resigned. Ministers found are taken before the Douma, also many Russian officers and other high officials. Most if not all regiments ordered to Petrograd have joined the revolutionists after arrival. American colony safe. No knowledge of any injuries to American citizens.

FRANCIS,
American Ambassador

On receipt of the preceding cable, Robert Lansing, Secretary of State, made its contents available to President Wilson (861.00/273):

PERSONAL AND CONFIDENTIAL

My Dear Mr. President:

I enclose to you a very important cablegram which has just come from Petrograd, and also a clipping from the New York WORLD of this morning, in which a statement is made by Signor Scialoia, Minister without portfolio in the Italian Cabinet, which is significant in view of Mr. Francis' report. My own impression is that the Allies know of this matter and I presume are favorable to the revolutionists since the Court party has been, throughout the war, secretely pro-German.

Faithfully yours,
ROBERT LANSING

Enclosure:
The President,
The White House

COMMENT

The significant phrase in the Lansing-Wilson letter is "My own impression is that the Allies know of this matter and I presume are favorable to the revolutionists since the Court party has been, throughout the war, secretely pro-German." It will be recalled (chapter two) that Ambassador Dodd claimed that Charles R. Crane, of Westinghouse and of Crane Co. in New York and an adviser to President Wilson, was involved in this first revolution.

DOCUMENT NO. 2

Memorandum from Great Britain Foreign Office file FO 371/ 2999 (The War —Russia), October 23, 1917, file no. 3743.

DOCUMENT

Personal (and) Secret.

Disquieting rumors have reached us from more than one source that Kerensky is m German pay and that he and his government are doing their utmost to weaken (and) disorganize Russia, so as to arrive at a situation when no other course but a separate peace would be possible. Do you consider that there is any ground for such insinuations, and that the government by refraining from any effective action are purposely allowing the Bolshevist elements to grow stronger?

If it should be a question of bribery we might be able to compete successfully if it were known how and through what agents it could be done, although it is not a pleasant thought.

COMMENT

Refers to information that Kerensky was in German pay.

DOCUMENT NO. 3

Consists of four parts:

(a) Cable from Ambassador Francis, April 27, 1917, in Petrograd to Washington, D.C., requesting transmission of a message from prominent Russian Jewish bankers to prominent Jewish bankers in New York and requesting their subscription to the Kerensky Liberty Loan (861.51/139).

(b) Reply from Louis Marshall (May 10, 1917) representing American Jews; he declined the invitation while expressing support for the American Liberty Loan (861.51/143).

(c) Letter from Jacob Schiff of Kuhn, Loeb (November 25, 1918) to State Department (Mr. Polk) relaying a message from Russian Jewish banker Kamenka calling for Allied help *against* the Bolsheviks ("because Bolshevist government does not represent Russian People").

(d) Cable from Kamenka relayed by Jacob Schiff.

DOCUMENTS

(a) Secretary of State
Washington.
1229, twenty-seventh.

Please deliver following to Jacob Schiff, Judge Brandies [*sic*], Professor Gottheil, Oscar Strauss *[sic]*, Rabbi Wise, Louis Marshall and Morgenthau:

"We Russian Jews always believed that liberation of Russia meant also our liberation. Being deeply devoted to country we placed implicit trust temporary Government. We know the unlimited economic power of Russia and her immense natural resources and the emancipation we obtained will enable us to participate development country. We firmly believe that victorious finish of the war owing help our allies and United States is near.

Temporary Government issuing now new public loan of freedom and we feel our national duty support loan high vital for war and freedom. We are sure that Russia has an unshakeable power of public credit and will easily bear a.11 necessary financial burden. We formed special committee of Russian Jews for supporting loan consisting representatives financial, industrial trading circles and leading public men.

We inform you here of and request our brethern beyong [*sic*] the seas to support freedom of Russian which became now case humanity and world's civilization. We suggest you form there special committee and let us know of steps you may take Jewish committee support success loan of freedom. Boris Kamenka, Chairman, Baron Alexander Gunzburg, Henry Silosberg."

FRANCIS

* * * * *

(b) Dear Mr. Secretary:

After reporting to our associates the result of the interview which you kindly granted to Mr. Morgenthau, Mr. Straus and myself, in regard to the advisability of calling for subscriptions to the Russian Freedom Loan as requested in the cablegram of Baron Gunzburg and Messrs. Kamenka and Silosberg of Petrograd, which you recently communicated to us, we have concluded to act strictly upon your advice. Several days ago we promised our friends at Petrograd an early reply to their call for aid. We would therefore greatly appreciate the forwarding of the following cablegram, provided its terms have your approval:

> "Boris Kamenka,
> Don Azov Bank, Petrograd.
>
> Our State Department which we have consulted regards any present attempt toward securing public subscriptions here for any foreign loans inadvisable; the concentration of all efforts for the success of American war loans being essential, thereby enabling our Government to supply funds to its allies at lower interest rates than otherwise possible. Our energies to help the Russian cause most effectively must therefore necessarily be directed to encouraging subscriptions to American Liberty Loan. Schiff, Marshall, Straus, Morgenthau, Wise, Gonheil."

You are of course at liberty to make any changes in the phraseology of this suggested cablegram which you may deem desirable and which will indicate that our failure to respond directly to the request that has come to us is due to our anxiety to make our activities most efficient.

May I ask you to send me a copy of the cablegram as forwarded, with a memorandum of the cost so that the Department may be promptly reimbursed.

I am, with great respect,
Faithfully yours,
[sgd.] Louis Marshall

The Secretary of State
Washington, D.C.

* * * * *

(c) Dear Mr. Polk:

Will you permit me to send you copy of a cablegram received this morning and which I think, for regularity's sake, should be brought to the notice of the Secretary of State or your good self, for such consideration as it might be thought well to give this.

Mr. Kamenka, the sender of this cablegram, is one of the leading men in Russia and has, I am informed, been financial advisor both of the Prince Lvoff government and of the Kerensky government. He is President of the Banque de Commerce de l'Azov Don of Petrograd, one of the most important financial institutions of Russia, but had, likely, to leave Russia with the advent of Lenin and his "comrades."

Let me take this opportunity to send sincere greetings to you and Mrs. Polk and to express the hope that you are now in perfect shape again, and that Mrs. Polk and the children are in good health.

Faithfully yours,
[sgd.] Jacob H. Schiff

Hon. Frank L. Polk
Counsellor of the State Dept.
Washington, D.C.

MM-Encl.

[Dated November 25, 1918]

* * * * *

(d) Translation:

The complete triumph of liberty and right furnishes me a new opportunity to repeat to you my profound admiration for the noble American nation. Hope to see now quick progress on the part of the Allies to help Russia in reestablishing order. Call your attention also to pressing necessity of replacing in Ukraine enemy troops at the very moment of their retirement in order to avoid Bolshevist devastation. Friendly intervention of Allies would be greeted everywhere with enthusiasm and looked upon as democratic action, because Bolshevist government does not represent Russian people. Wrote you September 19th. Cordial greetings.

[sgd.] Kamenka

COMMENT

This is an important series because it refutes the story of a Jewish bank conspiracy behind the Bolshevik Revolution. Clearly Jacob Schiff of Kuhn, Loeb was not interested in supporting the Kerensky Liberty Loan and Schiff went to the trouble of drawing State Department attention to Kamenka's pleas for Allied intervention against the Bolsheviks. Obviously Schiff and fellow banker Kamenka, unlike J.P. Morgan and John D. Rockefeller, were as unhappy about the Bolsheviks as they had been about the tsars.

DOCUMENT NO. 4

Description

Memorandum from William Boyce Thompson (director of the Federal Reserve Bank of New York) to Lloyd George (prime minister of Great Britain), December 1917.

DOCUMENT

FIRST

The Russian situation is lost and Russia lies entirely open to unopposed German exploitation unless a radical reversal of policy is at once undertaken by the Allies.

SECOND

Because of their shortsighted diplomacy, the Allies since the Revolution have accomplished nothing beneficial, and have done considerable harm to their own interests.

THIRD

The Allied representatives in Petrograd have been lacking in sympathetic understanding of the desire of the Russian people to attain democracy. Our representatives were first connected officially with the Czar's regime. Naturally they have been influenced by that environment.

FOURTH

Meanwhile, on the other hand, the Germans have conducted propaganda that has undoubtedly aided them materially in destroying the Government, in wrecking the army and in destroying trade and industry. If this continues unopposed it may result in the complete exploitation of the great country by Germany against the Allies.

FIFTH

I base my opinion upon a careful and intimate study of the situation both outside and inside official circles, during my stay in Petrograd between August 7 and November 29, 1917.

SIXTH

"What can be done to improve the situation of the Allies in Russia"?

The diplomatic personnel, both British and American, should be changed to one democratic in spirit and capable of sustaining democratic sympathy.

There should be erected a powerful, unofficial committee, with headquarters in Petrograd, to operate in the background, so to speak, the influence of which in matters of policy should be recognized and accepted by the DIPLOMATIC, CONSULAR and MILITARY officials of the Allies. Such committee should be so composed in personnel as to make it possible to entrust to it wide discretionary powers. It would presumably undertake work in various channels. The nature of which will become obvious as the task progress. es; it. would aim to meet all new conditions as they might arise.

SEVENTH

It is impossible now to define at all completely the scope of this new Allied committee. I can perhaps assist to a better understanding of its possible usefulness and service by making a brief reference to the work which I started and which is now in the hands of Raymond Robins, who is well and favorably known to Col. Buchan — a work which in the future will undoubtedly have to be somewhat altered and added to in order to meet new conditions. My work has been performed chiefly through a Russian "Committee on Civic Education" aided by Madame Breshkovsky, the Grandmother of the Revolution. She was assisted by Dr. David Soskice, the private secretary of the then Prime Minister Kerensky (now of London); Nicholas Basil Tchaikovsky, at one time

Chairman of the Peasants Co-operative Society, and by other substantial social revolutionaries constituting the saving element of democracy as between the extreme "Right" of the official and property-owning class, and the extreme "Left" embodying the most radical elements of the socialistic parties. The aim of this committee, as stated in a cable message from Madame Breshkovsky to President Wilson, can be gathered from this quotation: "A widespread education is necessary to make Russia an orderly democracy. We plan to bring this education to the soldier in the camp, to the workman in the factory, to the peasant in the village." Those aiding in this work realized that for centuries the masses had been under the heel of Autocracy which had given them not protection but oppression; that a democratic form of government in Russian could be maintained only BY THE DEFEAT OF THE GERMAN ARMY; BY THE OVERTHROW OF GERMAN AUTOCRACY. Could free Russia, unprepared for great governmental responsibilities, uneducated, untrained, be expected long to survive with imperial Germany her next door neighbor? Certainly not. Democratic Russia would become speedily the greatest war prize the world has even known.

The Committee designed to have an educational center in each regiment of the Russian army, in the form of Soldiers' Clubs. These clubs were organized as rapidly as possible, and lecturers were employed to address the soldiers. The lecturers were in reality teachers, and it should be remembered that there is a percentage of 90 among the soldiers of Russia who can neither read nor write. At the time of the Bolshevik outbreak many of these speakers were in the field making a fine impression and obtaining excellent results. There were 250 in the city of Moscow alone. It was contemplated by the Committee to have at least 5000 of these lecturers. We had under publication many newspapers of the "A B C" class, printing matter in the simplest style, and were assisting about 100 more. These papers carried the appeal for patriotism, unity and co-ordination into the homes of the workmen and the peasants.

After the overthrow of the last Kerensky government we materially aided the dissemination of the Bolshevik literature, distributing it through agents and by aeroplanes to the German army. If the suggestion is permissible, it might be well to consider whether it would not be desirable to have this same Bolshevik literature sent into Germany and Austria across the West and Italian fronts.

EIGHTH

The presence of a small number of Allied troops in Petrograd would certainly have done much to prevent the overthrow of the Kerensky government in November. I should like to suggest for your consideration, if present conditions continue, the concentration of all the British and French Government employes in Petrograd, and if the necessity should arise it might be formed into a fairly effective force. It might be advisable even to pay a small sum to a Russian force. There is also a large body of volunteers recruited in Russia, many of them included in the Inteligentzia of "Center" class, and these have done splendid work in the trenches. They might properly be aided.

NINTH

If you ask for a further programme I should say that it is impossible to give it now. I believe that intelligent and courageous work will still prevent Germany from occupying the field to itself and thus exploiting Russia at the expense of the Allies. There will be many ways in which this service can be rendered which will become obvious as the work progresses.

COMMENT

Following this memorandum the British war cabinet changed its policy to one of tepid pro-Bolshevism. Note that Thompson admits to distribution of Bolshevik literature by his agents. The confusion over the date on which Thompson left Russia (he states November 29th in this document) is cleared up by the Pirnie papers at the Hoover Institution. There were several changes of travel plans and Thompson was still in Russia in early December. The memorandum was probably written in Petrograd in late November.

DOCUMENT NO. 5

DESCRIPTION

Letter dated May 9, 1918, from Felix Frankfurter (then special assistant to the secretary of war) to Santeri Nuorteva (alias for Alexander Nyberg), a Bolshevik agent in the United States. Listed as Document No. 1544 in the Lusk Committee files, New York:

DOCUMENT

WAR DEPARTMENT
WASHINGTON
May 9, 1918

My dear Mr. Nhorteva [*sic*]:

Thank you very much for your letter of the 4th. I knew you would understand the purely friendly and wholly unofficial character of our talk, and I appreciate the prompt steps you have taken to correct your Sirola* letter. Be wholly assured that nothing has transpired which diminishes my interest in the questions which you present. Quite the contrary. I am much interested in** the considerations you are advancing and for the point of view you are urging. The issues*** at stake are the interests that mean much for the whole world. To meet them adequately we need all the knowledge and wisdom we can possibly get****.

Cordially yours,
Felix Frankfurter

Santeri Nuorteva, Esq.

* Yrjo Sirola was a Bolshevik and commissar in Finland.
** Original text, "continually grateful to you for."
*** Original text, "interests."
**** Original text added "these days."

COMMENT

This letter by Frankfurter was written to Nuorteva/Nyberg, a Bolshevik agent in the United States, at a time when Frankfurter held an official position as special assistant to Secretary of War Baker in the War Department. Apparently Nyberg was willing to change a letter to commissar "Sirola" according to Frankfurter's instructions. The Lusk Committee acquired the original Frankfurter draft including Frankfurter's changes and not the letter received by Nyberg.

THE SOVIET BUREAU IN 1920

Position	*Name*	*Citizenship*	*Born*	*Former Employment*
Representa tive of USSR	Ludwig C.A.K. MARTENS	German	Russia	V-P of Weinberg & Posner Engineer ing (120 Broadway)
Office manager	Gregory WEINSTEIN	Russian	Russia	Journalist

Secretary	Santeri NUORTEVA	Finnish	Russia	Journalist
Assistant secretary	Kenneth DURANT	U.S.	U.S.	(1) U.S. Committee on Public Information (2) Former aide to Colonel House
Private secre tary to NUOR TEVA	Dorothy KEEN	U.S.	U.S.	High school
Translator	Mary MODELL	Russian	Russia	School in Russia
File clerk	Alexander COLEMAN	U.S.	U.S.	High school
Telephone clerk	Blanche ABUSHEVITZ	Russian	Russia	High school
Office attendant	Nestor KUNTZEVICH	Russian	Russia	—
Military expert	Lt. Col. Boris Tagueeff Roustam BEK	Russian	Russia	Military critic on *Daily Express* (London)
Commercial Department				
Director	A. HELLER	Russian	U.S.	International Oxy gen Company
Secretary	Ella TUCH	Russian	U.S.	U.S. firms
Clerk	Rose HOLLAND	U.S.	U.S.	Gary School League
Clerk	Henrietta MEEROWICH	Russian	Russia	Social worker
Clerk	Rose BYERS	Russian	Russia	School
Statistician	Vladimir OLCHOVSKY	Russian	Russia	Russian Army
Information Department				
Director	Evans CLARK	U.S.	U.S.	Princeton University
Clerk	Nora G. SMITHMAN	U.S.	U.S.	Ford Peace Expedition
Steno	Etta FOX	U.S.	U.S.	War Trade Board
—	Wilfred R. HUMPHRIES	U.K.	—	American Red Cross
Technical Dept.				
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Educational Dept.				
Director	William MALISSOFF	Russian	U.S.	Columbia University
Medical Dept.				
Director	Leo A. HUEBSCH	Russian	U.S.	Medical doctor
	D. H. DUBROWSKY	Russian	U.S.	Medical doctor
Legal Dept.				
Director	Morris HILLQUIT	Lithuanian	—	—
	Counsel retained:			
	Charles RECHT			
	Dudley Field MALONE			
	George Cordon BATTLE			
Dept. of Economics & Statistics				
Director	Isaac A. HOURWICH	Russian	U.S.	U.S. Bureau of Census
	Eva JOFFE	Russian	U.S.	National Child Labor Commission
Steno	Elizabeth GOLDSTEIN	Russian	U.S.	Student
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Clerk	David OLDFIELD	Russian	Russia	—
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SOURCE: U.S., House, *Conditions in Russia* (Committee on Foreign Affairs), 66th Cong., 3rd sess. (Washington, D.C., 1921).

See also British list in U.S. State Department Decimal File, 316-22-656, which also has the name of Julius Hammer.

DOCUMENT NO. 7

DESCRIPTION

Letter from National City Bank of New York to the U.S. Treasury, April 15, 1919, with regard to Ludwig Martens and his associate Dr. Julius Hammer (316-118).

DOCUMENT

The National City Bank of New York
New York, April 15, 1919

Honorable Joel Rathbone,
Assistant Secretary of the Treasury
Washington, D.C.

Dear Mr. Rathbone:

I beg to hand you herewith photographs of two documents which we have received this morning by registered mail from a Mr. L. Martens who claims to be the representative in the United States of the Russian Socialist Federal Soviet Republic, and witnessed by a Dr. Julius Hammer for the Acting Director of the Financial Department.

You will see from these documents that there is a demand being made upon us for any and all funds on deposit with us in the name of Mr. Boris Bakhmeteff, alleged Russian Ambassador in the United States, or in the name of any individual, committee, or mission purporting to act in behalf of the Russian Government in subordination to Mr. Bakhmeteff or directly.

We should be very glad to receive from you whatever advice or instructions you may care to give us in this matter.

Yours respectfully,
[sgd.] J. H. Carter,
Vice President.

JHC:M

Enclosure

COMMENTS

The significance of this letter is related to the long-time association (1917-1974) of the Hammer family with the Soviets.

DOCUMENT NO. 8

DESCRIPTION

Letter dated August 3, 1920, from Soviet courier "Bill" Bobroff to Kenneth Durant, former aide to Colonel House. Taken from Bobroff by U.S. Department of Justice.

DOCUMENT

Department of Justice
Bureau of Investigation,
15 Park Row, New York City, N. Y.,
August 10, 1920

Director Bureau of Investigation
United States Department of Justice, Washington, D.C.

Dear Sir: Confirming telephone conversation with Mr. Ruch today, I am transmitting herewith original documents taken from the effects of B. L. Bobroll, steamship *Frederick VIII.*

The letter addressed Mr. Kenneth Durant, signed by Bill, dated August 3, 1920, together with the translation from "Pravda," July 1, 1920, signed by Trotzki, and copies of cablegrams were found inside the blue envelope addressed Mr. Kenneth Durant, 228 South Nineteenth Street, Philadelphia, Pa. This blue envelope was in turn sealed inside the white envelope attached.

Most of the effects of Mr. Bobroff consisted of machinery catalogues, specifications, correspondence regarding the shipment of various equipment, etc., to Russian ports. Mr. Bobroff was closely questioned by Agent Davis and the customs authorities, and a detailed report of same will be sent to Washington.

Very truly yours,
G. F. Lamb,
Division Superintendent

LETTER TO KENNETH DURANT

Dear Kenneth: Thanks for your most welcome letter. I have felt very much cut off and hemmed in, a feeling which has been sharply emphasized by recent experiences. I have felt distressed at inability to force a different attitude toward the bureau and to somehow get funds to you. To cable $5,000 to you, as was done last week, is but a sorry joke. I hope the proposal to sell gold in America, about which we have been cabling recently, will

soon be found practicable. Yesterday we cabled asking if you could sell 5,000,000 rubles at a minimum of 45 cents, present market rate being 51.44 cents. That would net at least $2,225,000. L's present need is $2,000,000 to pay Niels Juul & Co., in Christiania, for the first part of the coal shipment from America to Vardoe, Murmansk, and Archangel. The first ship is nearing Vardoe and the second left New York about July 28. Altogether, Niels Juul & Co., or rather the Norges' Bank, of Christiania, on their and our account, hold $11,000,000 gold rubles of ours, which they themselves brought from Reval to Christiania, as security for our coal order and the necessary tonnage, but the offers for purchase of this gold that they have so far been able to get are very poor, the best being $575 per kilo, whereas the rate offered by the American Mint or Treasury Department is now $644.42, and considering the large sum involved it would be a shame to let it go at too heavy a loss. I hope that ere you get this you will have been able to effect the sale, at the same time thus getting a quarter of a million dollars or more for the bureau. If we can't in some way pay the $2,000,000 in Christiania, that was due four days ago, within a very short time, Niels Juul & Co. will have the right to sell our gold that they now hold at the best price then obtainable, which, as stated above, is quite low.

We don't know yet how the Canadian negotiations are going on. We understand Nuorteva turned over the strings to Shoen when N.'s arrest seemed imminent. We don't at this writing know where Nuorteva is. Our guess is that after his enforced return to England from Esbjerg, Denmark, Sir Basil Thomson had him shipped aboard a steamer for Reval, but we have not yet heard from Reval that he has arrived there, and we certainly would hear from Goukovski or from N. himself. Humphries saw Nuorteva at Esbjerg, and is himself in difficulties with the Danish police because of it. All his connections are being probed for; his passport has been taken away: he has been up twice for examination, and it looks as if he will be lucky if he escapes deportation. It was two weeks ago that Nuorteva arrived at Esbjerg, 300 miles from here, but having no Danish visé, the Danish authorities refused to permit him to land, and he was transferred to a steamer due to sail at 8 o'clock the following morning. By depositing 200 kroner he was allowed shore leave for a couple of hours. Wanting to get Copenhagen on long-distance wire and having practically no more money, he once more pawned that gold watch of his for 25 kroner, therewith getting in touch with Humphries, who within half an hour jumped aboard the night train, slept on the floor, and arrived at Esbjerg at 7:30. Humphries found Nuorteva, got permission from the captain to go aboard, had 20 minutes with N., then had to go ashore and the boat sailed. Humphries was then invited to the police office by two plain-clothes men, who had been observing the proceedings. He was closely questioned, address taken, then released, and that night took train back to Copenhagen. He sent telegrams to Ewer, of Daily Herald, Shoen, and to Kliskho, at 128 New Bond Street, urging them to be sure and meet Nuorteva's boat, so that N. couldn't again be spirited away, but we don't know yet just what happened. The British Government vigorously denied that they had any intention of sending him to Finland. Moscow has threatened reprisals if anything happens to him. Meantime, the investigation of H. has begun. He was called upon at his hotel by the police, requested to go to headquarters (but not arrested), and we understand that his case is now before the minister of justice. Whatever may be the final outcome, Humphries comments upon the reasonable courtesy shown him, contrasting it with the ferocity of the Red raids in America.

He found that at detective headquarters they knew of some of his outgoing letters and telegrams.

I was interested in your favorable comment upon the Krassin interview of Tobenken's (you do not mention the Litvinoff one), because I had to fight like a demon with L. to get the opportunities for Tobenken. Through T. arrived with a letter from Nuorteva, as also did Arthur Ruhl, L. brusquely turned down in less than one minute the application T. was making to go into Russia, would hardly take time to hear him, saying it was impossible to allow two correspondents from the same paper to enter Russia. He gave a visé to Ruhl, largely because of a promise made last summer to Ruhl by L. Ruhl then went off to Reval, there to await the permission that L. had cabled asking Moscow to give. Tobenken, a nervous, almost a broken man because of his turn down, stayed here. I realized the mistake that had been made by the snap judgment, and started in on the job of getting it changed. Cutting a long story short, I got him to Reval with a letter to Goukovsky from L. In the meantime Moscow refused Ruhl, notwithstanding L's visé. L. was maddened at affront to his visé, and insisted that it be honored. It was, and Ruhl prepared to leave. Suddenly word came from Moscow to Ruhl revoking the permission and to Litvinoff, saying that information had reached Moscow that Ruhl was in service of State Department. At time of writing, both Tobenken and Ruhl are in Reval, stuck.

I told L. this morning of the boat leaving tomorrow and of the courier B. available, asked him if he had anything to write to Martens, offered to take it in shorthand for him, but no, he said he had nothing to write about that I might perhaps send duplicates of our recent cables to Martens.

Kameneff passed by here on a British destroyer en route to London, and didn't stop off here at all, and Krassin went direct from Stockholm. Of the negotiations, allied and Polish, and of the general situation you know about as much as we do here. L's negotiations with the Italians have finally resulted in establishing of mutual representation. Our representative, Vorovsky, has already gone to Italy and their representative, M. Gravina, is en route to Russia. We have just sent two ship loads of Russian wheat to Italy from Odessa.

Give my regards to the people of your circle that I know. With all good wishes to you.

Sincerely yours,
Bill

The batch of letters you sent —5 Cranbourne Road, Charlton cum Hardy, Manchester, has not yet arrived.

L's recommendation to Moscow, since M. asked to move to Canada, is that M. should be appointed there, and that N., after having some weeks in Moscow acquainting himself first hand, should be appointed representative to America.

L. is sharply critical of the bureau for giving too easily visés and recommendations. He was obviously surprised and incensed when B. reached here with contracts secured in Moscow upon strength of letters given to him by M. The later message from M. evidently didn't reach Moscow. What L. plans to do about it I don't know. I would suggest that M. cable in cipher his recommendation to L. in this matter. L. would have nothing to do with B. here. Awkward situation may be created.

L. instanced also the Rabinoff recommendation.

Two envelopes, Mr. Kenneth Durant, 228 South Nineteenth Street, Philadelphia, Pa., U.S.A.

SOURCE: U.S. State Department Decimal File, 316-119-458/64.

NOTE: IDENTIFICATION OF INDIVIDUALS

William (Bill) L. BOBROFF	Soviet courier and agent. Operated Bobroff Foreign Trading and Engineering Company of Milwaukee. Invented the voting system used in the Wisconsin Legilature.
Kenneth DURANT	Aide to Colonel House; see text.
SHOEN	Employed by International Oxygen Co., owned by Heller, a prominent financier and Communist.
EWER	Soviet agent, reporter for *London Daily Herald*.
KLISHKO	Soviet agent in Scandinavia

NUORTEVA	Also known as Alexander Nyberg, first Soviet representative in United States; see text.
Sir Basil THOMPSON	Chief of British Intelligence
"L"	LITVINOFF.
"H"	Wilfred Humphries, associated with Martens and Litvinoff, member of Red Cross in Russia.
KRASSIN	Bolshevik commissar of trade and labor, former head of Siemens-Schukert in Russia.

COMMENTS

This letter suggests close ties between Bobroff and Durant.

DOCUMENT NO. 9

DESCRIPTION

Memorandum referring to a request from Davison (Morgan partner) to Thomas Thacher (Wall Street attorney associated with the Morgans) and passed to Dwight Morrow (Morgan partner), April 13, 1918.

DOCUMENT

The Berkeley Hotel, London
April 13th, 1918.

Hon. Walter H. Page,
American Ambassador to England,
London.

Dear Sir:

Several days ago I received a request from Mr. H. P. Davison, Chairman of the War Council of the American Red Cross, to confer with Lord Northcliffe regarding the situation in Russia, and then to proceed to Paris for other conferences. Owing to Lord Northcliffe's illness I have not been able to confer with him, but am leaving with Mr. Dwight W. Morrow, who is now staying at the Berkeley Hotel, a memorandum of the situation which Mr. Morrow will submit to Lord Northcliffe on the latter's return to London.

For your information and the information of the Department I enclose to you, herewith, a copy of the memorandum.

Respectfully yours,
[sgd.] Thomas D. Thacher.

COMMENT

Lord Northcliffe had just been appointed director of propaganda. This is interesting in the light of William B. Thompson's subsidizing of Bolshevik propaganda and his connection with the Morgan-Rockefeller interests.

DOCUMENT NO. 10

DESCRIPTION

This document is a memorandum from D.C. Poole, Division of Russian Affairs in the Department of State, to the secretary of state concerning a conversation with Mr. M. Oudin of General Electric.

DOCUMENT

May 29, 1922

Mr. Secretary:

Mr. Oudin, of the General Electric Company, informed me this morning that his company feels that the time is possibly approaching to begin conversations with Krassin relative to a resumption of business in Russia. I told him that it is the view of the Department that the course to be pursued in this matter by American firms is a question of business judgment and that the Department would certainly interpose no obstacles to an American firm resuming operations in Russia on any basis which the firm considered practicable.

He said that negotiations are now in progress between the General Electric Company and the Allgemeine Elektrizitats Gesellschaft for a resumption of the working agreement which they had before the war. He expects that the agreement to be made will include a provision for cooperation of Russia.

Respectfully,
DCP D.C. Poole

COMMENT

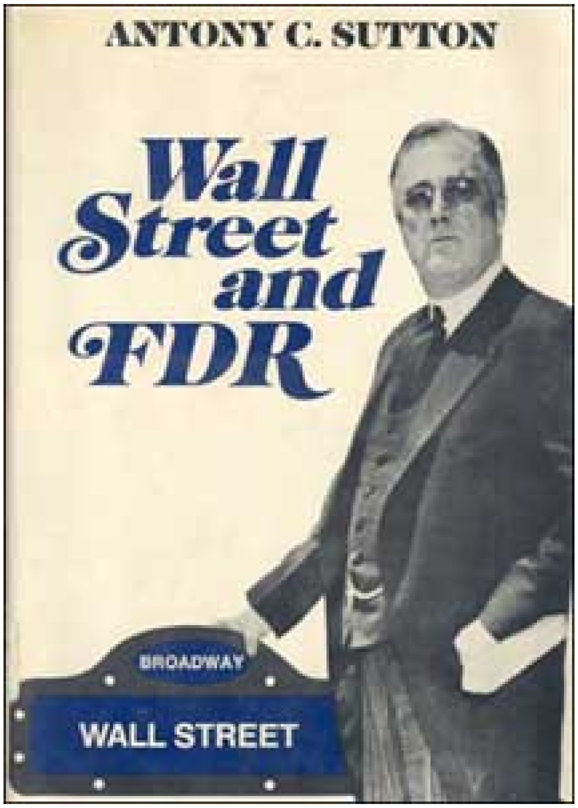
This is an important document as it relates to the forthcoming resumption of relations with Russia by an important American company. It illustrates that the initiative came from the company, not from the State Department, and that no consideration was given to the effect of transfer of General Electric technology to a self-declared enemy. This GE agreement was the first step down a road of major technical transfers that led directly to the deaths of 100,000 Americans and countless allies.

BACK

Wall Street and FDR

By

Antony C. Sutton



Socialists on Wall Street

• Why many Wall Streeters who invested in the Bolshevik Revolution also bankrolled FDR	• The NRA: Wall Street's reward for dumping Herbert Hoover?
• The powerful men who commuted between the White House and 120 Broadway	• FDR's 11 corporate directorships
• How Wall Street insiders turned the Federal Reserve System into a money machine for the elite	• Unearthed: the 1841 NRA-like scheme written by a 19th-century cousin of FDR
• FDR translates government contracts into personal profits: the case of the naval guns	• How Wall Streeters in New Deal guise helped buy off Big Labor - then used it
• The international financiers who liked Mussolini and loved FDR	• The Swope Plan: blueprint for the corporate state

- Why some money men backed FDR in 1932
- FDR's vending machine interests
- The "Butler Affair": the truth about the plot to install a dictator in the White House
- The three musketeers of the NRA. Their Wall Street ties
- How politics helped make FDR rich in the bond business
- FDR attempts to revolutionize the construction industry. Why he failed
- Huey Long's prophetic warning about Bernard Baruch and other New Deal financiers
- FDR's scheme to profit from confiscated German patents
- How FDR tried to profit by hyperinflation in the Weimar Republic
- How the captains of industry running the NRA punished their fellow businessmen
- FDR's $200,000 debt to the money men
- Wall Street's attempt to create a private army of 500,000 men to "support the President"
- The dime's worth of difference between corporate socialists and radical socialists
- Strange facts surrounding the Warm Springs Foundation, FDR's biggest investment
- Was FDR really the friend of the common man?

About Professor Sutton

> "And if one prevail against him, two shall withstand him; and a threefold cord is not quickly broken" (Ecclesiastes 4:12).

Though he was a prolific author, Professor Sutton will always be remembered by his great trilogy: *Wall St. and the Bolshevik Revolution,Wall St. and the Rise of Hitler,* and *Wall St. and FDR*.

Professor Sutton left rainy, cloudy England for sunny California in 1957. He was a voice crying in the academic wilderness when most of the U. S. colleges had sold their souls for Rockefeller Foundation money.

Of course he came to this country believing that it was the land of the *free* and the home of *brave*.



Professor Sutton (1925-2002).

ANTONY C. SUTTON was born in London in 1925 and educated at the universities of London, Gottingen, and California. A citizen of the United States since 1962, he was a Research Fellow at the Hoover Institution for War, Revolution and Peace at Stanford, California from 1968 to 1973, where he produced the monumental three-volume study, *Western Technology and Soviet Economic Development.*
In 1974, Professor Sutton completed *National Suicide: Military Aid to the Soviet Union*, a best-selling study of Western, primarily American, technological and financial assistance to the U.S.S.R. *Wall Street and the Rise of Hitler* is his fourth book exposing the role of American corporate insiders in financing international socialism. The two other books in this series are *Wall Street and the Bolshevik Revolution* and *Wall Street and FDR*.
Professor Sutton has contributed articles to Human Events, The Review of the News, Triumph, Ordnance, National Review, and many other journals. He is currently working on a two-part study of the Federal Reserve System and the manipulation of the U.S. economic system. Married and the father of two daughters, he lived in California.

OTHER BOOKS BY ANTHONY C. SUTTON

Western Technology and Soviet Economic Development, 1917-1930.
Western Technology and Soviet Economic Development, 1930-1945
Western Technology and Soviet Economic Development, 1945-1965.
National Suicide: Military Aid to the Soviet Union.
Wall Street and the Bolshevik Revolution
Wall Street and the Rise of Hitler
Wall Street and FDR.
The War on Gold
How the Order Controls Education. (Yale University's Skull and Bones unmasked). Yale is the *evil twin* versus Harvard which is the *good* university!!

Editor's Note

Sunny California was discovered in 1579 by Saint Francis Drake in his ship the *Golden Hind*. He called the land Nova Albion or New Albion and claimed it for his sovereign Queen Elizabeth I —daughter of saint ANNE BOLEYN and King Henry VIII.

There were no SPANIARDS there at that time because the natives came out to meet Saint Francis and treated him and his crew with love and affection.

Had the Spaniards been there before that time, the natives would have all ran and hid themselves fearing that the white men were Spaniards with their cruel Inquisition and blood-thirsty dogs.

CHAPTER 1

Roosevelts and Delanos

> **The real truth of the matter is, as you and I know, that a financial element in the larger centers has owned the Government ever since the days of Andrew Jackson—and I am not wholly excepting the Administration of W.W.* The country is going through a repetition of Jackson's fight with the Bank of the United States—only on a far bigger and broader basis.**
> President Franklin Delano Roosevelt to Col. Edward Mandell House, November 21, 1933, F.D.R.: His Personal Letters (New York: Duell, Sloan and Pearce 1950), p. 373.

This book[1] portrays Franklin Delano Roosevelt as a Wall Street financier who, during his first term as President of the United States, reflected the objectives of financial elements concentrated in the New York business establishment. Given the long historical association—since the late 18th century—of the Roosevelt and Delano families with New York finance and FDR's own career from 1921 to 1928 as banker and speculator at 120 Broadway and 55 Liberty Street, such a theme should not come as a surprise to the reader. On the other hand, FDR biographers Schlesinger, Davis, Freidel, and otherwise accurate Roosevelt commentators appear to avoid penetrating very far into the recorded and documented links between New York bankers and FDR. We intend to present the facts of the relationship, as recorded in FDR's letter files. These are new facts only in the sense that they have not previously been published; they are readily available in the archives for research, and consideration of this information suggests a reassessment of FDR's role in the history of the 20th century.

Perhaps it always makes good politics to appear before the American electorate as a critic, if not an outright enemy, of the international banking fraternity. Without question Franklin D. Roosevelt, his supporters, and biographers portray FDR as a knight in shining armor wielding the sword of righteous vengeance against the robber barons in the skyscrapers of downtown Manhattan. For instance, the Roosevelt Presidential campaign of 1932 consistently attacked President Herbert Hoover for his alleged association with international bankers and for pandering to the demands of big business. Witness the following FDR blast in the depths of the Great Depression at Hoover's public support for business and individualism, uttered in the campaign address in Columbus, Ohio, August 20, 1932:

> Appraising the situation in the bitter dawn of a cold morning after, what do we find? We find two thirds of American industry concentrated in a few

> hundred corporations and actually managed by not more than five human individuals.
> We find more than half of the savings of the country invested in corporate stocks and bonds, and made the sport of the American stock market.
> We find fewer than three dozen private banking houses, and stock selling adjuncts of commercial banks, directing the flow of American capital.
> In other words, we find concentrated economic power in a few hands, the precise opposite of the individualism of which the President speaks.[2]

This statement makes Franklin Delano Roosevelt appear as another Andrew Jackson, contesting a bankers' monopoly and their strangle-hold on American industry. But was FDR also an unwilling (or possibly a willing) tool of the Wall Street bankers, as we could infer from his letter to Colonel Edward House, cited in the epigraph to this chapter? Clearly if, as Roosevelt wrote to House, a "financial element in the larger cities has owned the Government ever since the days of Andrew Jackson," then neither Hoover nor Roosevelt was being intellectually honest in his presentation of the issues to the American public. The gut issues presumably were the identity of this "financial element" and how and by what means it maintained its "ownership" of the U.S. Government.

Putting this intriguing question temporarily to one side, the pervasive historical image of FDR is one of a President fighting on behalf of the little guy, the man in the street, in the midst of unemployment and financial depression brought about by big business speculators allied with Wall Street. We shall find, on the contrary, that this image distorts the truth to the extent that it portrays FDR as an enemy of Wall Street; this is simply because most historians probing into Wall Street misdeeds have been reluctant to apply the same standards of probity to Franklin D. Roosevelt as to other political leaders. What is a sin for Herbert Hoover or even 1928 Democratic Presidential candidate Al Smith is presumed a virtue in the case of FDR. Take Ferdinand Lundberg in *The Rich and the Super-Rich*.[3] Lundberg also looks at Presidents and Wall Street and makes the following assertion:

> In 1928 Al Smith had his chief backing, financial and emotional, from fellow-Catholic John J. Raskob, prime minister of the Du Ponts. If Smith had won he would have been far less a Catholic than a Du Pont President....[4]

Now the Du Ponts were indeed heavy, very heavy, contributors to the 1928 Al Smith Democratic Presidential campaign. These contributions are examined in detail in this volume in Chapter 8, "Wall Street Buys the New Deal," and no quarrel can be made with this assertion. Lundberg then moves on to consider Smith's opponent Herbert Hoover and writes:

> Hoover, the Republican, was a J. P. Morgan puppet; Smith his democratic

> opponent, was in the pocket of the Du Ponts, for whom J. P. Morgan & Company was the banker.

Lundberg omits the financial details, but the Du Ponts and Rockefellers are certainly on record in Congressional investigations as the largest contributors to the 1928 Hoover campaign. But Wall Street withdrew its support of Herbert Hoover in 1932 and switched to FDR. Lundberg omits to mention this critical and pivotal withdrawal. Why did Wall Street switch? Because, as we shall see later, Herbert Hoover would not adopt the Swope Plan created by Gerard Swope, long-time president of General Electric. By contrast, FDR accepted the plan, and it became FDR's National Industrial Recovery Act. So while Hoover was indebted to Wall Street, FDR was much more so. Arthur M. Schlesinger Jr. in *The Crisis of the Old Order*: 1919-1933 comes closer to the point than any establishment historian, but like other Rooseveltophiles fails to carry the facts to their ultimate and logical conclusions. Schlesinger notes that after the 1928 election the Democratic Party had a debt of $1.6 million and "Two of the leading creditors, John J. Raskob and Bernard Baruch, were philanthropic Democratic millionaires, prepared to help carry the party along until 1932".[5] John J. Raskob was vice president of Du Pont and also of General Motors, the largest corporation in the United States. Bernard Baruch was by his own admissions at the very heart of Wall Street speculation. Schlesinger adds that, in return for Wall Street's benevolence, "they naturally expected influence in shaping the party's organization and policy."[6] Unfortunately, Arthur Schlesinger, who (unlike most Rooseveltian biographers) has his finger on the very pulse of the problem, drops the question to continue with a discussion of the superficialities of politics—conventions, politicians, political give-and-take, and the occasional clashes that mask the underlying realities. Obviously, the hand on the purse ultimately decrees which policies are implemented, when, and by whom.

A similar protective attitude for FDR may be found in the four-volume biography by Frank Freidel, *Franklin D. Roosevelt*.[7] Discussing the shattering failure of the Bank of the United States just before Christmas 1930, Freidel glosses over FDR's negligence while Governor of the State of New York. The Bank of the United States had 450,000 depositors, of which 400,000 accounts held less than $400. In other words, the Bank of the United States was a little man's bank. A report by Senator Robert Moses on the condition of an earlier banking failure—City Trust—had been ignored by Governor F. D. Roosevelt, who appointed another commission that produced milder recommendations for banking reform. Freidel poses the question:

> Why had he [FDR] failed to fight through reform legislation which would have prevented the Bank of the United States debacle? These are sharp questions that critics of Roosevelt asked at the time and later.[8]

Freidel concludes that the answer lies in FDR's "personal confidence in the banking

community." Why did FDR have this complete confidence? Because, writes Freidel,

> Herbert Lehman was one of the soundest as well as politically the most liberal of Wall Street bankers; in banking matters Roosevelt seems to have followed Lehman's lead, and that was to cooperate as far as possible with the banking titans.[9]

This is something like saying that, if your banker is a liberal and loses your money, that's OK, because after all he is a liberal and a supporter of FDR. On the other hand, however, if your banker loses your money and happens not to be a liberal or a supporter of FDR, then he is a crook and must pay the price of his sins.

The four-volume Freidel biography has but a single chapter on FDR as "Businessman," the most space given by any major FDR biographer. Even Freidel reduces important ventures to a mere paragraph. For example, while the American Investigation Corporation venture is not named, an associated venture, General Air Service, is mentioned, but dismissed with a paragraph:

> In 1923, together with Owen D. Young, Benedict Crowell (who had been Assistant Secretary of War under Wilson), and other notables, he organized the General Air Service to operate helium-filled dirigibles between New York and Chicago.[10]

We shall see that there was a lot more to General Air Service (and more importantly the unmentioned American Investigation Corporation) than this paragraph indicates. In particular, exploration of the Freidel phrase "and other notables" suggests that FDR had entree to and worked in cooperation with some prominent Wall Street elements.

Why do Schlesinger, Freidel, and other lesser FDR biographers avoid the issue and show reluctance to pursue the leads? Simply because, when you probe the facts, Roosevelt was a creation of Wall Street, an integral part of the New York banking fraternity, and had the pecuniary interests of the financial establishment very much at heart.

When the information is laid out in detail, it is absurd to think that Wall Street would hesitate for a second to accept Roosevelt as a welcome candidate for President: he was one of their own, whereas businessman Herbert Hoover had worked abroad for 20 years before being recalled by Woodrow Wilson to take over the Food Administration in World War I.

To be specific, Franklin D. Roosevelt was, at one time or another during the 1920s, a vice president of the Fidelity & Deposit Company (120 Broadway); the president of an

industry trade association, the American Construction Council (28 West 44th Street); a partner in Roosevelt & O'Connor (120 Broadway); a partner in Marvin, Hooker & Roosevelt (52 Wall Street); the president of United European Investors, Ltd. (7 Pine Street); a director of International Germanic Trust, Inc. (in the Standard Oil Building at 26 Broadway); a director of Consolidated Automatic Merchandising Corporation, a paper organization; a trustee of Georgia Warm Springs Foundation (120 Broadway); a director of American Investigation Corporation (37-39 Pine Street); a director of Sanitary Postage Service Corporation (285 Madison Avenue); the chairman of the General Trust Company (15 Broad Street); a director of Photomaton (551 Fifth Avenue); a director of Mantacal Oil Corporation (Rock Springs, Wyoming); and an incorporator of the Federal International Investment Trust.

That's a pretty fair list of directorships. It surely earns FDR the title of Wall Streeter *par excellence*. Most who work on "the Street" never achieve, and probably never even dream about achieving, a record of 11 corporate directorships, two law partnerships, and the presidency of a major trade association.

In probing these directorships and their associated activities, we find that Roosevelt was a banker and a speculator, the two occupations he emphatically denounced in the 1932 Presidential election. Moreover, while banking and speculation have legitimate roles in a free society— indeed, they are essential for a sane monetary system—both can be abused. FDR's correspondence in the files deposited at the FDR Library in Hyde Park yields evidence—and evidence one reads with a heavy heart—that FDR was associated with the more unsavory elements of Wall Street banking and speculation, and one can arrive at no conclusion other than that FDR used the political arena, not the impartial market place, to make his profits.[11]

So we shall find it not surprising that the Wall Street groups that supported Al Smith and Herbert Hoover, both with strong ties to the financial community, also supported Franklin D. Roosevelt. In fact, at the political crossroads in 1932, when the choice was between Herbert Hoover and FDR, Wall Street chose Roosevelt and dropped Hoover.

Given this information, how do we explain FDR's career on Wall Street? And his service to Wall Street in creating, in partnership with Herbert Hoover, the trade associations of the 1920s so earnestly sought by the banking fraternity? Or FDR's friendship with key Wall Street operators John Raskob and Barney Baruch? To place this in perspective we must go back in history and examine the background of the Roosevelt and Delano families, which have been associated with New York banking since the 18th century.

THE DELANO FAMILY AND WALL STREET

The Delano family proudly traces its ancestors back to the Actii, a 600 B.C. Roman family. They are equally proud of Franklin Delano Roosevelt. Indeed, the Delanos claim that the Delano influence was the predominant factor in FDR's life work and accounts for his extraordinary achievements. Be that as it may, there is no question that the Delano side of the family links FDR to many other rulers and other politicians. According to the Delano family history,[12] "Franklin shared common ancestry with one third of his predecessors in the White House." The Presidents linked to FDR on the Delano side are John Adams, James Madison, John Quincy Adams, William Henry Harrison, Zachary Taylor, Andrew Johnson, Ulysses S. Grant, Benjamin Harrison, and William Howard Taft. On the Roosevelt side of the family, FDR was related to Theodore Roosevelt and Martin Van Buren, who married Mary Aspinwall Roosevelt. The wife of George Washington, Martha Dandridge, was among FDR's ancestors, and it is claimed by Daniel Delano that Winston Churchill and Franklin D. Roosevelt were "eighth cousins, once removed."[13] This almost makes the United States a nation ruled by a royal family, a mini monarchy.

The reader must make his own judgment on Delano's genealogical claims; this author lacks the ability to analyze the confused and complex family relationships involved. More to the point and without question, the Delanos were active in Wall Street in the 1920s and 1930s and long before. The Delanos were prominent in railroad development in the United States and abroad. Lyman Delano (1883-1944) was a prominent railroad executive and maternal grandfather of Franklin D. Roosevelt. Like FDR, Lyman began his career in the insurance business, with the Northwestern Life Insurance of Chicago, followed by two years with Stone & Webster.[14] For most of his business life Lyman Delano served on the board of the Atlantic Coast Line Railroad, as president in 1920 and as chairman of the board from 1931 to 1940. Other important affiliations of Lyman Delano were director (along with W. Averell Harriman) of the Aviation Corporation, Pan American Airways, P & O Steamship Lines, and half a dozen railroad companies.

Another Wall Street Delano was Moreau Delano, a partner in Brown Brothers & Co. (after 1933 it absorbed Harriman & Co. to become Brown Brothers, Harriman) and a director of Cuban Cane Products Co. and the American Bank Note Company.

The really notable Delano on Wall Street was FDR's "favorite uncle" (according to Elliott Roosevelt), Frederic Adrian Delano (1863-1953), who started his career with the Chicago, Burlington and Quincy Railroad and later assumed the presidency of the Wheeling & Lake Erie Railroad, the Wabash Railroad, and in 1913 the Chicago, Indianapolis and Louisville Railway. "Uncle Fred" was consulted in 1921 at a critical point in FDR's infantile paralysis attack, quickly found Dr. Samuel A. Levine for an urgently needed diagnosis, and arranged for the special private train to transport FDR from Maine to New York as he began the long and arduous road to recovery.[15]

In 1914 Woodrow Wilson appointed Uncle Fred to be a member of the Federal Reserve

Board. Intimate Delano connections with the international banking fraternity are exemplified by a confidential letter from central banker Benjamin Strong to Fred Delano requesting confidential FRB data:[16]

> (Personal)
> December 11, 1916
> My Dear Fred: Would it be possible for you to send me in strict confidence the figures obtained by the Comptroller as to holdings of foreign securities by national banks? I would be a good deal influenced in my opinion in regard the present situation if I could get hold of these figures, which would be treated with such confidence as you suggest.
> If the time ever comes when you are able to slip away for a week or so for a bit of a change and rest, why not take a look at Denver and incidentally pay me a visit? There are a thousand things I would like to talk over with you.
> Faithfully yours,
> Benjamin Strong
> Hon. F. A. Delano
> Federal Reserve Board, Washington, D.C.

Following World War I Frederic Delano devoted himself to what is euphemistically known as public service, while continuing his business operations. In 1925 Delano was chairman of the League of Nations International Committee on opium production; in 1927 he was chairman of the Commission on Regional Planning in New York; he then became active in sponsoring the National Park Commission. In 1934 FDR named Uncle Fred Delano as chairman of the National Resources Planning Board. The Industrial Committee of the National Resources Planning Board, which presumably Frederic Delano had some hand in choosing, was a happy little coterie of socialist planners, including Laughlin Currie, Leon Henderson, Isador Lublin (prominent in the transfer of industrial technology to the USSR in the pre-Korean War era), and Mordecai Ezekiel. The advisor to the Board was Beardsley Ruml.

Then from 1931 to 1936, while involved in socialist planning schemes, Delano was also chairman of the board of the Federal Reserve Bank of Richmond, Virginia. In brief, Frederic Delano was simultaneously both capitalist and planner.

Delano left a few writings from which we can glean some concept of his political ideas. There we find support for the thesis that the greatest proponents of government regulation are the businessmen who are to be regulated, although Delano does warn that government ownership of railroads can be carried too far:

> Government ownership of railroads is a bugaboo which, though often referred to, the public does not demand. If government ownership of

> railways comes, it will come because the owners of railways prefer it to government regulation, and it will be a sorry day for the republic when regulation is carried to such an extreme that the owners of the railways are unwilling to accept any longer the responsibilities of management.[17]

However, in another book, written about 20 years later, Delano is much more receptive to government planning:

> A big problem in planning is that of educating the people. If the public only realized that there can be social gains from directed effort, and that the time to accomplish most by planning comes before the need of making changes are manifested, the other problems of planning could be more easily solved.[18]

Further:

> The above brief classification of the problem involved in planning serves as a basis for indicating the need for both direct and indirect social control. Very few people really know the best use of land for their own advantage, to say nothing of planning its use for the common good. Institutions have done a great deal in educating farmers how to plan individual farms, and yet many of the farms in this country are poorly organized.[19]

In brief, the Delano side of the family has undertaken capitalist enterprises and has Wall Street interests going well back into the 19th century. By the 1930s, however, Frederic Delano had abandoned capitalist initiative for socialist planning.

THE ROOSEVELT FAMILY AND WALL STREET

Franklin Delano Roosevelt was also descended on the Roosevelt side from one of the oldest banking families in the United States. FDR's great-grandfather James Roosevelt founded the Bank of New York in 1784 and was its president from 1786 to 1791. The investment banking firm of Roosevelt & Son of New York City was founded in 1797, and in the 1930s George E. Roosevelt, FDR's cousin, was the fifth member of the family in direct succession to head the firm. So the New York City banking roots of the Roosevelt family extend without interruption back into the late 18th century. In the industrial sphere James Roosevelt built the first American sugar refinery in New York City in the 1740s, and Roosevelts still had connections with Cuban sugar refining in the 1930s. FDR's father, also named James Roosevelt, was born at Hyde Park, New York in 1828 into this old and distinguished family. This James Roosevelt graduated from Harvard Law School in 1851, became a director of the Consolidated Coal Company of Maryland and, like the Delanos in subsequent years was associated with the development of transportation, first

as general manager of the Cumberland & Pennsylvania Railroad, and then as president of the Louisville, New Albany & Chicago Railroad, the Susquehanna Railroad Co., Champlain Transportation Co., Lake George Steamboat Co., and New York & Canada Railroad Co. James Roosevelt was also vice president and manager of the Delaware & Hudson Canal Co. and chairman of the Maritime Canal Company of Nicaragua, but most significantly was an organizer of the Southern Railway Security Company, established in 1871 and one of the first of the security holding companies formed to buy up and consolidate railroads. The Southern Railway Security Company was a consolidation or cartelization scheme similar in its monopolistic principle to the trade associations formed by Franklin D. Roosevelt in the 1920s and to the National Recovery Act, another cartelization scheme, of the New Deal. James Roosevelt's second wife was Sara, daughter of Warren Delano, and their son was Franklin Delano Roosevelt, later President of the United States.

Franklin was educated at Groton and Harvard, then went on to Columbia Law School. According to his son Elliott,[20] FDR "never graduated or took a degree, but he was able to pass his New York State bar examination."[21] FDR's first job was with the old established downtown law firm of Carter, Ledyard and Milburn, whose principal client was J. Pierpont Morgan, and in three years FDR worked his way up from minor legal research posts to the firm's municipal court and admiralty divisions. We should note in passing that, when FDR first went to Washington D.C. in 1916 to become Assistant Secretary of the Navy, it was Thomas W. Lamont—international banker and most influential of the Morgan partners—who leased the FDR home in New York.[22]

There were other Roosevelts on Wall Street. George Emlen Roosevelt (1887-1963) was a cousin of both Franklin and Theodore Roosevelt. In 1908, George Emlen became a member of the family banking firm Roosevelt & Son. In January 1934, after passage of FDR's Banking Act of 1933, the firm was split into three individual units: Roosevelt & Son, with which George Roosevelt remained as a senior partner, Dick & Merle-Smith, and Roosevelt & Weigold. George Emlen Roosevelt was a leading railroad financier, involved in no fewer than 14 railroad reorganizations, as well as directorships in several important companies, including the Morgan-controlled Guaranty Trust Company,[23] the Chemical Bank, and the Bank for Savings in New York. The full list of George Emlen's directorships at 1930 requires six inches of small print in Poor's *Directory of Directors*.

Another Morgan-associated Roosevelt was Theodore Roosevelt, 26th President of the United States and the grandson of Cornelius Roosevelt, one of the founders of the Chemical National Bank. Like Clinton Roosevelt, whom we shall discuss later, Theodore served as a New York State Assemblyman from 1882-1884; he was appointed a member of the U.S. Civil Service Commission in 1889, Police Commissioner of New York City in 1895, and Assistant Secretary of the Navy in 1897; and was elected Vice President in 1900 to become President of the United States upon the assassination of President

McKinley in 1901. Theodore Roosevelt was reelected President in 1904, to become founder of the Progressive Party, backed by J. P. Morgan money and influence, and so launched the United States on the road to the welfare state. The longest section of the platform of the Progressive Party was that devoted to "Business" and reads in part:

> We therefore demand a strong national regulation of interstate corporations. The corporation is an essential part of modern business. The concentration of modern business, in some degree, is both inevitable and necessary for national and international business efficiency.

The only really significant difference between this statement backed by Morgan money and the Marxian analysis is that Karl Marx thought of concentration of big business as inevitable rather than "necessary." Yet Roosevelt's Progressive Party plugging for business regulation was financed by Wall Street, including the Morgan-controlled International Harvester Corporation and J. P. Morgan partners. In Kolko's words:

> The party's financial records for 1912 list C. K. McCormick, Mr. and Mrs. Medill McCormick, Mrs. Katherine McCormick, Mrs. A. A. McCormick, Fred S. Oliver, and James H. Pierce. The largest donations for the Progressives, however, came from Munsey, Perkins, the Willard Straights of the Morgan Company, Douglas Robinson, W. E. Roosevelt, and Thomas Plant.[24]

There is, of course, a long Roosevelt political tradition, centered on the State of New York and the Federal government in Washington, that parallels this Wall Street tradition. Nicholas Roosevelt (1658-1742) was in 1700 a member of the New York State Assembly. Isaac Roosevelt (1726-1794) was a member of the New York Provincial Congress. James I. Roosevelt (1795-1875) was a member of the New York State Assembly in 1835 and 1840 and a member of the U.S. House of Representatives between 1841 and 1843. Clinton Roosevelt (1804-1898), the author of an 1841 economic program remarkably similar to Franklin Roosevelt's New Deal (see Chapter 6) was a member of the New York State Assembly in 1835. Robert Barnwell Roosevelt (1829-1906) was a member of the U.S. House of Representatives in 1871-73 and U.S. Minister to Holland 1888-1890. Then, of course, as we have noted, there was President Theodore Roosevelt. Franklin continued the Theodore Roosevelt political tradition as a New York State Senator (1910-1913), Assistant Secretary of the Navy (1913-1920), Governor of the State of New York (1928-1930), and then President (1933-1945).

While FDR was in office, other Roosevelts assumed minor offices. Theodore Roosevelt, Jr. (1887-1944) was a member of the New York State Assembly from 1919 to 1921 and then continued the virtual Roosevelt Navy monopoly as Assistant Secretary of the Navy from 1921 to 1924, Governor of Puerto Rico from 1922 to 1932, and Governor General of the Philippines from 1932 to 1933. Nicolas Roosevelt was Vice Governor of the

Philippines in 1930. Other Roosevelts have continued this political tradition since the New Deal era.

An alliance of Wall Street and political office is implicit in this Roosevelt tradition. The policies implemented by the many Roosevelts have tended toward increased state intervention into business, desirable to some business elements, and therefore the Roosevelt search for political office can fairly be viewed as a self-seeking device. The euphemism of "public service" is a cover for utilizing the police power of the state for personal ends, a thesis we must investigate. If the Roosevelt tradition had been one of uncompromising *laissez-faire*, of getting the state out of business rather than encouraging intervention into economic activities, then our assessment would necessarily be quite different. However, from at least Clinton Roosevelt in 1841 to Franklin D. Roosevelt, the political power accumulated by the Roosevelt clan has been used on the side of regulating business in the interests of restricting competition, encouraging monopoly, and so bleeding the consumer in the interests of a financial élite. Further, we must consider the observation conveyed by Franklin D. Roosevelt to Edward House and cited in the epigraph to this chapter, that "a financial element in the large centers has owned the government ever since the days of Andrew Jackson." Consequently, it is pertinent to conclude this introductory chapter with the 1943 observations of William Allen White, an honest editor if ever there was one, who made one of the best literary critiques on this financial establishment in the context of World War II; this, it should be noted, was after ten years of FDR and at the peak of Roosevelt's political power:

> One cannot move about Washington without bumping into the fact that we are running two wars—a foreign war and a domestic one.
> The domestic war is in the various war boards. Every great commodity industry in this country is organized nationally and many of them, perhaps most of them are parts of great national organizations, cartels, agreements, which function on both sides of the battle front.
> Here in Washington every industry is interested in saving its own self. It wants to come out of the war with a whole hide and with its organization unimpaired, legally or illegally.
> One is surprised to find men representing great commodity trusts or agreements or syndicates planted in the various war boards. It is silly to say New Dealers run this show. It's run largely by absentee owners of amalgamated industrial wealth, men who either directly or through their employers control small minority blocks, closely organized, that manipulate the physical plants of these trusts.
> For the most part these managerial magnates are decent, patriotic Americans. They have great talents. If you touch them in nine relations of life out of ten they are kindly, courteous, Christian gentlemen.
> But in the tenth relation, where it touches their own organization, they are

> stark mad, ruthless, unchecked by God or man, paranoics, in fact, as evil in their design as Hitler.
> They are determined to come out of this war victorious for their own stockholders—which is not surprising. It is understandable also for Hitler to desire to come out of this war at any cost victorious for the German people.
> But this attitude of the men who control the great commodity industries, and who propose to run them according to their own judgment and their own morals, do not make a pretty picture for the welfare of the common man.
> These international combinations of industrial capital are fierce troglodyte animals with tremendous power and no social brains. They hover like an old silurian reptile about our decent more or less Christian civilization—like great dragons in this modern day when dragons are supposed to be dead.[25]

Footnotes

*W.W. is Woodrow Wilson—editor's not.

1. A previous volume, Antony C. Sutton, *Wall Street and the Bolshevik Revolution*, (New Rochelle, N.Y., Arlington House, 1974), hereafter cited as Sutton, *Bolshevik Revolution*, explored the links between Wall Street financiers and the Bolshevik Revolution. In great part, allowing for deaths and new faces, this book focuses on the same segment of the New York financial establishment.

2. The Public Papers and Addresses of Franklin D. Roosevelt, Volume 1 (New York: Random House, 1938), p. 679.

3. New York: Lyle Stuart, 1968.

4. Ibid., p. 172.

5. Boston: Riverside Press, 1957, p. 273.

6. Ibid.

7. This series is: Frank Freidel, Franklin D. Roosevelt: The Apprenticeship. (1952), hereafter cited as Freidel, The Apprenticeship; Freidel, Franklin D. Roosevelt: The Ordeal (1954), hereafter cited as Freidel, The Ordeal; Freidel, Franklin D. Roosevelt: The Triumph (1956), hereafter cited as Freidel, The Triumph; Freidel, Franklin D. Roosevelt,

Launching The New Deal (1973). All four volumes published in Boston by Little, Brown.

8. Freidel, The Triumph, op. cit., p. 187.

9. Ibid., p. 188.

10. Freidel, The Ordeal, op. cit., p. 149.

11. This raises a legitimate question concerning the scope of this book and the nature of the relevant evidence. The author is interested only in establishing the relationship between Wall Street and FDR and drawing conclusions from that relationship. Therefore, episodes that occurred in 1921, while FDR was on Wall Street, but not associated directly with his financial activities, are omitted. For example, in 1921 the Senate Naval Affairs Committee issued a report with 27 conclusions, almost all critical of FDR, and posing serious moral questions. The first conclusion in the Senate report reads:
"That immoral and lewd acts were practiced under instructions or suggestions, by a number of the enlisted personnel of the United States Navy, in and out of uniform, for the purpose of securing evidence against sexual perverts, and authorization for the use of these enlisted men as operators or detectives was given both orally and in writing to Lieut. Hudson by Assistant Secretary Franklin D. Roosevelt, with the knowledge and consent of Josephus Daniels, Secretary of the Navy." The 26 related conclusions and the minority report are contained in United States Senate, Committee on Naval Affairs, 67th Congress, 1st Session, Alleged Immoral Conditions at Newport (R.I.) Naval Training Station (Washington: Government Printing Office, 1921).
However, while FDR's conduct in the U.S. Navy may have been inexcusable and may or may not reflect on his moral fiber, such conduct is not pertinent to this book, and these incidents are omitted.
It should also be noted that, where FDR's correspondence is of critical import for the argument of this book, it is the practice to quote sections verbatim, without paraphrasing, to allow the reader to make his own interpretations.

12. Daniel W. Delano, Jr., Franklin Roosevelt and the Delano Influence (Pittsburgh, Pa.: Nudi Publications, 1946), p. 53.

13. Ibid., p. 54.

14. See Sutton, Bolshevik Revolution, op. cit., pp. 128, 130-3, 136 on Stone & Webster.

15. Elliott Roosevelt and James Brough, An Untold Story: The Roosevelts of Hyde Park (New York: Putnam's, 1973), pp. 142, 147-8.

16. United States Senate, Hearings before the Special Committee Investigating the

Munitions Industry, 74th Congress, Second Session, Part 25, "World War Financing and United States Industrial Expansion 1914-1915, J. P. Morgan & Company" (Washington: Government Printing Office, 1937), p. 10174, Exhibit No. 3896.

17. Frederic A. Delano, Are Our Railroads Fairly Treated? Address before the Economic Club of New York, April 29, 1913, p. 11.

18. Frederic A. Delano, What About the Year 2000? Joint Committee on Bases of Sound Land Policy, n.d., pp. 138-9.

19. Ibid., p. 141.

20. Elliott Roosevelt, An Untold Story, op. cit., p. 43.

21. Ibid., p. 67.

22. See Sutton, Bolshevik Revolution, for numerous citations to Thomas Lamont's connections with the Bolshevik Revolution in 1917, while residing in FDR's leased house in New York.

23. It is important to note as we develop the story of FDR in Wall Street that Guaranty Trust is prominent in the earlier Sutton, Bolshevik Revolution.
24. Gabriel Kolko, The Triumph of Conservatism (London: Free Press, 1963), p. 202. Willard Straight was owner of The New Republic.

25. Quoted from George Seldes, *One Thousand Americans* (New York: Boni & Gaer, 1947), pp. 149-150.

CHAPTER 2

Politics in the Bonding Business[1]

> **I am going to take advantage of our old friendship and ask you if you can help me out any [sic] in an effort to get fidelity and contract bonds from the powers that be in Brooklyn.**
> Franklin D. Roosevelt to Congressman J. A. Maher, March 2, 1922.

In early 1921 Franklin D. Roosevelt became vice president of the Fidelity & Deposit Company of Maryland and resident director of the company's New York office at 120 Broadway. Fidelity & Deposit of Maryland was an established insurance company specializing in the bonding and surety policies required on government and corporate contracts and a range of individual employments ranging from secretary of a trade union to employees of stock brokerage houses. In fact, a potential for bonding business exists wherever a contractor or employee can violate a fiduciary trust or fail to complete a contract, as in construction projects. In brief, bonding is a specialized field of insurance covering the risk of noncompliance. In 1921 Fidelity & Deposit was the fourth largest such bonding house in the United States, but not to be confused with the Fidelity and Casualty Company of New York, another insurance company, which incidentally had W. Emlen Roosevelt, FDR's cousin, on its board of directors.

Why did Van-Lear Black, owner of The Baltimore Sun and board chairman of Fidelity & Deposit, hire insurance novice Franklin D. Roosevelt as vice president of the important New York office? Almost certainly he hired FDR because the bonding business is unusually dependent upon political influence. Reading through FDR's Fidelity & Deposit letter files from 1921 to 1928, we find that only rarely do price or service appear as competitive elements in bonding. The main competitive weapons are "Whom do you know?" and "What are your politics?" In other words, politics is a substitute for the market place. Politics was FDR's forte and Van-Lear Black knew his bonding world when he acquired FDR. It is important to note the political nature of the bonding business because FDR's biographers have, in some cases, suggested that FDR, a business novice, was relatively useless to VanLear Black. For example, Frank Freidel writes:

> Whether Van-Lear Black hired him because it was a smart business move or merely to collect a celebrity is impossible to determine. The worst Wall Streeters unfriendly to Roosevelt were able to charge was that the company wasted the twenty-five thousand dollars per year it paid him in salary.[2]

What then were the roles of politics and politicians in the bonding business in New York State in the 1920s?

POLITICIANS AS BOND WRITERS

The pervasive political nature of the bonding business is reflected in a contemporary, but anonymous, news clipping found in the FDR letter files and carefully marked by FDR himself. The clip refers to New York State government officials negotiating state contracts while at the same time acting as members of private bond-issuing firms selling security bonds to state contractors. The newspaper aptly headed the column "All Under One Roof" and reported that Daniel P. O'Connell, a member of the Albany bonding firm O'Connell Brothers & Corning and simultaneously in charge of the public affairs of the city and county of Albany, was endeavoring to exert a statewide influence over the issue of his bonds, to the dismay of competing bond writers:

> Whereas, formerly Daniel P. has been somewhat busy going on the bonds of various and sundry constituents, hereafter he will do his utmost, it is said, to wish his bonds on other persons, especially contractors doing business with the city and county.
> His advent into the bondwriting world has been about as welcome as a snowstorm would be to a blushing bride on a bright and sunny June morning. Local insurance men, Democrats as well as Republicans, it is said, who have been engaged in writing contractors' bonds for many years, resent Daniel P's coming into their field, while perhaps admiring his ambition and display of courage and all that sort of thing; and in state political circles it is said that Royal K. Fuller, state commissioner of the bureau of canals and waterways, is fearful that if Daniel P. succeeds in the local field [it will be] to his (Mr. Fuller's) detriment, or rather to the detriment of the bondwriting firm with which he is connected and for whose benefit, it is said, he uses the influence of his position.

Bond writer cum office holder O'Connell then wrote soliciting letters to all Albany city and county contractors to the effect that he was in the bonding business at the City Savings Bank Building, owned incidentally by Albany Mayor Hackett and which also happened to be the headquarters of the Albany county Democratic organization. O'Connell's letter to State contractors concluded with the appeal:

> I would appreciate it if you will allow this office the opportunity of serving you. A telephone call or letter addressed to me at this office will receive prompt attention.

It is important to note this prevailing and apparently acceptable use of political office and influence to feather one's own nest. In the light of the evidence below, it suggests that FDR was merely following the contemporary mores of his environment. The use of politics to obtain bond business is reflected in the FDR letter files and essentially is the

only way he obtained bonding business while vice president of Fidelity & Deposit Company. Of course, his letters soliciting business to the other Wall Street Roosevelts are entirely legitimate. We find for example, a letter to "Dear Cousin Emlen" (W. Emlen Roosevelt of Roosevelt & Son, 30 Pine Street) dated March 10, 1922 to inquire about obtaining the scheduled bond for the Buffalo, Rochester and Pittsburgh Railway Company, a bond then written by the competing National Surety Company. Emlen replied promptly on March 16 that he "was able to speak to the President about the matter." This must have stirred FDR's imagination because on March 16, 1922 he wrote to "Dear George" (George E. Roosevelt), also at Roosevelt & Son, inquiring about the blanket bond taken out by the firm itself for its own protection.

Trade unions were a special FDR target for business; as each union local secretary and treasurer is required to have a bond, this was a lucrative field. On December 13, 1921 general secretary treasurer E. C. Davison of the International Association of Machinists wrote FDR:

> We are now carrying the bulk of our bonding business with your company, which we were influenced to do in a great measure by the fact of your connection with this concern.

Then on January 26, 1922 Joseph F. Valentine, president of the International Molder's Union of North America, wrote to FDR that he was most appreciative of all FDR's efforts for the union while acting as Assistant Secretary of the Navy and

> I have a desire to give the Fidelity and Deposit Company of Maryland as much of our business as possible ... as soon as our existing bonds have lapsed, it will be a personal pleasure to have your Company handle our business in the future.

Union officials in Washington and elsewhere were prompt to request their locals to divert business to their old friend FDR and away from other bonding companies. In turn, local union officials were prompt to report on their diverting actions, information in turn promptly conveyed to FDR. For example, the president of the International Association of Boilermakers wrote to Secretary Berres of the Metal Trades Department, A. F. of L., in Washington, D.C.:

> . . . You may rest assured that anything that I can do to be of service to Mr. Roosevelt in his new position will be a pleasure on my part, and I am today writing Mr. Roosevelt.

Naturally FDR exploited his old political friends to the utmost and with a commendable attention to detail. In a sales pitch dated March 2, 1922 addressed to Congressman J. A.

Maher, FDR wrote two letters, not one. The first letter read in part:

> Howe [Louis Howe, FDR's right-hand man] told me of his conversation over the telephone with you and I am inclosing a more formal letter for exhibition purposes. This is a little friendly note lest you think I have suddenly grown formal since I have adopted Wall Street as my business address.
> Do come over and see me. I know it will do your soul good to hear the language which Brother Berres and various others connected with the Labor Bureau, are using in regard to the present administration in general and Congressmen in particular. If the Missus happens to be out of hearing when you arrive I will repeat some of the more quotable extracts.

FDR enclosed for Congressman Maher a more formal letter obviously to be shown around to Maher's friends stating precisely what it was he wanted: "fidelity and contracts bonds from the powers that be in Brooklyn:"

> I am going to take advantage of our old friendship and ask you if you can help me out any in an effort to get fidelity and contract bonds from the powers that be in Brooklyn. There are a large number of bonds needed in connection with the city government work, besides the personal bonds which every city official has to give, and I am in hopes that some of my old friends will be willing to remember me. Unfortunately, I cannot take this matter up with them myself at the present time, but as all my friends are your friends I feel that if you have the time and inclination, you can be of real help to me. I assure you the favor will not soon be forgotten.

Later we shall see how successful this approach was for F & D.

POLITICAL INFLUENCE AND CONTRACT AWARDS

FDR's political contacts and influences were of course well known within Fidelity & Deposit, and he was repeatedly called upon by other members of the firm to use his political expertise and personal credit to generate bond business, even outside New York. This may be exemplified by a letter dated August 23, 1928 from F & D director F. A. Price, in charge of the Chicago office, about business from local Chicago politicians. Price wrote "Dear Franklin" with a message that, since the death of Chicago political leader George Brennan, several names had been proposed as leaders of the local Democratic Party machine. Brennan before his death requested that M. L. Igoe be his successor, Price writes FDR:

> You undoubtedly got in touch with him while at Houston and in the event you have a personal acquaintance with him, I would like to have you give

> me as strong a letter of introduction to him as possible.

Price noted that recently when in Baltimore he had discussions with F & D company president Charles Miller about "the thought of making some deal with the new democratic leader in Illinois. It is with this view in mind that I wish the letter of introduction." As machine politics in Chicago has been notorious for its low ethical standards, it requires little imagination to visualize the kind of deal Price was suggesting and which FDR used his name and influence to further.

That personal friendship alone was insufficient to get bonding business and that some variety of sweetener was used is brought out in a letter on the New York political situation dated September 23, 1925 from John Griffin, in charge of the New York office contract division, to "My Dear Mr. Roosevelt." It discusses the complex interconnections between New York political offices and the bond brokerage business. In part the letter reads:

> The big victory of Walker over Hylan will, of course, make a new set-up in the bond broker situation. Sinnott & Canty, from whom we were able to get some bonds in the early part of the Hylan Administration and in the latter part were not so much favored, will no doubt be out of it and either Charles F. Murphy, Jr., Hyman & McCall, Jim Hoey, or a man named McLaughlin, a brother of the Banking Superintendent, will be the favored one. As I see it, our strongest connection will be through Al Smith into Charlie Murphy or McCall or McLaughlin as Hoey has his own Company—the Columbia Casualty Company. Perhaps Murphy receives from the National Surety Company, or the Company to whom he gives business now, a larger commission than we might be willing to give for his direct business, but a word into his ear through you and, of course, through the Governor and possibly Jimmie Walker, would at least put us under the most favored nation clause or [for] any division of these bonds as you know all of them must be divided between two or more companies.
> I know all of these people pretty well and favorably, but mere personal friendship will not be sufficient.

A meticulous reading of this internal company letter suggests that kickbacks were the usual way to get bond business from New York government agencies; note the paragraph, "Perhaps Murphy receives from the National Surety Company, or the Company to whom he gives business now, a larger commission than we might be willing to give for his direct business." The concluding sentence, ". . . mere personal friendship will not be sufficient" has an ominous ring.

Politicization of the surety business, so obvious in Chicago and New York, extended also to the Federal government contract arena in Washington D.C. On May 5, 1926 F & D

second vice president F. A. Bach in Baltimore wrote FDR about a $11/4; million Veterans Bureau building projected for construction that spring:

> Dear Franklin,
> Among other projects of the Veterans Bureau this spring is one involving approximately a million and a quarter dollars at Bedford, Mass., and I am secretly hoping that through influence such as knowing Mrs. Rogers, Representative of Massachusetts, that we might have some chance of getting a piece of that business although, of course, the biggest project will be at North Port, Long Island.

Similarly, to a contact in a "firm holding Navy contracts" FDR wrote:

> A casual reference in a letter from one of my old friends in the Navy Department to the award of some 8-inch gun forgings to your company, brought to my mind the very pleasant relations we held during my term as Assistant Secretary of the Navy, and I wondered if you would feel like letting my company write some of the contract bonds that you are obliged to give the government from time to time. I would like very much to have one of our representatives call.

Louis Howe, FDR's right-hand man, also worked at F & D offices, also actively solicited bonds, and was not at all backward about canvassing business. Howe's letter to Homer Ferguson of the Newport News Shipbuilding Company in December 1921 noted that the company had entered bids on construction of the vessel Leviathan and thanked Ferguson for the bond:

> If by any chance the fact that this was Mr. Roosevelt's company influenced you in making this award it would cheer Mr. Roosevelt tremendously if you could write him a little line to that effect.

These political methods of doing business are, of course, a long way from the competitive market place of the college textbooks. It would be naïve to think that political preference and personal friendship have no role, or only a minor role, in business relationships. In reviewing FDR's bond business, however, it is difficult to visualize another business in which politics plays such an all-encompassing role as it did in the bonding and surety business in the 1920s. The morality of kickbacks and of the use of political office to generate personal business is questionable, and the legality is definitely doubtful. Much less obvious is the consequent loss of economic efficiency and loss to society as a whole. If purchase and sale of such bonds is determined by price and past performance—and personal acquaintance can be a legitimate factor in judging past performance—then the market place will yield maximum economic benefits and

efficiency for society. In a politicized business atmosphere these impartial competitive factors are eliminated, economic efficiency is foregone, and benefits are reduced. We have, in effect; a microcosm of a socialist economy in which all decisions are politicized to the detriment of society as a whole. In brief, FDR's bonding operations were to some degree antisocial.

Yet other letters in the Roosevelt files provide authentic glimpses into the back rooms of 1920 era politics, the wheeling and dealing that has so often degenerated into outright corruption. Witness an FDR letter dated July 11, 1928 to first vice president George L. Radcliffe in Baltimore relating to the manner in which John J. Raskob became Chairman of the Democratic National Committee. Raskob was vice president of Du Pont and of General Motors and consequently as much a member of the Wall Street establishment as could be found anywhere:

> At a meeting last night the Governor [Smith] definitely decided on John J. Raskob as Chairman of the National Committee. He said he wanted an organizer and a man who would bring the Democratic Party into favor with the business interests of the country. My first judgment is that it is a grave mistake as he is a Catholic; secondly, he is even wetter than Smith, seeking the repeal of the Eighteenth Amendment: and third, he is the head of the largest business organization in the world. I fear that it will permanently drive away a host of people in the south and west, and rural east who are not particularly favorable to Smith, but who up to today have been seeping back into the Party.
> I don't know Raskob very well, but expect to have a conference with him within a few days, and will mention among other things the possibility of V.L. B. [Van-Lear Black].

Later in this book we shall record the enormous funds poured into the Democratic Party by Raskob and the quid pro quo for big business: the New Deal and the National Recovery Administration (NRA).

On August 24, 1927 another letter to George Radcliffe outlined the manner in which the bonding industry could get together on behalf of James Beha, then Superintendent of Insurance in the State of New York. This quotation confirms the fact that "regulated" industries are no more than political devices to keep unwelcome competition at bay and that the regulators can be in the pockets and act on behalf of the supposedly regulated industry:

> Vic Cullen[3] and I have just had a talk in regard to Superintendent Beha. Vic says that he thinks there is some move on foot initiated by Joyce, to get Beha into the National in some capacity and Cullen makes what to me

> seems a most worthwhile suggestion. It is that Beha might become the head of the Surety Association. We all like Beha and trust him; he is a man of courage and independence, and I cannot think of any one better suited for the position. Of course, it would cost a high salary—my thought is $35,000 a year—but this divided up among all of the members, amounts to but a drop in the bucket.
>
> If you think well of this suggestion, Cullen and I both feel that you are the man, rather than either of us, to approach the heads of the American, U. S. F. & G. and one or two others in an informal and confidential way.

On the other hand, there were attempts in New York to eliminate abuses in the bonding business. One such effort was that by State Architect Sullivan W. Jones to eliminate a state requirement for bonds. Governor Al Smith was at first induced to extend his approval to the Jones plan. This brought a swift letter to FDR from R.H. Towner at 160 Broadway to the effect that the Jones Plan would be disastrous and (if) "Governor Smith (has gone) astray some of his friends ought to put him right." FDR's prompt reply to Towner was, "I hope to see the Governor in the next couple of weeks and will then talk to him like a Dutch uncle about Jones' plan." We read no more in the FDR files about abolishing compulsory surety bonds in the State of New York.

That F & D's office was hard nosed about its own interests is reflected even in relatively minor matters: for example, no New York business association was able to win F & D financial support. On August 5, 1926 a request from the Better Business Bureau of New York for a subscription evoked a cold response from F & D. FDR passed the letter to vice president Cullen to prepare a "suitable reply," and Cullen promptly turned down the Better Business Bureau. This turn-down was supported by president Charles R. Miller in Baltimore, "I am not so keen on making a contribution toward the Better Business Bureau at this time...." Then the Merchants Association of New York wrote FDR on May 23, 1925 about membership of F & D in their association. Again Cullen argued that "the Merchants Association is of absolutely no benefit to us." No law requires membership in better business associations, but these brush-offs make suspect do-gooder social appeals from these nonjoiners.

THE PAY-OFF FOR FIDELITY & DEPOSIT COMPANY

This brief review of Franklin D. Roosevelt's career from 1921 to 1928 as vice president of Fidelity & Deposit Company in New York suggests the philosophical road Roosevelt followed for the next two decades. The bonding business was pervasively political, and FDR in politics was like a duck in water. Political contacts made during his service as Assistant Secretary of the Navy were utilized to the full, new political contacts, encouraged by the Baltimore management of F & D, were made, and FDR had seven years to practice this art of politics in business. The results for F & D were exceptionally good. Business expanded, in some measure perhaps because almost all business

expanded in the 1920s, but almost certainly to a major extent because of FDR's political activities. In the period January 1st, 1923 to January 1st, 1924 Fidelity & Deposit showed a gain of $3 million in the year and surged into third place among the bonding companies, a good jump ahead of U.S. Fidelity and Casualty Co., its displaced competitor. The figures read:

Surety Company Bonds in the State of New York

	Jan. 1, 1923	Jan. 1, 1924	Gain/loss
Fidelity & Deposit Co.	$ 7,033,100	$10,184,600	+$3,151,500
National Surety Co.	$14,993,000	$15,677,550	+ 684,550
Fidelity & Casualty Co. Surety Co. of New York	$ 3,211,900	$ 3,215,150	+ 3,250
Aetna Casualty & Surety Co.	$ 5,517,200	4,799,500	- 717,700
U.S. Fidelity & Casualty Co.	$ 8,064,500	$ 6,817,000	- 1,247,500
American Surety Co.	$13,263,125	$12,127,400	- 1,125,725

The Fidelity & Deposit office at 120 Broadway was FDR's base of operations in the 1920s, but the bonding business, successful as it was, was not FDR's only business activity. Other interesting endeavors will be explored in subsequent chapters. These seven years in a politically charged business atmosphere—a microcosm of a socialist society, because socialist societies are also politically run economies—were undoubtedly a determining influence in FDR's later approaches to solutions of national economic problems. This was FDR's first exposure to the business world. It was not an exposure to the competitive market elements of price and product quality; it was exposure to business on the basis of "Whom do you know?" and "What are your politics?"—ultimately the most inefficient and unprofitable bases possible for business enterprise.

Footnotes

1. This chapter is based on the FDR papers at Hyde Park, New York: specifically Group 14, file entitled "Fidelity & Deposit Co. of Maryland, Correspondence of FDR as Vice President, 1921-1928."

2. Freidel, The Ordeal, op. cit., p. 138. Freidel is unfair to Roosevelt. No evidence is given of Wall Street criticism of the appointment. Criticism is unlikely—given the political nature of the business, that politics was FDR's strength, and the long Roosevelt tradition

on "the Street."

3. Cullen was Manager of the New York production office.

CHAPTER 3

FDR: International Speculator

> **One of the most morale-damaging aspects of the inflation was the "sack of Germany" that occurred at the height of the [1923] inflation. Anyone who possessed dollars or sterling was king in Germany. A few American dollars would allow a man to live like a millionaire. Foreigners swarmed into the country, buying up family treasures, estates, jewelry and art works at unbelievable low prices.**
> Marjori Palmer, *1918-1923 German Hyperinflation*, (New York: Traders Press, 1967)

Franklin D. Roosevelt was organizer and president of several speculative international financial enterprises linking Germany and the United States, and in particular one enterprise to profit from the ruinous German hyperinflation of 1922-23. In 1922 FDR became president and was one of the organizers of United European Investors, Ltd., with a Canadian charter, but based at 160 Broadway, New York. In 1927 FDR was also organizer of the International Germanic Trust Company, Inc. and the Federal International Investment Trust, which never got off the ground. By far the most important of these speculative enterprises in the world of international finance was United European Investors, Ltd., formed to accumulate German marks deposited in the United States and to reinvest these marks in Germany by purchasing property from destitute Germans. Fully to understand the scope and meaning of United European and to follow the activities of International Germanic Trust Company, we need to make a brief review of German financial conditions in the early 1920s.

THE GERMAN HYPERINFLATION OF 1922-23

Lionel Robbins, the prominent British economist, has described the German inflation of 1922-23:

> It was the most colossal thing of its kind in history: and next probably to the Great War itself, it must bear responsibility for many of the political and economic difficulties of our generation. It destroyed the wealth of the more solid elements of German society: and left behind a moral and economic disequilibrium, a breeding ground for the disasters which have followed. Hitler is the foster child of the inflation....[1]

The Treaty of Versailles imposed a massive reparations burden upon a defeated Germany, a country already financially weak from fighting World War I with deficit spending and postwar territorial reduction, with consequently reduced natural resources. Reparations have an effect on the balance of payments similar to imports. They require either taxation or deficit spending to offset the drain. If the course of deficit spending is followed, the result will be inflationary, and this was the course followed in Germany.
Germany was obligated by the Allies to make recompense for all damage to private property, except in Russia and to pay all costs of Allied troops on German soil, but no maximum limit was set on the demands. Germany had forthwith to surrender 100 billion gold marks, with payments of one billion gold marks annually after 1921. The final payments plan worked out at the "London Ultimatum" in May 1921 reflected these harsh and impossible terms and so provided a clear incentive to inflate to remove the burden of direct payments.

What is extraordinary about the reparations program is the identity of the so-called experts engaged in making the reparations arrangements, incidentally creating the monetary and social chaos alluded to by Lionel Robbins. The 1923 Reparations Committee had as its U.S. members Brigadier General Charles G. Dawes and Owen D. Young of the General Electric Company.

The 1928 Committee of Experts on the Young Plan comprised, on the American side, Owen D. Young and J.P. Morgan, with Thomas N. Perkins and Thomas W. Lamont as alternates. On the German side the members were Hjalmar Schacht and A. Voegler, with C. Melchior and L. Kastl as alternates.

In brief, the General Electric-Morgan elements prominent in the Bolshevik Revolution, and as we shall see also prominent in the New Deal, were the negotiators of a scheme generally regarded as one of the prime causes of World War II—and incidentally a scheme in which these same financiers, as well as Franklin Delano Roosevelt, were to profit.

It is also worthy of note that businessmen on the German side of the reparations negotiations were associated with the rise of National Socialism in Germany. Witness Hallgarten in his essay "Adolf Hitler and German Heavy Industry:"

> ... in November 1918 a group of the Reich's most prominent businessmen, comprising Stinnes, Albert Voegler (then director of the Gelsenkirchen Mining Co., Ltd.), Carl Friedrich von Siemens, Felix Deutsche (of German General Electric), Director Mankiewitz of the Deutsche Bank, and Director Salomonsohn, of the Diskontogesellschaft, financed the movement of a Hitler forerunner,

> one Dr. Eduard Stadtler, who demanded the establishment of a German National Socialist state....[2]

The pertinent point is that the Felix Deutsche mentioned was a director of German General Electric and the American reparations representatives included Owen D. Young of General Electric, while the Albert Voegler mentioned by Hallgarten was the German representative in the Young-Plan negotiations.
The depreciation of the German mark into worthless paper currency as a result of this reparations burden imposed by these men is illustrated in the following table:

The German Mark in Terms of[3]

Date	Foreign Exchange	German Wholesale Prices
	(1913=1.00)	
January 1913	1.0	1.0
January 1920	15.4	12.6
January 1921	15.4	14.4
January 1922	45.7	36.7
July 1922	117.0	101.0

The inflation accelerated following the formation of United European Investors, Ltd., with Franklin D. Roosevelt as President and John von Berenberg Gossler as a member of the German advisory board:

January 1923	4,279.0	2,785.0
July 1923	84,150.0	74,787.0
August 1923	1,100,100.0	944,041.0

The inflation went entirely out of control following the dismissal of Chancellor Wilhelm Cuno, who returned as president of HAPAG, and co directors John von Berenberg Gossler and Max Warburg:

September 1923	23,540,000.0	23,949,000.0
October1923	6,014,300,000.0	7,095,500,000.0
Nobember 1923	1,000,000,000,000.0	750,000,000,000.0

The policies that led to the ruinous German inflation were initiated under Chancellor Wilhelm Cuno, who was, immediately prior to becoming Chancellor, the president of Hamburg-America Line (HAPAG). Two of Cuno's co directors at HAPAG were Max Warburg, Hamburg banker and brother of Paul Warburg, member of the Federal Reserve System Advisory Board in the United States, and John von Berenberg Gossler, a member of the German advisory board of Franklin D. Roosevelt's United European Investors, Ltd.

Cuno was dismissed as German Chancellor in August 1923, but it will be noted from the table that inflation was already out of hand, and in November of that year the mark had depreciated to zero. The point to be made is that Wilhelm Cuno was Chancellor in 1922-23, when the mark was rapidly depreciating, and that Cuno came from a business circle that was able and willing to take pecuniary and personal advantage of the German inflation.

This terrifying monetary inflation and the ultimate collapse of the German mark in 1923 ruined the German middle class and benefited three groups: a few German big businessmen, a few foreign businessmen who were in a position to gain advantage from the inflation, and the rising Hitler movement. As president of United European Investors, Ltd., Franklin D. Roosevelt was among those foreign businessmen who took advantage of Germany's misery for their own gain.

THE BACKGROUND OF WILLIAM SCHALL

Unfortunately, there is a deeper perspective to this question of what could be called an élitist group preying on the world's misfortune. In the previous volume in this series, *Wall Street and the Bolshevik Revolution*, we identified personal links between Wall Street financiers and Bolshevik revolutionaries. Some of these same personal links can be extended to FDR and United European Investors. The precisely established links previously implicated the then German Ambassador to the United States, Count von Bernstorff, and his friend Adolph von Pavenstedt, senior partner in Amsinck & Co., who was "for many years a chief paymaster of the German spy system in this country."[4] Amsinck & Co. was controlled by the J. P. Morgan, John D. Rockefeller, and other New York financial interests through American International Corporation. With Guaranty Trust Company, the American International Corporation constituted the central points for financing German and Bolshevik espionage in the United States and North America during World War I. Adolph von Pavenstedt and Edmund Pavenstedt, the two Amsinck partners, were also members of another financial house, Müller, Schall & Company. And it is at Müller, Schall that in 1922 we find Franklin D. Roosevelt and his United European Investors, Ltd.

After the public disclosures in 1918 of the connection between Amsinck & Co. and German espionage, the German interests in Müller, Schall & Co. were represented by Edmund S. Payne, a New York attorney. Müller, Schall & Co. was formally liquidated, and a "new" firm—William Schall & Co.—took its place at the same address, 45 William Street, New York City. The new firm, formed in January 1918, included the two original partners, William Schall and Carl Müller, who were now joined by John Hanway of Harris, Forbes & Co., Frank M. Welty, vice president of the American Colonial Bank of Puerto Rico, and attorney Edmund S. Payne, a partner in the law firm of Rounds, Hatch, Dillingham & Debevoise, who represented the German interests of the former Müller, Schall & Co.

The Pavenstedts were also "heavily interested in Puerto Rican sugar properties and owned and controlled the Central Los Canos."[5] William Schall was president of the Colonial Bank of Puerto Rico and president of the South Puerto Rico Sugar Company. Similarly, the Roosevelt family had interests in the Caribbean sugar industry going back to the late 18th century, and George Emlen Roosevelt was in 1918 a director of Cuban Cane Products Co. in New York. It is therefore conceivable that through this common interest in Caribbean sugar the Pavenstedts and Roosevelts became known to each other. In any event, it was the Schall-Pavenstedt group, previously part of the German espionage operation in the United States, that in 1921-22 merged with Franklin D. Roosevelt and several dubious financial entrepreneurs to form United European Investors, Ltd. to profit from the crushing burden of German inflation.

UNITED EUROPEAN INVESTORS, LTD.

The original organizing group for United European Investors, Ltd. comprised the aforementioned William Schall and Franklin D. Roosevelt, joined by A. R. Roberts, Charles L. Gould, and Harvey Fisk & Sons. The 60,000 preferred shares issued were held by Harvey Fisk & Sons ($25,000), Franklin D. Roosevelt ($10,000) and Schall, Roberts, and Gould ($5,000 each). In brief, FDR was the largest individual preferred shareholder of the incorporating group.
United European Investors, Ltd. was granted an unusual Canadian charter that provided the company with unique powers, including the right to promote trade and commerce between Canada and any other country; to acquire title to property; underwrite or otherwise deal in bonds, stocks, and shares; act as brokers and agents; undertake all kinds of functions in regard to purchase, exchange, and transfer of stocks and shares; lend money; carry on any business, "manufacturing or otherwise;" and buy and sell property. In fact, on reading the charter, it is difficult to visualize any activity that could not be carried out under its numerous clauses.[6]

The capital stock was divided into two segments: Canadian $60,000 divided into 60,000 preference shares and 60,000 ordinary shares, denominated in 10,000 German marks. The objective of the company as noted in the contemporary press was to invest the many billions of German marks then held in the United States and Canada in German real property:

Once marks are invested in property in Germany, the funds should begin to earn money immediately and the funds cannot disappear, since they are represented by the ownership of tangible property, and the advantage may still be taken of a possible rise in exchange value. Compared with this, the holding of mark currency or drafts is a most hazardous operation and the funds are either idle or earning very little. Besides if the exchange quotation should approach the vanishing point, there would be nothing tangible left for the holders of marks or drafts. The capital of the company will be invested in improved real estate, mortgages, financing of goods in transit and participation in profitable industrial and commercial enterprises.[7]

Reference to the preceding table recording depreciation of the German mark (page 39) confirms the remarkable timeliness of United European Investors, Ltd. In July 1922 the mark, with 1913 as a base of 100, was at 117 in foreign exchange. This reflects a heavy rate of inflation of the mark, but nothing to distinguish it from inflation in many other countries. Yet the U.E.I. brochure specifically mentions the possibility of the mark's "approaching the vanishing point," which it did achieve a year later in November 1923.

The actual investment of U.E.I. was carried out in Germany by a German advisory board that occupied an office in Hamburg headed by Senator August Lattman, formerly a partner in G. Amsinck & Company of New York (see page 41). The second member of this German board was Senator John von Berenberg Gossler, head of the Hamburg banking firm Berenberg, Gossler & Co. Berenberg, Gossler was also a member of the management board of the Hamburg-America Line (HAPAG); other members were Wilhelm Cuno, at that time Chancellor of Germany and responsible for his country's economic policy, and Max Warburg, brother of Paul Warburg, member of the Federal Reserve Board in the United States.

In a letter dated November 11, 1922 to U.E.I., the German Advisory Board recorded its initial investments: "All the investments so far made are of first class industrial shares." However, the prospectus issued in the U.S. emphasized investment in real estate, and on this point the German board wrote:

> As to investing in mortgages we understand your point of view but shall eventually come back to the question in case we shall be able

> to offer you mortgages with a gold clause which might be possible, and would exclude any additional risk in case the mark should further decline.

There is no mention anywhere in the United European Investors file of the purchase of real property or any other of the tangibles mentioned in the company charter and the public announcements.

The investments made by the board during the next few years were stocks of German companies. Further, the investment prices were cited in an unusual manner, not in German marks or absolute figures of any kind, but as a percentage increase, presumably from a 1913 base, which enabled the German Board to write to New York, "the shares which you so far bought have risen considerably with the depreciation of the mark."

These shares and the percentage increase cited included, for example:

Deutsche Maschinen A.G.	bought at 1350% now quoted 1805%
Allgemeine Elektricitäts Gesellschaft	bought at 740% now quoted 5000%
Nobel Dynamit	bought at 1119% now quoted 3975%

The German Board did not mention the fact that the depreciation of the mark in terms of the U.S. dollar had been greater than the advance in the prices of the shares they bought as quoted in German marks. In effect, the claims of rising share prices made were illusory. One earlier writer has described it this way: "untrue and pure bunco steering, evidently intended to gull other holders of German marks to invest them with a company that could perform such miracles."[8]

This was not, however, of concern to the New York board of directors. At the regular meeting of the board held January 15, 1923 Franklin D. Roosevelt called the meeting to order, and George W. Muller acted as secretary. It was then recorded that the mark value of the German stock investments so far made by the company was more or less 73 million marks, and this investment was currently quoted at 420 million marks.

There is an interesting letter in FDR's files from Professor Homer B. Vanderblue, Professor of Business Economics at Harvard University, asking for explanations about the U.E.I. investment program. The letter was addressed to FDR, as president of the company, but replied to by Edmund S. Paine, who stated that the original idea of investing in tangible property, such as real estate, had proven

impracticable as it "would entail a very heavy overhead owing to the necessity of supervision and operation," and so it was decided to invest only in German stocks "representing the indirect ownership in tangible assets." Paine added that the theory justified itself to a "remarkable degree:"

> Taking as a test the first Mks 60,000,000 invested by the company, we find that the appreciation in price of the securities has somewhat exceeded the depreciation in the exchange value of the mark. In other words, the securities purchased could probably be sold today for a price in marks which would bring somewhat more in dollars than could have been secured by the holders of marks had they sold them at the time of the investment in spite of the fact that the value of their marks has gone down tremendously.

However, Paine to the contrary, a "Statement of Conditions as of January 31st 1923" located in FDR's files records that the book value per share of common stock at that time was $2.62 per share, while the average book value at the time of investment was $2.64—in other words, a slight decline.

At the directors meeting of September 19, 1923 it was confirmed that the total dollar value of investment was about $120,000, and in May 1925 this was still approximately the amount recorded in the treasury. However, in the intervening years following stabilization of the mark, conditions improved and a statement dated May 12, 1926 shows a net worth of $147,098.07, with 17,275 shares outstanding, and then equal to $8.50 per share. On May 21st, 1926 the company offered to buy all stock offered within 90 days at $7.50 a share. In May 1926 FDR resigned as president and accepted the offer of $7.50 per unit for his 1005 common stock shares.

Did the American holders of German marks who invested in United European investors gain or lose on their investment? If we suppose they held their stock to 1926 and accepted the company offer at $7.50 per common share unit, then buying at the issue price of 10,000 German marks in September 1922 (the date offered) they would have lost considerably. In September 1922 the dollar-mark exchange rate was $1.00 to 764 German marks. Thus a 10,000 mark share would be equivalent to $13.00 per share, and a share held from 1922 to 1926 would have realized a loss of approximately $5.50 per share; on the other hand, a shareholder would have avoided total depreciation and a loss of all his funds from holding on.

INVESTIGATION OF UNITED EUROPEAN INVESTORS, LTD.

The Roberts-Gould element that joined FDR and Schall on the Board of U.E.I. had a poor reputation on "the Street". In fact, Roberts and Gould were under investigation for suspected criminal activities. In July 1922, when United European was in the early stages of incorporation, a Mr. Crary, an old-time investigator for Proudfoot's Mercantile Agency—the top ranking investigation agency used by prestigious Wall Street firms—approached FDR's secretary, Miss Le Hand. Crary conveyed to "Missy" information about what he termed a "band of crooks with offices at 7 Pine Street" and with a nameplate on the door inscribed "United European Investors, Ltd." Missy Le Hand carried the information to FDR's right-hand man Louis Howe, who in turn raised the problem with Schall's earlier partner Müller. From Müller and other sources, Howe learned that Roberts and Gould were a part of this alleged "band of crooks" who, according to Crary, were "engaged in all manner of disreputable promoting and ... he is certain that they have as a member of their force an ex-convict under an assumed name with a most unsavory reputation."[9] When the name United European Investors, Ltd. was posted on their office door at 7 Pine Street, investigator Crary, who had been routinely watching the office for a year, began quietly probing Roberts and Gould. Although Roberts was never in the 7 Pine Street office, Crary found that Gould "had been in the habit of using that office for at least a year, and was considered one of their (i.e., the crooks') tried and true friends." Gould's association with "the crooks" made Crary suspicious because, while the Proudfoot Agency had previously given Gould "a clean enough record," it had also put him in "the professional promoter class."

Crary's investigation was undertaken on behalf of the owners of the building at 7 Pine Street, "who intend to dispossess the whole bunch in a short time." It was during the investigation that the Proudfoot Agency came upon a circular listing the name of Franklin D. Roosevelt as president of United European Investors, Ltd. and William Schall as its banker. The evidence unearthed by the Proudfoot Agency was substantiated to Louis Howe by a Mr. Hanway, a member of the stock brokerage firm of Harris, Forbes. Hanway said he had "been familiar with Mr. Gould's activities for a number of years, and that he so thoroughly distrusted him as to lead him to make every effort to prevent from meeting Schall originally."

Even further, the Proudfoot Agency suspected that Gould had attempted to acquire confidential information from them and that Gould was acting as "a spy for the crooks to find out what knowledge Proudfoot & Company had of their crooked deals."

All this information was duly reported by Howe in a letter ("Dear Boss") to FDR (July 29, 1922). Probably most businessmen faced with this caliber of partner would abandon any proposed operation such as United European Investors, but Howe's memorandum to FDR recommends nothing of the kind. It reads in part:

My recommendations are as follows: That Gould and Roberts be directed to immediately find new offices, preferably in a church or some other respectable place. That we get rid of Roberts, who is a wild man on publicity anyway, and who has no important function in this game, and that closest watch be kept of Gould. If Mr. Crary actually turns up the circular I would tear off the roof over it and make sure that its use is stopped until we are ready to make a formal announcement. I think it would be wise to insist that during the summer I be made a member of the Board of Directors, particularly as both Jenks and Rogers will be away most of the time and some one wants to watch every action taken.

In other words, Howe suggests that precautions against double-dealing will be sufficient and that the best way to do this is to put Louis Howe on the board of directors.

In any event, the enterprise went forward as planned; Roberts became Secretary of the U.E.I., and Gould, alleged spy for the crooks, retained his role as active promoter and continued to report periodically to FDR by letter on the progress of their fund-raising efforts. On July 20, before Howe reported to FDR the substance of the Proudfoot investigation, Gould had written FDR from the Southern Hotel, Baltimore about his talks with Edward Clark & Co., the Baltimore bankers, whose partner Herbert Clark had known FDR from their Harvard days. Then on August 13, 1923 Gould wrote FDR from the Canadian Club of New York to relay telegrams received from William Schall in Europe and concluded:

> I was sorry to hear you were again under the weather. Probably too much overdoing, one must not try to go to (sic) fast after such an illness. In any case I hope to have the pleasure of seeing you before I return to Europe in early September.

There is no clue that FDR communicated in any way with Gould, and the next letter in the files is from Gould to FDR, dated September 14, 1923 and also written from the Canadian Club of New York. This letter criticized the "jealous bankers whose scheme we hurt, and whose plans were upset. Had we not issued today we would have failed."
Gould then concludes, "Thank you for the great & noble way you have stood behind us, and I personally feel it was your strong attitude which is making our project a complete success," adding that when he (Gould) called on the large banks and trust companies to present "their proposal" he found "On every hand your name [FDR] was applauded as being the master mind in securing the proper operation to aid the unfortunate American investor," and that if FDR could have heard these comments from "the largest financial houses" it would have given him

"great satisfaction."

On the basis of these letters, we must conclude that FDR knowingly entered a business arrangement with persons whose reputation was, to say the least, dubious, and that this business arrangement was continued after evidence of impropriety was brought to FDR's attention by Missy Le Hand and Louis Howe.

There is only superficial evidence that the whole United European Investors operation was designed by Roosevelt. When Gould tells FDR that his "name was applauded as being the master mind," it is reasonable to assume that Gould was flattering Roosevelt for his own purposes. There is really no evidence either way in the files or elsewhere that Roosevelt's background and financial knowledge were sufficient to originate a plan as ingenious as U.E.I.

CHANCELLOR WILHELM CUNO AND HAPAG

The disastrous depreciation of the German mark that was the raison d'être of United European Investors was concentrated in the period mid-1922 to November 1923. The table indicates how inflation got completely out of hand after mid-1922. The German Chancellor between mid-1922 and August 1923 was Wilhelm Cuno (1876-1933). Cuno was originally a civil servant, always active in politics, and in November 1917 was elected a director of the Hamburg-America Line (HAPAG). When Ballin, the president of HAPAG, committed suicide in 1918, Cuno became its president. After May 10, 1921 Karl Wirth was German Chancellor, and Walter Rathenau, the president of German General Electric (A.E.G.), was Minister for Reparations. Then followed a series of dramatic events. The German Minister of Finance Matthias Erzberger was assassinated August 26, 1921. In January 1922 Rathenau became Foreign Minister and on June 24, 1922 was also assassinated. In October of 1922 Friedrich Ebert was Reich Chancellor and Wilhelm Cuno of HAPAG was appointed German Chancellor. The depreciation of the mark occurred under Cuno and culminated in the financial crisis and his dismissal in August 1923. Cuno returned to the presidency of the Hamburg-America Line. We might note in passing the prevalence of corporate presidents in contemporary politics: e.g., German General Electric's Rathenau and HAPAG's Cuno. Owen D. Young of General Electric in the U.S. was also creator of the Young Plan for German Reparations, and German General Electric (A.E.G.) president Rathenau was German Reparations Minister in 1922. These appointments are usually explained on the basis of "the best man for the job" but, given the evidence presented in the last chapter on politics in the bonding business, we can justifiably express skepticism about this explanation. It is much more likely that the Youngs, Cunos, Rathenaus—and the Roosevelts—were mixing business and politics for their own pecuniary gain. Unfortunately, while we must leave unanswered the key question of how far these elitist groups used the state apparatus for their own

ends, it is clear that, when we probe the background of Wilhelm Cuno, we arrive back at Franklin D. Roosevelt and the formation of United European Investors, Ltd. Cuno, under whose auspices the great German inflation raged, was a director of the Hamburg-America Line; John von Berenberg Gossler, the United European Investors adviser in Germany, was also a member of the board of that company. In sum, Cuno and Gossler were on the same board of directors at HAPAG. Cuno's policies were essentially responsible for the German inflation of 1922-23 while his co director Gossler, in cooperation with Franklin D. Roosevelt, was making profit out of the very same inflation policies. It makes one ponder.

THE INTERNATIONAL GERMANIC TRUST COMPANY

The International Germanic Trust Company, founded in 1927, was prompted, according to its promoters, by a demand for American banking institutions in central Europe. Among the organizers of the trust as approved by the Banking Department of the State of New York were Franklin D. Roosevelt; Herman A. Metz, a director of I. G. Farben; James A. Beha, Superintendent of Insurance for the State of New York; and E. Roland Harriman of the international banking firm of W. A. Harriman & Co. The president of the associated International Germanic Company and chairman of the executive committee of the trust company was Harold G. Aron, who had had more than his share of law suits involving stock promotion. The main offices of the International Germanic Trust were on the ground floor of 26 Broadway, the Standard Oil Building in New York. The authorized capital consisted of 30,000 shares to provide a capital of $3 million and a surplus of $2 million. In its application to the banking department the company was represented by Senator Robert F. Wagner; although not listed among the organizers, FDR's old friend, James A. Beha, Superintendent of Insurance for the State of New York, became a member of the board of directors.

The objectives of the company as stated by its president, Harold G. Aron, were:

> There appears to be a real need for an institution of sufficient size and backing, to take the place of those institutions which existed before the war and were primarily concerned in financing commercial intercourse between America and the Central European business world. Through its incorporators the trust company will have and develop relations both with Americans of German descent throughout this country and with business and banking institutions in Germany. It is the intention of the company to stress particularly the development of its foreign and trust departments, and to provide an effective fiscal agency in the expected liquidation of German properties and trusts still in Government custody.
> The company will, from the outset, be assured the support of

> important organizations and societies in this country, and the small depositor both in and outside of New York City will be welcome. It will aim to distribute its shares widely and in comparatively small amounts. There will be no voting trust nor individual or group control.

Roosevelt was involved in the flotation of the proposed company. A telegram dated April 7, 1927 from Julian Gerrard, president of the trust company, to FDR requested him to telegraph Frank Warder, Superintendent of Banks in the State of New York, to the effect that he (Roosevelt) was interested in the trust company. It was anticipated that this intervention would clear the delay in granting the charter. Board meetings were held in the Standard Oil Building, in FDR's office, and in the Bankers Club, the latter both located at 120 Broadway. The first meeting of the organization committee was held at the Bankers Club Friday May 27, 1927; although FDR was unable to attend, he wrote Julian M. Gerrard, "What is the news of the trust company?" Again on August 15, 1927 FDR asked Gerrard, "How is the organization work proceeding and what is being done in regard to the stock subscriptions?"

A considerable part of the FDR letter files of this promotion consists of requests for employment, stock in the proposed company, or related favors. For example, the National Park Bank of New York wrote FDR July 26, 1927 that it was interested in the creation of the International Germanic Trust Company and would be pleased to "have one of our officers address that body, going into detail regarding our facilities." In other words, the National Park Bank was looking for deposit business. FDR promised to take up the matter with the organization committee of the new trust company. Then on August 12, 1927 Roosevelt's partner Basil O'Connor dropped him a note: "Dear Franklin, On the Germanic Bank, see if you can get me 100 shares." The stock issue itself was heavily oversubscribed. It was planned to issue 30,000 shares, but total requests by September 12 were in excess of 109,000 shares, and by September 20 applications exceeded 200,000 shares from approximately 1900 individuals. The trust notified FDR on October 3, 1927 that his allotment was 120 shares at $170 per share and must be taken up by October 5. The telegram added that the issue was heavily oversubscribed and quoted at 187 bid, 192 asked, which would give FDR a profit on an immediate resale. This telegram from Howe added, "Would like ten of your shares for Grace if you are willing."

FDR was duly elected a member of the board of directors and notified on November 4, 1927 that the first meeting of the board would be held Friday, November 11 at the Bankers Club at 120 Broadway. However, Basil O'Connor, Roosevelt's law partner, apparently had cold feet or received adverse information on the promotion because he wrote FDR on November 14:

> I don't know what our position now is in this matter but if it is as when I parted I feel very badly about it. The proposition has not helped us any (with) other banking connections on which I have been working on a year and frankly it has all the earmarks that Gerrard (sic) thinks he can "kid you."

O'Connor suggested that FDR should resign from the board because "heretofore I have been able to say we have no banking affiliations, that was wrong. I can't say that now." Apparently, FDR did not immediately take this advice, because on January 19, 1928 he was notified of reelection as director for the coming year, but in a letter dated January 27, 1928 FDR wrote Gerrard as follows:

> Dear Julian,
> The more I consider my directorship and the trust company and the International Germanic Company, the more I am inclined to feel that it is somewhat futile. I have already told you of my partner's and my feelings in regard to extraneous connections on the part of either of us which involve merely attending occasional meetings and nothing more. It is somewhat difficult of course for me to go to the meetings at 26 Broadway in view of the steps but, frankly, I feel that in retaining my directorship I am accomplishing little either for myself or for the Trust Company or the International Germanic Company.

Whereupon FDR offered his resignation. It is notable that the reasons for resigning were "I am accomplishing little either for myself or for the trust company." In view of the rather unsavory reputation of the promoters, this explanation is a little weak.

Footnotes

1. Constantino Bresciani-Turroni, The Economics of Inflation: a Study of Currency Depreciation in Post War Germany, 1914-1923 (London: Allen & Unwin, 1937), "Foreword," p. 5.

2. George W. F. Hallgarten, "Adolf Hitler and German Heavy Industry" in Journal of Economic History, Summer 1952, p. 224.
3. Source: Statistisches Jahrbuch für das Deutsche Reich.

4. See Sutton, Bolshevik Revolution, op. cit., pp. 64-67, and Johann-Heinrich von Bernstorff, My Three Years in America (New York: Scribner's, 1920), p. 261.

5. Paul Haber, The House of Roosevelt (New York: Authors Publishing Co., 1936), p. 71.

6. The copy of the U.E.I. charter in FDR's files carries an amendment by A. B. Copp, Canadian Secretary of State, that prohibits building of railways and issue of paper money.

7. This is taken from a press release marked "From Hon. Franklin D. Roosevelt" in the FDR files.

8. Haber, The House of Roosevelt, op. cit., pp. 81-2.

9. Information taken from letter Howe-FDR, June 29, 1922 in United European Investors, Ltd. files.

CHAPTER 4

FDR: Corporate Promoter

> **The meshes of our banking laws have been woven so loosely as to permit the escape of those meanest of all criminals who squander the funds of hundreds of small depositors in reckless speculation for private gain. The entire Banking Law is in need of revision and the Banking Department needs immediately far more adequate inspection facilities.**
> Franklin Delano Roosevelt, Annual Message to New York State Legislature, January 1, 1930.

Quite apart from floating speculative enterprises in the field of international finance, FDR was intimately involved in domestic flotations, at least one of which was of some substance. The most important of these ventures was organized by a prominent group including Owen D. Young of General Electric (the ever-present Young of the Young Plan for German reparations described in the last chapter) and S. Bertron of Bertron Griscom, investment bankers in New York. This syndicate created the American Investigation Corporation in 1921. In 1927 followed Photomaton, Inc. and in 1928 the Sanitary Postage Service Corporation. Then Roosevelt became a director of CAMCO, Consolidated Automatic Merchandising Corporation, but only briefly, resigning upon his election as Governor of the State of New York. As we read in the above epigraph, by 1930 FDR has had second thoughts about playing with other peoples' money.

AMERICAN INVESTIGATION CORPORATION

German scientists and engineers made an early and successful start in the use of lighter-than-air vehicles or airships for passenger and freight transportation. As early as 1910 Germany operated scheduled airship passenger services. Patents for airships were seized in World War I by the U.S. Government under the 1917 Trading with the Enemy Act, and after the war Germany was forbidden by the Reparations Commission to construct airships. This left the field open to American enterprise. The opportunities presented by German work and development restrictions in Germany were observed by a group of Wall Street financiers: S.R. Bertron of Bertron, Griscom & Co. (40 Wall Street) and not surprisingly, since he was intimately involved in German reparations, by Owen D. Young of General Electric (120 Broadway). This group was particularly interested in the profitable opportunities for development of airship transportation in the United States. On January 10, 1921, as FDR was unpacking his bags in the offices of the Fidelity & Deposit Company at 120 Broadway, he received a letter from Bertron which read in part:

> My dear Mr. Roosevelt:
> Representing the small group of prominent men here who are becoming greatly interested in the question of air transportation, I had a long conference with Army officials in Washington last week in regard to it. I am advised that you, as Assistant Secretary of the Navy, are very familiar with this subject and I should like immensely to discuss it with you....

FDR and Bertron met to discuss air transportation over lunch at the Down Town Association. We can surmise that Bertron filled in Roosevelt on technical developments up to that time. We know from the files that there was also a meeting between Owen D. Young, S.R. Bertron, and engineer-attorney Fred S. Hardesty, representing the German patent holders, who had good connections in Washington where the seized patents were in the custody of the Alien Property Custodian and had yet to be released.

This second meeting yielded a preliminary compact dated January 19, 1921 known as the Hardesty-Owen-Bertron agreement that planned the road to development of commercial airship operations in the U.S. A syndicate was subsequently formed by Owen-Bertron to "investigate all phases of aerial navigation, legislation required and methods of fund raising." Hardesty and his associates turned over to the syndicate all their data and rights in exchange for a refund of their out-of-pocket expenses of $20,000 incurred to that date and an interest in the syndicate. FDR's role was that of fund raiser, using his numerous political contacts throughout the United States. On May 17, 1921

Bertron wrote FDR that he had been trying to raise funds from people in St. Louis, Cincinnati, and Chicago, while Stanley Fahnestock, a partner in his firm, had been making the rounds in California and Chicago. Lewis Stevenson, another syndicate member, was at work among his contacts in the mid-West. So Bertron appealed to FDR for a set of personal introductions to potential contributors:

> Stevenson is very anxious for you to give him a line to Edward Hurley, E. F. Carey and Charles Piez, all of whom you know. He would like a letter also to Edward Hines, R.P. Lamont, and H.C. Chatfield-Taylor. I am afraid this is a large order. Won't you do your best?

FDR acknowledged Bertron's request, to the effect that he was sending letters to Stevenson "introducing him to Edward Hurley and to Charles Piez and E.F. Carey. I am afraid I don't know the others." Charles Piez, president of Link-Belt Company in Chicago, excused himself from participation on the ground that "... I am practicing the most rigid economy, bending a deaf ear to the most inviting and alluring prospects," and citing the "deplorable shape" of the industry. (This plea of poverty was supported by Piez's letter to FDR, on old stock stationary, with the new address printed over the old one—hardly becoming a president of a major corporation such as Link-Belt Company). Edward N. Hurley wrote that he was "not very active in business," but when next in New York "I am

going to make it a point to call on you and check up the past."

On June 1st, Lewis Stevenson reported to Roosevelt on his fundraising progress in the mid-West. He confirmed the fact that Piez was short of funds and that Hurley wanted to talk later, but that Carey might have some interest:

> Charles Swift, Thomas Wilson, both packers, are now considering the proposition, as are Potter Palmer, Chauncey McCormick and a dozen others. Since securing Marshall Field I have added to our list C. Bai Lehme, a zinc smelter of very large means; Mr. Wrigley, junior member of the great chewing-gum firm; John D. Black, of Winston, Strawn & Shaw; B.M. Winston and Hampton Winston, of Winston & Company, and Lawrence Whiting, president of the new Boulevard Bridge Bank. Gradually I am getting together a desirable group but I must confess it is discouragingly slow and hard work. My experience has been I can convince an individual of the feasibility of this scheme but as soon as he discusses it with his friends, who know nothing whatever of the proposition, they develop a serious doubt in his mind which I have to combat all over again. As a result of my observation abroad I am firm in my belief it can be made a success.

Stevenson concluded by requesting a letter of introduction to prominent Chicago attorney Levy Meyer. It is clear that by the end of June 1921 Stevenson had induced a number of prominent Chicago citizens,
including Marshall Field, Philip N. Wrigley, and Chauncey McCormick, to sign on the dotted line.

So far as FDR is concerned, his sales letters on this project would do credit to a professional salesman. Witness his letter to Colonel Robert R. McCormick, of the Chicago newspaper empire:

> Dear Bert:
> As you happen to be a progressively minded person I am asking Mr. Lewis G. Stevenson to have a talk with you about something which at first blush may seem a perfectly wild idea. However, it is really something very different and all I can tell you is that a good many of us here, such as Young of the General Electric Company, Bertron of Bertron Griscom & Co, and a number of other perfectly respectable citizens have shown enough interest to look into the question further. All of this relates to the establishment of commercial dirigible lines in the United States...

Similar letters went to Chauncey McCormick, Frank S. Peabody of Peabody Coal, and Julius Rosenwald of Sears, Roebuck. These initiatives were followed up with personal

dinners. For example, on April 21, 1921 FDR wrote to Frank Peabody:

> ... is there any possibility you may be able to dine with Mr. Bertron, Mr. Snowden Fahnestock and several others of us at the Union Club next Monday evening at 7:30? Bertron is just back from the other side and has some very interesting data in regard to these commercial dirigibles, which have proved successful in Germany.

FDR added that the group "will promise not to hold you up against your will." To which a reluctant Peabody telegraphed, "Impossible to be there, would not be at all afraid of being held up would have enjoyed visit with you immensely."

To Edsel B. Ford FDR wrote, "I am sending this note by Mr. G. Hall Roosevelt, my brother-in-law, who is familiar with the whole matter." G. Hall Roosevelt, who happened to work for General Electric as a division manager, proved himself to be an alert negotiator, but not sufficiently so to win Ford during the early stages.

However, by February 18, 1922 the American Investigation Corporation had compiled a very healthy list of subscribers, as the following partial list confirms:[1]

Name	Affiliation	Location
W.E. Boeing	President, Boeing Airplane Co.	Seattle
Edward H. Clark	President, Homestake Mining Co.	New York
Benedict Crowell	Crowell & Little Construction Co.	Cleveland
Arthur V. Davis	President, Aluminum Co. of America	Pittsburgh
L.L. Dunham	Equitable Building Association	New York
Snowden A. Fahnestock	Bertron, Griscom & Co.	New York
Marshall Field, III	Capitalist	Chicago
E.M. Herr	President, Westinghouse Electric & Mfg. Co.	Pittsburgh

J.R. Lovejoy	Vice President, General Electric Company	New York
John R. McCune	President, Union National Bank	Pittsburgh
Samuel McRoberts	Capitalist	New York
R.B. Mellon	President, Mellon National Bank	Pittsburgh
W.L. Mellon	President, Gulf Oil Co.	Pittsburgh
Theodore Pratt	Standard Oil Company	New York
Franklin D. Roosevelt	Vice President, Fidelity & Deposit Co.	New York
Philip N. Wrigley	Vice President, Wm. Wrigley Co.	Chicago
Owen D. Young	Vice President, General Electric Co.	New York

The initial board of directors included National City Bank vice president Samuel McRoberts,[2] William B. Joyce, president of National Surety Company—one of FDR's competitors in the bonding and surety business—and Benedict Crowell, former Assistant Secretary of War and chairman of the board of the Cleveland construction company Crowell & Little Construction. Snowden A. Fahnestock of Bertron, Griscom was the son of New York financier Gibson Fahnestock and a partner in the stock brokerage firm of Fahnestock & Company. Gibson's brother William Fahnestock, a partner in the same firm, was director of several major corporations including Western Union and, with Allen Dulles, of Gold Dust Corporation. David Goodrich, another subscriber, was chairman of the board of B.F. Goodrich Company and a director of American Metals Company of New Mexico.
It should be noted with care that this enterprise was a private venture where the risk and the rewards were taken by experienced and clear-sighted capitalists. No criticism can be made of the financing of this venture; the criticism lies in the manner in which it acquired its main asset, the German patents.

The president's report for the year 1922, issued on January 8, 1923, summarizes the A.I. C. achievements to that date.

The German Reparations Commission refused to allow construction of large airships in Germany, and there was a delay in the completion and test of the new apparatus

designed by the U.S. Bureau of Mines for the economical manufacture of helium gas, but it was considered that A.I.C. was within a few months of the time to appeal to the public for financial support. According to this report, the first stage of the work had been brought to a close by signing a contract on March 11, 1922 between the American Investigation Corporation and the Schuette-Lanz Company whereby the American Investigation Corporation secured the world patent rights on the Schuette designs and methods of construction for rigid airships. The contract provided for installment payments and included an agreement with Schuette-Lanz either to construct an airship or to provide the services of the experts to undertake construction in the U.S.

The company had "definitely determined through the Department of State that the Reparations Commission and Council of Ambassadors would not consent to the construction in Germany of the full sized ship considered by the American Investigation Corporation," and so Dr. Schuette was requested to visit the U.S. to reach a final agreement. The ultimate object, continues the report, is the establishment of the airship industry in the U.S. and "is never lost sight of; nevertheless obtaining the first ship from Germany at less cost and built by the best experts is highly desirable."

The importance of ensuring a supply of helium gas for airships was highlighted by the destruction of the British R. 38 and the Italian *Roma* airships. After consultation with the Helium Board and the chief chemist of the Bureau of Mines, a decision on the helium question was deferred until completion of the improved apparatus the Bureau was designing for the production of commercial helium. Under the terms of the agreement between the American Investigation Corporation and Washington engineer Hardesty and his associates, in addition to the $20,000 provided to cover their work before the formation of the American Investigation Corporation, certain actual out-of-pocket expenses were to be repaid for assistance in organizing the corporation. The final agreement was, however, conditional upon the signing of a contract regarding the share which Mr. Hardesty and his associates were to receive in the American Investigation Corporation and any of its subsidiary companies in return for their promotion work: above all, it required that the German patents held on behalf of the American public by the Alien Property Custodian be released to the A.I.C.

POLITICS, PATENTS, AND LANDING RIGHTS

Consequently, the A.I.C. syndicate had a major hurdle to overcome before work could begin on commercial development of airships in the U.S. This political hurdle—to acquire the rights to the Schuette-Lanz airship construction patents—required the astute political assistance of FDR. These rights were German, but under the control of the U.S. Government. By U.S. law, seized alien property can be disposed of only by auction sale and competitive bidding. However, we find in the report of the president of A.I.C. dated May 26, 1922 that A.I.C. was then "the owner of the present Schuette-Lanz patents" and listed 24 patents and 6 patent applications originating in Germany, 6 applications

originating in England, and 13 patents and 6 applications originating in the United States. The report continued: "In the U.S. 7 patents are subject to return by the Alien Property Custodian. Through filing assignments all new U.S. patents are being issued directly in care of A.I.C." How, then, did the A.I.C. syndicate obtain the German patents held in trust by the U.S.? This is particularly important because no record exists of auctions or competitive bidding. The A.I.C. report notes only:

> The interests of A.I.C. were protected by the collaboration in drawing the contracts and assignments of Mr. J. Pickens Neagle (Solicitor of the Navy Department) Franklin Roosevelt, Mr. Howe and Blackwood Brothers.

This certainly raises the question of the propriety of a U.S. Navy Department solicitor acting on behalf of a private syndicate. The German patents were sprung loose from the U.S. Government for A.I.C. by the personal intervention of Franklin D. Roosevelt. Let's see how he went about the job.

Franklin D. Roosevelt was former Assistant Secretary of the Navy, one of a series of Roosevelts to hold the job, and consequently had good political contacts in the Navy Department. In mid-1921 FDR began to probe among his old Navy friends on two questions: (1) the position of the Schuette patents and (2) the possibility of acquiring private use for the A.I.C. syndicate of the Lakehurst naval base for A.I.C. airships. On May 4, 1921 Admiral R.R. Byrd in the Office of Naval Operations acknowledged an invitation to visit FDR's estate at Campobello. Nine months later, on May 23, 1922, Commander E.S. Land, of the Navy Bureau of Aeronautics, also acknowledged an invitation to visit FDR when next in New York. Land added that there "appears to be little likelihood of my going to New York during the next three or four weeks. If you could advise me relative to the nature of your inquiries, I might be able to give you some information along the lines desired."

FDR replied to Commander Land in a letter marked *Personal*, but sent to the Navy Department, to the effect that his inquiry could not be made by telephone or letter. FDR then briefly reviewed the position of A.I.C. and stated that the company "is about to go ahead with the actual construction and operation of dirigibles," but needed to know more about the U.S. government's program for such craft: "I am not looking for any confidential information but merely such facts as I feel sure I could obtain without much difficulty were I able to go to Washington myself."

This information is, wrote FDR to Land, "for the good of the cause generally," and he then offered to defray Commander Land's expenses if he would visit New York. This apparently had little success because on June 1 FDR again requested the information and pushed even further: "Incidentally would there be any objection to our getting a copy of the Zeppelin contract? Theoretically they are all public documents."

In the final analysis, it was Pickens Neagle of the Judge Advocate Generals Office in the Navy who was the prime mover in obtaining the required German patents for A.I.C.; Neagle was obviously making himself useful to FDR in other areas, as well. On May 15, 1922 FDR wrote Neagle about Hardesty, the engineer-attorney handling the patent negotiations in Washington:

> Both Mr. Fahnestock and I passed without question the very modest sum that Hardesty put in for you, [Neagle] and I feel sure that the Directors will approve of this when they meet, which will not be long now.

Navy Solicitor Neagle replied to this on June 16 to give FDR information about possible bonding business:

> I am ashamed to mention so small a thing as the bond that would accompany a contract for $29,000 but things are very dull in the Government contracting line just now. The Midvale Steel and Ordnance Company just received an award of contract for 8" gun forgings totaling a trifle under $29,000. The bond will be for an amount equal to something like 15 to 20 percent of the amount of the contract.

Again, on August 9, 1922 Neagle wrote to Louis Howe and referred to FDR's Navy papers, which were apparently undergoing the customary examination within the department before release to FDR. FDR's problem was to stop the papers "going through the hands of file clerks or inquisitive people with little sense of responsibility or meddlesome novices." The Navy Department would not release the papers without proper examination, even after Neagles' personal intervention. Writes Neagle to FDR:

> I didn't see any way in which I could induce Mr. Curtis to change his view on the subject so I left it in that condition with the mental reservation however that you will be down here soon yourself and perhaps shake him loose.

The file to this point suggests that Pickens Neagle, Solicitor in the office of the Judge Advocate General of the Navy was working more on behalf of FDR than the taxpayer and the Navy Department. The contents of this file then shift to the attempt to acquire use of the German patents for A.I.C.; these letters are no longer on navy stationery, but on plain paper, without a printed address but signed by Neagle. On February 16, 1922 a letter to Howe from Neagle relates that

> our office this aft. (sic) returned to Aeronautics Bureau that suggested form of contract with endorsement saying the station might be leased to the A.I.C. and [Navy] employees furloughed for the corporation to employ.

Neagle added that, although navy officers could not direct and supervise A.I.C. employees, they could be detailed into private industry to learn the business of building airships. This private information is followed by a formal letter to Fahnestock of A.I.C. from Neagle (now wearing his official hat as Solicitor in the U.S. Navy) to confirm the fact that the navy was willing to lease the station and plant at Cape May, a permission revocable without notice. Another dated January 6, 1923 reports that Hardesty has signed a contract that "ought to be acceptable to the Corporation."

It is clear that the Schuette patents were transferred without public auction and competitive bidding, but by private agreement between the U.S. government and attorneys acting on behalf of a private company. This was a violation of the Trading with the Enemy Act.

The files also record another Navy Department employee rushing to the aid of FDR. A letter dated March 31, 1923 from M.N. McIntyre, head of the Navy News Bureau, to Louis Howe suggested that A.I.C. get hold of the "German airship being built for the Navy," as well as access to the naval base at Lakehurst. McIntyre is refreshingly open about his proposed political assistance: "If you will let me know where you stand on the Lakehurst proposition there may be something I can do to help 'grease' the ways. The same applies to the other suggestion."

We can establish from the files that FDR and his syndicate were able to call on sources of information and assistance within the Navy Department. Precisely how then did A.I.C. get control of the Schuette-Lanz patents? These were supposedly public property to be disposed of by competitive bidding. The Hardesty report of February 1921 explains the legal status of the patents and throws more light on their transfer.

The patents had been seized by the Alien Property Custodian and up to that time licensed only to the War and Navy Departments. An application was submitted January 10, 1921 by Fred Hardesty, submitting

the information that a corporation (presumably A.I.C.) was to be formed that needed the patents, but Hardesty denied "that the patents themselves are of great intrinsic value." In other words, Hardesty walked a tightrope. The A.I.C. had absolute need of the patents to protect themselves from outsiders. At the same time, argues Hardesty, the patents really had no great value. They are required, he wrote to the Alien Property Custodian, "to form a moral bulwark for us against aggression of outside parties." Hardesty argued that the public interest was vitally involved and that he would be "pleased to receive information as to the value that has been set on the patents, if their value has been appraised, and as to the terms of and conditions on which they might be sold to us."

Attached to this letter in the FDR files is a "Memorandum for Mr. Hardesty" on the Johann Schuette patents that appears to have originated in the Alien Property

Custodian's Office. The memorandum confirms the fact that the patents were held under the Trading with the Enemy Act of 1917, that the only right remaining to the German holder was the right to claim release, and that such claims must be settled as directed by Congress. It is unlikely, states the memorandum, that the patents would be sold by the Alien Property Custodian but, if the patents were offered for sale, "there would be little or no competition, as there are probably very few companies in existence or proposed that contemplate using them, and that therefore the prices offered would not be very high." The memorandum then gets to the crux of the problem facing A.I.C.:

> The A.P.C. makes sales of patents, other than sales to the Government, only to American citizens at public sale to the highest bidder after public advertisement unless the President shall otherwise determine. Purchasing property from the A.P.C. for an undisclosed principal or for re-sale to a person not a citizen of the United States, or for the benefit of a person not a citizen of the United States is forbidden under severe penalty.

This leaves open the possibility that the Secretary of War or the Secretary of the Navy might recommend immediate sale to the President "as a matter of sound business policy in the public interest."

The syndicate then attempted to go the Presidential route, apparently with success. On February 4, 1921 FDR in New York wrote Hardesty in Washington, D.C., "I agree with you that we should do something immediately in regard to the Schuette patents, and at least make the try before the present administration goes out."

Then a memorandum of services rendered in the files records that on both February 9 and 17, 1921 FDR went to Washington and at least met with the Alien Property Custodian. Subsequently, Schuette granted power of attorney to Hardesty, and the patents were released by the Alien Property Custodian, although not immediately. The FDR files do not contain original signed documents on the release, only drafts of documents, but as the patents were ultimately released to A.I.C. it can be assumed that these working drafts are reasonably close to the final signed document. One document signed by both the Alien Property Custodian and German patentee Johann Schuette reads as follows:

> It is hereby further understood and agreed by and between the parties hereto that the price or prices at which the above enumerated patents of Johann Schuette may be sold to the American Investigation Corporation by the Alien Property Custodian are and shall be considered only a nominal value of said patents fixed and agreed on by and between the parties hereto and the actual value thereof; and that the said agent shall give, execute, and deliver to the Alien Property Custodian an unqualified release by and on

> the part of the said Johann Schuette and his said agent and their and each of their heirs and assigns and legal representatives of all claims, demands, etc.

It is clear from this document (1) that the Alien Property Custodian sold the patents to A.I.C., (2) that it charged A.I.C. only a "nominal price," (3) that there was no competitive bidding for the patents, and (4) that the former German holder Schuette was granted an interest either directly or indirectly. All four actions appear to be contrary to the requirements of the Trading with the Enemy Act of 1917 (see p. 000), even if there was Presidential authority for procedures (1) and (2).

Subsequently, on May 9, 1922 a contract was drawn between American Investigation Corporation and Johann Schuette. This paid Schuette $30,000 in cash, with a further $220,000 payable in monthly installments, with the last payment due not later than July 1, 1923. In the event of failure to pay by A.I.C., all rights in the patents would be turned over to Schuette. A stock allowance was granted Schuette, who in turn was to provide cooperation and technical assistance to A.I.C. There is also in the FDR files an internal memorandum that appears to be written on the typewriter normally used for FDR's letters; therefore, it is possibly a memo drawn up either by FDR or more probably by Louis Howe. This memorandum summarized the A.I.C. strategy. It lists "What we have to sell" and answers this question as follows:

> 1. The Schuette-Lanz patents, described as fundamental and needed by Ford's engineers also working on airship construction.
> 2. "A tentative contract to the Navy whereby over a million dollars in construction of a plant and building hangar are saved. This is our property as contract proposed is in exchange for license to use the Schuette patents by the Navy." In other words, A.I.C. not only was able to acquire the patents without public bidding in behind-the-scenes political maneuvers, but also acquired the right to sell them back to the Navy. This is the kind of deal most poor taxpayers don't even dream about, although they foot the bills in the end.
> 3. All the data, designs, and tests of the Schuette-Lanz patents.
> 4. An arrangement for production of helium.
> 5. "A list of stockholders comprised of men of public spirit and considerable means."
> 6. This wasn't enough, because the next section is headed "What we Need" and lists (1) funds and (2) work. The memo then proposes an amalgamation of A.I.C. work with that of Ford engineers.

We can summarize the FDR's American Investigation Corporation deal as follows:

First, the A.I.C. was able through the personal intervention of Franklin D. Roosevelt to obtain seized patents as a gift or at a nominal price. The law required that such seized patents be offered for public bidding and not for the advantage of the former German owner. In practice, they were released behind closed doors as a result of private understanding between FDR and the Alien Property Custodian, possibly with Presidential intervention, although no trace of such assistance can be found. These patents, previously described as of no value, then became the subject of a contract involving payment of $250,000 to German citizen Schuette and the main asset of a company to promote airship construction in the U.S. On the face of the documents in the files, there is a prima facie violation of the law both by FDR and the Alien Property Custodian.

Second, these patents appear to have been released for the indirect benefit of a foreign party, a procedure subject to severe penalties under the law.

Third, the A.I.C. was able to obtain use of navy facilities valued at $1 million and official information from within the Navy Department.

Fourth, the only risk taken by the Wall Street operators was to put the enterprise together. The patents were obtained nominally, the funds came from outside New York City, and the expertise was German or that of the Ford Motor Company. Franklin Delano Roosevelt provided the political leverage to put together a deal that was on the face of it illegal and certainly a long way from the "public trust" FDR and his associates were fond of promoting in their writings and speeches.

FDR IN THE VENDING MACHINE BUSINESS

Automatic postage stamp machine sales started in 1911, but were not really efficient outlets until development of the Shermack machine in the 1920s. In 1927 the Sanitary Postage Stamp Corporation was formed to market Shermack machines for the automatic dispensing of postage stamps, previously sold in stores in loose form that exposed the user, according to the firm's sales literature, to transmission of disease. The firm's board of directors consisted of the inventor Joseph J. Shermack, Edward S. Steinam, J.A. de Camp (120 Broadway), banker George W. Naumburg, A.J. Sach, Nathan S. Smyth, and Franklin D. Roosevelt.

By April 1927 the company was selling about 450 machine installations a week. According to a letter written by FDR to A.J. Sach, vice president of the company, there were major problems with collections; in fact, ten stamp locations had not been heard from in over six months, and cash was short. FDR made the eminently sensible suggestion that salesmen should stop selling for a week and spend the released time on cash collections. Apart from such occasional suggestions, FDR's role in Sanitary Postage Stamp was nominal. Henry Morgenthau, Jr. got him into it originally and even

paid the original subscription of $812.50 for FDR's initial 100 shares: "You can send me a check for the same at your leisure." FDR mailed his check the same day. The sponsors issued FDR 3000 shares of common stock "in consideration of the services you have rendered," obviously for use of his name as a bait for investors.

FDR resigned in late 1928 upon his election as Governor of New York.

FDR also was director of CAMCO (Consolidated Automatic Merchandising Corporation), but never took an active part in its flotation. CAMCO was a holding company designed to take over 70 per cent of the outstanding capital stock of a number of companies, including Sanitary Postage Stamp Corporation, and is notable because the board of directors included, not only FDR, but Saunders Norwell, who from 1926 to 1933 was president of the Remington Arms Company. In 1933 Remington Arms was sold to the Du Pont Company. In Chapter 10 we will probe the Butler Affair, an abortive attempt to install a dictatorship in the White House. Both Remington Arms and Du Pont are named in the suppressed testimony of the Congressional investigation committee. Yet in 1928 we find FDR and Saunders Norvell as co directors in CAMCO.

GEORGIA WARM SPRINGS FOUNDATION

FDR's personal and highly commendable struggle to regain use of his legs after a 1921 polio attack led him to the mineral waters of Georgia Warm Springs. Regaining some strength, FDR decided to convert the springs, derelict and almost unused, into a business proposition to aid other polio victims.

Unfortunately, the precise source of the major funds used to develop Georgia Warm Springs cannot be determined from the FDR files as they exist today. The FDR folder on Georgia Warm Springs is relatively skimpy, and it is exceedingly unlikely that it contains all the papers relating to development of the project. The folder gives the appearance of having been screened before release to the Hyde Park archives. There is no public record of the funding for Georgia Warm Springs. Given FDR's tight personal finances during the 1920s, it is unlikely that the funds came from his personal resources. We do have some evidence for three sources of funds. First, it is more than likely that his mother, Mrs. James Roosevelt, was one. In fact, Eleanor Roosevelt wrote FDR, "Don't let yourself in for too much money and don't make Mama put in much, for if she lost she'd never get over it!"[3] Second, Edsel B. Ford is reported to have contributed funds to build the enclosure of the swimming pool, but was not a trustee of the foundation. Third, and most important, the original property was owned by corporate socialist, George Foster Peabody. According to FDR's son, Elliott Roosevelt, there was a sizeable personal note on the property itself, and this note was probably held by Peabody:

> On April 29, 1926, he acquired the derelict property, where Loyless was

> running ever deeper into debt. At the peak of his obligations as the new proprietor, Father had precisely $201,667.83 invested in the place in the form of a demand note, which was not completely paid off until after his death, and then only from a life insurance policy he had taken out in Warm Springs' favor. The $200,000-plus represented more than two thirds of everything he owned. It was the only time he took such a monumental risk. Mother was terrified that if this went the way of so many of his business ventures, none of us boys could go to college, a fate which I, for one, was more than ready to face.[4]

It is significant that Elliott Roosevelt reports the existence of a $200,000 demand note that was not paid off until FDR's death. It is a reasonable supposition, moreover, that the funds were put up by some or all of the trustees. This places FDR in the same position as Woodrow Wilson, beholden to his Wall Street creditors. As these trustees were among the most powerful men in Wall Street, the charge that FDR was "in the grip of the bankers" is at least plausible.
It is therefore reasonable to suppose that the funds for Georgia Warm Springs were put up, or were under the control of, the trustees of the Georgia Warm Springs Foundation and the associated Meriweather Reserve. The trustees of the foundation in 1934 and their main business affiliations are listed below:

Georgia Warm Springs Foundation: Trustees in 1934[5]

Name of Trustee[6]	Chief Affiliations
Franklin D. Roosevelt	President of the United States of America
Basil O'Connor	Attorney, 120 Broadway, former law partner of FDR
Jeremiah Milbank	Director, Chase National Bank of N.Y.
James A. Moffett	Vice President & director, Standard Oil of New Jersey
George Foster Peabody	Original owner of the property and holder of the note on Georgia Warm Springs
Leighton McCarthy	Director of Aluminum, Ltd (Canadian subsidiary of ALCOA)
Eugene S. Wilson	President, American Telephone & Telegraph (195 Broadway)
William H. Woodin	Secretary of the Treasury under FDR
Henry Pope	Director of Link-Belt Company
Cason J. Callaway	President of Callaway Mills, Inc. of New York

The trustees of Georgia Warm Springs obviously tie FDR to Wall Street. The most prominent of these were Eugene Smith Wilson (1879-1973), a vice president of American Telephone and Telegraph of 195 Broadway, New York City. Wilson also held directorships in numerous other telephone companies, including Northwestern and Southwestern Bell and the Wisconsin Telephone Company. In 1919 he was attorney for Western Electric, then became counsel for A. T. & T. before appointment as vice president in 1920. Wilson had a long association with the campaign against polio, became associated with Franklin D. Roosevelt, and in the mid-1930s was a member of the investment committee of the Georgia Warm Springs Foundation. His fellow directors on A. T. & T. included John W. Davis, who turns up in the Butler Affair (see Chapter 10).

Another of the Georgia Warm Springs trustees was James A. Moffett, a vice president of Standard Oil of New Jersey. Walter Teagle of the same company was one of the key administrators of NRA.

Trustee Jeremiah Milbank was director of the Rockfeller-controlled Chase National Bank and the Equitable Trust Company.

Trustee William H. Woodin was a director of the Federal Reserve Bank of New York from 1926 to 1931 and was appointed Secretary of the Treasury by Franklin D. Roosevelt after strongly supporting FDR's 1932 election bid. Woodin resigned within six months, but because of ill health, not for any lack of interest in holding the Treasury position.

Trustee George Peabody has been identified in the previous volume[7] and was prominently associated with the 1917 Bolshevik Revolution in Russia and the Federal Reserve Bank of New York.

7. Sutton, Bolshevik Revolution, op. cit.

Footnotes

1. List dated Feb. 18, 1922 in FDR files.

2. Samuel McRoberts figures prominently in Sutton, *Bolshevik Revolution*, op. cit.

3. Elliott Roosevelt, *The Untold Story*, op. cit., p. 232.

4.Ibid.

5. Taken from letter dated March 5, 1932 from Fred Botts, Business Manager at Warm Springs, to FDR at The White House.

6. Trustees also included Frank C. Root, of Greenwich, Conn., Keith Morgan of New York City, and resident trustee Arthur Carpenter.

7. Sutton, *Bolshevik Revolution*, op. cit.

Chapter 5 Part II —The Genesis of Corporate Socialism

Making Society Work for the Few

> **While society is struggling toward liberty, these famous men who put themselves at its head are filled with the spirit of the seventeenth and eighteenth centuries. They think only of subjecting mankind to the philanthropic tyranny of their own social inventions.**
> Frederic Bastiat, The Law, (New York: Foundation for Economic Education, 1972), p. 52

We have described Franklin D. Roosevelt's seven-year career on "the Street" that ended with his election as Governor of New York in 1928. This description was taken from FDR's own letter files. To avoid possible misinterpretation, portions of these letters were reproduced verbatim and at length. On the basis of these letters, there is no question that FDR used political influence almost exclusively to gain bonding business while vice president of Fidelity & Deposit Co.; that significant and questionable international financial and political links surface in the case of United European Investors and International Germanic Trust; and that his intimate associates ranged from Owen D. Young, president of General Electric, a member of the élitist financial establishment, to men described by an agent of the Proudfoot Agency as a "band of crooks."

There is one persistent theme running through FDR's method of doing business: he used the political route to an extraordinary degree. In other words, FDR employed for personal gain the police power of the state as implemented by regulatory agencies, by government regulation, and by government officials through his intercession, for example, with the Alien Property Custodian, the U.S. Navy, the Federal Reserve System, and the Insurance Superintendent of the State of New York. All these political contacts made while in public service gave FDR his competitive edge in business. These are political devices, not devices born of the market place. They are devices reflecting political coercion, not voluntary exchange in the free market.

The next four chapters comprising Part Two of this book expand upon this theme of politicization of business enterprise. First, we cast a wider net to formulate the thesis of corporate socialism and identify some prominent corporate socialists, mostly associated with FDR. Then we move back in time to the 1840's to one of FDR's ancestors, Assemblyman Clinton Roosevelt of New York and his early version of NRA. This scheme is compared to Baruch's War Industries Board in 1917, the operation of the Federal Reserve System, and the Roosevelt-Hoover American Construction Council of the 1920s. Finally, in the last chapter of this part we detail the financial investment of Wall Street in the New Deal.

THE ORIGINS OF CORPORATE SOCIALISM

Old John D. Rockefeller and his 19th century fellow-capitalists were convinced of one absolute truth: that no great monetary wealth could be accumulated under the impartial rules of a competitive laissez faire society. The only sure road to the acquisition of massive wealth was monopoly: drive out your competitors, reduce competition, eliminate laissez-faire, and above all get state protection for your industry through compliant politicians and government regulation. This last avenue yields a legal monopoly, and a legal monopoly always leads to wealth.

This robber baron schema is also, under different labels, the socialist plan. The difference between a corporate state monopoly and a socialist state monopoly is essentially only the identity of the group controlling the power structure. The essence of socialism is monopoly control by the state using hired planners and academic sponges. On the other hand, Rockefeller, Morgan, and their corporate friends aimed to acquire and control their monopoly and to maximize its profits through influence in the state political apparatus; this, while it still needs hired planners and academic sponges, is a discreet and far more subtle process than outright state ownership under socialism. Success for the Rockefeller gambit has depended particularly upon focusing public attention upon largely irrelevant and superficial historical creations, such as the myth of a struggle between capitalists and communists, and careful cultivation of political forces by big business. We call this phenomenon of corporate legal monopoly—market control acquired by using political influence—by the name of corporate socialism.

The most lucid and frank description of corporate socialism and its mores and objectives is to be found in a 1906 booklet by Frederick Clemson Howe, *Confessions of a Monopolist*.[1]

Frederick Howe's role in the 1917 Bolshevik Revolution and its aftermath was described in *Wall Street and the Bolshevik Revolution*.[2] Howe also emerges in Roosevelt's New Deal as consumer counsel in the Agricultural Adjustment Administration. So Howe's interest in society and its problems spans the early 20th century, from his association with Newton D. Baker, later Secretary of War, to communist Lincoln Steffens. As a special U.S. Commissioner, Howe made studies of municipal ownership of public utilities in England and in 1914 was appointed by President Wilson as U.S. Commissioner of Immigration.

What is the secret of making great wealth? Howe answers the question as follows: "Mr. Rockefeller may think he made his hundreds of millions by economy, by saving on his gas bills, but he didn't. He managed to get the people of the globe to work for him...."[3]

In brief, corporate socialism is intimately related to making society work for the few.

MAKING SOCIETY WORK FOR THE FEW

This is the significant theme in Howe's book, expressed time and time again, with detailed examples of the "let others work for you" system at work. How did Mr. Rockefeller and his fellow monopolists get the globe to work for them? It went like this, according to Howe:

> This is the story of something for nothing—of making the other fellow pay. This making the other fellow pay, of getting something for nothing, explains the lust for franchises, mining rights, tariff privileges, railway control, tax evasions. All these things mean monopoly, and all monopoly is bottomed on legislation.
> And monopoly laws are born in corruption. The commercialism of the press, or education, even of sweet charity, is part of the price we pay for the special privileges created by law. The desire of something for nothing, of making the other fellow pay, of monopoly in some form or other, is the cause of corruption. Monopoly and corruption are cause and effect. Together, they work in Congress, in our Commonwealths, in our municipalities. It is always so. It always has been so. Privilege gives birth to corruption, just as the poisonous sewer breeds disease. Equal chance, a fair field and no favors, the "square deal" are never corrupt. They do not appear in legislative halls nor in Council Chambers. For these things mean labor for labor, value for value, something for something. This is why the little business man, the retail and wholesale dealer, the jobber, and the manufacturer are not the business men whose business corrupts politics.[4]

Howe's opposite to this system of corrupt monopoly is described as "labor for labor, value for value, something for something." But these values are also the essential hall marks of a market system, that is, a purely competitive system, where market clearing prices are established by impartial interaction of supply and demand in the market place. Such an impartial system cannot, of course, be influenced or corrupted by politics. The monopoly economic system based on corruption and privilege described by Howe is a politically run economy. It is at the same time also a system of disguised forced labor, called by Ludwig von Mises the *Zwangswirtschaft* system, a system of compulsion. It is this element of compulsion that is common to all politically run economies: Hitler's New Order, Mussolini's corporate state, Kennedy's New Frontier, Johnson's Great Society, and Nixon's Creative Federalism. Compulsion was also an element in Herbert Hoover's reaction to the depression and much more obviously in Franklin D. Roosevelt's New Deal and the National Recovery Administration.

It is this element of compulsion that enables a few—those who hold and gain from the legal monopoly—to live in society at the expense of the many. Those who control or

benefit from the legislative franchises and regulation and who influence the government bureaucracies at the same time are determining the rules and regulations to protect their present wealth, prey on the wealth of others, and keep out new entrants from their business. For example, to make the point clear, the Interstate Commerce Commission, created in 1880, exists to restrict competition in the transportation industry, not to get the best deal possible for shippers. Similarly, the Civil Aeronautics Board exists to protect the domestic aviation industry, not the airline traveler. For a current example, among hundreds, witness the CAB seizure in July 1974 of a Philippines Air Lines (PAL) DC-10 at San Francisco airport. What sin had PAL committed? The airline merely substituted a DC-10 plane, for which equipment CAB had not granted permission, for a DC-8. Who gained? The domestic U.S. airlines, because of less competition. Who lost? The traveler denied seats and a choice of equipment. Any doubts about whose side the CAB might be on were dispelled by an article a few weeks later in *The Wall Street Journal* (August 13, 1974) entitled "CAB Is an Enthusiastic Backer of Moves to Trim Airline Service, Increase Fares." This piece contained a gem by CAB vice chairman Whitney Gillilland: "We've had too much emphasis on passenger convenience in the past." Gillilland added that the CAB must be more tolerant of capacity-packed planes, "even if it may mean somebody has to wait a day to get a flight."

In brief, regulatory agencies are devices to use the police power of the state to shield favored industries from competition, to protect their inefficiencies, and to guarantee their profits. And, of course, these devices are vehemently defended by their wards: the regulated businessmen or, as we term them, "the corporate socialists."

This system of legal compulsion is the modern expression of Frederic Bastiat's dictum that socialism is a system where everyone attempts to live at the expense of everyone else. Consequently, corporate socialism is a system where those few who hold the legal monopolies of financial and industrial control profit at the expense of all others in society.

In modern America the most significant illustration of society as a whole working for the few is the 1913 Federal Reserve Act. The Federal Reserve System is, in effect, a private banking monopoly, not answerable to Congress or the public, but with legal monopoly control over money supply without let or hindrance or even audit by the General Accounting Office.[5] It was irresponsible manipulation of money supply by this Federal Reserve System that brought about the inflation of the 1920s, the 1929 Depression, and so the presumed requirement for a Roosevelt New Deal. In the next chapter we shall examine more closely the Federal Reserve System and its originators. For the moment, let's look more closely at the arguments made by the Wall Street financier-philosophers to justify their "making society work for the few" credo.

THE CORPORATE SOCIALISTS ARGUE THEIR CASE

One can trace a literary path by which prominent financiers have pushed for national planning and control for their own benefit and that ultimately evolved into the Roosevelt New Deal.

In the years following the 1906 publication of Howe's *Confessions of a Monopolist*, Wall Street financiers made book-length literary contributions, none quite as specific as Howe, but all pushing for the legal institutions that would grant the desired monopoly and the control that flows from this monopoly. From these books, we can trace New Deal ideas and the theoretical base upon which corporate socialism later came to be justified. Two themes are common in these Wall Street literary efforts. First, that individualism, individual effort, and individual initiative are out of date and that "destructive" competition, usually termed "blind competition" or "dog-eat-dog competition" is outmoded, unwanted, and destructive of human ideals. Second, we can identify a theme that follows from this attack on individualism and competition to the effect that great advantages accrue from cooperation, that cooperation advances technology, and that cooperation prevents the "wastes of competition." It is then concluded by these financier philosophers that trade associations and ultimately economic planning—in other words, enforced "cooperation"—are a prime objective for responsible and enlightened modern businessmen.

Such themes of cooperation and rejection of competition are expressed in different ways and with varying degrees of lucidity. Businessmen are not persuasive writers. Their books tend to be turgid, superficially self-seeking, and somewhat weightily pedantic. A few such examples will, however, demonstrate how Wall Street corporate socialists made their case.

Bernard Baruch was the outstanding corporate socialist whose ideas we shall examine in the next chapter. After Baruch and the Warburgs, also discussed in the next chapter, the next most prolific writer was influential banker Otto Kahn of Kuhn, Loeb & Co.

Kahn is notable for his support of both the Bolshevik Revolution and Benito Mussolini, support which he concretized in such totalitarian expressions as, "The deadliest foe of democracy is not autocracy but liberty frenzied."[6] On socialism, Otto Kahn stated his sympathy toward its objectives on many occasions. For instance, his address to the socialist League of Industrial Democracy in 1924 included the following:

> Let me point out that such measures as, for instance, the progressive income tax, collective bargaining by employees, the eight-hour day, the governmental supervision and regulation of railroads and of similar natural monopolies or semi-monopolies, are approved by the sense of justice of the business community, provided the application of such measures is kept within the limits of reason, and that they would not be repealed by business if it had the power to repeal them.

> What you Radicals and we who hold opposing views differ about, is not so much the end as the means, not so much what should be brought about as how it should and can be brought about, believing as we do, that rushing after the Utopian not only is fruitless and ineffectual, but gets into the way of, and retards, progress toward realizing attainable improvement.
> With all due respect, I venture to suggest that Radicalism too often tends to address itself more to theoretical perfection than to concrete amelioration; to phantom grievances, or grievances of the past, which have lost their reality, rather than to actual matters of the day; to slogans, dogmas, professions, rather than to facts.[7]

A number of these financier-philosophers from Wall Street were trustees of the Brookings Institution in Washington D.C.., responsible for many of the policy guides to achieve this desired system. Robert S. Brookings, founder of the Brookings Institution, is generally termed an economist, but Brookings himself wrote: "I certainly have no claim to that professional title. I write only as one who, through a long business experience of more than sixty years, has had much to do with manufacturing and distribution. . . ."[8] In his self-described role of businessman, Brookings published three books: *Industrial Ownership*, *Economic Democracy*, and *The Way Forward*. In these three books, Brookings argues that classical political economy, as reflected in the work of Adam Smith and his school,

> while logically convincing, was actually incomplete in that it made no allowance for the moral and intellectual development of man and his dependence on nationalism for its expression, so ably presented later by Adam Müller and Frederick List, or for the economic influence of mechanical production upon the relation of capital to labor.[9]

Consequently, but without presenting his evidence, Brookings rejects the free enterprise ideas of Adam Smith and accepts the statist ideas of List—also, by the way, reflected in the Hitlerian corporate state. From rejection of free enterprise Brookings finds it quite easy to deduce a "moral" system rejecting the market place and substituting an approximation to the Marxist labor theory of value. For example, Brookings writes:

A sound system of economic morality demands therefore that instead of our paying labor merely a market wage, the minimum necessary to secure its services, capital should receive the market wage necessary to secure its services, and the balance should go to labor and the consuming public.[10]

From this quasi-Marxist argument Brookings constructs, rather vaguely and without detailed support, the outlines of proposals needed to combat the "evils" of the prevailing market system. Of these proposals, "The first is the revision of the anti-trust laws in such a way as to permit extensive cooperation."11 This, argues Brookings, would have two

effects: advance research and development and flatten out the business cycle. Just how these objectives follow from "cooperation" is not stated by Brookings, but he cites Herbert Hoover at length to support his argument, and particularly Hoover's article, "If Business Doesn't, Government Will."[12]

Then, like any good socialist, Brookings concludes: "Efficiently managed corporations have nothing to fear from intelligent public supervision designed to protect the public and the trade alike from grasping and intractable minorities."[13] This is necessary because, Brookings argues elsewhere, statistics indicate that most businesses operate inefficiently, "So we know from sad experience that blind or ignorant competition has failed to make its reasonable contribution through earnings to our national economic needs."[14]

In 1932 Brookings emerged from his shell in *The Way Forward* to become even more outspoken about developments in Soviet Communism:

The verbal damning of communism now prevalently popular in the United States will get us nowhere. The decision between capitalism and communism hinges on one point. Can capitalism adjust itself to this new age? Can it move out from its old individualism, dominated by the selfish profit motive, and so create a new co-operative epoch with social planning and social control, that it can serve, better than it has, the welfare of all the people? If it can, it can survive. If it cannot, some form of communism will be forced upon our children. Be sure of that![15]

And in the same book Brookings has good words to say about another forced labor system, Italian fascism:

> Although Italy is an autocracy under the dictatorship of the Duce, every economic interest of the country is afforded opportunity for discussion and negotiation so that they may, by mutual agreement, arrive at a fair compromise of their differences. The government will not permit, however, either through lockouts or strikes, any interference with the productivity of the nation, and if, in the last analysis, the groups fail to agree among themselves, the government through its minister or the labor court determines the solution of all problems. In Italy as elsewhere, however, the autocracy of capital seems to exist, and the general feeling among the working classes is that government favors the employers.[16]

What then is preeminent in Brookings' writing is his predilection for any social system, communism, fascism, call it what you will, that reduces individual initiative and effort and substitutes collective experience and operation. What is left unsaid by Brookings and his fellow financier philosophers is the identity of the few running the forced labor collective.

It is implicit in their arguments that the operators of the system will be the corporate socialists themselves.

From the purely theoretical proposals of Brookings we can move to those of George W. Perkins, who combined parallel proposals with some effective, but hardly moral ways of putting them into practice.

George W. Perkins was the forceful, energetic builder of the great New York Life Insurance Company. Perkins was also, along with Kahn and Brookings, an articulate expounder of the evils of competition and the great advantages to be gained from ordered cooperation in business. Perkins preached this collectivist theme as one of a series of lectures by businessmen at Columbia University in December 1907. His speech was hardly a roaring success; biographer John Garraty claims that when it was over:

> ...The President of Columbia, Nicholas Murray Butler, hurried off without a word of congratulations, evidently believing, according to Perkins, that he had unwittingly invited a dangerous radical to Morningside Heights. For Perkins had attacked some of the basic concepts of competition and free enterprise.[17]

Garraty summarizes Perkins' business philosophy:

> The fundamental principle of life is co-operation rather than competition — such was the idea that Perkins developed in his talk. Competition is cruel, wasteful, destructive, outmoded; co-operation, inherent in any theory of a well-ordered Universe, is humane, efficient, inevitable and modern.[18]
>
> Again, as with Brookings, we find proposals for "elimination of waste" and more "planning" for material and human resources and the concept that big business has "responsibilities to society" and is more likely to act fairly toward labor than small business. These high-sounding phrases are, of course, impressive—particularly if New York Life Insurance had lived up to its social do-good sermons. Unfortunately, when we probe further, we find evidence of wrongdoing by New York Life Insurance and investigation of this wrongdoing by the State of New York, which found a decidedly antisocial ring about New York Life's corporate behavior. In 1905-06 the Armstrong Committee (the New York State Legislature Joint Committee on Investigation of Life Insurance) found that New York Life Insurance Company had been a liberal contributor to the Republican National Committee in 1896, 1900, and 1904. Without question, these financial contributions were to advance the interests of the company in political

> circles. In 1905 John A. McCall, president of New York Life Insurance, was called before the New York investigating committee and proceeded to advance the idea that the defeat of Byran and free silver coinage was for him a *moral* issue. According to McCall, "....I consented to a payment to defeat Free Silver, not to defeat the Democratic party, but to defeat the Free Silver heresy, and thank God that I did it."[19]

At the same hearing the vice president of Mutual Life Insurance also advanced the interesting concept that business had a "duty" to "scotch" unwelcome ideas and policies. The history of corporate financing of politics has hardly maintained the principles of the Constitution and a free society. More specifically, there is a gross inconsistency between the social do-good principles of cooperation advanced by Perkins and his fellow businessmen and the contemporary antisocial behavior of his own New York Life Insurance Company.

In brief, the principles of corporate socialism are but a thin veneer for the acquisition of wealth by a few at the expense of the many.

We can now look profitably at the preaching of those financiers more intimately associated with Roosevelt and the New Deal. One such financier-philosopher who expressed his collectivist ideas in writing was Edward Filene (1860-1937) The Filenes were a family of highly innovative businessmen, owners of the large department store William Filene's Sons Co. in Boston. A vice president of Filene's became one of the three musketeers running the National Recovery Administration in 1933; the other two of the triumvirate were Walter Teagle, president of Standard Oil and John Raskob, vice president of Du Pont and General Motors.

From the turn of the century Edward Filene concerned himself with public affairs. He served as chairman of the Metropolitan Planning Commission of Boston, promoter of people's banks, and provided assistance to various cooperative movements. Filene was active in the Red Cross and the U.S. Chamber of Commerce; a founder of the League to Enforce Peace; a founder and later president of the Cooperative League, subsequently renamed the Twentieth Century Fund; and a member of the Foreign Policy Association and the Council on Foreign Relations. In Roosevelt's era Filene was chairman of the Massachusetts State Recovery Board and active in the 1936 campaign for FDR's reelection. Filene wrote several books, of which two, *The Way Out* (1924)[20] and *Successful Living in this Machine Age*, (1932),[21] express his philosophical leanings. In *The Way Out*, Filene emphasizes the theme of reducing waste, and the shortsightedness of competition and stresses the value of cooperation between business and government. Filene summarizes his argument as follows:

> Two things are clear. The first is that the business in order to be good

> business must itself be conducted as a public service. The second is that the finest possible public service of business men is that rendered in and through the private businesses of the world.[22]

This "public service is private business" theme is expanded in another of his books:

> My own attitude is that business must undertake social planning, but neither for the purpose of snuffing out new theories nor of preserving old ones, but because there has been a social revolution. The old order has gone and by no possibility can we bring it back. We are living in a new world. It is a world in which mass production has related everybody to everybody; and our plans, therefore, must take everybody into consideration.[23]

We also find in Filene "the road to peace is the balance of power" argument—a repeat of a 19th-century formula resurrected by Henry Kissinger in the 1970s and one that has always ultimately led to war rather than peace. Filene phrases his version as follows:

> No wonder there was war. Peace, it was soon discovered, could be maintained only by a balance of power between the larger competitors, and that balance of power was frequently upset. Eventually the whole impossible situation exploded in the greatest war of human history. The World War did not cause the world change which we have lately been noting. It was, rather, one of the phenomena of that change, just as the French Revolution was a phenomenon of the First Industrial Revolution.[24]

This theme of promotion of the public interest as a matter of primary benefit to business itself is also found in Myron C. Taylor, chairman of United States Steel Company. The public interest, Taylor argues, needs cooperation by business for rational production. The blindness of big business is clear when Taylor denies this would also be restraint of trade. Taylor omits to explain how we can adjust production to consumption without compulsion of those who may not want to cooperate. Taylor summarizes his proposals as follows:

> The point, then, is to discover what we as a nation possess and to learn to use it rather than go out in search of the new only because it is new. The primary responsibility is on industry to find ways to promote the public interest and the interests of its own producers, employees, distributors, and customers, by making and carrying out whatever constructive plans may be permissible under the present laws, acting openly and, so far as possible, in cooperation with the Government. I confess I find it extremely hard to believe that constructive, cooperative plans sincerely undertaken by a basic industry for rationally adjusting production to demand in that industry, and

> which avoid any attempt artificially to fix or control prices, can be fairly regarded as in restraint of trade and commerce. For the sole effect would be to remove vital impairments of production, trade, and commerce, and to promote the public interests.[25]

The Standard Oil contribution to this liturgy is expressed by Walter C. Teagle, president of Standard Oil Company of New Jersey and appointed by President Roosevelt to a top position in his NRA. Teagle phrases his version of corporate socialism as follows:

> The ills of the oil industry are peculiar to that industry and require peculiar remedies. These are modification of anti-trust laws, cooperation among producers, and the exercise of the policing power of the States.[26]

More bluntly than the others, Teagle wants the police power of the State to enforce voluntary cooperation:

> Voluntary cooperation within the industry is not sufficient to remedy its ills. It would not be sufficient even if legal restrictions on cooperation were removed, although tremendous progress would result from the removal of such restrictions.
> To protect the correlative rights of producers and to enforce adequate conservation laws the police power of the State must be employed. This is a matter for State, rather than Federal action, but cooperation among various States and among the operating units of the industry will also be needed if production in the country at large is to be limited to the nation's markets.
> The solution of the problem therefore depends upon voluntary cooperation within the industry, upon exercise of the police power of the State, and upon cooperation among the various States concerned and among unites(sic) of the industry in the different States. To permit this both State and Federal anti-trust laws will need to be revised.[27]

These extracts reflect the basic outlook of our Wall Street financier philosophers. These were not minor figures on the Street. On the contrary, they were the powerful and influential elements and in significant cases associated with Roosevelt and the New Deal. Otto Kahn was a prime mover in the Federal Reserve System. Lamont and Perkins were key figures in the banking and insurance fields. Businessman Brookings gave his name and money to the influential research institute that produced the reports upon which much policy came to be based. Louis Kirstein, a vice president of Filene's firm, and Walter Teagle of Standard Oil became two of the three dominant men who ran the National Recovery Administration under Bernard Baruch's protégé Hugh Johnson. Bernard Baruch was probably the most prestigious Wall Streeter of all time, perhaps even exceeding in influence both Morgan and Rockefeller. We will examine Baruch and

the Warburgs next.

What was the philosophy of the financiers so far described? Certainly anything but laissez-faire competition, which was the last system they envisaged. Socialism, communism, fascism or their variants were acceptable. The ideal for these financiers was "cooperation," forced if necessary. Individualism was out, and competition was immoral. On the other hand, cooperation was consistently advocated as moral and worthy, and nowhere is compulsion rejected as immoral. Why? Because, when the verbiage is stripped away from the high-sounding phrases, compulsory cooperation was their golden road to a legal monopoly. Under the guise of public service, social objectives, and assorted do-goodism it is fundamentally "Let society go to work for Wall Street."

Footnotes

1. Frederic C. Howe, Confessions of a Monopolist (Chicago: Public Publishing Co. 1906). The sponsor of Howe's book was the same publisher who in 1973 put out a collectivist dirge by John D. Rockefeller III entitled The Second American Revolution.

2. Sutton, Bolshevik Revolution, op. cit.

3. Howe, op. cit., p. 145.

4. Howe, op. cit., pp. V-VI.

5. A very limited audit of the Federal Reserve System was voted by Congress in 1974.

6. Otto H. Kahn, Frenzied Liberty: The Myth of a Rich Man's War, Address at University of Wisconsin, Jan. 14, 1918, p. 8.

7. Otto H. Kahn, Of Many Things, (New York: Boni & Liveright, 1925), p. 175.

8. R. S. Brookings, Economic Democracy, (New York: Macmillan, 1929), p. xvi.

9. Ibid., pp. xxi-xxii.

10. R. S. Brookings, Industrial Ownership (New York: Macmillan, 1925), p. 28.

11. Ibid., p. 44.

12. The Nation's Business, June 5, 1924, pp. 7-8.

13. Brookings, Industrial Ownership, op. cit., p. 56.

14. Brookings, Economic Democracy, op. cit., p. 4

15. R. S. Brookings, The Way Forward (New York: Macmillan, 1932), p. 6.

16. Ibid., p. 8.

17. John A. Garraty, Right Hand Man: The Life of George W. Perkins, (New York: Harper & Row, n.d.), p. 216.

18. Ibid.

19. Quoted in Louise Overacker, Money in Elections, (New York: Macmillan, 1932), p. 18.

20. Edward A. Filene, The Way Out, (A Forecast of Coming Changes in American Business and Industry) (New York: Doubleday, Page, 1924).

21. Edward A. Filene, Successful Living in this Machine Age (New York: Simon & Schuster, 1932).

22. Filene, The Way Out, op. cit., p. 281.

23. Filene, Successful Living in This Machine Age, op. cit., p. 269.

24. Ibid., p. 79.

25. From Samuel Crowther, A Basis for Stability, (Boston: Little, Brown, 1932), p. 59.

26. Ibid., p. 111

27. Ibid., p. 113

CHAPTER 6

Prelude to the New Deal

> **Whichever party gains the day, tyrants or demagogues are most sure to take the offices.**
> Assemblyman Clinton Roosevelt of New York, 1841.

The full story of the construction of corporate socialism in the United States, as envisaged by the financier-philosophers identified in the previous chapter, is beyond the scope of this book, but we can gain greater perspectives through a brief look at a few facets of the historical process: for example, Clinton Roosevelt's system a century before FDR, Bernard Baruch's War Industries Board, and Paul Warburg's Federal Reserve System.

In 1841 FDR's distant cousin, Assemblyman Clinton Roosevelt of New York, proposed a scheme resembling the New Deal for economic planning and control of society by the few. Under President Woodrow Wilson in 1918 Bernard Baruch, corporate socialist *par excellence*, followed the broad outline of the Roosevelt scheme, almost certainly unknowingly and probably attributable to some unconscious parallelism of action, when he established the War Industries Board, the organizational forerunner of the 1933 National Recovery Administration. Some of the 1918 WIB corporate elite appointed by Baruch—Hugh Johnson, for example—found administrative niches in Roosevelt's NRA. In 1922 then-Secretary of Commerce Herbert Hoover an up and coming Wall Streeter Franklin D. Roosevelt joined forces to promote trade associations, implementing Bernard Baruch's postwar economic planning proposals. Shortly thereafter, former socialist editor Benito Mussolini marched on Rome and established—with liberal help from the J.P. Morgan Company—the Italian corporate state whose organizational structure is distinctly reminiscent of Roosevelt's NRA. In the United States glorification of Mussolini and his Italian achievements was promoted by the ever-present financiers Thomas Lamont, Otto Kahn, and others. We will mention only briefly Wall Street involvement with both Bolshevik Russia and Hitler's Germany—both totalitarian states governed by a self-appointed elite—as full treatment of these aspects is covered in other volumes.[1] In brief, construction of FDR's National Recovery Administration was but one facet of a wider historical process—construction of economic systems where the few could profit at the expense of the many, the citizen-taxpayer-in-the-street—and all of course promoted under the guise of the public good, whether it was Stalin's Russia, Mussolini's Italy, Hitler's Germany, or Roosevelt's New Deal.

ASSEMBLYMAN CLINTON ROOSEVELT'S NRA—1841

New York Assemblyman Clinton Roosevelt was a 19th-century cousin of Franklin Delano

Roosevelt and incidentally also related to President Theodore Roosevelt, John Quincy Adams, and President Martin Van Buren. Clinton Roosevelt's only literary effort is contained in a rare booklet dated 1841.[2] In essence this is a Socratic discussion between author Roosevelt and a "Producer" presumably representing the rest of us (i.e., the many). Roosevelt proposes a totalitarian government along the lines of George Orwell's 1984 society, where all individuality is submerged to a collective run by an elitist aristocratic group (i.e., the few) who enact all legislation. Roosevelt demanded ultimate, but not immediate, abandonment of the Constitution

> P. [Producer] But I ask again: Would you at once abandon the old doctrines of the Constitution?
> A. [Author] Not by any means. Not any more than if one were in a leaky vessel he should spring overboard to save himself from drowning. It is a ship put hastily together when we left the British flag, and it was then thought an experiment of very doubtful issue.[3]

This early expression of Rooseveltian family skepticism toward the Constitution brings to mind the Supreme Court rejection in October 1934 (*Schechter Poultry Corp. v. U.S.*) of another Rooseveltian departure, an "unfettered" departure according to the court, from the rules of a constitutional society: the National Recovery Act, itself an uncanny replica of Clinton Roosevelt's 1841 program for a collective economy.

The earlier Rooseveltian system depended "First, on the art and science of cooperation. This is to bring the whole to bear for our mutual advantage."[4] It is this cooperation, i.e., the ability to bring the whole to bear for the interest of the few, that is, as we have seen, the encompassing theme of the writings and preachings of Otto Kahn, Robert Brookings, Edward Filene, Myron Taylor, and the other financier-philosophers discussed in Chapter 5. In the Roosevelt schema each man rises through specified grades in the social system and is appointed to that class of work to which he is best suited, choice of occupation being strictly circumscribed. In the words of Clinton Roosevelt:

> P. Whose duty will it be to make appointments to each class?
> A. The Grand Marshal's.
> P. Who will be accountable that the men appointed are the best qualified?
> A. A Court of physiologists, Moral Philosophers, and Farmers and Mechanics, to be chosen by the Grand Marshal and accountable to him.
> P. Would you constrain a citizen to submit to their decisions in the selection of a calling?
> A. No. If any one of good character insisted, he might try until he found the occupation most congenial to his tastes and feelings.[5]

Production in the system had to be equated with consumption, and the handling of

"excesses and deficiencies" reflected the ideas pursued in the Swope Plan,[6] the literary base of Roosevelt's NRA. The system is certainly akin to that used in Bernard Baruch's War Industries Board during World War I. This is how Clinton Roosevelt describes the duties of the Marshal of Creation, whose job it is to balance production and consumption:

> P. What is the duty of the Marshal of the Creating or Producing order?
> A. It is to estimate the amount of produce and manufactures necessary to produce a sufficiency in each department below him. When in operation, he shall report excesses and deficiencies to the Grand Marshal.
> P. How shall he discover such excesses and deficiencies?
> A. The various merchants will report to him the demand and supplies in every line of business, as will be seen hereafter.
> P. Under this order are agriculture, manufactures and commerce, as I perceive. What then is the duty of the Marshal of Agriculture?
> A. He should have under him four regions, or if not, foreign commerce must make good the deficiency.
> P. What four regions?
> A. The temperate, the warm, the hot region and the water region.
> P. Why divide them thus?
> A. Because the products of these different regions require different systems of cultivation, and are properly subject to different minds.[7]

Then there is a Marshal of Manufacturers overseeing the whole system—similar to Baruch's position as economic dictator in 1918 and Hugh Johnson's position as Administrator of the National Recovery Administration in 1933. The Marshal's functions are described by Clinton Roosevelt as follows:

> P. What are the duties of the Marshal of Manufacturers?
> A. He shall divide men into five general classes, according to the printed diagram.
> 1st. The manufacturers of all the means of defence against the weather.
> 2d. All kinds of viands.
> 3d. Metals and minerals.
> 4th. Chemicals.
> 5th. Machinery.
> All these have on the printed diagrams, banners, with a glory on one side and an appropriate motto on the reverse, showing the advantage each class is to all others: and by the way, we would remark, this should be universally adopted, to give a just direction to man's love of glory.
> By a reference to the chart, and what has been before observed, the duties of the officers under this department will all be obvious.

The industrial categories of 1841 are not of course precisely the categories of 1930, but a generalized similarity can be traced. The 1st division is clothing and fabrics, limited in 1841 to cotton, wool, and linen, but extended today to synthetic materials, including plastics and fibers. The 2nd division is that devoted to foodstuffs. The 3rd division is devoted to raw materials, and the 4th division includes medicines. The 5th is machinery. Today the 5th division comprises the many subdivisions of electronics, mechanical and civil engineering, but the five categories could be utilized to divide a modern economy. Clinton Roosevelt's society can be summed in his phrase, "The system should rule, and the system should look chiefly to the general good."

BERNARD BARUCH'S WARTIME DICTATORSHIP

While the Federal Reserve System and its private legal monopoly of the money supply has been a fount of wealth for its operators, the ultimate goal of making society work for the few as outlined by Frederick Howe and Clinton Roosevelt can be brought about only by planned control of the whole economy, and this requires compulsory adherence of the many smaller entrepreneurs to the dictates of the few deciding the plans to be followed.

The genesis of Roosevelt's NRA, a system that included compulsory adherence by small enterpreneurs to a plan devised by big business, can be traced from Bernard Baruch's U. S. War Industries Board, established and elaborated as an emergency wartime measure. In 1915, before the U.S. entered World War I, Howard E. Coffin, then chairman of General Electric, headed the U.S. Committee on Industrial Preparedness. In company with Bernard Baruch and Daniel Willard of the Baltimore and Ohio Railroad, Coffin was also a member of the Advisory Commission to the Council of National Defense. In 1915 Bernard Baruch was invited by President Woodrow Wilson to design a plan for a defense mobilization committee. This Baruch plan subsequently became the War Industries Board, which absorbed and replaced the old General Munitions Board. Margaret L. Coit, Baruch's biographer, describes the War Industries Board as a concept similar to cooperative trade associations, a device long desired by Wall Street to control the unwanted rigors of competition in the market place:

> Committees of industry, big business and small business, both represented in Washington, and both with Washington representation back home—this could be the backbone of the whole structure.[8]

By March 1918 President Wilson acting without Congressional authority, had endowed Baruch with more power than any other individual had been granted in the history of the United States. The War Industries Board, with Baruch as its chairman, became responsible for building all factories and for the supply of all raw material, all products, and all transportation, and all its final decisions rested with chairman Bernard Baruch. In brief, Baruch became economic dictator of the United States, or "Marshal of

Manufacturers" in Clinton Roosevelt's scheme. Yet, as Margaret Coit points out, "... the creation of this office was never specifically authorized by an Act of Congress."[9]

So by the summer of 1918 Baruch, with extraordinary and unconstitutional powers, had, in his own words, "finally developed a scheme of positive 'control' over the major portion of the industrial fabric... Success bred courage for more success, and trade after trade was taken under control with an increasing willingness on the part of the interests affected."[10]

At the time of the Armistice the W.I.B. comprised Baruch (chairman), Alexander Legge of International Harvester (vice chairman), with E.B. Parker and R.S. Brookings (whose ideas we have already examined) in charge of price fixing. Assistants to the chairman were: Herbert Bayard Swope, brother of Gerard Swope of General Electric; Clarence Dillon of the Wall Street firm Dillon, Read & Co.; Harrison Williams; and Harold T. Clark.[11]

Baruch's final report on W.I.B. activity was much more than a history of its operations; it was also a specific plan and recommendation for economic planning in peacetime. Baruch was not content merely to summarize the lessons to be learned for planning in war or for industrial preparedness in time of uneasy peace. On the contrary, Baruch's conclusions were directed, in his own words, to the "industrial practices of peace" and to make recommendations "relating to the business practices of normal times." The bulk of the conclusions relate to change-over of a planned wartime economic system to a planned peacetime economic system, and even the suggestions for wartime practice are related to peacetime functions. Baruch suggested that the most important "direct war lessons to be derived" from the operation of the War Industries Board were:

> 1. The establishment of a peacetime skeleton organization with 50 commodity divisions, meeting to keep abrest of the development of industry and develop information. The thrust of this proposal was that the information needed for peacetime planning should be collected and that the direction of the organization should stem from large-scale or major industry.
> 2. That the government "should devise some system for protecting and stimulating internal production of certain raw materials used in war," and
> 3. That war-related industries should be encouraged by the government to maintain skeleton organizations for wartime use.

Apart from these quite elementary suggestions, Baruch is exclusively concerned in the report with peacetime "planning." First we are presented with the canard that, in some unstated way, "the processes of trade" have changed and are now forced to give way before "certain new principles of supervision." This non sequitur is followed by the statement:

> We have been gradually compelled to drift away from the old doctrine of Anglo-American law, that the sphere of Government should be limited to preventing breach of contract, fraud, physical injury and injury to property, and that the Government should exercise protection only over non competent persons.

It is necessary, writes Baruch, for government "to reach out its arm" to protect "competent individuals against the discriminating practices of mass industrial power." While Baruch points to Federal control of the railroads and the merchant fleet, he does not state why the representatives of big business would be the best fitted to exercise this control. In other words, *why* the fox is proposed as the most competent being to run the chicken coop is left unstated. Baruch then slashes at the Sherman and Clayton anti-trust laws on the grounds that these statutes are merely efforts to force industry into the mold of "simpler principles sufficient for the conditions of a bygone day," and lauds the achievement of the War Industries Board because it had constructed hundreds of trade associations controlling prices and methods of distribution and production:

> Many businessmen have experienced during the war, for the first time in their careers, the tremendous advantages, both to themselves and to the general public, of combination, of cooperation and common action with their natural competitors.

If these cooperative attributes are not continued, argues Baruch, then businessmen will be tempted "and many of them will be unable to resist" to conduct "their business for private gain with little reference to general public welfare." On the other hand, trade associations can be of the greatest public benefit to achieve the desired end of cooperation. Baruch concludes:

> The question, then is what kind of Government organization can be devised to safeguard the public interest while these associations are preserved to carry on the good work of which they are capable.

Baruch, like any good socialist, proposes government organizations to develop these principles of cooperation and coordination.

If the reader will shed for a moment the idea of a mutual antagonism between communism and capitalism, he will readily see in the writing of Bernard Baruch the basic objectives of Karl Marx writing in *The Communist Manifesto*. What is different between the two systems are the names of the elitist few running the operation known as state planning; the vanguard of the proletariat in Karl Marx is replaced by the vanguard of big business in Bernard Baruch.

Who would gain from Baruch's proposal? The consumer? Not at all, because consumer interests are *always* protected by free competition in the market place, where goods and services are produced at the least cost, in the most efficient manner, and the consumer is given maximum choice among competing producers. The gainers from Baruch's proposals would be the few who control major industrial sectors—particularly iron and steel, raw materials, electrical goods, that is, those industries already well established and fearful of competition from more enterprising newcomers. In other words, the gainers from his proposal would be Bernard Baruch and the Wall Street coterie that effectively controls big business through its interlocking directorships. The gut issue then is: who benefits from these proposals for trade associations and government coordination of industry? The principal, indeed the only major benefactors—apart from the swarms of academic advisers, bureaucrats, and planners—would be the financial elite in Wall Street.

So here we have, in Baruch's own words and ideas, an implementation of Frederic Howe's injunction to "make society work for you," the monopolist. This is also in the form of a proposal comparable to Clinton Roosevelt's system. There is no evidence that Baruch had heard of Clinton Roosevelt. There was no need for him to have done so; the advantages of restraint of trade and opportunity have always been obvious to the already established enterprise. It will therefore come as no surprise to find Bernard Baruch at the very core of the Roosevelt NRA, which itself parallels many of Baruch's post-war proposals, and who had a $200,000 investment in the election of FDR. It explains why Baruch's World War I personnel turn up in the New Deal. General Hugh Johnson, for example, spent the 1920s studying industrial organization at Baruch's expense and emerged in 1933 as boss of the National Recovery Administration. It also explains why Franklin Delano Roosevelt, a Wall Streeter himself for much of the 1920s, was cofounder with Herbert Hoover—another Wall Streeter in the 1920s—of the first of the trade associations proposed by Baruch, the American Steel Construction Association, discussed in the next chapter.

Parallel to Bernard Baruch's ideas, which came to fruition in the NRA, there is a much more successful contemporary example of corporate socialism in practice: the Federal Reserve System.

PAUL WARBURG AND CREATION OF THE FEDERAL RESERVE SYSTEM

Although many had a hand, or thought they had, in fashioning the Federal Reserve legislation, essentially the system was the brain child of one man: Paul Warburg, brother of Max Warburg, whom we met in Chapter 3. Paul Moritz Warburg (1868-1932) descended from the German banking family of Oppenheim. After early training in the offices of Samuel Montagu & Co. in London and the Banque Russe Pour le Commerce Etranger in Paris, Warburg entered the family banking house of M.M. Warburg & Co. in Hamburg. In 1902 Warburg became a partner in the New York banking house of Kuhn, Loeb & Co. while continuing as a partner in Warburg's of Hamburg. Five years later, in

the wake of the financial panic of 1907, Warburg wrote two pamphlets on the U.S. banking system: Defects and Needs of our Banking System and A Plan for a Modified Central Bank.[12]

In the years after 1907, Warburg lost no opportunity to speak and write publicly about the need for banking and currency reform in the United States, and in 1910 he formally proposed a United Reserve Bank of the United States. This plan developed into the Federal Reserve System, and Warburg was appointed by President Woodrow Wilson a member of the first Federal Reserve Board. Major criticism of Warburg erupted during World War I because of brother Max's role in Germany, and he was not reappointed to the Board in 1918. However, from 1921 to 1926, after criticism had abated, Warburg became a member of the Advisory Council of the Federal Reserve Board and served as its president from 1924 to 1926.

After passage of the 1913 Federal Reserve Act, Warburg and his banking associates promptly set about using the legal banking monopoly for their own ends and purposes, as suggested by Frederic Howe. In 1919 Warburg organized the American Acceptance Council and served as chairman of its executive committee in 1919-20 and as its president in 1921-22. Then in 1921 Warburg organized and became chairman of the private International Acceptance Bank, Inc. while still serving on the Advisory Council of the Federal Reserve Board. In 1925 Warburg added two more private acceptance banks: the American and Continental Corp. and the International Acceptance Trust Co. These banks were affiliated with the Warburg-controlled Bank of the Manhattan Company. As an aside it may be noted that Paul Warburg was also a director of the American IG Chemical Corp., the American subsidiary of IG Farben in Germany. I.G. Farben was prominent in bringing Hitler to power in 1933 and manufactured the Zyklon-B gas used in Nazi concentration camps. Warburg was a founding member of the Carl Schurz Memorial Foundation, a propaganda organization established in 1930, a director of the prestigious Council on Foreign Relations, Inc., and a trustee of the Brookings Institution.

But it was through a virtual monopoly of U.S. acceptance banking, achieved by the International Acceptance Bank Inc. and its affiliated units, that Warburg was able to get society to go to work for the Warburgs and their banking friends. Revisionist historian Murray Rothbard has examined the origins of the 1920s inflation that led to the collapse of 1929 and makes this pertinent observation:

> While purchase of U.S. securities has received more publicity, bills bought were at least as important and indeed more important than discounts. Bills bought led the inflationary parade of Reserve credit in 1921 and 1922, were considerably more important than securities in the 1924 inflationary spurt, and equally important in the 1927 spurt. Furthermore, bills bought alone continued the inflationary stimulus in the fatal last half of 1928.[13]

What were these "bills bought" pinpointed by Rothbard as the key culprit of the 1929 depression? Bills bought were acceptances, and almost all were bankers acceptances.

Who created the acceptance market in the United States, largely unknown before 1920? Paul Warburg.
Who gained the lions' share of this acceptance business at artificially low subsidized rates? The International Acceptance Bank, Inc.

Who was the International Acceptance Bank, Inc? Its chairman was Paul Warburg, with Felix Warburg and James Paul Warburg as co-directors. However, a closer look at the make-up of the banks (see below page 95) suggests that it was a vehicle representing the financial élite of Wall Street.

Did the Warburgs and their Wall Street friends know where their financial policy would lead? In other words, did their financial policies of the 1920s have elements of deliberation? There exists a memorandum by Paul Warburg that clearly notes that banks had the capability to prevent inflation:

> If the Government and the banks of the United States were helpless automatons, inflation, no doubt, would have to ensue. But it is insulting our banks to have the impression go out that they should not be capable of cooperating in some common plan of protection such, for instance, as keeping all cash reserves higher than required by the law, if indeed such a step should become advisable for the greater safety of the country.[14]

Consequently, Rothbard quite rightly concludes:

> Surely, Warburg's leading role in the Federal Reserve System was not unconnected with his reaping the lion's share of benefits from its acceptance policy.[15]

In brief, the policy of creating acceptances at subsidized artificial rates was not only inflationary, but was the most important factor, apparently a deliberate banking policy, leading to the inflation of the 1920s and the ultimate collapse in 1929, thus making FDR's New Deal or national economic planning appear necessary. Further, this was, as Rothbard states, "...the grant of special privilege to a small group at the expense of the general public." In other words, Wall Street made American society go to work for a financial oligopoly.

Warburg's revolutionary plan to get American society to go to work for Wall Street was astonishingly simple. Even today, in 1975, academic theoreticians cover their

blackboards with meaningless equations, and the general public struggles in bewildered confusion with inflation and the coming credit collapse, while the quite simple explanation of the problem goes un discussed and almost entirely un comprehended. The Federal Reserve System is a legal private monopoly of the money supply operated for the benefit of a few under the guise of protecting and promoting the public interest.
Revolutionary? Yes indeed! But as one of Warburg's admiring biographers commented:

Paul M. Warburg is probably the mildest-mannered man that ever personally conducted a revolution. It was a bloodless revolution: he did not attempt to rouse the populace to arms. He stepped forth armed simply with an idea. And he conquered. That is the amazing thing. A shy, sensitive man, he imposed his idea on a nation of a hundred million people.[16]

How did this revolution of Warburg's differ from socialist revolution? Only in the fact that under socialism, once the revolution is achieved and the power of the state gathered into the right ideological hands, the accrued personal rewards are not usually as substantial — although the fiefdoms carved out by national socialist Hitler and the modern Soviets may challenge this observation—nor are the results so veiled. The monetary dictatorship of the Soviets is obvious. The monetary dictatorship of the Federal Reserve System is muted and evaded.

We should then take a closer look at the International Acceptance Bank, the vehicle used for this revolutionary exploitive maneuver because it provides valid signals that Wall Street would also have a real interest in national economic planning and an FDR type of New Deal.

THE INTERNATIONAL ACCEPTANCE BANK, INC.

The bank was founded in 1921 in New York and affiliated with Warburg's Bank of the Manhattan Company. However, the board of directors suggests that the most important elements in Wall Street also had a significant interest and control in and profited from the International Acceptance Bank. Further, we find a striking link-up between its affiliated financial institutions and a general scheme to establish corporate socialism in the United States.

As we have noted, Paul M. Warburg was chairman of the board: his brother Felix, also a partner in Kuhn Loeb & Co., and his son James P. Warburg were co directors. The vice chairman of the board was John Stewart Baker, also president and director of the Bank of Manhattan Trust Co. and International Manhattan Co., as well as chairman of the executive committee and director of the Manhattan Trust Co. Baker was also director of the American Trust Co. and the New York Title and Mortgage Co.

F. Abbot Goodhue was president and director of International Acceptance Bank, on the board of the other Warburg banks, and a director of the First National Bank of Boston. Other directors of the International Acceptance Bank were Newcomb Carlton, director of the Rockefeller-controlled Chase National Bank, the Morgan-controlled Metropolitan Life Insurance Co., and other such major companies as the American Express Co., the American Sugar Refining Co., and the American Telegraph and Cable Co. Newcomb Carlton was also a director of American Telegraph and Cable and a director of American International Corporation, a company intimately involved with the Bolshevik Revolution.17 Another director of International Acceptance Bank who was also a director of American International Corp. was Charles A. Stone, located at 120 Broadway and a director of the Federal Reserve Bank from 1919 to 1932. Bronson Winthrop was also a director of both American International Corp. and International Acceptance Corp. Thus, three directors of International Acceptance Bank had interlocking directorships with American International Corp., the key vehicle in U.S. involvement in the Bolshevik revolution.

Another director of International Acceptance Bank was David Franklin Houston, who was also a director of the Carnegie Corp., the Morgan-controlled Guaranty Trust Co., U.S. Steel, and A.T.& T., as well as president of the Mutual Life Insurance Co. Other directors of I.A.B. included Philip Stockton, president of the First National Bank of Boston, and a director of A.T. & T., General Electric, International Power Securities, and many other companies; William Skinner, director of Irving Trust Co., Equitable Life Assurance, and the Union Square Savings Bank; Charles Bronson Seger, director of Aviation Corp., Guaranty Trust Co., and W.A. Harriman; Otto V. Schrenk, director of Agfa Ansco Corp., Krupp Nirosta, and Mercedes Benz Co.; and Henry Tatnall, director of the Girard Trust Co. Paul Warburg was also a director of Agfa Ansco, Inc., a firm 60 per cent owned by I. G. Farben and a "front" for I.G. in the United States.

In sum, the directors of International Acceptance Bank reflected the most powerful sectors of Wall Street: the Morgans, the Rockefellers, and Harriman, as well as the Boston bankers.

Further, there was a lifelong and intimate Warburg association with the Roosevelts from childhood to the New Deal. This Warburg–Roosevelt association is illustrated by an extract from James P. Warburg's memoirs: "It so happened that I had known the President elect's eldest son, James Roosevelt, for some years, because he had been living in one of the cottages on my Uncle Felix's estate in White Plains."[18]

Later the same James P. Warburg became adviser to President Franklin D. Roosevelt on domestic and international monetary affairs. The Warburg's deep interest in the NRA program is reflected in a 1933 Warburg memorandum to FDR:

> Memorandum for the President: Domestic Currency Problem. The Administration has, in my judgment, never faced a more serious situation than it does today. The entire recovery program, which is the heart of its policy, is jeopardized by uncertainty and doubt in the monetary field. The National Recovery Act cannot possibly function to any useful end if there is fear of currency depreciation of an unknown amount and fear as to monetary experimentation. There has already been a tremendous flight of capital, and this flight will continue at an increasing pace so long as uncertainty prevails.[19]

Then, following the Warburg proclivity for monopoly, James Warburg recommended to FDR that *all* monetary ideas, actions, and decisions be centralized in the Treasury Department and the Federal Reserve Board.

Obviously, this proposal would ensure that all monetary decisions were made by the élitist group associated with the International Acceptance Bank and the Federal Reserve System. The Secretary of the Treasury in July 1933, when James Warburg wrote his memorandum to FDR, was William H. Woodin, who had been director of FRB of New York from 1925 to 1931. We can also cite FDR's own associations with the Federal Reserve System. His "favorite uncle" Frederic Delano was appointed vice chairman of the Federal Reserve Board by President Woodrow Wilson in 1914, and from 1931 to 1936 Delano served as chairman of the board of the Federal Reserve Bank of Richmond, Virginia. FDR appointed Delano chairman of the National Resources Planning Board in 1934.

In 1933-34 the United States faced the greatest financial crisis in its history. And what did FDR do? He called in as the financial doctors the very operators responsible for the crisis —as sensible a policy as allowing the lunatics to run the asylum.

So we find associations between Franklin D. Roosevelt, the Warburg family, and the Warburg-inspired central banking system ranging from childhood to Warburg's appointment as a key monetary adviser to FDR. We shall see later that it was Warburg who determined the final shape of the National Industrial Recovery Administration. On the other hand, the Warburg family and their Wall Street friends controlled the private monopoly money supply known as the Federal Reserve System and through the International Acceptance Bank exploited that monopoly for their own purposes.

The Founding Fathers demonstrated a profound wisdom and insight into the dangers of a monopoly of paper money issue that is reflected in Article I, Section 9 of the U.S. Constitution: "No State shall...make any Thing but gold and silver Coin a Tender in Payment of Debts...."

A constitutional challenge to the issue of Federal Reserve notes by a private banking monopoly, the Federal Reserve System, is overdue. Hopefully, the value of the dollar will not have to be reduced to zero, as the mark was in post-World War I Germany, before such a challenge is initiated and sustained by the Supreme Court of the United States.

Footnotes

1. For Wall Street and the early Bolsheviks see Sutton, *Bolshevik Revolution*, op. cit. Wall Street involvement with the rise of Hitler and German Nazism is the topic of a forthcoming book.

2. Clinton Roosevelt, *The Science of Government Founded on Natural Law* (New York: Dean & Trevett, 1841). There are two known copies of this book: one in the Library of Congress, Washington D.C. and another in the Harvard University Library. The existence of the book is not recorded in the latest edition of the Library of Congress catalog, but was recorded in the earlier 1959 edition (page 75). A facsimile edition was published by Emanuel J. Josephson, as part of his *Roosevelt's Communist Manifesto* (New York: Chedney Press, 1955).

3. Ibid.

4. Ibid.

5. Ibid.

6. See Appendix A.

7. Clinton Roosevelt, The Science of Government Founded on Natural Law, op. cit.

8. Margaret L. Coit, Mr. Baruch (Boston: Houghton, Mifflin, 1957), p. 147.

9. Ibid., p. 172.

10. Bernard M. Baruch, American Industry in the War: A Report of the War Industries Board (March 1921), with an introduction by Hugh S. Johnson (New York: Prentice-Hall, 1941) (including "a reprint of the report of the War Industries Board of World War I, Mr. Baruch's own program for total mobilization of the nation as presented to the War Policies Commission in 1931, and current material on priorities and price fixing").

11. For a complete list of W.I.B. personnel see Grosvenor B. Clarkson, Industrial America in the World War (New York: Houghton, Mifflin, 1923), Appendix III. In the light of Chapter 11, below, it is intriguing to note numerous W.I.B. committee members with offices at 120 Broadway including Murry W. Guggenheim, Stephen Birch (Kennecott Copper), Edward W. Brush (American Smelting and Refining), F. Y. Robertson (United States Metals Refining Co.), Harry F. Sinclair (Sinclair Refining Co.), Charles W. Baker, (American Zinc), and Sidney J. Jennings (United States Smelting, Refining and Mining Co.)

12. See also Paul Warburg, The Federal Reserve System, Its Origin & Growth; Reflections & Recollections (New York: Macmillan, 1930)

13. Murray N. Rothbard, America's Great Depression (Los Angeles: Nash Publishing Corp. 1972), p. 117.

14. United States Senate, Hearings, Munitions Industry, Part 25, op. cit., p. 8103.

15. Murray Rothbard, America's Great Depression, op. cit., p. 119.

16. Harold Kellock, "Warburg, the Revolutionist," in The Century Magazine, May 1915, p. 79.

17. See Sutton, Bolshevik Revolution, op. cit., Chapter 8.

18. James P. Warburg, The Long Road Home: The Autobiography of a Maverick (Garden City: Doubleday, 1964), p. 106.

19. Franklin D. Roosevelt and Foreign Affairs, Vol. I, p. 325. Memorandum of James P. Warburg to Roosevelt, July 24, 1933

CHAPTER 7

Roosevelt, Hoover, and the Trade Councils

> **People of the same trade seldom meet together even for merriment and diversion, but the conversation ends in a conspiracy against the public, or on some contrivance to raise prices.**
> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (London: George Routledge, 1942), p. 102.

The idea of getting society to work for a privileged group within that society originated neither among the corporate socialists in Wall Street, nor in the financial community at large, nor even among the Marxian socialists. In fact, the notion predates our own industrial society, and there is an interesting parallel between the codes of New Deal America (which we shall examine later) and 13th-century trade legislation in England.[1]

A MEDIEVAL NEW DEAL

In 1291 the tanners of Norwich, England were brought before the local court charged with organizing and coding their tanning activities to the detriment of local citizens. Two years later in 1293, the cobblers and saddle makers of Norwich were faced with similar charges. By "greasing" the legislators, the political power structure of medieval Norwich was brought around to the view that perhaps the tanners needed protection, after all. This protection came to incorporate the same basic principles of economic planning that almost 700 years later were put forward in the Roosevelt New Deal. So in 1307 the tanning industry of Norwich was legally coded and wages and conditions of work prescribed, all done under the guise of protecting the consumer, but in practice granting a legal monopoly to the tanners.

In the decade before the New Deal, during the 1920s Wall Streeter Roosevelt was active on behalf of business to promote these same basic ideas of using the police power of the state to restrain trade, to advance cooperation, and to utilize government regulation to inhibit unwelcome competition from more efficient outsiders. The trade associations of the 1920s were more demure in their proposals than the 13th-century Norwich tanners, but the underlying principle was the same.

Unfortunately, Franklin D. Roosevelt's role in the Wall Street of the 1920s has been ignored by historians. Daniel Fusfield does correctly observe that FDR "took an active part in the trade association movement that was to develop into the N.R.A. of the early New Deal;"[2] on the other hand Fusfield, who offers the only extensive description of FDR's business activities, concludes that his attitude toward business was "a curious

mixture." FDR, says Fusfield, was "insistent that mere profits were not a full justification for business activity," that a businessman must also "have the motive of public service." This to Fusfield was inconsistent with participation "in a number of outright speculative and promotional ventures that had little to do with serving the public."[3]

Fusfield and his fellow historians of the Roosevelt era have failed to note that "public service" for a businessman is absolutely consistent with "profit maximization;" in fact, public service is the easiest and certainly the most lucrative road to profit maximization. Further, the riskier and more speculative the business, presumably the greater is the advantage to be gained from public service.
When we take this more realistic view of social do-goodism, then Wall Streeter Roosevelt's attitude toward business is not at all "curious." It is in fact a consistent program of profit maximization.

THE AMERICAN CONSTRUCTION COUNCIL

The American Construction Council (A.C.C.), formed in May 1922, was the first of numerous trade associations created in the 1920s, devices used to raise prices and reduce output. The original proposal and the drive for the council came from Secretary of Commerce Herbert Hoover, and the council operated under the leadership of Franklin D. Roosevelt, then just beginning his Wall Street career following his service as Assistant Secretary of the Navy. The stated public objectives of the A.C.C. were a "code of ethics" (a euphemism for restraint of trade), efficiency, and standardization of production. Most importantly, but less publicized, the A.C.C. was to provide the industry with an opportunity to fix its own price and production levels without fear of antitrust prosecutions by the government. The New York Times reported:

> It is these tremendous possibilities, in dedication to the public service and the elimination of waste, that have fired the imaginations of Mr. Hoover and Mr. Roosevelt and invited them to accept positions of leadership in the movement.[4]

Like the price-fixing committees of Baruch's War Industries Board, the A.C.C. was in effect a primitive industry association, although the high-sounding stated object of the council was:

> . . .to place the construction industry on a high plane of integrity and efficiency and to correlate the efforts toward betterment made by existing agencies through an association dedicated to the improvement of the service within the construction industry. . . ."[5]

and so to stabilize conditions for the benefit of the industry, labor, and the general public. This objective was also Baruch's objective for peacetime trade associations: to regulate industry under government control, while citing the public good. In the American Construction Council the public good was announced as the elimination of the scandals found by the Lockwood Commission investigating the New York building industry. However, as that scandal dealt in great part with exclusive dealing and similar coercive conditions forced upon contractors and erectors by the United States Steel Corporation and Bethlehem Steel, the announced public good makes little sense. These industry giants were controlled by the Morgan interests on Wall Street who were, as we shall see, also at the root of the A.C.C. proposal. In brief, the alleged antisocial conditions to be solved by a trade association could have been halted much more simply and effectively by a memorandum from J.P. Morgan and his associates; there was no necessity to promote a trade association to halt such abuses. So we must look elsewhere for the reason for trade associations. The real reason, of course, is to protect industry from unwelcome competition and to establish monopoly conditions for those already in the business. As Howe told us, a legal monopoly is the sure road to profit. It was formation of this legal monopoly that induced Roosevelt and Herbert Hoover to join hands against the public interest, although, according to Freidel:

> FDR's friend Elliott Brown, warned him against the "socialistic" tendencies of these associations and of Hoover specifically. Socialistic, because the moment a combination is formed, the Government will assert an interest and will express that interest through the medium of some clerk in the Department of Commerce, who will approve or disapprove many matters affecting the initiative and welfare of all peepul (sic).[6]

FDR's role is not really surprising. He was then attempting to get a business career underway. He had political contacts and was more than willing, indeed eager, to use these. On the other hand, there is an odd dichotomy in the ideas and practices of Herbert Hoover in this area of the relationship between government and business. Herbert Hoover declared his adherence to the principles of free enterprise and individual initiative and his suspicion of government intervention. These assertions were mixed with other contrary statements encouraging, indeed authorizing, government intervention on almost trivial grounds. Unfortunately, Herbert Hoover's Memoirs, the only finally authoritative source, do not resolve these conflicts. The American Construction Council is not mentioned in Hoover's Memoirs, although Volume II, "The Cabinet and the Presidency," underlines the evils of government intervention in the economy, pointing to communism, socialism, and fascism to comment, "This left wing cure for all business evil" now appears as "national planning." Hoover added that business "abuses" were only "marginal" and rather than have government intervention" . . . beyond and better than even that was cooperation in the business community to cure its own abuses."7
On the other hand, Hoover's private correspondence with Roosevelt on the American Construction Council suggests that Hoover, while in favor of government intervention,

was careful to disguise this continuing interest for fear of bringing public opposition down upon his own head and ruining the proposal. A letter from Hoover to Roosevelt dated June 12, 1923 makes this point:

> June 12, 1923
> Franklin D. Roosevelt, Vice Pres.
> Fidelity and Deposit Company of Maryland
> 120 Broadway
> New York City
> My Dear Roosevelt:
> I am in somewhat of a quandary about your telegram of June 7th. I had hoped that the Construction Council would be solely originated from the industries without pressure from the Administration. Otherwise it will soon take on the same opposition that all Governmental touches to this problem immediately accrue.
> The vast sentiment of the business community against Government interference tends to destroy even a voluntary effort if it is thought to be carried on at Government inspiration.
> Yours faithfully
> Herbert Hoover

In any event, the American Construction Council was a cooperative association of business, labor, and government

> formed at Washington on June 19 at the suggestion and under the guidance of Secretary Hoover of the Department of Commerce (who) has taken the first steps toward putting into operation a program of construction effort which, it is hoped, will eliminate many of the evils which have developed in the industry during the past decade.[8]

Thus, it was free enterpriser Herbert Hoover who became the sponsor of the first of the trade associations, the American Construction Council, which was designed to include

> architects, engineers, construction labor, general contractors, sub-contractors, materials and equipment manufacturers, material and equipment dealers, bond, insurance and real estate interests and the construction departments of Federal, State and municipal governments.[9]

The organization meeting of the American Construction Council was held at FDR's house in New York and attended by about 20 persons. This group discussed the concept of the council and particularly whether it

> should be a clearing house for the different national associations, a clerical clearing house, or whether it should be an active, aggressive (sic) militant organization in this service of the public good of the construction industry.[10]

It was unanimously decided that the council should be a militant aggressive organization and not just a clearing house for information. This concept was discussed with Dwight Morrow of the J.P. Morgan firm; with Mr. Dick, secretary to Judge Gary of the U.S. Steel Corporation; with Gano Dunn, president of J.G. White Engineering Corporation; and with Stone & Webster. It is interesting to note that most of these persons and firms are prominent in my previous volume, *Wall Street and the Bolshevik Revolution*.

After the financial establishment had expressed support of A.C.C., the construction industry at large was approached for its reaction. This preliminary work culminated in an organizational meeting at the Hotel Washington, Washington D.C., on Tuesday, June 20, 1922. Franklin D. Roosevelt was elected president of the council, and John B. Larner, vice president of the American Bankers Association, was elected treasurer. The chairman of the finance committee was Willis H. Booth of Guaranty Trust Company. The committee then established its committees and laid down priorities for its problems.

Roosevelt's interpretation of the causes for the problems of the construction industry were reported by The New York Times: "Muddling through has been the characteristic method employed by the construction industry for the last few years. There has been no system, no cooperation, no intensive national planning."

After pointing out that a railroad man is not laid off because of bad weather, Roosevelt commented:

> In construction work, however, we have that great bugbear in our economic life, the seasonal job. All the work is crowded into the summer months, none of the work is carried on during the winter. The results of this piling on are plain. In the summer we have scarcity of labor and skyrocketing of prices, in the winter unemployment and cutting of incomes. The only thing that lasts throughout the year is the bitterness of men engaged in the work.[11]

How did FDR propose to change all this?

> A large part of the work can be spread over the year. There is no reason in the world why a skilled mechanic living in New York, for instance, should be called down in June to help put up a public building in Georgia. Georgia can build in seasons of the year in which it is impossible for New York to build; so can Louisiana, so can all the Southern States.

Roosevelt's suggestion, an aimless non sequitur, was that the construction industry must "get together on this situation: move construction materials during off season and spread labor around." At an early board of governors' meeting, held at FDR's home in New York on May 16, 1923, FDR called attention to the road the council had followed: "The American Construction Council was organized, but frankly, it has not done one darned thing from that time to this except collect dues from some 115 different organizations, I think."

FDR put the basic choice to the assembled governors: did they want to continue the old way, "Build all we can, paying any old price as long as we get the orders?" Because if that was the case, said FDR, "We might just as well adjourn." On the other hand, he continued, that did not appear to be the view of the majority, and "We want to go back to the real basic purpose of the Council, which was to prevent this sort of thing." Then followed a series of proposed resolutions, adopted unanimously, that would have the effect of slowing down construction. The council continued to have its problems, summarized in a letter of April 29, 1924 from executive vice president D. Knickerbocker Boyd to Franklin D. Roosevelt, "to call attention to the very serious condition of affairs existing at this time." Boyd reminded FDR that the executive secretary, Dwight L. Hoopingarner, had served "practically" without pay, and that $7000 in back salary was owed to him. Boyd added, "This is not just or right and it should not be allowed to continue. He should not only be paid all back fees promptly but assured of prompt pay in the future—or the work should be stopped." Then Boyd commented that he, too, expected recompense for the time expended on council work, noting that time expended to date amounted to $3168.41, in addition to traveling expenses. Boyd suggested that the council face up squarely to its responsibilities, place itself on an adequate financial footing, or dissolve. The final paragraph of Boyd's letter demonstrates the fundamental objective of those promoting the American Construction Council:

> If the Council should go out of existence it would, in my opinion, be a country-wide calamity—as I doubt whether after this second effort to nationalize the great building industry on human lines, enough people with the enthusiasm, faith and patience could be found to make a third attempt.

Franklin D. Roosevelt, president of American Construction Council, had argued for "economic planning;" now the executive vice president acknowledges an "effort to nationalize" the construction industry. This effort to organize the construction industry under the somnolent eye of the government, statedly for the public good, failed.

Footnotes

1. See Erwin F. Meyer, "English Medieval Industrial Codes" in The American Federationist, January 1934. Meyer draws some fascinating parallels between the medieval guilds and NRA practice under Roosevelt. In medieval times the result, as in the 1930s was to create "an oligarchy of capitalists" in the English economy.

2. Daniel R. Fusfield, The Economic Thought of Franklin D. Roosevelt and the Origins of the New Deal

3. Ibid.

4. The New York Times, May 15, 1922, p. 19.

5. Cited in Fusfield, Economic Thought, op. cit., p. 102.

6. Freidel, The Ordeal, op. cit., p. 152.

7. The Memoirs of Herbert Hoover. The Cabinet and the Presidency 1920-1933, (London: Hollis and Carter 1952), p. 67.

8. The New York Times, July

9, 1922, VIII 1:3. 9. The New York Times, May 15, 1922, p. 19, col. 8.

10. Minutes of the Executive Board of the American Construction Council, June 20, 1922. FDR Files, Group 14: American Construction Council.

11. The New York Times, June 4, 1922. One searches in vain for a practicable, workable proposal to solve the alleged problems of the construction industry. The most valid suggestions put forward by Roosevelt and his fellow planners required changing the weather to allow year-round construction or movement of men and materials by "planning." Of course, a market system moves men and materials automatically, a point presumably unknown to FDR.

CHAPTER 8

Wall Street Buys The New Deal

> **B.M. [Bernard Baruch] played a more effective role. Headquarters just didn't have any money. Sometimes they couldn't even pay the radio bill for the candidate's speeches. They had practically nothing to carry on the campaign in the critical state of Maine. Every time a crisis came, B.M. either gave the necessary money, or went out and got it.**
> Hugh S. Johnson, *The Blue Eagle from Egg to Earth* (New York: Doubleday, Doran, 1935), p. 141. On FDR's campaign in 1932.

The 1928 Presidential campaign matched Governor Alfred E. Smith, a Catholic with backing from Tammany Hall and a collectivist coloring to his politicking, against Herbert Hoover, a Quaker with a professed leaning to traditional American individualism and self-help. Herbert Hoover won by 21,392,000 votes to Smith's 15,016,000.

Where did the Wall Street banker-philosophers place their support and influence in the Smith-Hoover election? On the basis of the accepted interpretation of the philosophy of financiers, their support should have gone to Herbert Hoover. Hoover promoted the dearly beloved trade associations, dearly loved, that is, by the financial and business community. Further, in *American Individualism*[1] Herbert Hoover made it clear that the ideal system for America was, in his own words, "no system of laissez faire" but, on the contrary, a regulated economy. On the other hand, the most vocally political member of the Wall Street financial establishment in 1928 was John J. Raskob, vice president of Du Pont and of General Motors and a director of Bankers Trust Co. and the County Trust Co. At the personal insistence of Governor Al Smith, Raskob became chairman of the Finance Committee of the Democratic Party. Raskob was also the largest single contributor, giving more than $350,000 to the campaign. What were the policy objectives sought by Raskob and his allies that made Al Smith so attractive a candidate?

In 1928 the key elements of what became the National Recovery program were given a public airing by John J. Raskob, Bernard Baruch, and other Wall Streeters. The promotion of Roosevelt's NRA actually dates from the 1928 Raskob speeches made in the Al Smith Presidential campaign. Although both Al Smith and Herbert Hoover depended heavily on Wall Street's "golden circle" for election funds, as we shall detail later in this chapter, the Du Pont-Raskob-Baruch money was heavily on Al Smith. Smith, of course, lost the 1928 election for the Democrats, and Herbert Hoover became the Republican President. In spite of luke-warm Wall Street treatment, Hoover appointed many Wall Streeters to his committees and boards. Then in mid-1932, given the blunt choice between a National Recovery program in the form of the Swope Plan or less fascist policies, Hoover declined to institute corporate socialism, identified the Swope

Plan for what it was, and brought the wrath of Wall Street down upon his head.

Consequently, we can trace and will trace in this chapter the Baruch proposals for NRA and the financial backing of the two Presidential candidates in each election by Raskob, Baruch, Du Pont, Rockefeller, and others of the financial élite. The main backing in each case went to the Democratic candidate willing to promote corporate socialism. In 1928 this was Al Smith, who was also a director of the Morgan-controlled Metropolitan Life Insurance Company; in 1930 it went to Roosevelt with the early bird pre convention contributions for the 1932 Hoover-Roosevelt contest. This was followed in mid-1932 by withdrawal of a great deal of Wall Street support from Herbert Hoover and the wholesale transfer of influence and money toward the election of Roosevelt.

Subsequently, FDR did not abandon his backers. The National Recovery Act with its built-in ability to coerce small business was promised and in June 1933 became law. Let's look then more closely at these events and the related evidence.

BERNARD BARUCH'S INFLUENCE ON FDR

According to his own statements Hugh Johnson, the Administrator of Roosevelt's NRA, went through a training program in the 1920s under Bernard Baruch's tutelage. Johnson records this experience as follows:

> I doubt if anybody had any more direct or complete access to sources of information than B.M. and he always gave me a free hand in the consultation and use of such scientists and experts as I might need. I was for several years the only Research Staff which he permanently maintained. That and what went before was a great training for service in NRA because these studies covered a considerable segment of the whole of American industry and the experience with government linked the two together.[2]

Johnson himself views the Raskob speeches of September and October 1928 in the Al Smith campaign as the start of Roosevelt's NRA: "There was nothing particularly new in the essence or principles developed. We had worked out and expressed precisely the same philosophy in Al Smith's campaign in 1928. . . ."3

Al Smith, the 1928 Democratic Presidential candidate was, as we have noted, a director of Metropolitan Life Insurance, the largest life insurance company in the U.S. and controlled by J.P. Morgan, and the greater part of his campaign funds came from the golden circle in Wall Street. Bernard Baruch outlined the NRA plan itself on May 1, 1930 — an auspicious day for a socialist measure—in a speech at Boston. The content of NRA was all there, the regulation, codes, enforcement, and the carrot of welfare for the

workers. It was repeated in Baruch's platform of June 1932—the one that Herbert Hoover refused to adopt. The NRA was presented again by Baruch in testimony before the Senate and in speeches before the Brookings Institution and at Johns Hopkins University. In all, Hugh Johnson counts ten documents and speeches, all presented before the election of Roosevelt in 1932, in which "will be found the development of the economic philosophy of the 1928 campaign and of almost all that happened since. Of a part of this philosophy NRA was a concrete expression."[4]

The following extracts from Baruch's May 1, 1930 speech contain the core of his proposals:

> What business needs is a common forum where problems requiring cooperation can be considered and acted upon with the constructive, non political sanction of government. It may have been sound public policy to forbid by law anything that looked to regulation of production when the world was in fear of famine but it is public lunacy to decree unlimited operation of a system which periodically disgorges indigestible masses of unconsumable products. No repressive, inquisitorial, mediocre bureau will answer—we must have a new concept for this purpose—a tribunal invested like the Supreme Court, with so much prestige and dignity that our greatest business leaders will be glad to divest themselves of all personal interest in business and there serve. Like the Supreme Court also it must be absolutely non-political.
>
> It should have no power to repress or coerce but it should have power to convoke conference, to suggest and to sanction or license such commonsense cooperation among industrial units as will prevent our economic blessings from becoming unbearable burdens. Its sole punitive power should be to prescribe conditions of its licenses and then to revoke those licenses for infringement of such conditions.
>
> Its deliberations should be in the open and should be wholly scientific, briefed like an engineer's report, and published to the world. Such a system would safeguard the public interest and should be substituted for the blind inhibitory blankets of the Sherman and Clayton Acts. . . .
>
> It is not government in business in the sense which is here condemned. It is only a relaxation of the grip government has already taken on business by the Anti-Trust Acts. There is no fallacy in restricting ruinous excess production—a policy which the Federal Government is now vigorously urging on Agriculture. Yet if there is nothing in the change of concept from bureaucratic precedent to that of an open forum where business can practice group self-government, acting on its own motion under sanction of non-political, constructive and helpful tribunal —then the idea is not practicable. But that there is a possibility of such industrial self-government under governmental sanction was clearly demonstrated in 1918. Many

> difficulties suggest themselves. In the first place anything done in the elation and fervor of war must be accepted as a criterion only with caution.
> In the regulation of production price is one consideration. That is a subject which is loaded with dynamite.
> There are other obvious reservations. The thought is revived at this critical moment because it seems worthy of consideration as an aid in a threatening economic development 'of unusual extent' and as an alternative to governmental interference and vast extension of political powers in the economic field—an eventuality which, in the absence of constructive action by business itself, is almost as certain as death and taxes.[5]

Baruch wanted by his own words a resurrection of the trade associations, relaxation of anti-trust laws, and control of business leaders and casts the reader back to the War Industries Board of 1918. To be sure, Baruch suggests "no power to coerce" and "open" deliberations, but such protestations of good faith carry small weight in the light of economic history and past furious efforts to establish cartels and combinations in restraint of trade by this same group. It was to further this end that financial support for both Democrats and Republican candidates was forthcoming; the greater part of the financing originated in a relatively small geographical area of New York.

WALL STREET FINANCES THE 1928 PRESIDENTIAL CAMPAIGN

The direction of political support can be measured and identified by related financial support. The origins of the financial contributions to the Smith and Hoover campaigns of 1928 can be identified, and we find, contrary to prevailing beliefs, that it was the Democrats who received the lion's share of funds from Wall Street; as we have seen, it was in the Democratic campaign that the outlines of the National Recovery Act were first promulgated by Baruch and Raskob.

After the 1928 Presidential election the Steiwer Committee of the U.S. House of Representatives investigated the sources of campaign funds funneled into the election[6] The detailed information was published, but the Steiwer Committee did not probe into the corporate origins and affiliations of the contributors: it merely listed names and amounts contributed. Table XIII in the report is entitled "Persons contributing sums of $5,000 and over in behalf of Republican presidential candidate." The Republican Presidential candidate was, of course, Herbert Hoover. This table lists full names and the amounts contributed, but without the affiliation of the contributors. Similarly, Table XIV of the report is entitled "Persons contributing sums of $5,000 and over in behalf of Democratic presidential candidate." Again, full names and amounts are given, but the affiliations of the person are not stated.

These lists were taken and matched by the author to the *Directory of Directors in the City*

of New York 1929-1930.[7] Where the contributor as listed by the Steiwer Committee was identified as having an address within a one-mile circle of 120 Broadway in New York, the name and amount contributed were noted. No notation was made of persons not in the directory and most probably resident outside of New York City, but a record was kept of the sums of money contributed by the non New York residents. In other words, two totals were constructed from the Steiwer Committee data: (1) contributions from persons listed as directors of companies headquartered in New York and (2) contributions from all other persons. In addition, a list of names of the New York contributors was compiled. In practice, the research procedure was biased against inclusion of the New York-based directors. For example, in the Democratic Party list Van-Lear Black was listed by the author as a non-New York resident, although Black was chairman of the Fidelity & Casualty Co; the company had offices at 120 Broadway, and Franklin D. Roosevelt was their New York vice president in the early 1920s. However, Black was based in Baltimore and therefore not counted as a New York director. Again Rudolph Spreckels, the sugar millionaire, was listed in the Steiwer Committee report for a $15,000 contribution, but is not listed in the New York total, as he did not base himself in New York. Similarly, James Byrne contributed $6500 to the Smith for President campaign, but is not listed as a New York director —he was a director of the Fulton Savings Bank in Brooklyn and outside the one-mile circle. Jesse Jones, the Texas banker, contributed $20,000, but is not listed as a New York director because he was a Texas, not a New York, banker. In other words, the definition of a Wall Street contributor was very tightly and consistently drawn.

Major Wall Street Contributors to the Al Smith For President Campaign—1928

Name	**Contributions**			
	1924 deficit	1928 campaign	1928 deficit	Total contribution
John J. Raskob (Du Pont and General Motors)	—	$110,000	$250,000	$360,000
William F. Kenny (W.A. Harriman)	$25,000	$100,000	$150,000	$275,000
Herbert H. Lehman	$10.000	$100.00	$150,000	$260,000
M.J. Meehan (120 Broadway)	—	$50,000	$100,000	$150,000

Total $1,045,000

Source: Adapted from Louise Overacker, Money in Elections (New York: Macmillan, 1932), p. 155.

Under this restricted definition the total amount contributed by Wall Street directors, mostly connected with major banks, to the Al Smith 1928 Presidential campaign was $1,864,339. The total amount contributed by persons not within this golden circle was $500,531, which makes a grand total of $2,364,870. In brief, the percentage of the Al Smith for President campaign funds coming from persons giving more than $5000 and also identified as Wall Street directors was 78.83 per cent. The percentage from donors outside the golden circle was a mere 21.17 per cent. Looking at the total Al Smith contributors another way, the large contributors (over $5000) to the Smith campaign, those in the best position to ask and receive political favors, put up almost four dollars out of five.
The identity of the larger contributors to both the Al Smith campaign and the Democratic National Committee fund is listed in the attached tables.

Contributors of $25,000 or More to Democratic National Committee January to December 1928 (including contributions listed in previous table)

			NOTE
Herbert H. Lehman and Edith A. Lehman	Lehman Brothers, and Studebaker Corp.	$135,000	FDR's chief political adviser
John J. Raskob	Vice president of Du Pont and General Motors	$110,000	NRA administrator
Thomas F. Ryan	President, Bankers Mortgage Co., Houston	$75,000	Chairman, Reconstruction Finance Corp.
Harry Payne Whitney	Guaranty Trust	$50,000	See Chap. 10: "The Butler Affair"
Pierre S. Du Pont	Du Pont Company, General Motors	$50,000	See Chap. 10: "The Butler Affair"
Bernard M. Baruch	Financier, 120 Broadway	$37,590	NRA planner
Robert Sterling Clark	Singer Sewing Machine Co.	$35,000	See Chap. 10: "The Butler Affair"
John D. Ryan	National City Bank, Anaconda Copper	$27,000	—
William H. Woodin	General Motors	$25,000	Secretary of Treasury, 1932

Source: Steiwer Committee Report, op. cit.

Contributions to the Democratic Presidential Primary

1928 by Directors* of the County Trust Company.

Name of Director	Contribution to Campaign and Deficit	Other Affiliations
Vincent Astor	$ 10,000	Great Northern Railway, U.S. Trust Co. Trustee, N.Y. Public Library Metropolitan Opera
Howard S. Cullman	$ 6,500	Vice President, Cullman Brothers, Inc.
William J. Fitzgerald	$ 6,000	—
Edward J. Kelly	$ 6,000	—
William F. Kenny	$275,000 **	President and Director, William F. Kenny Co. Director, The Aviation Corp., Chrysler Corp.
Arthur Lehman	$ 14,000 ***	Partner, Lehman Brothers. Director, American International Corp., RKO Corp., Underwood-Elliott-Fisher Co.
M.J. Meehan	$150,000**	61 Broadway
Daniel J. Mooney	Daniel J. Mooney	120 Broadway
John J. Raskob	$360,000 **	Director, American International Corp., Bankers Trust Co., Christiania Securities Co. Vice President, E.I. Du Pont de Nemours & Co. and General Motors Corp.
James J. Riordan	$10,000	—
Alfred E. Smith	—	Presidential Candidate Director: Metropolitan Life Insurance Co.
Total	$842,000	

Notes: *The following directors of County Trust Company did not contribute (according to the records): John J. Broderick, Peter J. Carey, John J. Cavanagh, William H. English,

James P. Geagan, G. Le Boutillier, Ralph W. Long, John J. Pulleyn, and Parry D. Saylor.
**Includes contributions to the campaign deficit.
***Excludes contributions by other members of the Lehman family to the Democratic Presidential campaign that totalled $168,000.

Looking at the names in these tables, it would be neither unkind nor unfair to say that the Democratic candidate was bought by Wall Street before the election. Moreover, Al Smith was a director of the County Trust Company, and the County Trust Company was the source of an extraordinarily large percentage of Democratic campaign funds.

HERBERT HOOVER'S ELECTION FUNDS

When we turn to Herbert Hoover's 1928 campaign, we also find a dependence on Wall Street financing, originating in the golden mile, but not nearly to the same extent as in Al Smith's campaign. Of a large donations total for Herbert Hoover of $3,521,141, about 51.4 per cent came from within this golden mile in New York and 48.6 per cent from outside the financial district.

Contributions of $25,000 or More to Republican National Committee, January to December 1928

Mellon family	Mellon National Bank		$50,000
Rockefeller family	Standard Oil		$50,000
Guggenheim family	Copper smelting		$75,000
Eugene Meyer	Federal Reserve Bank		$25,000
William Nelson Cromwell	Wall Street attorney		$25,000
Otto Kahn	Equitable Trust Company		$25,000
Mortimer Schiff	Banker		$25,000
		Total	$275,000

Source: Steiwer Committee Report, op. cit.

Herbert Hoover was, of course, elected President; his relationship to the rise of corporate socialism has been misinterpreted in most academic and media sources. The bulk of liberal-oriented literature holds that Herbert Hoover was some kind of unreconstructed laissez faire Neanderthal. But this view is rejected by Hoover's own statements: for example:

> Those who contended that during the period of my administration our economic system was one of laissez faire have little knowledge of the extent of government regulation. The economic philosophy of laissez faire, or "dog eat dog," had died in the United States forty years before,
> when Congress passed the Interstate Commerce Commission and the Sherman Anti-Trust Acts.[8]

Murray Rothbard points out [9] that Herbert Hoover was a prominent supporter of Theodore Roosevelt's Progressive Party and, according to Rothbard, Hoover "challenged in a neo-Marxist manner, the orthodox laissez-faire view that labor is a commodity and that wages are to be governed by laws of supply and demand."[10] As Secretary of Commerce Hoover pushed for government cartelization of business and for trade associations, and his "outstanding" contribution, according to Rothbard," was to impose socialism on the radio industry," while the courts were working on a reasonable system of private property rights in radio frequencies. Rothbard explains these ventures into socialism on the grounds that Hoover "was . . . the victim of a terribly inadequate grasp of economics."[11] Indeed, Rothbard argues that Herbert Hoover was the real creator of the Roosevelt New Deal.
Although the evidence presented here suggests that Baruch and Raskob had more to do with FDR's

New Deal, there is some validity to Rothbard's argument. Hoover's practical policies were not consistent. There are some pro-free market actions; there are many anti-free market actions. It seems plausible that Hoover was willing to accept a part, possibly a substantial part, of a socialist program, but had a definite limit beyond which he was not willing to go.

During the course of the 1920s, in the years after the formation of the American Construction Council, more than 40 codes of practice compiled by trade associations were adopted. When he became President, and in spite of his early association with the A.C.C., Herbert Hoover promptly ended these industrial codes. He did this on the grounds that they were probably illegal associations to police prices and production and that no government could regulate these in the interest of the public. Then in February 1931 the U.S. Chamber of Commerce formed a group entitled the Committee on Continuity of Business and Employment under Henry I. Harriman. This committee came up with proposals very much like those of the New Deal: that production should be balanced to equal consumption, that the Sherman anti-trust laws should be modified to allow agreements in restraint of trade, that a national economic council should be set up under the auspices of the U.S. Chamber of Commerce, and that provision should be made for shorter hours in industry, for pensions, and for unemployment insurance. This was followed by yet another Hoover committee known as the Committee on Work Periods in Industry under P.W. Litchfield, president of Goodyear Tire and Rubber Company. Then still another committee under Standard Oil Company of New Jersey

president Walter Teagle recommended sharing work, a proposal endorsed by the Litchfield Committee. Then came the Swope Plan in 1931 (see Appendix A). The plans were forthcoming, but Herbert Hoover did very little about them.

So, under Herbert Hoover, while big business was prolific in publicizing plans designed to modify the Sherman anti-trust act, allow self regulation by industry, and establish codes in restraint of trade. President Herbert Hoover did nothing to encourage these ventures.

In fact, Hoover recognized the Swope Plan as a fascist measure and recorded this in his memoirs, along with the melancholy information that Wall Street gave him a choice of buying the Swope plan—fascist or not—and having their money and influence support the Roosevelt candidacy. This is how Herbert Hoover described the ultimatum from Wall Street under the heading of "Fascism comes to business—with dire consequences":

> Among the early Roosevelt fascist measures was the National Industry Recovery Act (NRA) of June 16, 1933. The origins of this scheme are worth repeating. These ideas were first suggested by Gerard Swope (of the General Electric Company) at a meeting of the electrical industry in the winter of 1932. Following this, they were adopted by the United States Chamber of Commerce. During the campaign of 1932, Henry I. Harriman, president of that body, urged that I agree to support these proposals, informing me that Mr. Roosevelt had agreed to do so. I tried to show him that this stuff was pure fascism; that it was merely a remaking of Mussolini's "corporate state" and refused to agree to any of it. He informed me that in view of my attitude, the business world would support Roosevelt with money and influence. That for the most part, proved true.[12]

WALL STREET BACKS FDR FOR GOVERNOR OF NEW YORK

The chief fund raiser in FDR's 1930 reelection campaign was Howard Cullman, Commissioner of the Port of New York and a director of the County Trust Company. Freidel[13] lists the campaign contributors in 1930 without their corporate affiliations. When we identify the corporate affiliations of these contributors, we find once again that County Trust Company of 97 Eighth Avenue, New York had an extraordinarily large interest in FDR's reelection. Apart from Howard Cullman, the following major contributors to FDR's campaign were also directors of the County Trust Company: Alfred Lehman, Alfred (Al) E. Smith, Vincent Astor, and John Raskob. Another director was FDR's old friend Dan Riordan, a customer from Fidelity & Deposit days at 120 Broadway, and William F. Kenny, yet another FDR supporter and director of County Trust. To place this list in focus, we must remember that Freidel lists 16 persons as major contributors to this campaign, and of this 16 we can identify no less than five as directors of County Trust and two other unlisted directors as known FDR supporters. Other prominent Wall

Streeters financing FDR's 1930 campaign were the Morgenthau family (with the Lehmans, the heaviest contributors); Gordon Rentschler, president of the National City Bank and director of the International Banking Corporation; Cleveland Dodge, director of the National City Bank and the Bank of New York; Caspar Whitney; August Heckscher of the Empire Trust Company (120 Broadway); Nathan S. Jones of Manufacturers Trust Company; William Woodin of Remington Arms Company; Ralph Pulitzer; and the Warburg family. In brief, in the 1930 campaign the bulk of FDR's financial backing came from Wall Street bankers.

Contributors to the Pre Convention Expenses of FDR ($3,500 and Over)

Edward Flynn	$21,500	Director of Bronx County Safe Deposit Co.
W.H. Woodin	$20,000	Federal Reserve Bank of New York, Remington Arms Co.
Frank C. Walker	$15,000	Boston financier
Joseph Kennedy	$10,000	
Lawrence A. Steinhardt	$ 8,500	Member of Guggenheim, Untermeyer & Marshall, 120 Broadway
Henry Morgenthau	$ 8,000	Underwood-Elliott-Fisher
F.J. Matchette	$ 6,000	
Lehman family	$ 6,000	Lehman Brothers, 16 William Street
Dave H. Morris	$ 5,000	Director of several Wall Street firms
Sara Roosevelt	$ 5,000	
Guy P. Helvering	$ 4,500	
H.M. Warner	$ 4,500	Director, Motion Picture Producers & Distributors of America
James W. Gerard	$ 3,500	Financier, 57 William Street
Total	$117,500	

Shortly after FDR's reelection in 1930, these backers started to raise funds for the 1932 Presidential campaign. These "early bird" pre convention contributions have been described by Flynn: "These contributors, who helped early when the need was great, so thoroughly won Roosevelt's devotion that in most instances they ultimately received substantial returns in public offices and honors."14

WALL STREET ELECTS FDR IN 1932

In 1932 Bernard Baruch was the key operator working behind the scenes—and sometimes not so much behind the scenes—to elect FDR, with the money and influence

of big business (see epigraph to this chapter). Further, Bernard Baruch and Hugh Johnson collected numerous statistics and materials over the 1920s decade supporting their concept of national economic planning through trade associations. Johnson recounts how this information became available to FDR's speech writers. During the Roosevelt campaign of 1932:

> Ray Moley and Rex Tugwell came up to B.M.'s house and we went over all the material that B.M. and I had collected and summarized in our years of work. They, with Adolph Berle, had long before worked out the subjects of what they thought would be an ideal scheme of economic speeches for a Presidential candidate, but they had few facts. From that moment we joined Ray Moley's forces and we all went to work to find for Franklin Roosevelt the data which he welded into the very remarkable series of simply expressed speeches on homely economics which convinced this country that here was the leader upon whom it could rely.[15]

In rereading the FDR campaign speeches, it becomes obvious that they lack concreteness and specific facts. Presumably the Moley-Tugwell team set out the general theme and Baruch and Johnson introduced supporting statements in such areas as credit expansion, the consequences of speculation, the role of the Federal Reserve system, and so on. It is remarkable, but perhaps not surprising, that these Baruch-influenced speeches took the reader back to World War I, cited the contemporary emergency as greater than that of the war, and then subtly suggested similar Baruchian solutions. For example, at the Jefferson Day Dinner speech of April 18, 1932 Roosevelt said, or was prompted to say:

> Compare this panic stricken policy of delay and improvisation with that devised to meet the emergency of war fifteen years ago. We met specific situations with considered, relevant measures of constructive value. There were the War Industries Board, the Food and Fuel Administration, the War Trade Board, the Shipping Board and many others.[16]

Then in May 22, 1932 Roosevelt addressed himself to the theme "The Country Needs, the Country Demands, Persistent Experimentation" and called for national economic planning. This speech was followed on July 2, 1932 by the first hint of the New Deal. Finally, in accepting the nomination for the Presidency at Chicago, FDR said "I pledge you—I pledge myself to a New Deal for the American People."

Note

Freidel's list of pre-convention contributors to Franklin Delano Roosevelt's 1932 Presidential campaign.

1932 Reconvention Contributors[17] (over $2,000)	Affiliations
James W. Gerard	Gerard, Bowen & Halpin (see Julian A. Gerard)
Guy Helvering	
Col. E.M. House, New York	
Joseph P. Kennedy,1560 Broadway	Ambassador to Court of St. James New England Fuel & Transportation Co.
Henry Morgenthau, Sr. Underwood-Elliott-Fisher 1133 Fifth Avenue	Bank of N.Y. & Trust Co. (Asst. Comptroller); American Savings Bank (Trustee)
Dave Hennen Morris	
Mrs. Sara Delano Roosevelt, Hyde Park, N.Y.	FDR's mother
Laurence A. Steinhardt 120 Broadway	Guggenheim, Untermeyer & Marshall
Harry M. Warner 321W. 44th St.	Motion Picture Producers & Distributors of America, Inc.
William H. Woodin Secretary of the Treasury	American Car & Foundry; Remington Arms Co.
Edward J. Flynn 529 Courtlandt Ave.	Bronx County Safe Deposit Co.
James A. Farley adds to this list:	
James A. Farley adds to this list:	
William A. Julian	Director, Central Trust Co.
Jesse I. Straus 1317 Broadway	President, R.H. Macy & Co. N.Y. Life Insurance
Robert W. Bingham	Publisher, Louisville *Courier-Journal*
Basil O'Connor 120 Broadway	FDR's law partner

Footnotes

1. New York: Doubleday, Page, 1922.

2. Hugh S. Johnson, The Blue Eagle from Egg to Earth (New York: Doubleday, Doran, 1935), p. 116.

3. Ibid., p. 141.

4. Ibid., p. 157

5. Ibid., pp. 156–7. Italics in original.

6. United States Congress, Senate Special Committee investigating Presidential campaign expenditures, Presidential Campaign Expenditures. Report Pursuant to S. Res. 234, February 25 (Calendar Day, February 28), 1929. 70th Congress, 2nd session. Senate Rept. 2024 (Washington: Government Printing Office, 1929). Cited hereafter as Steiwer Committee Report.

7. New York: Directory of Directors Co., 1929.

8. The Memoirs of Herbert Hoover: The Cabinet and the Presidency 1920-1923 (London: Hollis and Carter, 1952), p. 300.

9. New Individualist Review, Winter, 1966.

10. Ibid., p. 5.

11. Ibid., p.10.

12. Herbert Hoover, The Memoirs of Herbert Hoover: The Great Depression 1929-1941 (New York: Macmillan, 1952), p. 420.

13. Freidel, The Ordeal, op. cit, p. 159.

14. John T. Flynn, "Whose Child is the NRA?" Harper's Magazine Sept. 1932, pp. 84-5.

15. Hugh S. Johnson, The Blue Eagle from Egg to Earth, op. cit., pp. 140-1.

16. The Public Papers and Addresses of Franklin D. Roosevelt; Vol. 1, The Genesis of the New Deal, 1928-1932 (New York: Random House, 1938), p. 632.

17. Freidel, The Ordeal, op. cit., p. 172.

CHAPTER 9

FDR AND THE CORPORATE SOCIALISTS

The Swope Plan

> **I think this is as revolutionary as anything that happened in this country in 1776, or in France in 1789, or in Italy under Mussolini or in Russia under Stalin.**
> Senator Thomas P. Gore in the National Recovery Administration Hearings, U.S. Senate Finance Committee, May 22, 1933.

Although the New Deal and its most significant component, the National Recovery Administration (NRA), are generally presented as the progeny of FDR's brain trust, as we have seen the essential principles had been worked out in detail long before FDR and his associates came to power. The FDR group did little more than put the stamp of academic approval to an already prepared plan.
The roots of the Roosevelt NRA are of peculiar importance. As we have seen in Chapter 6, allowing for vast changes in the industrial structure, NRA approximated a schema worked out in 1841 by FDR's ancestor, Assemblyman Clinton Roosevelt of New York. Then we noted that wartime dictator Bernard Baruch was preparing an NRA-like program in the 1920s and that he and his assistant Hugh Johnson were very much an integral part of the preliminary planning. Further, the Roosevelt NRA was in its details a plan presented by Gerard Swope (1872-1957) long-time president of General Electric Company. This Swope Plan[1] was in turn comparable to a German plan worked out in World War I by his opposite number Walter Rathenau, head of German General Electric (Allgemeine Elektizitäts Gesellschaft) in Germany, where it was known as the Rathenau Plan. So let's take a closer look at the Swope Plan.

THE SWOPE FAMILY

The Swope family was of German origin. In 1857 Isaac Swope, a German immigrant, settled in St. Louis as a manufacturer of watch cases. Two of Swope's sons, Herbert Bayard Swope and Gerard Swope, subsequently rose to the peak of American enterprise. Herbert Bayard Swope was long-time editor of the New York *World*, a racetrack devotee, a close friend of Bernard Baruch, and used by FDR as an unofficial envoy during the New Deal period. Herbert's brother Gerard made his career with General Electric Company. Swope started as a helper on the factory floor in 1893, became a sales representative in 1899, manager of the St. Louis office in 1901, and director of the Western Electric Company in 1913. During World War I Swope was assistant director of purchase, storage, and traffic in the Federal government under General George W. Goethals and planned the U.S. Army procurement program. In 1919

Swope became the first president of the International General Electric Company. Successful promotion of G.E.'s foreign business brought him to the presidency of G.E. in 1922 to succeed Edwin Rice, Jr. Swope remained as G.E.'s president from 1922 until 1939.

General Electric was a Morgan-controlled company and always had one or two Morgan partners on its board, while Swope was also a director of other Wall Street enterprises, including International Power Securities Co. and the National City Bank.

Gerard Swope's political development began in the 1890s. Biographer David Loth reports that, soon after coming to Chicago, Swope was introduced to socialists Jane Addams, Ellen Gates Starr, and their Hull House Settlement. This interest in social affairs developed to culminate in the 1931 Swope plan for stabilization of industry, 90 per cent of which consisted of a scheme for workmen's compensation, life and disability insurance, old-age pensions, and unemployment protection. The Swope plan is an extraordinary document. One short paragraph removes all industry from the anti-trust laws—a long-time industrial goal—while numerous lengthy paragraphs detail proposed social plans. In sum, the Swope Plan was a transparent device to lay the groundwork for the corporate state by defusing potential labor opposition with a massive welfare carrot.

The Swope Plan and Bernard Baruch's earlier and similar proposal became the Roosevelt National Recovery Act. The Wall Street origins of NRA did not go unnoticed when the act was debated by Congress. Witness for example, the indignant, but not altogether accurate, outburst of Senator Huey P. Long:

> I come here now and I complain. I complain in the name of the people of my country, of the sovereign State I represent. I complain in the name of the people wherever else it may be known. I complain if it be true, as I am informed by Senators on this floor, that under this act Mr. Johnson, a former employee of Mr. Baruch, has been put in charge of the administration of the act, and has already called as his aides the head of the Standard Oil Co., the head of General Motors, and the head of the General Electric Co.
> I complain if Mr. Peek, who is an employee of Mr. Baruch, or has been, as I have been informed on the floor of the Senate, has been placed in charge of administering the Farm Act, however good a man he may be and whatever his ideas may be.
> I complain if Mr. Brown, who, I am informed on the floor of the Senate, has been made an influential manipulator of the office of the Bureau of the Director of the Budget, has been an employee of Mr. Baruch, and is now given this authority. I complain because, on the 12th day of May 1932, before we went to Chicago to nominate a President of the United States, I stood in this very place on this floor and told the people of this country that we were not going to have the Baruch influence, at that time so potent with

> Hoover, manipulating the Democratic Party before nomination, after nomination, or after election.[2]

Huey Long was correct to point up the Wall Street dominance of NRA, but his identifications are a little haphazard. Hugh Johnson, long-time associate of Bernard Baruch, was indeed appointed head of NRA. Further, Johnson's principal assistants in NRA were three corporate heads: Walter C. Teagle, president of Standard Oil of New Jersey; Gerard Swope, president of General Electric and author of the Swope Plan; and Louis Kirstein, vice president of William Filene's Sons of Boston. As we have seen (p. 80) Filene was a long-time proponent of corporate socialism. The "head of General Motors" cited by Senator Long was Alfred P. Sloan, not related to NRA, but G.M. vice president John Raskob, who was the big fund raiser in 1928 and 1932 and behind-the-scenes operator promoting the election of Franklin D. Roosevelt in 1932. In other words, key positions in NRA and in the Roosevelt Administration itself were manned by men from Wall Street. The Public relations explanation for business men turned bureaucrats is that businessmen have the experience and should become involved in public service. The intent in practice has been to control industry. It should not, however, surprise us if the corporate socialists go to Washington D.C. after election of their favorite sons to take over the reins of monopoly administration. One would have to be naive to think it would be otherwise after the massive election investments recorded in Chapter 8.

Before President Roosevelt was inaugurated in March 1933, a so-called brain trust was more or less informally put to work on economic plans for the Roosevelt era. This group comprised General Hugh Johnson, Bernard Baruch (see p. 106 for his political contributions), Alexander Sachs of Lehman Brothers (see p. 117 for political contributions), Rexford G. Tugwell, and Raymond Moley. This small group, three from Wall Street and two academics, generated Roosevelt's economic planning.
This link between Bernard Baruch and NRA planning has been recorded by Charles Roos in his definitive volume on NRA:

> Early in March 1933 Johnson and Baruch started on a hunting trip and en route stopped in Washington. Moley had dinner with them and proposed that Johnson remain in Washington to draft a plan for industrial recovery. . . . The idea appealed to Baruch, and he promptly granted Johnson leave of absence from his regular duties. Then Johnson and Moley, after some study of the various proposals believed by the latter to have merit, proceeded to draw up a bill which would organize industry in an attack on the depression.[3]

According to Roos, Johnson's first NRA draft was on two sheets of foolscap paper and provided simply for suspension of the anti-trust laws, together with almost unlimited authority for President Roosevelt to do almost anything he wished with the economy,

including licensing and control of industry. According to Roos, "It was, of course, rejected by the Administration, since it would have made the President a dictator, and such power was not desired."

This seemingly incidental rejection of unwanted dictatorial power by the Roosevelt administration may be of some significance. In Chapter 10 we will describe the Butler affair, an attempt by the same Wall Street interests to install Roosevelt as a dictator or replace him with a more pliant figurehead in case of his objection. Johnson's first draft attempts were to set up NRA in a form consistent with Roosevelt as an economic dictator, and its rejection by Roosevelt is consistent with serious charges laid at the feet of Wall Street (p. 141). At this point in the planning, according to Roos, Johnson and Moley were joined by Tugwell and later by Donald R. Richberg, a Chicago labor attorney. The three proceeded to draft a more "comprehensive" bill, whatever that meant.

General Hugh Johnson, was appointed head of the National Recovery Administration created under the title of the N.I.R.A. and believed for a while that he was also to head the Public Works Administration. The plans and diagrams drawn up by General Johnson and Alexander Sachs of Lehman Brothers assumed that the NRA head would also direct the public works program.
Consequently, we can find the roots of the NRA bill and the Public Works Administration in this small Wall Street group. Their effort reflects both the Swope and the Baruch plans for corporate socialism, with an initial attempt to provide for a corporate dictatorship in the United States.

SOCIALIST PLANNERS OF THE 1930s

There were, of course, many other plans in the early 1930s; indeed, economic planning was endemic among the academics, politicians, and businessmen of this era. The weight of informed opinion considered economic planning essential to raise America from the depression. Those who doubted the efficacy and wisdom of economic planning were few and far between. Unfortunately, in the early 1930s no empiric experience existed to demonstrate that economic planning is inefficient, creates more problems than it solves, and leads to loss of individual freedom. To be sure, Ludwig von Mises had written Socialism and made his accurate predictions on the chaos of planning, but von Mises was even then an unknown economic theoretician. There is a mystical lure to economic planning. Its proponents always implicitly visualize themselves as the planners, and the anti capitalist psychology, so well described by von Mises, is the psychological pressure behind the scenes to make the plan come about. Even today in 1975, long after economic planning has been totally discredited, we still have the siren song of prosperity by planning. J. Kenneth Galbraith is one prominently vocal example, no doubt because Galbraith's personal estimate of his abilities and wisdom is greater than that of America at large. Galbraith recognizes that planning offers a means to exercise his assumed abilities to the full. The rest of us are to be coerced into the plan by the police power of

the state: a negation of liberal principles perhaps, but logic was never a strong point among the economic engineers.

In any case, in the 1930s economic planning had many more enthusiastic proponents and far fewer critics than today. Almost everyone was a Galbraith, and the basic content of the plans proposed was notably similar to his. The table below lists the more prominent plans and their outstanding attributes. Industry, always anxious to find shelter from competition in the police power of the state, itself proposed three plans. The most important of these industry plans, the Swope plan, had compulsory features for all companies with more than 50 employees, combining continuous regulation with, as we have noted, extraordinarily costly welfare proposals. The Swope plan is reproduced in full as Appendix A; the full text reflects the lack of well thought-out administrative proposals and the preponderance of irresponsible give-away welfare features. The first few paragraphs of the plan give the core of Swope's proposals: trade associations, enforced by the state and with power of enforcement concentrated in the hands of major corporations through a system of industrial votes. While 90 per cent of the proposal text is devoted to give-away pensions for workers, unemployment insurance, life insurance and so on, the core is in the first few paragraphs. In brief, the Swope Plan was a carrot to get what Wall Street so earnestly desired: monopoly trade associations with the ability to use state power to enforce monopoly—Frederic Howe's maxim of "get society to work for you" in practice.

Economic Stabilization Plans: 1933

Name of Plan	Proposal for Industry	Government Regulation	Welfare Proposals
	Industry Plans		
Swope Plan (General Electric)	Trade Associations, membership compulsory after three years for companies with 50 or more employees. Rulings mandatory	Continuous regulation by Federal Trade Commission	Life and disability insurance, pensions, and unemployment insurance
U.S. Chamber of Commerce Plan	National Economic Council; power not mandatory	No regulation	Individual corporation plans; public works planning

Associated General Contractors of America Plan	Grant by Congress of greater power to Federal Reserve Board. Bond issues to be authorized for revolving fund for construction; bond for increasing public and semi-public construction. Federal Reserve to guarantee solvency of banks	Financial regulation. Licensing of contractors. Establishment of construction credit bureaus	Stimulation of employment through greater building and construction activity. State bonds for public buildings; development of home loan bank
	Labor Plans		
American Federation of Labor Plan	National Economic Council; power not mandatory	No regulation	Spread jobs; maintenance of wages; guarantees of jobs; long range stabilization plans. Five day week and shorter day immediately. Program of public building
	Academic and General		
Stuart Chase Plan	Revival of War Industries Board using coercive, mandatory power, confined to 20 or 30 basic industries	Continuous regulation	National employment bureaus; reduction of hours; unemployment insurance; raising of wages; allocation of labor

National Civic Federation Plan	"Business Congress" of industrial organizations. No limitations or restrictions; full and complete power to fix prices or combine	Continuous regulation	Unemployment insurance plan. Raise wages
Beard Plan	National Economic Council," authorized by Congress, to coordinate finance, operation, distribution, and public service enterprises. Each industry governed by subsidiary syndicates	Continuous regulation	Use of unemployed on housing and public project programs

The U.S. Chamber of Commerce plan was similar to the Swope plan, but required only voluntary compliance with the code and did not embody the extensive welfare clauses of the Swope plan. The Chamber of Commerce plan was also based on voluntary compliance, not the coercive government regulation inherent in the Swope proposal.

The third industry plan was put forward by the Associated General Contractors of America. The AGC plan proposed that greater powers be granted the Federal Reserve System to guarantee banks bonds for public construction and, not surprisingly, establishment of special construction credit bureaus financed by the state, coupled with licensing of contractors. In brief, the AGC wanted to keep out competition and tap Federal (taxpayers') funds for promotion of the construction industry.

The American Federation of Labor plan proposed a National Economic Council to spread and guarantee jobs and embark on economic planning for stabilization. The unions did not push for government regulation.

The academic plans were notable in the sense that they supported industry objectives. Stuart Chase, a well-known socialist, came up with something very close to the Wall Street plans: in effect, a revival of Bernard Baruch's 1918 War Industries Board, with

coercive power granted to industry, but confined to 20 or 30 basic industries, with continuous regulation. The Chase plan was an approximation of Italian fascism. The Beard plan also proposed syndicates along Italian lines, with continuous regulation and use of the unemployed in public programs á la Marx and The Communist Manifesto. The National Civic Federation advocated the total planning concept: full and complete power to fix prices and combinations, with state regulation and welfare features to appease labor.

Almost no one, except of course Ludwig von Mises, pointed to the roots of the problem to draw the logical conclusion from economic history that the best economic planning is no economic planning.[4]

SOCIALISTS GREET THE SWOPE PLAN

Orthodox socialists greeted Swope's plan with a curious, if perhaps understandable, restraint. On the one hand, said the socialists, Swope had recognized the evils of unrestrained capitalism. On the other hand the Swope system, complained the socialists, would leave control of industry in the hands of industry itself rather than to the state. As Norman Thomas explained:

> Mr. Swope's scheme of regulation is a probably unconstitutional plan for putting the power of government behind the formation of strong capitalist syndicates which will seek to control the government which regulates them and, failing that, will fight it.[5]

Socialist criticism of General Electric's Swope did not consider whether the Swope system would work or had operational efficiency or how it proposed to work; orthodox socialist criticism was limited to the observation that control would be in the wrong hands if industry took over and not in the right hands of the government planners, that is, the socialists themselves. In sum, the dispute was over who was going to control the economy: Mr. Gerard Swope or Mr. Norman Thomas.

Consequently, the Thomas criticism of Swope has a curious duality, sometimes praiseful:

> Certainly it is significant that at least one of our authentic captains of industry, one of the real rulers of America, has overcome the profound and bewildered reluctance of the high and mighty to go beyond the sorriest platitudes in telling us how to break the depression they did so much to cause and so little to avert. Obviously Mr. Swope's speech had its good points . . .[6]

At other times Thomas is skeptical and points out that Swope, ". . . no longer trusts

individual initiative, competition and the automatic working of markets," but proposes to gear the system to the benefit of "the stockholding class."
There is no evidence that Gerard Swope and his associates ever trusted individual initiative, competition, and free markets any more
than did Norman Thomas. This is an important observation because, once we abandon the myths of all capitalists as entrepreneurs and all liberal planners as saviors of the little man, we see them both for what they are: totalitarians and the opponents of individual liberty. The only difference between them is who is to be the director.

THE THREE MUSKETEERS OF NRA

The National Recovery Administration, most important segment of the New Deal, was then designed, constructed, and promoted by Wall Street. In essence, the NRA originated with Bernard Baruch and his long-time assistant General Johnson. In detail, NRA was the Swope Plan, and its general principles were promoted over the years by numerous prominent Wall Streeters.

There were, of course, planning variants from the socialists and Marxist-influenced planners, but these variants were not the versions that finally became NRA. NRA was essentially fascist in that industry, not central state planners, had the authority to plan, and these industrial planners came from the New York financial establishment. Bernard Baruch's office was at 120 Broadway; the offices of Franklin D. Roosevelt (the New York offices of Fidelity & Deposit and the law offices of Roosevelt & O'Connor) were also at 120 Broadway. Gerard Swope's office and the executive offices of General Electric Company were at the same address. We can therefore say in a limited sense that the Roosevelt NRA was born at 120 Broadway, New York City.

General Hugh Johnson had three principal assistants in NRA, and "these three musketeers were on the job longer and they walked in and out of my office whenever they discovered anything that needed attention."[7] The three assistants were Wall Streeters from major industries who themselves held prominent positions in major firms in these industries: Gerard Swope, president of General Electric, Walter C. Teagle, of Standard Oil of New Jersey, and Louis Kirstein of William Filene's Sons, the retail merchants. Through this trio, a dominant element of big business was in control at the very peak of NRA. This concentration of control explains the thousands of complaints of NRA oppression that came from medium and small businessmen.

Who were these men? As we have noted, Gerard Swope of General Electric had been assistant to General Johnson in the War Industries Board of World War I. While NRA was under discussion, Johnson "suggested his name to Secretary Roper at once." General Electric was in 1930 the largest of the electrical equipment manufacturers, with Westinghouse holding many of the basic patents in the field, as well as a large interest in

RCA and many international subsidiaries and affiliates. In the late 1920s G.E. and Westinghouse produced about three quarters of the basic equipment for distributing and generating electric power in the U.S. General Electric, however was the dominant firm in the electrical equipment industry.[8] Under NRA the National Electrical Manufacturers Association (NEMA) was designated as the agency for supervising and administering the electrical industry code. NEMA moved promptly and by July 1933 presented the second code of "fair competition" for the President's signature.

Johnson's second musketeer was Walter Teagle, chairman of the board of the Standard Oil of New Jersey. Standard of New Jersey was the biggest integrated oil company in the U.S., and only Royal Dutch challenged it in international sales. Jersey Standard was controlled by the Rockefeller family, whose holdings in the early 1930s have been estimated at between 20 and 25 per cent.[9] One might therefore say that Teagle represented the Rockefeller interests in NRA, whereas Swope represented the Morgan interests. It is interesting to note in passing that the largest Standard competitor was Gulf Oil, controlled by the Mellon interests, and there were persistent efforts early in the Roosevelt administration to prosecute Mellon for tax evasion.

The third of Johnson's three musketeers at NRA was Louis Kirstein, vice president of Filene's of Boston. Edward Filene is notable for his books on the advantages of trade associations, fair competition, and cooperation (see page 81 below).

The peak of the Roosevelt National Recovery Administration consisted of the president of the largest electrical corporation, the chairman of the largest oil company, and the representative of the most prominent financial speculator in the United States.

In brief, the administration of NRA was a reflection of the New York financial establishment and its pecuniary interests. Further, as we have seen, since the plan itself originated in Wall Street, the presence of businessmen in the administration of NRA cannot be explained on the basis of their experience and administrative ability. NRA was a creature of Wall Street implemented by Wall Streeters.

THE OPPRESSION OF SMALL BUSINESS

The proponents of the National Industrial Recovery Act made a great show that NRA would protect the small businessman who, it was alleged, had suffered in the past from unfair application of the anti-trust laws; the suspension of the anti-trust laws would remove their more unwelcome features, while NRA would preserve their welcome antimonopoly provisions. Senator Wagner stated that all industry would formulate the proposed industrial codes, not just big business. Senator Borah, on the contrary, contended that "monopoly" was about to receive a service it had coveted for over 25

years, that is, "the death of the antitrust laws" and that the NRA industrial codes "are going to be combinations or contracts in restraint of trade, or it would not be necessary to suspend the antitrust laws." Senator Borah also pointedly accused Senator Wagner of betraying the legitimate businessman for the sake of Wall Street:

> The elder Rockefeller did not need any criminal law to aid him when he was building up his wealth. He destroyed the independents everywhere; he scattered them to the four winds; he concentrated his great power. But the Senator would not only give to the combines all the power to write their code, but would give them the power to indict and prosecute the man who violated the code, although he might be pursuing a perfectly legitimate business.
> Mr. President, I do not care how much we strengthen, how much we build up, how much we buttress the antitrust law; I object to a suspension in any respect whatever, because I know that when those laws are suspended, we give these 200 non banking corporations, which control the wealth of the United States, a stupendous power, which can never be controlled except through the criminal laws enforced by the courts.[10]

Senator Borah then cited Adam Smith (see p. 99) to effect, pointing out that no definition of fair competition was in the bill and that codes of fair competition would degenerate into the dictates of the major corporations. Similarly, Senator Gore pointed to the possibility that the President could require all members of an industry to be licensed and that this meant that the President could revoke a license at his pleasure, an obvious infringement on due process of law and basic property rights:

> SENATOR GORE. Could the President revoke that license at this pleasure?
> SENATOR WAGNER. Yes, for a violation of the code imposed by the Federal Government.
> SENATOR GORE. On what sort of hearing?
> SENATOR WAGNER. After a hearing. It is provided that a hearing may be had, before a license can be revoked.
> SENATOR GORE. That is something that really affects the life and death of a particular industry or enterprise, if he has the power to revoke the license.
> SENATOR WAGNER. Yes; it is a sanction.
> SENATOR GORE. What I wanted to ask you. Senator, is this: Do you think you could place that power in the hands of an executive officer?
> SENATOR WAGNER. I do, in the case of an emergency.
> SENATOR GORE. To exterminate an industry?
> SENATOR WAGNER. All of these powers, of course, are lodged in one individual, and we have just got to rely upon him to administer it fairly and justly. We had the same sort of power during the war.
> SENATOR GORE. I know that, and Mr. Hoover, if I may use these words,

> put free-born American citizens out of business without trial by jury.
> SENATOR WAGNER. The philosophy of this bill is to encourage voluntary action and initiative on the part of industry, and I doubt whether or not these compulsory methods will be used at all except on very rare occasions; but if you are going to lift the standard, you have got to have some sanctions in order to enforce the code that may be adopted.
> SENATOR GORE. I understand, but if you are going to carry out this system you have to have power to carry it out. My point is why in a free country a free man ought to be required to take out a license to engage in legitimate industry, and why somebody under our constitutional system should be given the power to destroy the value of his property, which you do when you bring about a situation where he cannot operate. That seems to me approaching the point of taking property without due process of law.[11]

When we examine the results of the N.I.R.A., even a few short months after passage of the bill, we find that these Senatorial fears were fully justified and that President Roosevelt had abandoned the small businessman of the United States to the control of Wall Street. Many industries were dominated by a few major firms, in turn under control of Wall Street investment houses. These major firms were dominant, through the three musketeers, in establishing the NRA codes. They had the most votes and could and did set prices and conditions ruinous to smaller firms.

The iron and steel industry is a good example of the manner in which large firms dominated the NRA code. In the 1930s two leading companies, United States Steel, with 39 per cent, and Bethlehem Steel, with 13.6 per cent, controlled over half of the country's steel ingot capacity. The board of U.S. Steel included J.P. Morgan and Thomas W. Lamont, as well as chairman Myron C. Taylor. The board of Bethlehem included Percy A. Rockefeller and Grayson M-P. Murphy of Guaranty Trust, whom we shall meet again in Chapter 10.

In 1930 the largest stockholders of U.S. Steel were George F. Baker and George F. Baker, Jr., with combined shares of 2000 preferred and107,000 common; Myron C. Taylor head of the Finance Committee of U.S. Steel owned 27,800 shares of common; J. P. Morgan held 1261 shares; and James A. Farrell had title to 4850 shares of preferred stock. These men were also substantial Presidential campaign contributors. For example, in Hoover's 1928 campaign they contributed

J.P. Morgan.. ...$5,000
J.P. Morgan Company..................................$42,500
George F. Baker..$27,000
George F. Baker Jr.......................................$20,000

Myron C. Taylor..$25,00

In the NRA, we find that U.S. Steel and Bethlehem Steel effectively controlled the whole industry by virtue of their votes in the industrial codes; of a total of 1428 votes, these two companies alone were allowed a total of 671 votes, or 47.2 per cent, perilously close to outright control and with undoubted ability to find an ally among the smaller but still significant companies.

NRA-Voting Strength in the Iron and Steel Industry Code

Company[12]	Votes in Code Authority	Percentage of Total
U.S. Steel	511	36.0
Bethlehem Steel	160	11.2
Republic Steel	86	6.0
National Steel	81	5.7
Jones and Laughlin	79	5.5
Youngstown Sheet & Tube	74	5.1
Wheeling Steel	73	5.1
American Rolling Mill	69	4.8
Inland Steel	51	3.6
Crucible Steel	38	2.7
McKeesport Tin Plate	27	1.9
Allegheny Steel	21	1.5
Spang-Chalfant	17	1.2
Sharon Steel Hoop	16	1.1
Continental Steel	16	1.1

Source: NRA Report Operation of the Basing Point System in the Iron and Steel Industry.

Although U.S. Steel and Bethlehem were the major units in the iron and steel industry before passage of the NRA, they were unable to control competition from numerous smaller firms. After the passage of NIRA, these two firms were able, through their dominance of the code system, also to dominate the iron and steel industry.
John D. Rockefeller organized the Standard Oil trust in 1882 but, as a result of court orders under the Sherman Act, the cartel was dissolved into 33 independent companies. In 1933 these companies were still controlled by the Rockefeller family interests; the

Sherman Act was more shadow than substance:

Company	Net income (1930) in Million $$
Standard Oil of New Jersey	57
Standard Oil of Indiana	46
Standard Oil of California	46
Standard Oil of New York	16

Offices of the "independent" Standard companies continued to be located at Rockefeller headquarters, at this time at 25 and 26 Broadway. During the 1920s new capital entered, and there was a relative shift in the importance of the various Standard Oil companies. By the time of the New Deal the largest single unit was Standard Oil of New Jersey, in which the Rockefeller interests held a 20 to 25 per cent interest. The president of New Jersey Standard, Walter S. Teagle, became one of the three musketeers of NRA. When we look at the auto industry in 1930 we find that two companies, Ford and General Motors, sold about three quarters of the cars produced in the United States. If we include Chrysler, the three companies sold about five sixths of all U.S. automobiles produced:

Ford Motor Co... 40 per cent

General Motors... 35 per cent

Chrysler Corp... 8 per cent

Under its founder, Henry Ford, the Ford Motor Company had little use for politics, although James Couzens, one of the original Ford stockholders, later became Senator from Michigan. Ford maintained its executive offices in Dearborn, Michigan and only a sales office in New York. Ford was also vehemently anti-NRA and anti-Wall Street, and Henry Ford is notable by reason of his absence from the lists of contributors to Presidential campaigns.

On the other hand, General Motors was a creature of Wall Street. The firm was controlled by the J.P. Morgan firm; the chairman of the board was Pierre S. Du Pont, of the Du Pont Company, which in 1933 had about a 25 per cent interest in General Motors. In 1930 the General Motors board comprised Junius S. Morgan, Jr. and George Whitney of the Morgan firm; directors from the First National Bank and Bankers Trust; seven directors from Du Pont; and Owen D. Young of General Electric.

Another example is the International Harvester Company, in 1930 under its president Alexander Legge the giant of the agricultural equipment industry. Legge was part of the NRA. The agricultural equipment combination was formed in 1920 by the J.P. Morgan Company and controlled about 85 per cent of the total production of harvesting machines in the United States. In 1930, the firm was still dominant in the industry:

Company	Assets	Percentage of Market
International Harvester (11 Broadway)	$384 million (1929)	60
Deere & Co.	$107	17
J.I. Case	$55	8
Others	$100	15
Total	$646 million	100

In 1930 at least 80 large companies were mining bituminous coal in the United States; of these, two—Pittsburgh Coal and Consolidation Coal—were dominant. Pittsburgh Coal was under control of the Pittsburgh banking family, the Mellons. Consolidation Coal was largely owned by J.D. Rockefeller, who owned 72 per cent of the preferred and 28 per cent of the common stock. Both the Mellons and the Rockefellers were heavy political contributors. Similarly, anthracite production was concentrated in the hands of the Reading Railroad, which mined 44 per cent of U.S. hard coal. Reading was controlled by the Baltimore and Ohio Railroad, which held 66 per cent of its stock, and the chairman of B & 0 was E.T. Stotesbury, a partner in the Morgan firm.

When we look at machine-building firms in the United States in 1930, we find that the largest by far was General Electric—and president Swope of G.E. was intimately connected with NRA.

Major Machine Building Firms (1929)

Firm	Assets in Millions	Profits (1929) in Millions	Sales (1929) in Millions
General Electric, 120 Broadway	$500	$71	$415.3
American Radiator & Standard Sanitary, 40 W. 40th St.	226	20	
Westinghouse Electric, 150 Broadway	225	27	216.3

Baldwin Locomotive, 120 Broadway	100	3	40
American Locomotive, 30 Church St.	106	7	
American Car & Foundry, 30 Church St.	120	2.7	
International Business Machines, 50 Broadway	40	6.7	
Otis Elevator, 260 11th Avenue	57	8	
Crane Company	116	11.5	

As we glance down the list we note that American Car & Foundry (whose president, Woodin, became Secretary of the Treasury under Roosevelt), American Radiator & Standard, and Crane Company were all prominent contributors to FDR.

Given this dominant influence of large firms in the NRA and the Roosevelt administration, it is not surprising that NRA was administered in a manner oppressive to small business. Even in the brief life of NRA, until it was declared unconstitutional, we find evidence of oppression: witness the complaints by small business in the industries we have discussed compared to other industries in small business with many more units:

Industry	Numbers of Complaints of Oppression (January-April 1934)
Major Industry	
Iron and Steel	66
Investment Banking	47
Petroleum	60
Electrical Manufacturing	9
Small Business	
Cleaning and Dyeing	31
Ice	12
Printing	22
Boot and Shoes	10
Laundry	9

Source: Roos, NRA Economic Planning, p. 411, from unpublished NRA data.

Footnotes

1. See Appendix A for the full text.

2. Senator Huey P. Long, Congressional Record, June 8, 1933, p. 5250.3. Charles F. Ross, NRA Economic Planning (Indianapolis: The Principia Press 1937), p. 37.

4. Should the reader wish to pursue the explanation for this pervasive inability to see the obvious, he could start in no better place than Ludwig von Mises, The Anti-Capitalistic Mentality (New York; Van Nostrand, 1956).

5. "A Socialist Looks at the Swope Plan," The Nation, Oct. 7, 1931, p. 358.

6. Ibid., p. 357.

7. Hugh S. Johnson, The Blue Eagle from Egg to Earth, op. cit., p. 217.

8. For more information see Harry W. Laidler, Concentration of Control in American Industry (New York: Crowell, 1931), Chapter XV.

9. Ibid., p. 20.

10. Congressional Record, 1933, p. 5165.

11. United States Senate, National Industrial Recovery, Hearings before Committee on Finance, 73rd Congress, 1st Session, S.17and H.R. 5755 (Washington: Government Printing Office, 1933), p. 5.

12. In addition, the following smaller firms had votes: Acme Steel (9), Granite City Steel (8), Babcock and Wilcox (8), Alan Wood (7), Washburn Wire (7), Interlake Iron (7), Follansbee Bros. (6), Ludlum Steel (6), Superior Steel (6), Bliss and Laughlin (6), Laclede Steel (5), Apollo Steel (5), Atlantic Steel (4), Central Iron and Steel (4), A.M. Byers Company (4), Sloss-Sheffield (4), Woodward Iron (3), Firth-Sterling (2), Davison Coke and Iron (2), Soullin Steel (1), Harrisburg Pipe (1), Eastern Rolling Mill (1), Michigan Steel Tube (1), Milton Manufacturing Company (1), and Cranberry Furnace (1).

CHAPTER 10

FDR; Man on the White Horse

> **In the last few weeks of the committee's official life it received evidence showing that certain persons had made an attempt to establish a fascist organization in this country. There is no question that these attempts were discussed, were planned, and might have been placed in execution when and if the financial backers deemed it expedient....**
> **This committee received evidence from Maj. Gen. Smedley D. Butler (retired), twice decorated by the Congress of the United States . . . your committee was able to verify all the pertinent statements made by General Butler....**
> John W. McCormack, Chairman, Special Committee on Un-American Activities, House of Representatives, February 15, 1935.

Just before Christmas 1934, news of a bizarre plot to install a dictator in the White House surfaced in Washington and New York, and the story—one of unparalleled significance—was promptly smothered by Congress and the establishment press.[1]

On November 21, 1934 *The New York Times* printed the first portion of the Butler story as told to the House Un-American Activities Committee, giving it front-page treatment and an intriguing lead paragraph:

> A plot of Wall Street interests to overthrow President Roosevelt and establish a fascist dictatorship, backed by a private army of 500,000 ex-soldiers and others, was charged by Major Gen. Smedley D. Butler, retired Marine Corps officer. . . .

The New York Times report added that General Butler, ". . . had told friends . . . that General Hugh S. Johnson, former NRA administrator, was scheduled for the role of dictator, and J.P. Morgan & Co. as well as Murphy & Co. were behind the plot."

After this promising opening, *The New York Times* reporting gradually faded away and finally disappeared. Fortunately, enough information has since surfaced to demonstrate that the Butler Affair or the Plot to Seize the White House is an integral part of our story of FDR and Wall Street.

GRAYSON M-P. MURPHY COMPANY, 52 BROADWAY

The central figure in the plot was Major General Smedley Darlington Butler, a colorful, popular, widely known Marine Corps officer, twice decorated with the Congressional Medal of Honor and a veteran of 33 years of military service. General Butler testified in 1934 to the McCormack-Dickstein Committee investigating Nazi and Communist activities in the United States that a plan for a White House dictatorship was outlined to him by two members of the American Legion: Gerald C. MacGuire, who worked for Grayson M-P. Murphy & Co., 52 Broadway, New York City, and Bill Doyle, whom Butler identified as an officer of the American Legion. General Butler testified that these men wanted to "unseat the Royal Family in control of the American Legion at the Convention to be held in Chicago, and [were] very anxious to have me take part in it." A scheme was outlined to General Butler: he was to come before the convention as a legion delegate from Honolulu; there would be two or three hundred American Legion members in the audience; and "these planted fellows were to begin to cheer and start a stampede and yell for a speech, then I was to go to the platform and make a speech."

The prepared speech was to be written by Morgan associate John W. Davis. To prove his Wall Street financial backing, MacGuire showed General Butler a bank book listing deposits of $42,000 and $64,000 and mentioned that their source was Grayson M-P. Murphy, director of Guaranty Trust Company and other Morgan-controlled companies. A millionaire banker, Robert S. Clark, with offices in the Stock Exchange Building at 11 Wall Street, was also involved.

Robert Clark was incidentally known to General Butler from his China campaign days. MacGuire and Doyle also offered Butler a substantial sum to make a similar speech before the convention of the Veterans of Foreign Wars at Miami Beach. According to MacGuire, his group had investigated the background of Mussolini and Italian fascism, Hitler's organization in Germany, and the Croix de Feu in France and hinted that it was time to establish a similar organization in the United States. General Butler testified to the Congressional committee about MacGuire's statement in the following words:

> He said, "The time has come now to get the soldiers together."
> "Yes," I said, "I think so, too." He said, "I went abroad to study the part that the veteran plays in the various set-ups of the governments that they have abroad. I went to Italy for 2 or 3 months and studied the position that the veterans of Italy occupy in the Fascist set-up of Government, and I discovered that they are the background of Mussolini. They keep them on the pay rolls in various ways and keep them contented and happy; and they are his real backbone, the force on which he may depend, in case of trouble, to sustain him. But that set-up would not suit us at all. The soldiers of America would not like that. I then went to Germany to see what Hitler was doing, and his whole strength lies in organizations of soldiers, too. But that would not do. I looked into the Russian business. I found that the use of

> the soldiers over there would never appeal to our men. Then I went to France, and I found just exactly the organization we are going to have. It is an organization of super soldiers." He gave me the French name for it, but I do not recall what it is. I never could have pronounced it, anyhow. But I do know that it is a super organization of members of all the other soldiers' organizations of France, composed of noncommissioned officers and officers. He told me that they had about 500,000 and that each one was a leader of 10 others, so that it gave them 5,000,000 votes. And he said, "Now, that is our idea here in America—to get up an organization of that kind."[2]

What would be the objective of this super organization? According to the previously cited *New York Times*,[3] General Butler is reported to have testified that the affair was an attempted *coup d'etat* to overthrow President Roosevelt and replace him with a fascist dictator. This interpretation is repeated by Archer, Seldes, and other writers. However, this was not the accusation made by General Butler to the committee. Butler's precise statement concerning the projected organization, the use to which it was to be put when established, and the role of President Roosevelt is as follows; General Butler reported on his conversation with MacGuire:

> I said, "What do you want to do with it when you get it up?"
> "Well," he said, "we want to support the President."
> I said, "The President does not need the support of that kind of an organization. Since when did you become a supporter of the President? The last time I talked to you you were against him."
> He said, "Well, he is going to go along with us now."
> "Is he?"
> "Yes."
> "Well, what are you going to do with these men, suppose you get these 500,000 men in America? What are you going to do with them?"
> "Well," he said, "they will be the support of the President."
> I said, "The President has got the whole American people. Why does he want them?"
> He said, "Don't you understand the set-up has got to be changed a bit? Now, we have got him—we have got the President. He has got to have more money. There is not any more money to give him. Eighty percent of the money now is in Government bonds, and he cannot keep this racket up much longer. He has got to do something about it. He has either got to get more money out of us or he has got to change the method of financing the Government, and we are going to see to it that he does not change that method. He will not change it."
> I said, "The idea of this great group of soldiers, then, is to sort of frighten him, is it?"

"No, no, no; not to frighten him. This is to sustain him when others assault him."
I said, "Well I do not know about that. How would the President explain it?"
He said: "He will not necessarily have to explain it, because we are going to help him out. Now, did it ever occur to you that the President is overworked? We might have an Assistant President, somebody to take the blame; and if things do not work out, he can drop him."
He went on to say that it did not take any constitutional change to authorize another Cabinet official, somebody to take over the details of the office—take them off the President's shoulders. He mentioned that the position would be a secretary of general affairs—a sort of super secretary.
CHAIRMAN [Congressman McCormack]. A secretary of general affairs?
BUTLER. That is the term used by him—or a secretary of general welfare—I cannot recall which. I came out of the interview with that name in my head. I got that idea from talking to both of them, you see. They had both talked about the same kind of relief that ought to be given the President, and he said: "You know, the American people will swallow that. We have got the newspapers. We will start a campaign that the President's health is failing. Everybody can tell that by looking at him, and the dumb American people will fall for it in a second." And I could see it. They had that sympathy racket, that they were going to have somebody take the patronage off of his shoulders and take all the worries and details off of his shoulders, and then he will be like the President of France. I said, "So that is where you got this idea?"
He said: "I have been traveling around looking around. Now, about this super organization—would you be interested in heading it?"
I said, "I am interested in it, but I do not know about heading it. I am very greatly interested in it, because you know. Jerry, my interest is, my one hobby is, maintaining a democracy. If you get these 500,000 soldiers advocating anything smelling of Fascism, I am going to get 500,000 more and lick the hell out of you, and we will have a real war right at home. You know that."
"Oh, no. We do not want that. We want to ease up on the President."
"Yes; and then you will put somebody in there you can run; is that the idea? The President will go around and christen babies and dedicate bridges, and kiss children. Mr. Roosevelt will never agree to that himself."
"Oh yes; he will. He will agree to that."[4]

In other words, the Wall Street plot was not to dispose of President Roosevelt at all, but to kick him upstairs and install an Assistant President with absolute powers. Just why it was necessary to go to the trouble of installing an Assistant President is unclear because the Vice President was in office. In any event, it was planned to run the United States with a Secretary of General Affairs, and the gullible American public would accept this

under the guise of necessary protection from a communist take-over.

At this point it is interesting to recall the role of many of these same financiers and financial firms in the Bolshevik Revolution—a role, incidentally, that could not have been known to General Butler[5]—and the use of similar Red scare tactics in the 1922 United Americans organization. Grayson M-P. Murphy was, in the early 1930s, a director of several companies controlled by the J.P. Morgan interests, including the Guaranty Trust Company, prominent in the Bolshevik Revolution, the New York Trust Company, and Bethlehem Steel, and was on the board of Inspiration Copper Company, National Aviation Corporation, Intercontinental Rubber Co., and U.S. & Foreign Securities. John W. Davis, the speech writer for General Butler, was a partner in Davis, Polk, Wardwell, Gardner & Reed of 15 Broad Street. Both Polk and Wardwell of this prestigious law firm, as well as Grayson Murphy, had roles in the Bolshevik Revolution. Further, Davis was also a co-director with Murphy in the Morgan-controlled Guaranty Trust Co. and a co director with Presidential hopeful Al Smith in the Metropolitan Life Insurance Co., as well as director of the Mutual Life Insurance Co., the U.S. Rubber Co., and American Telephone and Telegraph, the controlling unit of the Bell System.

Fortunately for history. General Butler discussed the offer with an impartial newspaper source at a very early point in his talks with MacGuire and Doyle. The McCormack-Dickstein Committee heard testimony under oath from this confidant, Paul Comley French. French confirmed the facts that he was a reporter for *The Philadelphia Record* and the *The New York Evening Post* and that General Butler had told him about the plot in September 1934. Subsequently, on September 13,1934 French went to New York and met with MacGuire. The following is part of French's statement to the Committee:

> MR. FRENCH. [I saw] Gerald P. MacGuire in the offices of Grayson M.-P. Murphy & Co., the twelfth floor of 52 Broadway, shortly after 1 o'clock in the afternoon. He has a small private office there and I went into his office. I have here some direct quotes from him. As soon as I left his office I got to a typewriter and made a memorandum of everything that he told me. "We need a Fascist government in this country," he insisted, "to save the Nation from the communists who want to tear it down and wreck all that we have built in America. The only men who have the, patriotism to do it are the soldiers and Smedley Butler is the ideal leader. He could organize a million men over night." During the conversation he told me he had been in Italy and Germany during the summer of 1934 and the spring of 1934 and had made an intensive study of the background of the Nazi and Fascist movements and how the veterans had played a part in them. He said he had obtained enough information on the Fascist and Nazi movements and of the part played by the veterans, to properly set up one in this country. He emphasized throughout his conversation with me that the whole thing was tremendously patriotic, that it was saving the Nation from communists,

> and that the men they deal with have that crackbrained idea that the Communists are going to take it apart. He said the only safeguard would be the soldiers. At first he suggested that the General organize this outfit himself and ask a dollar a year dues from everybody. We discussed that, and then he came around to the point of getting outside financial funds, and he said that it would not be any trouble to raise a million dollars.
> During the course of the conversation he continually discussed the need of a man on a white horse, as he called it, a dictator who would come galloping in on his white horse. He said that was the only way; either through the threat of armed force or the delegation of power, and the use of a group of organized veterans, to save the capitalistic system.
> He warmed up considerably after we got under way and he said, "We might go along with Roosevelt, and then do with him what Mussolini did with the King of Italy." It fits in with what he told the general [Butler], that we would have a Secretary of General Affairs, and if Roosevelt played ball, swell; and if he did not, they would push him out.[6]

ACKSON MARTINDELL, 14 WALL STREET

The sworn testimony of General Smedley Butler and Paul French in the committee hearings has a persistent thread. General Butler rambled from time to time, and some parts of his statement are vague, but there is obviously a lot more to the story than an innocent gathering of American Legion members into a super organization. Is there any independent evidence to confirm General Butler and Paul French? Unknown to both Butler and French, Guaranty Trust had been involved in Wall Street maneuverings in the Bolshevik Revolution in 1917, so indicating at least a predisposition to mix financial business with dictatorial politics; two of the persons involved in the plot were directors of Guaranty Trust. Also, before the hearings were abruptly halted, the committee heard evidence from an independent source, which confirmed many details recounted by General Butler and Paul French. In December 1934 Captain Samuel Glazier, Commanding Officer of the CCC Camp at Elkridge, Maryland,[7] was called before the committee.

On October 2, 1934, testified Captain Glazier, he had received a letter from A.P. Sullivan, Assistant Adjutant General of the U.S. Army, introducing a Mr. Jackson Martindell, "who will be shown every courtesy by you." This letter was sent to Glazier by command of Major General Malone of the U.S. Army. Who was Jackson Martindell? He was a financial counsel with offices at 14 Wall Street, previously associated with Stone & Webster & Blodget, Inc., investment bankers of 120 Broadway, and with Carter, Martindell & Co., investment bankers at 115 Broadway.[8] Martindell was a man of substance, living according to The New York Times, ". . . in the centre of a beautiful sixty acre estate" that he had bought from Charles Pfizer,[9] and was sufficiently influential for

General Malone to arrange a conducted tour of the Elkridge, Maryland Conservation Corps Camp.
Martindell's association with Stone & Webster (120 Broadway) is significant and by itself warrants a follow-up on his associates in the Wall Street area.

Captain Glazier provided Martindell with the requested camp tour and testified to the committee that Martindell posed numerous questions about a similar camp for men to work in industry rather than in forests. A week or so after the visit. Captain Glazier visited Martindell's New Jersey home, learned that he was a personal friend of General Malone, and was informed that Martindell wanted to organize camps similar to the CCC to train 500,000 young men. The overtones of this talk, as reported by Glazier, were anti-semitic and suggested an attempted coup d'etat in the United States; the organization sponsoring this overthrow was called American Vigilantes, whose emblem was a flag with a red eagle on a blue background in lieu of the German swastika. This was in part an independent verification of General Butler's testimony.

GERALD C. MACGUIRE'S TESTIMONY

Gerald MacGuire, one of the accused plotters, was called before the committee and testified at length under oath. He stated that he met General Butler in 1933 and that his reasons for visiting Butler were, (1) to discuss the Committee for a Sound Dollar and (2) that he thought Butler would be a "fine man to be commander of the Legion."

MacGuire admitted that he had told General Butler that he was a member of the distinguished guest committee of the American Legion; he had a "hazy recollection" that millionaire Robert S. Clark had talked to Butler, but "denied emphatically" making arrangements for Clark to meet Butler. MacGuire admitted sending Butler postcards from Europe, that he had had a conversation with the general at the Bellevue-Stratford Hotel, and that he had told Butler that he was going to the convention in Miami. However, when asked whether he had told Butler about the role veterans played in European governments, he replied that he had not, although he stated that he had told Butler that in his opinion "Hitler would not last another year in Germany and that Mussolini was on the skids."[10]
MacGuire's testimony on his meeting with French differed substantially from French's account:

> QUESTION. Now, what did Mr. French call to see you about, Mr. MacGuire?
> ANSWER. He called, according to Mr. French's story, to meet me, and to make my acquaintance, because I had known General Butler, and I was a friend of his, and he wanted to know me, and that was mainly the object of his visit.
> QUESTION. Nothing else discussed?

> ANSWER. A number of things discussed; yes. The position of the bond market, the stock market; what I thought was a good buy right now; what he could buy if he had seven or eight hundred dollars; the position of the country; the prospects for recovery, and various topics that any two men would discuss if they came together.
> QUESTION. Nothing else?
> ANSWER. Nothing else, excepting this, Mr. Chairman: As I said yesterday, I believe, when Mr. French came to me, he said. General Butler is, or has, again been approached by two or three organizations—and I think he mentioned one of them as some Vigilante committee of this country— and he said, "What do you think of it?" and I think I said to him, "Why, I don't think the General ought to get mixed up with any of those affairs in this country. I think these fellows are all trying to use him; to use his name for publicity purposes, and to get membership, and I think he ought to keep away from any of these organizations."
> QUESTION. Nothing else?
> ANSWER. Nothing else. That was the gist of the entire conversation.[11]

MacGuire further testified that he worked for Grayson Murphy and that Robert S. Clark had put up $300,000 to form the Committee for a Sound Dollar.

The McCormack-Dickstein Committee was able to confirm the fact that Robert Sterling Clark transmitted money to MacGuire for political purposes:

> He [MacGuire] further testified that this money was given him by Mr. Clark long after the Chicago Convention of the Legion, and that he had also received from Walter E. Frew of the Corn Exchange Bank & Trust Co. the sum of $1,000, which was also placed to the credit of the Sound Money Committee.
> MacGuire then testified that he had received from Robert Sterling Clark approximately $7200, for his traveling expenses to, in and from Europe, to which had been added the sum of $2500 on another occasion and $1000 at another time, and he stated under oath, that he had not received anything from anybody else and further testified that he had deposited it in his personal account at the Manufacturers Trust Co., 55 Broad Street.
> MacGuire further testified that he had a drawing account of $432 a month right now, to which were added some commissions. Later MacGuire testified that the $2500 and the $1000 were in connection with the organization of the Committee for a Sound Dollar.
> Chairman McCormack then directed the following question: "Did Mr. Clark contribute any money in any other way, besides the $30,000. and the other sums that you have enumerated he gave to you personally?" to which MacGuire replied, "No sir, he has been asked several times to contribute to

different funds, but he has refused."[12]

In its New York press release the committee noted several discrepancies in MacGuire's testimony on receipt of funds. The section reads as follows:

> Neither could MacGuire remember what the purpose of his trip was to Washington or whether he had given the Central Hanover Bank thirteen one thousand dollar bills or that he had bought one of the letters of credit with a certified check drawn on the account of Mr. Christmas.
> In the course of the questioning MacGuire could not remember whether he had ever handled thousand dollar bills, and certainly could not remember producing thirteen of them at one time in the bank. It must be remembered in this connection, that the $13,000 purchase with one thousand dollar bills at the bank, came just six days after Butler claims MacGuire showed him eighteen one thousand dollars bills in Newark.
> From the foregoing, it can readily be seen that in addition to the $30,000 which Clark gave MacGuire for the Sound Money Committee that he produced approximately $75,000 more which MacGuire reluctantly admitted on being confronted with the evidence.
> This $75,000 is shown in the $26,000 that went into the Manufacturers Trust account, $10,000 in currency at the luncheon, the purchase of letters of credit totaling $30,300, of which Christmas' certified check was represented as $15,000, expenses to Europe close to $8,000. This still stands unexplained.
> Whether there was more and how much, the Committee does not yet know.[13]

The committee then asked MacGuire an obvious question: whether he knew Jackson Martindell. Unfortunately, an equally obvious error in MacGuire's answer was allowed to pass by unchallenged. The committee transcript reads as follows:

> By the Chairman:
> QUESTION. Do you know Mr. Martindell, Mr. MacGuire?
> ANSWER. Mr. Martin Dell? No, sir; I do not.
> THE CHAIRMAN. Is that his name?
> MR. DICKSTEIN. I think so.[14]

So, in brief, we have three reliable witnesses—General Butler, Paul French, and Captain Samuel Glazier—testifying under oath about plans of a plot to install a dictatorship in the United States. And we have contradictory testimony from Gerald MacGuire that clearly warrants further investigation. Such investigation was at first the committee's stated intention: "The Committee is awaiting the return to this country of both Mr. Clark and Mr.

Christmas. As the evidence stands, it calls for an explanation that the Committee has been unable to obtain from Mr. MacGuire."[15]

But the Committee did not call either Mr. Clark or Mr. Christmas to give evidence. It made no further effort—at least, no further effort appears on the public record—to find an explanation for the inconsistencies and inaccuracies in MacGuire's testimony, testimony that was given to the committee under oath.

SUPPRESSION OF WALL STREET INVOLVEMENT

The story of an attempted take-over of executive power in the United States was suppressed, not only by parties directly interested, but also by several institutions usually regarded as protectors of constitutional liberty and freedom of inquiry. Among the groups suppressing information were (1) the Congress of the United States, (2) the press, notably *Time* and *The New York Times*, and (3) the White House itself. It is also notable that no academic inquiry has been conducted into what is surely one of the more ominous events in recent American history. Suppression is even more regrettable in the light of the current trend toward collectivism in the United States and the likelihood of another attempt at a dictatorial takeover using supposed threats from either the left or the right as a pretext.

Suppression by the House Un-American Activities Committee took the form of deleting extensive excerpts relating to Wall Street financiers including Guaranty Trust director Grayson Murphy, J.P. Morgan, the Du Pont interests, Remington Arms, and others allegedly involved in the plot attempt. Even today, in 1975, a full transcript of the hearings cannot be traced.
Some of the deleted portions of the transcript were unearthed by reporter John Spivak.16 A reference to NRA Administrator Hugh Johnson will show the type of information suppressed; the Committee suppressed the words in italics from the printed testimony; Butler speaks to MacGuire:

> I said, "Is there anything stirring about it yet?"
> "Yes," he says; "you watch; in two or three weeks you will see it come out in the papers. There will be big fellows in it" . . .and in about two weeks the American Liberty League appeared, which was just about what he described it to be.
> We might have an assistant President, somebody to take the blame; and if things do not work out, he can drop him. He said, "That is what he was building up Hugh Johnson for. Hugh Johnson talked too damn much and got him into a hole, and he is going to fire him in the next three or four weeks."
> I said, "How do you know all this?" "Oh," he said, "we are in with him all the time. We know what is going to happen."[17]

The testimony of Paul French was also censored by the House Committee. Witness the following extract from French's testimony referring to John W. Davis, J.P. Morgan, the Du Pont Company, and others in Wall Street and which strongly corroborates General Butler's testimony:

> At first he [MacGuire] suggested that the General [Butler] organize this outfit himself and ask a dollar a year dues from everybody. We discussed that, and then he came around to the point of getting outside financial funds, and he said it would not be any trouble to raise a million dollars. He said he could go to John W. Davis [attorney for J.P. Morgan & Co.] or Perkins of the National City Bank, and any number of persons to get it. Of course, that may or may not mean anything. That is, his reference to John W. Davis and Perkins of the National City Bank. During my conversation with him I did not of course commit the General to anything. I was just feeling him along. Later, we discussed the question of arms and equipment, and he suggested that they could be obtained from the Remington Arms Co., on credit through the Du Ponts.
> I do not think at that time he mentioned the connections of Du Pont with the American Liberty League, but he skirted all around it. That is, I do not think he mentioned the Liberty League, but he skirted all around the idea that that was the back door; one of the Du Ponts is on the board of directors of the American Liberty League and they own a controlling interest in the Remington Arms Co ... He said the General would not have any trouble enlisting 500,000 men.[18]

John L. Spivak, the reporter who unearthed the suppression in the Congressional transcripts, challenged Committee Cochairman Samuel Dickstein of New York with his evidence. Dickstein admitted that:

> the Committee had deleted certain parts of the testimony because they were hearsay."
> "But your published reports are full of hearsay testimony."
> "They are?" he said.
> "Why wasn't Grayson Murphy called? Your Committee knew that Murphy's men are in the anti-Semitic espionage organization Order of '76?"
> "We didn't have the time. We'd have taken care of the Wall Street groups if we had the time. I would have no hesitation in going after the Morgans."
> "You had Belgrano, Commander of the American Legion, listed to testify. Why wasn't he examined?"
> "I don't know. Maybe you can get Mr. McCormack to explain that. I had nothing to do with it."[19]

The fact remains that the committee did not call Grayson Murphy, Jackson Martindell, or John W. Davis, all directly accused in sworn testimony. Further, the committee deleted all portions of the testimony involving other prominent persons: J.P. Morgan, the Du Ponts, the Rockefeller interests, Hugh Johnson, and Franklin D. Roosevelt. When Congressman Dickstein pleaded his innocence to John Spivak, it was inconsistent with his own letter to President Roosevelt, in which he claims to have placed restrictions even upon public distribution of the committee hearings, as printed, "in order that they might not get into other than responsible hands." The final report issued by the committee in February 15, 1935 buried the story even further. John L. Spivak sums up the burial succinctly: "I... studied the Committee's report. It gave six pages to the threat by Nazi agents operating in this country and eleven pages to the threat by communists. It gave one page to the plot to seize the Government and destroy our democratic system."[20]

The role of leading newspapers and journals of opinion in reporting the Butler affair is equally suspect. In fact, their handling of the event has the appearance of outright distortion and censorship. The veracity of some major newspapers has been widely questioned in the last 50 years,[21] and in some quarters the media have even been accused of a conspiracy to suppress "everything in opposition to the wishes of the interest served." For example, in 1917 Congressman Callaway inserted in The Congressional Record the following devastating critique of Morgan control of the press:

> MR. CALLAWAY. Mr. Chairman, under unanimous consent, I insert in the Record at this point a statement showing the newspaper combination, which explains their activity in this war matter, just discussed by the gentleman from Pennsylvania (Mr. Moore):
> In March, 1915, the J.P. Morgan interests, the steel, shipbuilding, and powder interests, and their subsidiary organizations, got together 12 men high up in the newspaper world and employed them to select the most influential newspapers in the United States and a sufficient number of them to control generally the policy of the daily press of the United States.
> These 12 men worked the problem out by selecting 179 newspapers, and then began by an elimination process, to retain only those necessary for the purpose of controlling the general policy of the daily press throughout the country. They found it was only necessary to purchase the control of 25 of the greatest papers. The 25 papers were agreed upon; emissaries were sent to purchase the policy, national and international, of these papers; an agreement was reached; the policy of the papers was bought, to be paid for by the month; an editor was furnished for each paper to properly supervise and edit information regarding the questions of preparedness, militarism, financial policies, and other things of national and international nature considered vital to the interests of the purchasers.
> This contract is in existence at the present time, and it accounts for the news columns of the daily press of the country being filled with all sorts of

> preparedness arguments and misrepresentations as to the present condition of the United States Army and Navy and the possibility and probability of the United States being attacked by foreign foes.
> This policy also included the suppression of everything in opposition to the wishes of the interests served. The effectiveness of this scheme has been conclusively demonstrated by the character of stuff carried in the daily press throughout the country since March 1915. They have resorted to anything necessary to commercialize public sentiment and sandbag the National Congress into making extravagant and wasteful appropriations for the Army and Navy under the false pretense that it was necessary. Their stock argument is that it is "patriotism." They are playing on every prejudice and passion of the American people.[22]

In the Butler affair the accused interests are also those identified by Congressman Callaway: the J.P. Morgan firm and the steel and powder industries. General Butler accused Grayson Murphy, a director of the Morgan-controlled Guaranty Trust Company; Jackson Martindell, associated with Stone & Webster, allied to the Morgans; the Du Pont Company (the powder industry); and Remington Arms Company, which was controlled by Du Pont and the Morgan-Harriman financial interests. Further, the firms that appear in the suppressed 1934 Congressional testimony are J.P. Morgan, Du Pont, and Remington Arms. In brief, we can verify 1934 Congressional suppression of information that supports the earlier 1917 charges of Congressman Callaway.

Does such suppression extend to major news journals? We can take two prime examples; *The New York Times* and *Time* magazine. If such a combination as Callaway charges did exist, then these two journals would certainly be among "25 of the greatest papers involved in the 1930s." *The New York Times* reporting of the "plot" opens up with a front-page headline article on November 21, 1934: "Gen. Butler Bares 'Fascist Plot' to Seize Government by Force," with the lead paragraph quoted above (p. 143). This *Times* article is a reasonably good job of reporting and includes a forthright statement by Congressman Dickstein: "From present indications Butler has the evidence. He's not going to make any serious charges unless he has something to back them up. We'll have men here with bigger names than his." Then the Times article records that "Mr. Dickstein said that about sixteen persons mentioned by General Butler to the Committee would be subpoenaed, and that a public hearing might be held next Monday." The Times also includes outright and sometimes enraged denials from Hugh Johnson, Thomas W. Lamont, and Grayson M-P. Murphy of Guaranty Trust.

The following morning, November 22, the *Times* made a major switch in reporting the plot. The disclosures were removed to an inside page, although the testimony now concerned Gerald MacGuire, one of the accused plotters. Further, a decided change in the attitude of the committee can be discerned. Congressman McCormack is now reported as saying that "the committee has not decided whether to call any additional

witnesses. He said that the most important witness, aside from Mr. MacGuire, was Robert Sterling Clark, a wealthy New Yorker with offices in the Stock Exchange Building."

While the *Times* reporting was consigned to an inside single column, the editorial page, its most influential section, carried a lead editorial that set the tone for subsequent reporting. Under the head "Credulity Unlimited," it contended that the Butler charge was a "bald and unconvincing narrative. ... The whole story sounds like a gigantic hoax ... it does not merit serious discussion," and so on. In brief, *before* the 16 important witnesses were called, before the evidence was on the record, *before* the charge was investigated. The New York Times decided that it wanted to hear nothing about this story because it was a hoax, not fit to print.

The next day, November 23, the Times changed its reporting still further. The headlines were now about Reds and Red Union Strife and concerned alleged activities by communists in American trade unions, while the Butler testimony and the developing evidence were secreted deep within the reporting of Red activities. The resulting story was, of course, vague and confused, but it effectively buried the Butler evidence.

On November 26, the hearings continued, but the committee itself now had cold feet and issued a statement: "This Committee has had no evidence before it that would in the slightest degree warrant calling before it such men as John W. Davis, General Hugh Johnson, General James G. Harbord, Thomas W. Lamont, Admiral William S. Sims, or Hanford MacNider."

It should be noted that these names had come up in sworn testimony, later to be deleted from the official record. The Times pursued its

reporting of this development in abbreviated form on an inside page under the head, "Committee Calm over Butler 'Plot', Has No Evidence to Warrant Calling Johnson and Others." On November 27 the *Times* reporting declined to five column inches on an inside page under the ominous head "Butler Plot Inquiry Not To Be Dropped." The December hearings were reported by the *Times* on a front page (December 28 1934), but the plot was now twisted to "Reds Plot to Kidnap the President, Witness Charges at House Inquiry."

Reviewing the story of the Butler Affair in the *Times* 40 years after the event and comparing its story to the printed official testimony, itself heavily censored, it is obvious that the newspaper, either under its own initiative or under outside pressure, decided that the story was not to be made public. Consistent with this interpretation, we find that The New York Times, the "newspaper of record," omits the Butler testimony from entries in its annual index, depended upon by researchers and scholars. The *Times* Index for 1934 has an entry "BUTLER (Maj Gen), Smedley D," but lists only a few of his speeches and a biographic portrait. The Butler testimony is not listed. There is an entry, "See also:

Fascism-U.S.," but under that cross-reference there is listed only: "Maj Gen S.D. Butler charges plot to overthrow present govt; Wall Street interests and G.P. MacGuire implicated at Cong com hearing." The only significant Wall Street name mentioned in the index is that of R.S. Clark, who is reported as "puzzled" by the charges. None of the key Morgan and Du Pont associates cited by General Butler is listed in the *Index.* In other words, there appears to have been a deliberate attempt by this newspaper to mislead historians.

Time magazine's reporting descended to fiction in its attempts to reduce General Butler's evidence to the status of absurdity. If ever a student wants to construct an example of biased reporting, there is a first-rate example in a comparison of the evidence presented to the McCormack-Dickstein Committee by General Butler with the subsequent *Time* reportage. The December 3rd 1934 issue of *Time* ran the story under the head "Plot Without Plotters," but the story bears no resemblance at all to the testimony, not even the censored testimony. The story portrays General Butler leading a half-million men along U. S. Highway 1 with the cry, "Men, Washington is but 30 miles away! Will you follow me?" Butler was then depicted as taking over the U.S. government by force from President Roosevelt. The remainder of the *Time* story is filled with dredges from Butler's past and an assortment of denials from the accused. Nowhere is there any attempt to report the statements made by General Butler, although the denials by J.P. Morgan, Hugh Johnson, Robert Sterling Clark, and Grayson Murphy are cited correctly. Two photographs are included: a genial grandfatherly J.P. Morgan and General Butler in a pose that universally symbolizes lunacy—a finger pointed to his ear. The reporting was trashy, dishonest, and disgraceful journalism at its very worst. Whatever our thoughts may be on Nazi propaganda or Soviet press distortion, neither Goebbels nor *Goslit* ever attained the hypnotic expertise of *Time's* journalists and editors. The fearful problem is that the opinions and mores of millions of Americans and of English speakers around the world have been molded by this school of distorted journalism.

To keep our criticism in perspective, it must be noted that *Time* was apparently impartial in its pursuit of lurid journalism. Even Hugh S. Johnson, administrator of NRA and one of the alleged plotters in the Butler Affair, was a target of *Time's* mischief. As Johnson reports it in his book:

> I stood in the reviewing stand in that parade and there were hundreds of people I knew who waved as they went past. Down below were massed batteries of cameras, and I knew if I raised my hand higher than my shoulders, it would seem and be publicized as a "Fascist salute." So I never did raise it higher. I just stuck my arm out straight and wiggled my hand around. But that didn't help me—Time came out saying I had constantly saluted au Mussolini and even had a photograph to prove it, but it wasn't my arm on that photograph. It wore the taped cuff sleeve of a cut-away coat and a stiff round cuff with an old fashioned cuff button and I never wore

> either in my whole life. I think it was the arm of Mayor O'Brien who stood beside me which had been faked onto my body.[23]

AN ASSESSMENT OF THE BUTLER AFFAIR

The most important point to be assessed is the credibility of General Smedley Darlington Butler. Was General Butler lying? Was he telling the truth? Was he exaggerating for the sake of effect?
General Butler was an unusual man and a particularly unusual man to find in the armed forces: decorated twice with the Medal of Honor, an unquestioned leader of men, with undoubted personal bravery, deep loyalty to his fellow men, and a fierce sense of justice. All these are admirable qualities. Certainly, General Butler was hardly the type of man to tell lies or even exaggerate for a petty reason. His flair for the dramatic does leave open a possibility of exaggeration, but deliberate lying is most unlikely.

Does the evidence support or reject Butler? Reporter Paul French of *The Philadelphia Record* wholly supports Butler. Evidence by Captain Glazier, commander of the CCC camp, supports Butler. In these two cases there is no discrepancy in the evidence. The statements of MacGuire made under oath to Congress do not support Butler. We have therefore a conflict of sworn evidence. Further, MacGuire was found at fault on several points by the committee; he used the evasion of "do not recall" on a number of occasions and, in major areas such as the financing by Clark, MacGuire unwillingly supports Butler. There is a hard core of plausibility to the Butler story. There is some possibility of exaggeration, perhaps not untypical for a man of Butler's flamboyant personality, but this is neither proven nor disproven

Without question, the Congress of the United States did a grave disservice to the cause of freedom in suppressing the Butler story. Let us hope that some Congressmen or some Congressional committee, even at this late date, will pick up the threads and release the full uncensored testimony. We may also hope that the next time around, in some comparably important matter, The New York Times will live up to its claim to be the newspaper of record, a name it justified so admirably four decades later in the Watergate Investigation.

Footnotes

1. See Jules Archer, *The Plot to Seize the White House* (New York: Hawthorn Books, 1973) Archer's book is "the first effort to tell the whole story of the plot in sequence and full detail."
Also see George Wolfskill, *The Revolt of the Conservatives* (Boston: Houghton, Mifflin,

1962), which has extensive material on the plot. The interested reader should also take a look at George Seldes, One Thousand Americans (New York: Honi & Gaer, 1947). Unfortunately, while these books have kept the event alive—a valiant effort that should by no means be underrated—they do reflect an amteurish confusion of fascism with moderation. Supporters of the Constitution would, of course, absolutely reject the dictatorial efforts described. Some groups, such as the American Conservative Union for instance, have for a decade aimed their attacks at the targets identified by Archer and Seldes. The misinterpretation by the latter authors is accentuated because confusion over the meaning of conservatism also prevented these authors from exploring the possibility that Wall Street had none other than Franklin Delano Roosevelt in mind as "the man on the white horse."

2. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., p. 17.

3. The New York Times, Nov. 21, 1934.

4. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., pp. 17-18.
5. See Sutton, Bolshevik Revolution, op. cit.

6. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., p. 26.

7. Ibid., Parts 1-2. Based on Testimony before the McCormack-Dickstein Committee.

8. 120 Broadway is the topic of a chapter in this book and a previous book, Sutton, Bolshevik Revolution, op. cit. Stone & Webster is also prominent in the earlier book.

9. The New York Times, Dec. 28, 1934.

10. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., p. 45.

11. Ibid., p. 45.

12. Press release. New York City, p. 12.

13. Ibid., p. 13.

14. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., p. 85.

15. Press release, New York City, p. 13.

16. See Jules Archer, The Plot to Seize the White House, op. cit.

17. George Seldes, One Thousand Americans, op. cit, p. 288.

18. Ibid., pp. 289-290.

19. John L. Spivak, A Man in his Time (New York: Horizon Press, 1967), pp. 311, 322-25.

20. Ibid., p. 331.

21. See Herman Dinsmore, All the News That Fits, (New Rochelle: Arlington House, 1969).

22. Congressional Record, Vol. 55, pp. 2947-8 (1917).

23 Hugh S. Johnson, The Blue Eagle from Egg to Earth, op. cit., p.267

CHAPTER 11

The Corporate Socialists at 120 Broadway, New York City

> **Already he [FDR] had begun to reappear at the office of the Fidelity and Deposit Company at 120 Broadway. He did not yet visit his law office at 52 Wall Street, because of the high front steps—he could not bear the thought of being carried up them in public. At 120 Broadway he could manage, by himself, the one little step up from the sidewalk.**
> Frank Freidel, Franklin D. Roosevelt: The Ordeal (Boston; Little, Brown, 1954), p. 119.

As in *Wall Street and the Bolshevik Revolution*, we find many of the leading characters (including FDR) and firms, even a few of the events, described in this book located at a single address, the Equitable Office Building at 120 Broadway, New York City. Franklin D. Roosevelt's office in the early 1920s when he was vice president of the Fidelity and Deposit Company was at 120 Broadway. Biographer Frank Freidel records above his reentry to the building after his crippling polio attack. At that time, Bernard Baruch's office was also at 120 Broadway and Hugh Johnson, later to be the administrator of NRA, was Bernard Baruch's research assistant at the same address. The executive offices of General Electric and the offices of Gerard Swope, author of the Swope Plan that became Roosevelt's NRA, were also there. The Bankers Club was on the top floor of this same Equitable Office Building and was the location of a 1926 meeting by the Butler Affair plotters. Obviously, there was a concentration of talent at this particular address deserving greater description.

THE BOLSHEVIK REVOLUTION AND 120 BROADWAY

In Wall Street and the Bolshevik Revolution, we noted that revolution related financiers were concentrated at a single address in New York City, the same Equitable Office Building. In 1917 the headquarters of the No. 2 District of the Federal Reserve System, the most important of the Federal Reserve districts, was located at 120 Broadway; of nine directors of the Federal Reserve Bank of New York, four were physically located at 120 Broadway, and two of these directors were simultaneously on the board of American International Corporation. The American International Corporation had been founded in 1915 by the Morgan interests with enthusiastic participation by the Rockefeller and Stillman groups. The general offices of A.I.C. were at 120 Broadway. Its directors were heavily interlocked with other major Wall Street financial and industrial interests, and it was determined that American International Corporation had a significant role in the success and consolidation of the 1917 Bolshevik Revolution. A.I.C. executive secretary William Franklin Sands, asked for his opinion of the Bolshevik Revolution by the State

Department within a few weeks of the outbreak in November 1917 (long before even a fraction of Russia came under Soviet control), expressed strong support for the revolution. Sands' letter is reprinted in *Wall Street and the Bolshevik Revolution.* A memorandum to David Lloyd George, Prime Minister of England, from Morgan associate Dwight Morrow also urged support for the Bolshevik revolutionaries and backing for its armies. A director of the FRB of New York, William Boyce Thompson, donated $1 million to the Bolshevik cause and intervened with Lloyd George on behalf of the emerging Soviets.

In brief, we found an identifiable pattern of pro-Bolshevik activity by influential members of Wall Street concentrated in the Federal Reserve Bank of New York and the American International Corporation, both at 120 Broadway. By 1933 the bank had moved to Liberty Street.

THE FEDERAL RESERVE BANK OF NEW YORK AND 120 BROADWAY

The names of individual FRB directors changed between 1917 and the 1930s, but it was determined that, although the FRB had moved, four FRB directors still had offices at this address in the New Deal period, as shown in the following table:

Directors of the Federal Reserve Bank of New York in the New Deal Period

Name	Directorships Held for Companies Located at 120 Broadway
Charles E. Mitchell	Director of the FRB of New York, 1929-1931, and director of Corporation Trust Co. (120 Broadway)
Albert H. Wiggin	Succeeded Charles E. Mitchell as Director, FRB of New York, 1932-34, and Director of American International Corp, and Stone and Webster, Inc. (both 120 Broadway)
Clarence M. Woolley	Director FRB of New York, 1922-1936, and director, General Electric Co. (120 Broadway)
Owen D. Young	Director FRB of New York, 1927-1935, and chairman, General Electric Co. (120 Broadway)

Persons and firms located at:

120 BROADWAY	42 BROADWAY
Franklin Delano Roosevelt	Herbert Clark Hoover

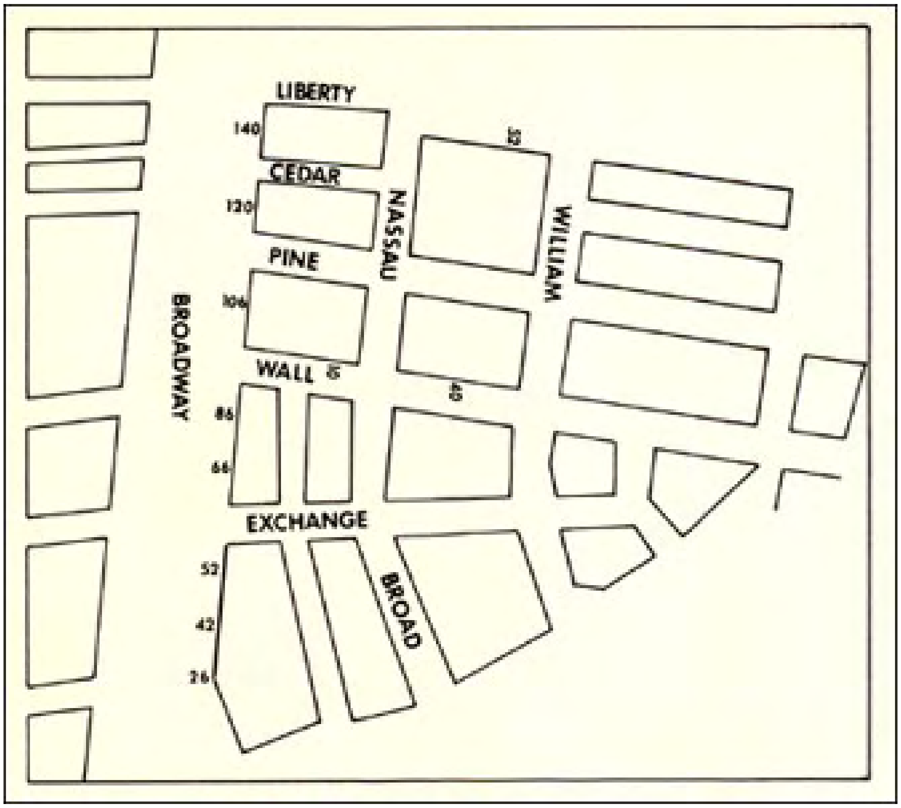
Bernard Baruch

Gerard Swope

Owen D. Young

Others

American International Corp.	Grayson M-P Murphy (52 Broadway)
The Corporation Trust Co.	International Acceptance Bank,
Empire Trust Co. Inc.	(52 Cedar St.)
Fidelity Trust Co.	International Acceptance Trust
American Smelting & Refining Co.	(52 Cedar St.)
Armour & Co. (New York Office).	International Manhattan Co. Inc.
Baldwin Locomotive Works	(52 Cedar St.)
Federal Mining & Smelting Co.	Jackson Martindell (14 Wall St.)
General Electric Co.	John D. Rockefeller, Jr. (26 Broadway)
Kennecott Copper Corp.	Percy A. Rockefeller (25 Broadway)
Metal & Thermit Corp.	Robert S. Clark (11 Wall St.)
National Dairy Products Corp.	
Yukon Gold Co.	
Stone & Webster & Blodget, Inc.	



Map of Wall Street Area Showing Office Locations for persons and firms mentioned in this book.

AMERICAN INTERNATIONAL CORPORATION AND 120 BROADWAY

The American International Corporation (AIC) was formed in 1915 by a coalition of Morgan, Stillman and Rockefeller interests; its general offices were at 120 Broadway from 1915 through the 1920s. The great excitement in Wall Street about formation of AIC brought about a concentration of the most powerful financial elements on its board of directors—in effect a monopoly organization for overseas development and exploitation.1 Of nine directors on the board in 1930, five were on the AIC board in 1917 at the time of the Bolshevik Revolution: Matthew C. Brush, president and chairman of the executive committee of American International Corporation and director of the Empire Trust Company; Pierre S. Du Pont, member of the Du Pont family and a director of the Bankers Trust Company; Percy A. Rockefeller, of the Rockefeller family and director of National City Bank; Albert H. Wiggin, director of the Federal Reserve Bank of New York and the Rockefeller Chase National Bank; and Beekman Winthrop, of the Warburgs' International Banking Corporation and the National City Bank. Several prominent financiers joined the board of AIC during the 1920s, including Frank Altschul and Halstead G. Freeman of the Chase National Bank, Arthur Lehman of Lehman Brothers and the Manufacturers Trust Company, and John J. Raskob, vice president of Du Pont and director of General Motors and the Bankers Trust Company.

Mathew C. Brush, president, director, and chairman of the executive committee of

American International Corporation and president of Allied Machinery, a subsidiary company, was also director and member of the executive committee of International Acceptance Bank (see Chapter 6), director and member of the executive committee of Barnsdall Corporation,[2] director of Empire Trust Company (120 Broadway) and Equitable Office Corporation (which owned and operated the building at 120 Broadway), director of Georgian Manganese Company,[3] and director and member of the Executive Committee of the Remington Arms Co., identified by General Butler in the last chapter. Matthew C. Brush was indeed in the vanguard of Wall Street.

Brush's political contributions, unlike those of other AIC directors, were apparently limited to $5000 to the campaign of Herbert Hoover in 1928. Brush was director of International Acceptance Bank, which profited from the inflation of the 1920s, as well as a director of Remington Arms (a suppressed name in the Butler Affair) while serving as president of American International, but appears to have been on the fringes of the occurrences explored in this book. On the other hand, four directors of American International have been identified as substantial financial supporters of Franklin D. Roosevelt: Frank Altschul, Pierre S. Du Pont, Arthur Lehman, and John J. Raskob between 1928 and 1932. The Lehman family and John J. Raskob were, as we have seen, at the very heart of Roosevelt's support. It is significant that AIC, the key vehicle for American participation in the Bolshevik Revolution, should also be unearthed, even in an incidental form, in a study of the Roosevelt era.

THE BUTLER AFFAIR AND 120 BROADWAY

Testimony to the House Un-American Activities Committee on the attempt to convert the Roosevelt administration into a dictatorship with Major General Butler in a key role as Secretary of General Affairs had several links to 120 Broadway. There were at least half a dozen persons whom the committee should have subpoenaed to investigate the statements made under oath by General Butler, Captain Glazier, and Paul French; of these, four were located in, or had a significant connection with, 120 Broadway. According to accused plotter Gerald MacGuire, the original meeting of the alleged participants was held in 1926 at the Bankers Club, 120 Broadway. The following extract from the committee hearings, records MacGuire's statement; the questioner was Chairman McCormack:

> QUESTION. How long have you known Clark?
> ANSWER. Well, I believe I said that I have done business with him and known him since 1925 or 1926.
> QUESTION. Did he ever give you that kind of money before to use, as you say—in the way that he wanted you to represent him in these transactions?
> ANSWER. In what transactions?
> QUESTION. In those money transactions, since that time?

ANSWER. In what money transactions?
QUESTION. What I mean is this, since 1926, at the time that you met him and after; this was really the first time that you got this money without any receipt or papers or anything at all?
ANSWER. Yes.
QUESTION. And this dinner was at the Bankers Club, at 120 Broadway, wasn't it?
ANSWER. Yes.
QUESTION. Who was that dinner given to; was it given to anybody specially?
ANSWER. It was a regular luncheon.
QUESTION. Who was present at your table?
ANSWER. Mr. Christmas.
QUESTION. And yourself?
ANSWER. Yes.
QUESTION. And Mr. Clark?
ANSWER. Yes.[4]

Thus, although the original meeting that brought together Robert S. Clark, his attorney Christmas, and bond salesman Gerald MacGuire was held at 120 Broadway, and Christmas and Clark were linked in numerous ways to MacGuire, neither Christmas nor Clark were called by the committee. Further, Captain Samuel Glazier of the CCC Camp at Elkridge, Maryland reported to the committee that Jackson Martindell had inquired about the training of 500,000 civilian soldiers for political purposes. Martindell was not called by the committee to challenge or confirm the testimony implicating him in the Butler Affair.

The Du Pont Company, cited in the suppressed portion of the testimony, was located at 120 Broadway. Hugh S. Johnson, named by General Butler as a probable participant, had been located at 120 Broadway when working as research assistant to Baruch; Baruch's office was at the same address.5 Clark, MacGuire, and Grayson M-P. Murphy had offices just down the street from No. 120; Clark at 11 Wall Street and MacGuire and Murphy at 52 Broadway.

It is also significant that names suppressed by the committee were located at 120 Broadway: the Du Pont Company executive office and Du Pont subsidiary Remington Arms. The other named participants, MacGuire, Clark, Christmas, Martindell, Grayson M-P. Murphy (at Rockefeller headquarters, 25 Broadway) were all located within a few blocks of 120 Broadway and within the previously described golden circle.

FRANKLIN D. ROOSEVELT AND 120 BROADWAY

We have noted that FDR's preferred office—he had two in the early 1920s—was the one at 120 Broadway. FDR's Georgia Warm Springs Foundation, Inc. was formed as a Delaware company in July 1926 with offices at 120 Broadway and remained at that address at least through 1936. The 1934 annual report for Georgia Warm Springs Foundation shows that its president was listed as Franklin D. Roosevelt, The White House, Washington D.C., with the head office of the foundation shown at 120 Broadway. The vice president and assistant secretary was Raymond H. Taylor, with secretary-treasurer Basil O'Connor, both shown at the 120 Broadway address.

Basil O'Connor was a close associate and business partner of Franklin D. Roosevelt. Born in 1892, O'Connor received his law degree from Harvard in 1915 and then joined the New York law firm of Cravath and Henderson for one year, leaving to work with Streeter & Holmes in Boston for three years. In 1919 Basil O'Connor established a law practice in New York under his own name. In 1925 the firm of Roosevelt and O'Connor was created, lasting until FDR's inauguration in 1933. After 1934, O'Connor was senior partner in O'Connor & Farber and in 1944 succeeded Norman H. Davis as chairman of the American Red Cross.

O'Connor was a director of several companies: in the 1920s, of New England Fuel Oil Corp., in the 1940s of the American Reserve Insurance Co. and the West Indies Sugar Corp. From 1928 until his death he was responsible for administration of the Georgia Warm Springs Foundation.

The Roosevelt New Deal was a gold mine to some of FDR's associates, including Basil O'Connor. Globe & Rutgers was an insurance company recapitalized with government funds, and the reorganization proved a rich source of fees for attorneys handling the liquidation and reorganization. Of these attorneys President Roosevelt's former firm of O'Connor & Farber demanded the largest single fee until Jesse Jones of the Reconstruction Finance Corporation cut it down. Here is a letter Jesse Jones wrote to Earle Bailie of J. & W. Seligman & Company about these fees:

> October 6, 1933.
>
> Dear Mr. Bailie:
> Our board is unwilling to invest in or lend upon stock in an insurance company, if indeed we have the right to do so, that contemplates paying such lawyers' fees, reorganization or otherwise, as is proposed in the case of the Globe & Rutgers, which we understand from information to be

Basil O'Connor	$200,000
Root, Clark, Buckner & Ballantine	165,000

Sullivan & Cromwell	95,000
Prentice & Townsend	50,000
Cravath, de Gersdorff, Swaine & Wood	37,500
Martin Conboy	35,000
Joseph V. McKee	25,000
Coudert Brothers	12,000

> or a total of $619,500. Even the suggested reduction to a total of $426,000 would be very much more than what would appear to this Corporation to be proper fees to be paid by an insurance company that is being recapitalized with Government funds.
> Yours very truly,
> JESSE J. JONES

Under court orders Mr. O'Connor's firm was paid $100,000 in 1934 and $35,000 more the following year.[6]

CONCLUSIONS ABOUT 120 BROADWAY

It is virtually impossible to develop an unshakable conclusion about the significance of 120 Broadway; explanations can range from conspiracy to coincidence.

What can we prove with direct, rather than circumstantial, evidence?
First, we know that U.S. assistance to the Bolshevik Revolution originated in the Wall Street golden circle in 1917 and was heavily concentrated at this particular address. Second, when FDR entered the business world in 1921, one of the two FDR offices was at this address, as was his law partnership with Basil O'Connor, and the Georgia Warm Springs Foundation. Third, Bernard Baruch and his assistant Hugh Johnson, later part of the planning and administration of the National Industry Recovery Act, were in the same building. NRA was a logical sequel to the trade associations of the 1920s, and FDR had a prominent role, along with Herbert Hoover, in the implementation of trade association agreements in the 1920s. Fourth, there was an association between General Electric and the Bolshevik Revolution, at least in building up the early Soviet Union. Executive offices of G.E. were at this address, as were those of Gerard Swope, the president of G.E. who authored the Swope plan.

Finally, the bizarre Butler affair had a few links with 120 Broadway. For example, this was Du Pont's New York address, although Remington Arms was at Rockefeller headquarters, 25 Broadway. Most of the plotters had other addresses, but still all within the golden circle.

Nothing is proven by a common geographical location. While 120 Broadway was a massive building, it was by no means the largest in New York City. But how does one explain the concentration of so many links to so many important historical events at one address? One could argue that birds of a feather flock together. On the other hand, it is more than plausible that these Wall Streeters were following the maxim laid down by Frederick Howe and found it more convenient, or perhaps more efficient for their purposes, to be at a single address. The point to hold in mind is that no other such geographical concentration exists and, if we ignore the persons and firms at 120 Broadway, there is no case for any relationship between these historical events and Wall Street. Which, incidentally, is also an excellent reason for retaining one's perspective in accepting the fact that we are discussing a small fraction of the banking community, a fraction that has in effect betrayed the financial center of a free economy.

Footnotes

1. See Sutton, Bolshevik Revolution, op. cit.

2. Barnsdall Corporation was the company that in 1921 entered the Soviet Union to reopen theCaucasian oil fields for the Soviets and so enabled the Soviet Union to generate the foreign exchange required to develop a Sovietized Russia; see Sutton, Western Technology and Soviet Economic Development, 1917 to 1930 (Stanford: Hoover Institution, 1968), Vol. 1.

3. Ibid.

4. House of Representatives, Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, Hearings No. 73-D.C.-6, op. cit., p. 80. "Mr. Clark" was Robert Sterling Clark and "Mr. Christmas" was Clark's attorney.

5. United States Senate, Digest of Data From the Files of a Special Committee to Investigate Lobbying Activities, 74th Congress, Second Session, Part I: List of Contributions, (Washington, 1936), p. 3.

6. Jesse H. Jones, Fifty Billion Dollars pp. 209-210.

CHAPTER 12

FDR and the Corporate Socialists

> **At the first meeting of the Cabinet after the President took office in 1933, the financier and adviser to Roosevelt, Bernard Baruch, and Baruch's friend General Hugh Johnson, who was to become the head of the National Recovery Administration, came in with a copy of a book by Gentile, the Italian Fascist theoretician, for each member of the Cabinet, and we all read it with great care.**
> Mrs. Frances Perkins, Secretary of Labor under FDR.

It is worth recalling at this point the epigraph to Chapter 1, that Franklin D. Roosevelt privately believed that the U.S. government was owned by a financial élite. There is, of course, nothing notably original about this observation: it was commonplace in the 19th century. In modern times, it has been averred by such dissimilar writers as Robert Welch and William Domhoff that America is controlled by a financial elite based in New York. The Soviets, who are not always altogether inaccurate, have used this theme in their propaganda for decades, and it was a Marxist theme before Lenin came along.[1]

It was under Roosevelt that quaint Keynesian notions—the modern versions of John Laws' con game with paper money—were introduced to Washington, and so the seeds of our present economic chaos were laid in the early 1930s under Roosevelt. Contemporary double digit inflation, a bankrupt Social Security system, bumbling state bureaucracy, rising unemployment—all this and more can be traced to Franklin Delano Roosevelt and his legislative whirlwind.

But while we now pay the price for these unsound and irresponsible policies, so pervasive is prevailing misinformation that even the identity of the originators of Roosevelt's New Deal and their reasons have been forgotten. While our economists cover their blackboards with meaningless static equations, a dynamic looting operation of the economy has been in progress by the authentic formulators of the liberal New Deal. While the bleeding heart social engineers have screamed at capitalism as the cause of the world's misery, they have been blissfully unaware that their own social formulas in part emanated from—and have certainly been quietly subsidized by—these same so-called capitalists. The tunnel vision of our academic world is hard to beat and equalled only by their avarice for a piece of the action.

What we do find is that government intervention into the economy is the root of our present problems; that a Wall Street cotérie has substantive, if subtle, muscle within this government structure to obtain legislation beneficial to itself; and that a prime example of this self-seeking legislation to establish legal monopoly under big business control was

FDR's New Deal and, in particular, the National Recovery Administration.

The name Franklin Delano Roosevelt should suggest, but rarely does, a link with Wall Street. Both Delano and Roosevelt are prominent names in the history of American financial institutions.

Who was Franklin Delano Roosevelt?

Roosevelt's pre political career can be described only as that of financier. Both his family and career before 1928 and his election as Governor of New York were in the business world, more specifically the financial world. Between 1921 and 1928 Roosevelt was a director of 11 corporations headquartered in the Wall Street golden circle and president of a major trade association. The American Construction Council.

Furthermore, Roosevelt was not only president of United European Investors, Ltd., formed to take pecuniary advantage of the misery of German hyperinflation, but was one of the organizers of American Investigation Corporation, a high-powered financial syndicate. Roosevelts formed the financial firm Roosevelt & Son in the late 18th century, and Delanos operated in the financial arena from at least the mid19th century. Roosevelts and Delanos may not have reaped the great wealth of Morgans and Rockefellers, but they were known and respected names in the halls of international finance. Even in the 1920s we find Uncle Frederic Delano on the Federal Reserve Board, and George Emlen Roosevelt as a director of Guaranty Trust, the bête noire of the Street if there ever was one.

It is also reliably recorded that Theodore Roosevelt's Progressive Party, the first step to the modern welfare-warfare state, was financed by the J.P. Morgan interests; consequently, it should not surprise us to find Wall Street backing Roosevelt in 1928, 1930, and 1932.

In brief, we have shown that Roosevelt was a Wall Streeter, descended from prominent Wall Street families and backed financially by Wall Street. The policies implemented by the Roosevelt régime were precisely those required by the world of international finance. It should not be news to us that international bankers influence policy. What appears to have been neglected in the history of the Roosevelt era is that, not only did FDR reflect their objectives, but was more inclined to do so than the so-called reactionary Herbert Hoover. In fact, Hoover lost in 1932 because, in his own words, he was unwilling to accept the Swope Plan, alias NRA, which he termed, not incorrectly, "a fascist measure."

We cannot say that Wall Streeter Roosevelt was always a highly ethical promoter in his financial flotations. Buyers of his promotions lost money, and substantial money, as the

following brief table based on the data presented suggests:

How Investors Fared With FDR at the Helm

Company Associated with FDR	Issue Price of Stock	Subsequent Price History
United European Investors, Ltd	10,000 marks (about $13)	Company wound up, stock-holders offered $7.50
International Germanic Trust Company, Inc.	$170	Went to $257 in 1928, liquidated in 1930 at $19 a share

Loss of stockholders' funds, however, can be an accident or mismanagement. Many honest financiers have stumbled. However, association with persons of known ill repute such as Roberts and Gould in United European Investors, Ltd. was not accidental.

FDR's association with the American Construction Council brings to mind Adam Smith's *obita dicta* that the law ". . . cannot hinder people of the same trade from sometimes assembling together, but it ought to do nothing to facilitate such assemblies, much less to render them necessary."[2] Why not? Because the American Construction Council was in the interests of the construction industry, not in those of the consumer of construction services.

The New York bonding business was made to order for FDR. As vice president of the Fidelity & Deposit Company of Maryland, FDR knew precisely how to operate in the world of politicized business, where price and product quality in the market place are replaced by "Whom do you know?" and "What are your politics?"

The United European Investors caper was an attempt to take advantage of the misery of German 1921-23 hyperinflation. The firm operated under a Canadian charter, no doubt because Canadian registration requirements were more lenient at that time. The most conspicuous observation concerns FDR's associates at U.E.I., including John von Berenberg Gossler, a HAPAG co director of German Chancellor Cuno, who was responsible for the inflation! Then there was William Schall, FDR's New York associate, who had only a few years earlier been involved with German espionage in the United States—at 120 Broadway. The Roberts-Gould element in United European Investors was under criminal investigation; FDR knew they were under investigation, but continued his business associations.

Then we found that the background of the New Deal was speckled with prominent

financiers. The economic recovery part of the New Deal was a creation of Wall Street—specifically Bernard Baruch and Gerard Swope of General Electric—in the form of the Swope Plan. So in Chapter 5 we expanded upon the idea of the politicization of business and formulated the thesis of corporate socialism: that the political way of running an economy is more attractive to big business because it avoids the rigors and the imposed efficiency of a market system. Further, through business control or influence in regulatory agencies and the police power of the state, the political system is an effective way to gain a monopoly, and a legal monopoly always leads to wealth. Consequently, Wall Street is intensely interested in the political arena and supports those political candidates able to maximize the amount of political decision-making under whatever label and minimize the degree to which economic decisions in society are made in the market place. In brief. Wall Street has a vested interest in politics because through politics it can make society go to work for Wall Street. It can also thus avoid the penalties and risks of the market place.

We examined an early version of this idea: Clinton Roosevelt's planned society, published in 1841. We then briefly discussed Bernard Baruch's 1917 economic dictatorship and his declared intent to follow the course of a planned economy in peacetime and traced Baruch and his economic assistant Hugh Johnson to the very core of the National Recovery Administration. Some attention was then given to the Federal Reserve System as the most prominent example of private legal monopoly and to the role of the Warburgs through the International Acceptance Bank and the manner in which the bank was able to get society to go to work for Wall Street. In a final look at the years before FDR's New Deal we reviewed the operation of the American Construction Council, a trade association, the concept of which originated with Herbert Hoover, but with FDR as its president. The council had, as its stated objectives, limitation of production and regulation of industry, a euphemism for industry control for maximization of its own profits.

Then we examined the financial contributions of the 1928, 1930, and 1932 elections on the ground that such contributions are a very accurate measure of political inclinations. In 1928, an extraordinary percentage of the larger contributions, those over $25,000, came from Wall Street's golden circle. Such large sums are important because their contributors are more than likely to be identifiable after the election when they ask favors in return for their earlier subsidies. We found that no less than 78.83 per cent of the over $1000 contributions to the Al Smith for President campaign came from a one-mile circle centered on 120 Broadway. Similarly 51.4 per cent, a lesser but still significant figure, of Hoover's contributions came from within this same area. Then we demonstrated that, after his election, Herbert Hoover was given an ultimatum by Wall Street: either accept the Swope Plan (the NRA) or the money and influence of Wall Street would go to FDR who was willing to sponsor that scheme. To his eternal credit, Herbert Hoover refused to introduce such planning on the ground that it was equivalent to Mussolini's fascist state. FDR was not so fussy.

In FDR's 1930 campaign for Governor of New York, we identified a major Wall Street influence. There was an extraordinary flow of funds via the County Trust Company, and John J. Raskob of Du Pont and General Motors emerged as Chairman of the Democratic Campaign Committee and a power behind the scenes in the election of FDR. Seventy-eight per cent of the pre-convention "early-bird" contributions for FDR's 1932 Presidential bid came from Wall Street.

The Swope Plan was a scheme to force American industry into compulsory trade associations and provide exemption from the anti-trust laws. It was baited with a massive welfare carrot to quiet the misgivings of labor and other groups. The administrator of the National Recovery Administration, which developed from the Swope Plan, was Baruch's assistant. General Hugh Johnson. The three musketeers, Johnson's circle of assistants, comprised Gerard Swope of General Electric, Walter Teagle, of Standard Oil of New Jersey, and Louis Kirstein of Filene's of Boston. Adherence to the NRA codes was compulsory for all firms with more than 50 employees. The Swope NRA Plan was greeted favorably by such socialists as Norman Thomas, whose main objection was only that they, the orthodox socialists, were not to run the plan.

Fortunately, NRA failed. Big business attempted to oppress the little man. The codes were riddled with abuses and inconsistencies. It was put out of its misery by the Supreme Court in the Schechter Poultry decision of 1935, although its failure was evident long before the Supreme Court decision. Because of failure of NRA, the so-called 1934 Butler Affair becomes of peculiar interest. According to General Smedley Butler's testimony to Congress, supported by independent witnesses, there was a plan to install a dictator in the White House. President Roosevelt was to be kicked upstairs and a new General Secretary— General Butler was offered the post—was to take over the economy on behalf of Wall Street. Far-fetched as this accusation may seem, we can isolate three major statements of fact:

1. There was independent confirmation of General Butler's statements and in some measure unwilling confirmation by one of the plotters.
2. There existed a motive for Wall Street to initiate such a desperate gamble: the NRA-Swope proposal was foundering.
3. The alleged identity of the men behind the scenes is the same as those identified in the Bolshevik Revolution and in the political promotion of FDR.

Unfortunately, and to its lasting shame. Congress suppressed the core of the Butler testimony. Further, *The New York Times* first reported the story fairly, but then buried and distorted its coverage, even to the extent of incomplete indexing. We are left with the definite possibility that failure of the Baruch-Swope-Johnson NRA plan was to be followed by a more covert, coercive take-over of American industry. This occurrence deserves the fullest attention that unbiased scholars can bring to it. Obviously, the full story has yet to emerge.

Once again, as in the earlier volume, we found a remarkable concentration of persons, firms and events at a single address—120 Broadway, New York City. This was FDR's office address as president of Fidelity & Deposit Company. It was Bernard Baruch's address and the address of Gerard Swope. The three main promoters of the National Recovery Administration—FDR, Baruch, and Swope—were located at the same address through the 1920s. Most disturbing of all, it was found that the original meeting for the Butler Affair was held in 1926 at the Bankers Club, also located at 120 Broadway.

No explanation is yet offered for this remarkable concentration of talent and ideas at a single address. Quite obviously, it is an observation that must be accounted for sooner or later. We also found a concentration of directors of American International Corporation, the vehicle for Wall Street involvement in the Bolshevik revolution, and heavy contributors to the Roosevelt campaign.

Can we look at this story in any wider perspective? The ideas behind the Roosevelt New Deal were not really those of Wall Street; they actually go back to Roman times. From 49 to 44 B.C. Julius Caesar had his new deal public works projects; in 91 A.D. Domitian had his equivalent of the American Construction Council to stop overproduction. The ultimate fall of Rome reflected all the elements we recognize today: extravagant government spending, rapid inflation, and a crushing taxation, all coupled with totalitarian state regulation.[3]

Under Woodrow Wilson Wall Street achieved a central banking monopoly, the Federal Reserve System. The significance of the International Acceptance Bank, controlled by the financial establishment in Wall Street, was that the Federal Reserve banks used the police power of the state to create for themselves a perpetual money-making machine: the ability to create money with a stroke of a pen or the push of a computer key. The Warburgs, key figures in the International Acceptance Bank—an overseas money-making machine—were advisers to the Roosevelt administration and its monetary policies. Gold was declared a "barbaric relic," opening the way to worthless paper money in the United States. In 1975, as we go to press, the fiat inconvertible dollar is obviously on the way to ultimate depreciation.

Did Wall Street recognize the result of removing gold as backing for currency? Of course it did! Witness Paul Warburg to a Congressional Committee:

Abandonment of the gold standard means wildly fluctuating foreign exchanges and, therefore, the destruction of the free inflow of foreign capital and business. Weak countries will repudiate—or, to use the more polite expression, "fund their debts"—but there will be no general demonetization of gold. Gold at the end of the war will not be worth less but more.[4]

The inevitable conclusion forced upon us by the evidence is that there may indeed exist a financial élite, as pointed out by Franklin D. Roosevelt, and that the objective of this élite is monopoly acquisition of wealth. We have termed this élite advocates of corporate socialism. It thrives on the political process, and it would fade away if it were exposed to the activity of a free market. The great paradox is that the influential world socialist movement, which views itself as an enemy of this élite, is in fact the generator of precisely that politicization of economic activity that keeps the monopoly in power and that its great hero, Franklin D. Roosevelt, was its self-admitted instrument.

Footnotes

1. It may be superfluous to record this literature, but for the sake of completeness and the benefit of the innocent reader, a few titles may be included: William Domhoff, *Who Rules America?* (Englewood Cliffs, N.J.: Prentice-Hall, 1967); Ferdinand Lundberg, *The Rich and the Super Rich* (New York: Lyle Stuart, 1968), and Gary Allen, *None Dare Call It Conspiracy* (Seal Beach, Calif.: Concord Press, 1972)

Certainly, if sheer weight of printed paper has any influence, the power of any financial élite should have collapsed long ago. The establishment does appear to have considerable endurance, but nowhere near as much influence as many believe. The most important leg sustaining the credibility and so the power of the élite is the academic community. This group has, in large part, swapped truth and integrity for a piece of the political power and the financial action. Apparently academics can be bought—and you don't have to pay overly much!

2. Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations (London: George Routledge n.d.), p. 102.

3. H. J. Haskell, *The New Deal in Old Rome: How Government in the Ancient World Tried to Deal with Modern Problems* (New York: Knopf, 1947), pp. 239–40.

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CHAPTER 12

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Mrs. Frances Perkins, Secretary of Labor under FDR.

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The name Franklin Delano Roosevelt should suggest, but rarely does, a link with Wall Street. Both Delano and Roosevelt are prominent names in the history of American financial institutions.

Who was Franklin Delano Roosevelt?
Roosevelt's prepolitical career can be described only as that of financier. Both his family and career before 1928 and his election as Governor of New York were in the business world, more specifically the financial world. Between 1921 and 1928 Roosevelt was a director of 11 corporations headquartered in the Wall Street golden circle and president of a major trade association. The American Construction Council.

Certainly, if sheer weight of printed paper has any influence, the power of any financial élite should have collapsed long ago. The establishment does appear to have considerable endurance, but nowhere near as much influence as many believe. The most important leg sustaining the credibility and so the power of the élite is the academic community. This group has, in large part, swapped truth and integrity for a piece of the political power and the financial action. Apparently academics can be bought—and you don't have to pay overly much!

Furthermore, Roosevelt was not only president of United European Investors, Ltd., formed to take pecuniary advantage of the misery of German hyperinflation, but was one of the organizers of American Investigation Corporation, a high-powered financial syndicate. Roosevelts formed the financial firm Roosevelt & Son in the late 18th century, and Delanos operated in the financial arena from at least the mid19th century. Roosevelts and Delanos may not have reaped the great wealth of Morgans and Rockefellers, but they were known and respected names in the halls of international finance. Even in the 1920s we find Uncle Frederic Delano on the Federal Reserve Board, and George Emlen Roosevelt as a director of Guaranty Trust, the bête noire of the Street if there ever was one.
It is also reliably recorded that Theodore Roosevelt's Progressive Party, the first step to the modern welfare-warfare state, was financed by the J.P. Morgan interests; consequently, it should not surprise us to find Wall Street backing Roosevelt in 1928, 1930, and 1932.
In brief, we have shown that Roosevelt was a Wall Streeter, descended from prominent Wall Street families and backed financially by Wall Street. The policies implemented by the Roosevelt régime were precisely those required by the world of international finance. It should not be news to us that international bankers influence policy. What appears to have been neglected in the history of the Roosevelt era is that, not only did FDR reflect their objectives, but was more inclined to do so than the so-called reactionary Herbert Hoover. In fact, Hoover lost in 1932 because, in his own words, he was unwilling to accept the Swope Plan, alias NRA, which he termed, not incorrectly, "a fascist measure."
We cannot say that Wall Streeter Roosevelt was always a highly ethical promoter in his financial flotations. Buyers of his promotions lost money, and substantial money, as the following brief table based on the data presented suggests:

How Investors Fared With FDR at the Helm

Company Associated with FDR Issue Price of Stock Subsequent Price History
United European Investors, Ltd 10,000 marks (about $13) Company wound up, stock-holders offered $7.50
International Germanic Trust Company, Inc. $170 Went to $257 in 1928, liquidated in 1930 at $19 a

share

Loss of stockholders' funds, however, can be an accident or mismanagement. Many honest financiers have stumbled. However, association with persons of known ill repute such as Roberts and Gould in United European Investors, Ltd. was not accidental.

FDR's association with the American Construction Council brings to mind Adam Smith's obita dicta that the law ". . . cannot hinder people of the same trade from sometimes assembling together, but it ought to do nothing to facilitate such assemblies, much less to render them necessary."2 Why not? Because the American Construction Council was in the interests of the construction industry, not in those of the consumer of construction services.

The New York bonding business was made to order for FDR. As vice president of the Fidelity & Deposit Company of Maryland, FDR knew precisely how to operate in the world of politicized business, where price and product quality in the market place are replaced by "Whom do you know?" and "What are your politics?"

The United European Investors caper was an attempt to take advantage of the misery of German 1921-23 hyperinflation. The firm operated under a Canadian charter, no doubt because Canadian registration requirements were more lenient at that time. The most conspicuous observation concerns FDR's associates at U.E.I., including John von Berenberg Gossler, a HAPAG codirector of German Chancellor Cuno, who was responsible for the inflation! Then there was William Schall, FDR's New York associate, who had only a few years earlier been involved with German espionage in the United States—at 120 Broadway. The Roberts-Gould element in United European Investors was under criminal investigation; FDR knew they were under investigation, but continued his business associations.

Then we found that the background of the New Deal was speckled with prominent financiers. The economic recovery part of the New Deal was a creation of Wall Street—specifically Bernard Baruch and Gerard Swope of General Electric—in the form of the Swope Plan. So in Chapter 5 we expanded upon the idea of the politicization of business and formulated the thesis of corporate socialism: that the political way of running an economy is more attractive to big business because it avoids the rigors and the imposed efficiency of a market system. Further, through business control or influence in regulatory agencies and the police power of the state, the political system is an effective way to gain a monopoly, and a legal monopoly always leads to wealth. Consequently, Wall Street is intensely interested in the political arena

2. Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations (London: George Routledge n.d.), p. 102.

and supports those political candidates able to maximize the amount of political decision-making under whatever label and minimize the degree to which economic decisions in society are made in the market place. In brief. Wall Street has a vested interest in politics because through politics it can make society go to work for Wall Street. It can also thus avoid the penalties and risks of the market place.

We examined an early version of this idea: Clinton Roosevelt's planned society, published in 1841. We then briefly discussed Bernard Baruch's 1917 economic dictatorship and his declared intent to follow the

course of a planned economy in peacetime and traced Baruch and his economic assistant Hugh Johnson to the very core of the National Recovery Administration. Some attention was then given to the Federal Reserve System as the most prominent example of private legal monopoly and to the role of the Warburgs through the International Acceptance Bank and the manner in which the bank was able to get society to go to work for Wall Street. In a final look at the years before FDR's New Deal we reviewed the operation of the American Construction Council, a trade association, the concept of which originated with Herbert Hoover, but with FDR as its president. The council had, as its stated objectives, limitation of production and regulation of industry, a euphemism for industry control for maximization of its own profits.

Then we examined the financial contributions of the 1928, 1930, and 1932 elections on the ground that such contributions are a very accurate measure of political inclinations. In 1928, an extraordinary percentage of the larger contributions, those over $25,000, came from Wall Street's golden circle. Such large sums are important because their contributors are more than likely to be identifiable after the election when they ask favors in return for their earlier subsidies. We found that no less than 78.83 per cent of the over $1000 contributions to the Al Smith for President campaign came from a one-mile circle centered on 120 Broadway. Similarly 51.4 per cent, a lesser but still significant figure, of Hoover's contributions came from within this same area. Then we demonstrated that, after his election, Herbert Hoover was given an ultimatum by Wall Street: either accept the Swope Plan (the NRA) or the money and influence of Wall Street would go to FDR who was willing to sponsor that scheme. To his eternal credit, Herbert Hoover refused to introduce such planning on the ground that it was equivalent to Mussolini's fascist state. FDR was not so fussy.

In FDR's 1930 campaign for Governor of New York, we identified a major Wall Street influence. There was an extraordinary flow of funds via the County Trust Company, and John J. Raskob of Du Pont and General Motors emerged as Chairman of the Democratic Campaign Committee and a power behind the scenes in the election of FDR.

Seventy-eight per cent of the pre-convention "early-bird" contributions for FDR's 1932 Presidential bid came from Wall Street.

The Swope Plan was a scheme to force American industry into compulsory trade associations and provide exemption from the anti-trust laws. It was baited with a massive welfare carrot to quiet the misgivings of labor and other groups. The administrator of the National Recovery Administration, which developed from the Swope Plan, was Baruch's assistant. General Hugh Johnson. The three musketeers, Johnson's circle of assistants, comprised Gerard Swope of General Electric, Walter Teagle, of Standard Oil of New Jersey, and Louis Kirstein of Filene's of Boston. Adherence to the NRA codes was compulsory for all firms with more than 50 employees. The Swope NRA Plan was greeted favorably by such socialists as Norman Thomas, whose main objection was only that they, the orthodox socialists, were not to run the plan.

Fortunately, NRA failed. Big business attempted to oppress the little man. The codes were riddled with abuses and inconsistencies. It was put out of its misery by the Supreme Court in the Schechter Poultry decision of 1935, although its failure was evident long before the Supreme Court decision. Because of failure of NRA, the so-called 1934 Butler Affair becomes of peculiar interest. According to General Smedley Butler's testimony to Congress, supported by independent witnesses, there was a plan to install a dictator in the White House. President Roosevelt was to be kicked upstairs and a new General Secretary

— General Butler was offered the post—was to take over the economy on behalf of Wall Street. Far-fetched as this accusation may seem, we can isolate three major statements of fact:

1. There was independent confirmation of General Butler's statements and in some measure unwilling confirmation by one of the plotters.
2. There existed a motive for Wall Street to initiate such a desperate gamble: the NRA-Swope proposal was foundering.
3. The alleged identity of the men behind the scenes is the same as those identified in the Bolshevik Revolution and in the political promotion of FDR.

Unfortunately, and to its lasting shame. Congress suppressed the core of the Butler testimony. Further, The New York Times first reported the story fairly, but then buried and distorted its coverage, even to the extent of incomplete indexing. We are left with the definite possibility that failure of the Baruch-Swope-Johnson NRA plan was to be followed by a more covert, coercive take-over of American industry. This occurrence deserves the fullest attention that unbiased scholars can bring to it. Obviously, the full story has yet to emerge.

Once again, as in the earlier volume, we found a remarkable concentration of persons, firms and events at a single address—120 Broadway, New York City. This was FDR's office address as president of Fidelity & Deposit Company. It was Bernard Baruch's address and the address of Gerard Swope. The three main promoters of the National Recovery Administration—FDR, Baruch, and Swope—were located at the same address through the 1920s. Most disturbing of all, it was found that the original meeting for the Butler Affair was held in 1926 at the Bankers Club, also located at 120 Broadway.

No explanation is yet offered for this remarkable concentration of talent and ideas at a single address. Quite obviously, it is an observation that must be accounted for sooner or later. We also found a concentration of directors of American International Corporation, the vehicle for Wall Street involvement in the Bolshevik revolution, and heavy contributors to the Roosevelt campaign.

Can we look at this story in any wider perspective? The ideas behind the Roosevelt New Deal were not really those of Wall Street; they actually go back to Roman times. From 49 to 44 B.C. Julius Caesar had his new deal public works projects; in 91 A.D. Domitian had his equivalent of the American Construction Council to stop overproduction. The ultimate fall of Rome reflected all the elements we recognize today: extravagant government spending, rapid inflation, and a crushing taxation, all coupled with totalitarian state regulation.3

Under Woodrow Wilson Wall Street achieved a central banking monopoly, the Federal Reserve System. The significance of the International Acceptance Bank, controlled by the financial establishment in Wall Street, was that the Federal Reserve banks used the police power of the state to create for themselves a perpetual money-making machine: the ability to create money with a stroke of a pen or the push of a computer key. The Warburgs, key figures in the International Acceptance Bank—an overseas money-making machine—were advisers to the Roosevelt administration and its monetary policies. Gold was declared a "barbaric relic," opening the way to worthless paper money in the United States. In 1975, as we go to press, the fiat inconvertible dollar is obviously on the way to ultimate depreciation.

Did Wall Street recognize the result of removing gold as backing for currency? Of course it did! Witness Paul Warburg to a Congressional Committee:

Abandonment of the gold standard means wildly fluctuating foreign exchanges and, therefore, the

destruction of the free inflow of foreign capi-

3. H. J. Haskell, The New Deal in Old Rome: How Government in the Ancient World Tried to Deal with Modern Problems (New York: Knopf, 1947), pp. 239–40.

tal and business. Weak countries will repudiate—or, to use the more polite expression, "fund their debts"—but there will be no general demonetization of gold. Gold at the end of the war will not be worth less but more.4

The inevitable conclusion forced upon us by the evidence is that there may indeed exist a financial élite, as pointed out by Franklin D. Roosevelt, and that the objective of this élite is monopoly acquisition of wealth. We have termed this élite advocates of corporate socialism. It thrives on the political process, and it would fade away if it were exposed to the activity of a free market. The great paradox is that the influential world socialist movement, which views itself as an enemy of this élite, is in fact the generator of precisely that politicization of economic activity that keeps the monopoly in power and that its great hero, Franklin D. Roosevelt, was its self-admitted instrument.

4. United States Senate, Hearings, Munitions Industry, Part 25, op. cit., p. 8105. Appendix A The Swope Plan

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1. All industrial and commercial companies (including subsidiaries) with 50 or more employees, and doing an interstate business, may form a trade association which shall be under the supervision of a federal body referred to later.
2. These trade associations may outline trade practices, business ethics, methods of standard accounting and cost practice, standard forms of balance sheet and earnings statement, etc., and may collect and distribute information on volume of business transacted, inventories of merchandise on hand, simplification and standardization of products, stabilization of prices, and all matters which may arise from time to time relating to the growth and development of industry and commerce in order to promote stabilization of employment and give the best service to the public. Much of this sort of exchange of information and data is already being carried on by trade associations now in existence. A great deal more valuable work of this character is possible.
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3. The public interest shall be protected by the supervision of companies and trade associations by the Federal Trade Commission or by a bureau of the Department of Commerce or by some federal supervisory body specially constituted.

4. All companies within the scope of this plan shall be required to adopt standard accounting and cost systems and standardized forms of balance sheet and earnings statement. These systems and forms may differ for the different industries, but will follow a uniform plan for each industry as adopted by the trade association and approved by the federal supervisory body.

5. All companies with participants or stockholders numbering 25 or more, and living in more than one state, shall send to its participants or stockholders and to the supervisory body at least once each quarter a statement of their business and earnings in the prescribed form. At least once each year they shall send to the participants or stockholders and to the supervisory body a complete balance sheet and earnings statement in the prescribed form. In this way the owners will be kept informed of the conditions of the business in such detail that there may be no criticism of irregularity or infrequency of statements or methods of presentation.

6. The federal supervisory body shall cooperate with the Internal Revenue Department and the trade associations in developing for each industry standardized forms of balance sheet and income statement, depending upon the character of the business, for the purpose of reconciling methods of reporting assets and income with the basis of values and income calculated for federal tax purposes.

7. All of the companies of the character described herein may immediately adopt the

provisions of this plan but shall be required to do so within 3 years unless the time is extended by the federal supervisory body. Similar companies formed after the plan becomes effective may come in at once but shall be required to come in before the expiration of 3 years from the date of their organization unless the time is extended by the federal supervisory body.

8. For the protection of employees, the following plans shall be adopted by all of these companies:

(A) **A WORKMEN'S COMPENSATION ACT**, which is part of the legislation necessary under this plan, shall, after careful study, be modeled after the best features of the laws which have been enacted by the several states.

(B) **LIFE AND DISABILITY INSURANCE**. All employees of companies included in this plan may, after two years' service with such companies, and shall, before the expiration of five years of service, be covered by life and disability insurance.

(1) The form of policy shall be determined by the association of which the Company is a member and approved by the federal supervisory body. The policy will belong to the employee and may be retained by him and kept in full force when he changes his employment or otherwise discontinues particular service as outlined later.

(2) The face value of a policy shall be for an amount approximately equal to one year's pay, but not more than $5,000, with the exception that the employee may, if he desires, increase at his own cost the amount of insurance carried, subject to the approval of the Board of Administrators, later defined.

(3) The cost of this life and disability insurance shall be paid one half by the employee and one-half by the company for which he works, with the following exception: the company's cost shall be determined on the basis of premiums at actual age of employees less than 35 years old and on the basis of 35 years of age for all employees 35 or over and shall be a face value of approximately one-half a year's pay but limited to a maximum premium for $2,500 of insurance. An employee taking out insurance at age 35 or over will pay the excess premium over the amount based upon age 35. This will remove the necessity for restriction against engaging employees or transferring them from one company to another because of advanced age, as it will place no undue burden of high premiums upon the company.

(4) The life and disability insurance may be carried by a life insurance company selected by the trade association and approved by the federal supervisory body or may be carried by a company organized by the trade association and approved by the federal supervisory body, or a single company may be formed to serve all associations.

(5) The administration of the insurance plan for each company shall be under the direction of a Board of Administrators consisting of representatives, one-half elected by the employee members. The powers and duties of the Board for each company will be to formulate general rules relating to eligibility of employees, etc., but such rules shall be in consonance with the general plan laid down by the General Board of Administration of the trade association of which the company is a member, and approved by the federal supervisory body.

(6) Provision for the continuation of a policy after an employee leaves one company and goes to another in the same association, or goes to a company in another trade association; continuance of the policy after retirement on pension; provisions with regard to beneficiaries; total or partial disability; method of payment of premiums by payroll deductions or otherwise, weekly, monthly
or annually, shall be embodied in the plan formulated by the trade association, with the approval of the federal supervisory body.

(7) If an employee leaves a company to go with one which is not a member of the trade association; if he engages in business for himself; or if he withdraws from industrial or commercial occupation, he may elect to retain the portion of the policy for which he has paid, in whole, or in part, by the continued payment of the proportional full premium costs, or he may receive a paid up policy, or be paid the cash surrender value for the part for which he has been paying the premiums. The cash surrender value of that portion of the policy paid for by the company will be paid to the company which paid the premiums.

(C) **PENSIONS**. All employees of companies included in this plan shall be covered by old age pension plans which will be adopted by the trade associations and approved by the federal supervisory body. The principal provisions will be as follows:

(1) All employees may, after two years of service with a company coming within the scope of this plan, and shall, before the expiration of five years of service, be covered by the old age pension plan.

(2) All employees after two years' service may, and after five years' service shall be required to, put aside a minimum of one per cent of earnings, but not more than $50 per year, for the pension fund. The employee may, if he desires, put aside a larger amount, subject to the approval of the Board of Administrators.

(3) The Company shall be required to put aside an amount equal to the minimum stated above, namely one per cent of earnings of employees, but not more than $50 per year per employee.

(4) The above minimum percentage shall be the same for all employees who are less

than 35 years of age when payments begin and the minimum percentage for these employees shall remain the same thereafter. The percentage to be set aside by employees coming into the pension plan at 35 years of age or over shall be so determined that it will provide a retiring allowance at age 70 the same as though they had begun one per cent payments at the age of 35. These provisions enable employees to go from one company to another in the same association or to different associations at any age with provision for retiring allowances which will be not less than the minimum rate of an employee who entered the pension plan at age 35.

(5) The amounts set aside by the employee and the company with interest compounded semiannually at five per cent until retirement at age 70, for a typical average employee, would provide an annuity of approximately one-half pay.

(6) The administration of the pension plan for each company shall be under the direction of a Board of Administrators, consisting of representatives, one-half appointed by the management and one half elected by the employee members. The powers and duties of the Board for each company will be to formulate general rules relating to eligibility of employees, conditions of retirement, etc., but such rules shall be in consonance with the general plan laid down by the General Board of Administration of the trade association of which the company is a member, and approved by the federal supervisory body.

(7) The amounts collected from the employees and the companies shall be placed with the pension trust organized by the association, the management of which shall be under the direction of the General Board of Administration referred to hereafter. In no case shall such funds be left under the control of an individual company.

(8) The Pension trust shall invest all funds and place them to the credit of the individual employees, including the income earned by the trust. If an employee goes from one company to another in the same association, the funds accumulated to his credit shall be continued to his credit with proper record of transfer. If an employee goes to a company in another association, the funds accumulated to his credit shall be transferred to his credit in the pension trust of the association to which he goes. If an employee goes to a company which does not come under these provisions or which is not a member of a trade association; goes into business for himself; or withdraws from an industrial or commercial occupation, the amount of his payments plus the interest at the average rate earned by the funds shall be given to him. If an employee dies before reaching retirement age, his beneficiary will receive the amount of his payments plus interest at the average rate earned by the funds. When an employee reaches retirement age, the entire amount accumulated to his credit, including his own payments and those of the company, plus accumulated interest, will be given to him in the form of an annuity. If an employee goes to a company which does not come under these provisions or which is not a member of a trade association; goes into business for himself; or withdraws from industrial or

commercial occupation, he may elect to let the amount to his credit (namely, his own payments plus those of the company and the
accumulated interest) remain with the pension trust for transfer, if he should return to the employ of any company coming within the provisions of this plan. If he does not return to the employ of a company coming under these provisions, he may at any time thereafter withdraw the amount of his own payments plus interest at the average rate earned by the funds up to that time. Company contributions and accumulated interest credited to employees who die, or for reasons indicated above, receive or withdraw their own contributions and interest, shall be returned to the employer or employers who made the contributions.

(9) The rules governing the payments of pensions on retirement and all other rules governing its continuance shall be made by the trade association, approved by the federal supervisory body, and observed by the General Board of Administration and the Boards of Administration of the member companies.

(D) **UNEMPLOYMENT INSURANCE**. All employees on piece work, hourly work daily, weekly, or monthly work, with normal pay of $5,000 per year or less (approximately $96.15 per week) shall be covered by unemployment insurance.

(1) All such employees may, after two years of service with a company coming within the provisions of this plan, and shall, after five years of service, be each required to put aside a minimum of one per cent of earnings, but not more than $50 per year for an unemployment insurance fund.

(2) The company shall be required to put aside an amount equal to that put aside by the employees, as set forth above, namely one per cent of the earnings of each employee, but not more than $50 per year for each such employee.

(3) If a company regularizes and guarantees employment for at least 50 per cent of the normal wage paid each year to such employees, the company assessment for employees covered by such guarantee need not be made, but the employees will pay in a minimum of one per cent of earnings, but not more than $50 per year, into a special fund for their own benefit.
If such an employee leaves the company, dies or retires on pension, the amount to his credit in the special fund plus interest at the average rate earned by the special fund, shall be given to him or to his beneficiaries or added to his pension.

(4) If a company so plans its work that it is able to reduce unemployment, when the amount of such company's credit in the normal unemployment fund is equal to but not less than 5 per cent of the normal annual earnings of the employees covered, the company may cease making payment to the fund. Employees' payments will continue.

The company will resume payments when its credit in the normal unemployment fund falls below 5 per cent of normal annual earnings of the employees covered.

(5) When the weekly payments made from the fund for unemployment benefits amount to 2 per cent or more of the average weekly earnings of participating employees, the company shall declare an unemployment emergency, and normal payments by the employees and the company shall cease. Thereafter all employees of the company (including the highest officers) receiving 50 per cent or more of their average full-time earnings shall pay 1 per cent of their current earnings to the unemployment fund. A similar amount shall be paid into the fund by the company. The unemployment emergency shall continue until normal conditions are restored, which shall be determined by the Board of Administrators of each company. Thereupon normal payments will be resumed.

(6) The main provisions for the distribution of the funds shall follow along these lines, unless modified by the Board of Administrators as set forth in Section D, paragraph 7 hereof. A certain small percentage of the normal payments of the employees and the company may be considered as available for helping participating employees in need. A larger percentage of such normal payments may be considered as available for loans to participating employees in amounts not exceeding $200 each, with or without interest as may be determined by the Board. The balance of the funds shall be available for unemployment payments. Unemployment payments shall begin after the first two weeks of unemployment and shall amount to approximately 50 per cent of the participating employee's average weekly or monthly earnings for full time, but in no case more than $20 per week. Such payments to individual employees shall continue for no longer than ten weeks in any twelve consecutive months unless extended by the Board. When a participating employee is working part-time because of lack of work and receiving less than 50 per cent of his average weekly or monthly earnings for full time, he shall be eligible for payments to be made from the fund, amounting to the difference between the amount he is receiving as wages from the company and the maximum he may be entitled to as outlined above.

(7) The custody and investment of funds and administration of the unemployment insurance plan for each company shall be under the direction of a Board of Administrators consisting of representatives, one-half appointed by the management and one-half elected by the employee members. The powers and duties of the Board shall be to formulate general rules relating to eligibility of employees, the waiting period before benefits are paid, amounts of benefits and how long they shall continue in any year, whether loans shall be made in time of unemployment or need, whether a portion of the funds shall be placed at the disposal of the Board for relief from need arising from causes other than unemployment, etc., but such rules shall be in consonance with the general plan laid down by the General Board of Administration of the trade association of which the company is a member, and approved by the federal supervisory body.

(8) If an employee leaves the company and goes to work for another company coming within the provisions of this plan, the proportionate amount remaining of his normal contributions, plus interest at the average rate earned by the funds, shall be transferred to such company and to his credit. If he leaves for other reasons, dies or retires on pension, the proportionate amount remaining of his normal payment, plus interest at the average rate earned by the funds, shall be given to him, or to his beneficiary, or added to his pension. When such employee's credit is transferred to another company, or paid to the employee or to his beneficiary under this provision, an equal amount shall be paid to the cooperating company.

GENERAL ADMINISTRATION. Each trade association will form a General Board of Administration which shall consist of nine members, three to be elected or appointed by the association, three to be elected by the employees of the member companies, and three, representing the public, to be appointed by the federal supervisory body. The members of the General Board, except employee representatives, shall serve without compensation. The employee representatives shall be paid their regular rates of pay for time devoted to Board work, and all members shall be paid traveling expenses, all of which shall be borne by the trade association. The powers and duties of this General Board shall be to interpret the life and disability insurance, pension and unemployment insurance plans adopted by the trade association and approved by the federal supervisory body, supervise the individual company Boards of Administration, form and direct a pension trust for the custody, investment, and disbursements of the pension funds, and in general supervise and direct all activities connected with life and disability insurance, pension and unemployment insurance plans.

Appendix B

Sponsors of Plans Presented for Economic Planning in the United States at April 1932.[1]

American Engineering Council, New York.
American Federation of Labor, Washington.
Associated General Contractors, Washington.
Charles A. Beard, New Milford, Conn.
Ralph Borsodi, author and economist. New York.
Chamber of Commerce of the United States, Washington.
Stuart Chase, author and economist. Labor Bureau, New York.
Wallace B. Donham, Dean, Harvard School of Business.
Fraternal Order of Eagles (Ludlow bill).
Jay Franklin, author, The Forum.
Guy Greer, economist, The Outlook.
Otto Kahn, banker. New York.
Senator Robert M. La Follette, U.S. Senate.
Lewis L. Lorwin, economist, Brookings Institute, Washington.
Paul M. Mazur, investment banker. New York.
McGraw-Hill Publishing Co., New York.
New England Council, Boston.
Progressive Conference (La Follette bill).
P. Redmond, economist, Schenectady, N.Y.
Sumner Slichter, economist and author, Madison Wis.
George Soule, editor, The New Republic.
C. R. Stevenson, of Stevenson, Jordan, and Harrison, New York.
Gerard Swope, president, General Electric Co.
Wisconsin Regional Plan, State Legislature, Madison, Wis.
National Civic Federation, New York.

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Western Technology and Soviet Economic Development 1917 to 1930

By

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HOOVER INSTITUTION ON WAR, REVOLUTION AND PEACE
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The Hoover Institution on War, Revolution and Peace, founded at Stanford University in 1919 by the late President Herbert Hoover, is a center for advanced study and research on public and international affairs in the twentieth century. The views expressed in its publications are entirely those of the authors and do not necessarily reflect the views of the Hoover Institution.

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To

Mum and Dad

Preface

By far the most significant factor in the development of the Soviet economy has been its absorption of Western technology and skills. Previously this technological transfer has not been treated in detail; hence the data that comprise Part I of this study are thoroughly documented. Without such documentation, the argument of Part II would appear less than credible. The reader may, however, wish to pass on to Part II after briefly satisfying himself with the general content of Part I. Chapter two discussing Soviet oil, and chapter eleven, on electrical equipment, are representative of the empirical treatment of key sectors in Soviet industry.

The primary sources for data are the U.S. State Department Decimal File and the German Foreign Ministry Archives, supplemented by journals in half a dozen languages from a dozen countries. Of these, the journals published by Soviet trade representatives abroad were of particular help.

Grateful appreciation is due the Relm Foundation for funds to purchase several hundred thousand microfilmed documents. Acknowledgment is also due to California State College at Los Angeles and to the Economic Opportunity Program for secretarial and research assistance. The National Archives, the Library of Congress, and the Hoover Institution library were unfailingly responsive and remarkably adept at interpreting requests for information. Without their sympathetic aid, this study could have been neither attempted nor completed. In addition, Dr. Stefan Possony of the Hoover Institution was very helpful in making research suggestions which, in the final analysis, turned out to be of fundamental importance. The Hoover Institution also accepted the considerable burden of preparing the manuscript for publication; particular thanks is due London G. Green for his capable and understanding work as editor.

Finally, acknowledgment is made to F. W. B. Coleman, resident United States Minister in Riga, Lativa, during the 1920s. Riga was the main American 'listening post' of this time, and dispatches by Coleman to Washington, D.C.,

suggest a deep understanding of events in the Soviet Union. These detailed and accurate reports were of major help in this study.

It is especially important in a study which breaks substantially new ground in a controversial area to point out that any criticism concerning the interpretation of data must fall squarely on the shoulders of the writer, and not on his sources. Such criticism is, of course, to be welcomed.

A. C. S.

Pasadena, California
April 1, 1966

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CHARTS AND MAPS

Glossary

Artel:	Collective labor group
Basmach:	Counter-revolutionary bandit
Bedniak:	'Poor' peasant
Centrosoyuz:	Central Union of Consumers Co-operatives
Chervonetz:	Ten ruble bank note
Dessiatin	2.7 acres
Glavk:	Central board or committee
Glavkontsesskom:	Chief Concessions Committee
Geolro:	State Commission for Electrification
Gosbank:	State Bank
Gosplan:	State Planning Commission
Guberniia:	Province
Hectare:	2.47 acres
Kolkhoz:	Collective farm
Kopeck:	Small coin, 1/100 of a ruble
Koustarny:	Home industry, handicraft wares
Krai:	Region
Kroner:	Swedish monetary unit
Kulak:	Literally 'fist' (term applied to 'rich' peasant)
Oblast':	Province
Pood:	36.1128 pounds
Rayon:	District (of an oblast')
Ruble, gold:	Ruble valued in gold at 0.222168 grams
Sazhen:	2.3333 yards
Seredniak:	'Middle' peasant
Usufruct:	Legal term for operation of an economic activity without ownership rights
Uyezd:	District
Verst:	0.6629 miles

VSNKh (Vesenkha):	Vysshyi Sovet Narodnogo Khozaistva—Supreme Council of National Economy
Zemstvos	Elected rural councils in tsarist Russia
Zolotnik	0.15 of an ounce (4.265 grams)

PART ONE

An Empirical Examination of Foreign Concessions and Technological Transfers

CHAPTER ONE

Introduction

ECONOMIC DEVELOPMENT AND THE INTERNATIONAL TRANSFER OF TECHNOLOGY

It is accepted that a significant factor in the economic growth of those countries undergoing rapid development during the twentieth century is the 'advantage of coming late.' Advanced industrial and agricultural technology can be effectively transferred, reducing the latecomer's investment in research and development. Indeed, continuing investment in technology by advanced countries has generally made for a dramatic decrease in capital-output ratios, during the last sixty years.[1]

Massell[2] argues, with empirical support, that the productivity increase in United States manufacturing between 1919 and 1955 is attributable far more to technological change than to increased capital investment. Traditionally it has been assumed that capital investment exceeds technological advance as the major factor in economic development. According to Massell however, 90 percent of the increase in the U.S. output per man-hour is to be attributed to technological improvement and only 10 percent to increases in capital investment. Improvement in labor skills is included as technological advance.

In the sphere of Soviet development, other things being equal, we would then look for technology as a contributing factor of some significance. Development literature in the West omits this factor, although recognition of its importance is implicit in the Soviet emphasis on technological advance.

[1] Paul S. Anderson, 'The Apparent Decline in Capital-Output Ratios,' *The Quarterly Journal of Economics*, LXXV, No. 4 (November 1961), 629.

[2] B. F. Massell, 'Capital Formation and Technological Change in United States Manufacturing,' *Review of Economics and Statistics*, XLII (May 1960), 182–8. In economic terminology, the change in productivity is due to a shift of the production function to the right rather than a deepening in capital intensity and a movement along the production function. Other writers have arrived at similar conclusions. Massell's conclusions coincide with those of Solow and Fabricant, who use different data and methodology.

Considerable evidence will be presented to show that Soviet technology was completely dependent on the West in the decade of the 1920s. Thus we can argue that a major portion of Soviet economic development would have been dependent on the technological contribution of Western enterprises even had there been no capital transfers. There were, however, such capital transfers—of at least sufficient magnitude to support the transfer of technology.

The argument of this study hinges indeed on the contribution of Western technology to Soviet economic development. As technology in the period between 1917 and 1930 originated in the West and not in the Soviet Union, it is concluded that the Western contribution was decisive in Soviet economic development during this period. The essential technology can usually be acquired for significantly less than the cost of the overall project. For example, the total cost of the Volkhov hydroelectric project was 90 million rubles, the major part of which was absorbed by the construction of the dam, the access roads, and the supporting buildings, while only 6 million was spent on imported equipment. However, it was the imported equipment—the turbines, generators, and switchgear—that determined the technical success of the project.

This, of course, is not to argue that technology is the only factor in economic development. Political, social and psychological factors play their respective roles. This interplay is particularly interesting in the Soviet example but is, unfortunately, outside the scope of this study.

THE SOVIET UNION AND THE TRANSFER OF TECHNOLOGY

A study of the influence of Western technology upon the early stages of Soviet economic development may then be a profitable field for research and, in fact, may change our view of those forces allegedly 'released' by socialism and traditionally held responsible for Soviet economic growth. No rigorous analysis of this technological transfer has yet been attempted, although its existence has been noted within the Western world.[3]

The mechanisms for this transfer were in fact many and varied, and include some not found elsewhere in world economic development. First, there was a carryover of internal capital investment from prerevolutionary industrial Russia.[4] This industrial structure was but slightly affected by the Revolutions and subsequent Civil War; evidence to be developed in this study indicates

[3] Werner Keller, *Ost minus west = null* (Munich: Droemersche Verlagsanstalt, 1960).

[4] Anton Crihan, *Le capital étranger en Russie* (Paris: Pichon, 1934). P. V. Oll, *Les capitaux étrangers en Russie* (Petrograd: 1922), estimated this capital, expropriated by the Soviet government, to be over $1 billion, a figure quoted in S. N. Prokopovitch, *Histoire Economique de l'U.R.S.S.* (Paris: Flammarian, 1952), p. 281.

that the popular story of substantial physical destruction is, except in the case of the Don Basin, a myth. More damage was done to Russian industry by the ineptitudes of War Communism than by World War I, the Revolutions, the Civil War, and the Allied Intervention combined. Many of the largest plants worked at full capacity right through the Revolutions and Civil War under their 'capitalist' managers. Others, with equipment intact, were placed in a state of 'technical preservation' until managers with skills requisite to recommence operations could be found.

Second, the New Economic Policy (NEP) denationalized certain economic activities and restored some measure of free enterprise to both foreign and domestic capitalists. Internally, the relaxation of controls affected retailing, wholesaling, and small industries employing less than twenty persons. However, the 'commanding heights' of the economy (iron and steel, electrical equipment, transportation, and foreign trade) were retained under Communist control and grouped into trusts and syndicates. Foreign capital and technology were then invited into these units through concessions and mixed joint-stock companies, both with and without domestic private and state participation. The concession, in its varying forms, was the most significant vehicle for the transfer of foreign technology.

At the beginning of the NEP, the emphasis was on concessions to Western entrepreneurs. In the middle and last years of the decade the concession was replaced by technical-assistance contracts and the import of complete plants and equipment. After the acquisition of a specific technology, by either concession, purchase, or confiscation, came duplication in Soviet plants. Major acquisitions were supplemented by the purchase or appropriation of designs, plans, patents, and prototypes. This process extended even to agriculture. For instance, the purchase of pedigreed stock provided for rapid multiplication—equivalent in its way to the reproduction of technical processes.[5]

A third transfer vehicle was the employment of individual Western engineers and experts and the corresponding dispatch of Soviet engineers and workers to training positions in foreign plants. When foreign assistance was required on a substantial and continuing scale, the technical-assistance contract was utilized. The study trip abroad by Soviet engineers was used both as prelude

[5] Numerous examples are given in detail below. One interesting importation of Western agricultural technology was the acquisition of Australian and American stud merinos. In 1929, the Soviet government purchased between 20,000 and 30,000 pedigreed breeding sheep. In order to maintain Australian flocks, the Australian government placed an embargo, still maintained today, on the export of sheep for breeding purposes. (House of Representatives, Commonwealth of Australia, *Parliamentary Debates*, 12th Parliament, 1st Session, p. 315.)

to a technical-assistance contract and when minor foreign training or technical help was required.[6]

The transfer of technical knowledge sometimes took forms easily overlooked. For example, the number of subscriptions taken out by the Soviet government for American technical and scientific publications jumped dramatically as the industrialization process got under way.[7]

The penetration of early Soviet industry by Western companies and individuals was remarkable. Western technical directors, consulting engineers, and independent entrepreneurs were common in the Soviet Union. In retrospect, perhaps the most surprising examples were the directorships held by General Electric affiliates on the boards of Soviet electrical trusts.[8]

Although the technological transfer took many forms, dictated by political and economic circumstances, the central mechanism was the concession, around which this study is built. The concession was also interrelated with other mechanisms and the very small amount of internally originated research, development, and innovation. It is true that after 1930 the importance of the concession declined greatly as other forms of technological transfer came into use but for the period from 1917 to 1930 the concession is central.

THE ROLE OF THE FOREIGN CONCESSION, 1917 TO 1930

The use of concessions was suggested in December 1917 at the first All Russian Congress of Councils of the National Economy. After extensive debate it was agreed that concessions were desirable for the restoration of the Russian economy. Subsequent negotiations with American, German, French, and British capital however, were temporarily halted by the Allied Intervention and Civil War.

In 1920, when political conditions were more stabilized, Lenin issued a decree allowing concessions to be granted by simple departmental permission. However, negotiations with Urquhardt, a British financier and well-known capitalist in prewar Russia, ended in failure; and so ended the second attempt to establish foreign concessions. Urquhardt sensed the likelihood of con-

[6] A partial list is in Saul G. Bron, *Soviet Economic Development and American Business* (New York: Horace Liveright, 1930), pp. 144–6. Bron was chairman of the Amtorg Trading Corporation in New York.

[7] In 1925 the Soviet government held 200 subscriptions to United States technical journals, in 1926–7 about 1,000, in 1927–8 about 8,000, and in 1928–9 more than 12,000, as noted in Amtorg Trading Co., *Economic Review of the Soviet Union* (New York: 1928), III, 383.

[8] The General Electric Co. was represented on the board of Electroexploatsia, which was responsible for new electrical power stations and systems construction. Swedish General Electric (ASEA) was a 'founder and a principal shareholder' of Electroselstroi, responsible for electrification of rural areas, as noted in *Annuaire Politique et Economique*, (Moscow: N.K.I.D., 1926), p. 25 (rear).

fiscation and would not embark without ironclad guarantees. An agreement between Krassin and Urquhardt was rejected by Lenin, who had problems with the more unrealistic members of the Party, who refused to accept a return of foreign capital under any guise.

A third, successful, attempt stemmed from the decree of March 8th, 1923, replaced by the law of August 21, 1923, which was further amended in December 14, 1927 and supplemented by special ordinances of May 23, 1926 and April 17, 1928. The August 1923 law established a Chief Concessions Committee (Glavkontsesskom) and the legal structure for the conduct of negotiations and the transfer of Russian property to foreign enterprises.[9]

A pure concession is an economic enterprise in which a foreign company enters into a contract with the host country to organize, equip, and exploit a specific opportunity, under the legal doctrine of *usufruct*. In return for the burden of development, exploitation, and production, the foreign company receives a non-contractual surplus or profit, usually taxed by the host country. The Soviets even considered the foreign commune, wherein foreign settlers entered the U.S.S.R. with their tools and equipment, as an agreement 'in lease *usufruct*.'[10] A variant of the pure concession found in Soviet development is the credit or contract concession. Here the foreign firm has the function of organization and finance, but operation is by a Soviet organization. Mixed companies are of this nature, and are still utilized in Soviet economic relations with satellite countries. Technical-assistance contracts are sometimes viewed as concession operations by the Soviets but rarely by the West. The return allowed to the foreign participant in a technical-assistance agreement is usually determined by contract and is not merely a surplus accruing to the entrepreneur. On the other hand, not all economic agreements lacking contractual payment features can be described as concessions. The design competitions, such as the Locomotive Design Competition of 1927, had non-contractual rewards but were not concessions, although they had elements of technological transfer.

The mixed corporation was also used in agriculture, as were credit and contract concessions financed by foreign firms but operated by Soviet organizations. In addition, technical-assistance contracts were used to acquire advice on particular agricultural problems, and in some cases concessions participated in the financing of equipment purchases.

Concessions, however, operated within all sectors of the economy, although the largest single group numerically was in raw materials development. Indus-

[9] The Concession Law of 1923 is reprinted in the *Journal of the Workmen-Peasant Government of the U.S.S.R.*, No. 13, 1923. The amendment is reprinted in *Collection of Laws of the U.S.S.R.* (Moscow: 1927), Part I, No. 69.

[10] The Imkommune Uhlfeld (Austria) is a good example. See page 129.

trial concessions formed a smaller but, as will be seen, strategically important group. Although concessions were offered in housing and public utilities, they were not, with the exception of a few housing developments, attractive to foreign investors.

In size, concessions ranged from the gigantic Lena Goldfields, Ltd., of the United Kingdom, operating thirteen separate industrial complexes and valued, after Soviet expropriation, at over $89 million, to small factories manufacturing pencils (the Hammer concession) or typewriter ribbons (the Alftan concession).

The Soviet definition of a concession is sometimes broader than that used in the West, and to avoid confusion the broader definition is utilized in this study. Concessions are here categorized in three ways; each category refers to a distinct organizational type.

The 'pure' concession (or Type I) was an agreement between the U.S.S.R. and a foreign enterprise whereby the foreign firm was enabled to develop and exploit an opportunity within the U.S.S.R., under the legal doctrine of *usufruct*, i.e., without acquiring property rights. Royalty payments to the U.S.S.R. were an essential part of the agreement, and in all cases the foreign enterprise was required both to invest stipulated capital sums and to introduce the latest in Western technology and equipment.

The 'mixed' company concession (or Type II) utilized a corporation in which Soviet and foreign participation were on equal basis (at first 50:50 but later 51:49), with a Soviet Chairman of the Board who had the deciding vote in cases of dispute. Normally the foreign company invested capital and technology or skills and the Soviets provided the opportunity and the location. Labor, both skilled and unskilled, was partly imported, and profits were to be split.

Whereas the first two types are clearly recognized as concessions, the technical-assistance contract (or Type III concession) has not usually been so designated, except in the U.S.S.R. Probably the Soviets were well aware of the negligible marginal cost to Western companies of supplying technical knowledge, patents, designs, and similar technological vehicles. In essence, Type III was a 'reverse technical concession,' in that the Soviets were making payments to exploit foreign technological resources; the Western company was not, in this case, making payment to exploit Russian natural resources or opportunities.

All known concessions can be grouped into these three categories, as table 1–1 demonstrates. The common link is that each type, in its own way, acted as a mechanism for the transfer of Western technology and skills, although only Types I and II involved the transfer of capital.

Table 1-1 CONCESSION APPLICATIONS AND AGREEMENTS, 1921-30

Year	*Applications*[1]	*Number of agreements Types I and II*[1]	*Type III*[2]
1921-2	224	18	0
1922-3	579	44	1
1923-4	396	55	0
1924-5	256	103	4
1925-6	482	110	7
1926-7	263	Not available	13
1927-8	200	Not available	17
1928-9	270	Not available	33
1929-30	Not available	Not available	59
Total	2,670 (to 1928-9)	330 (to 1925-6)	134 (to 1929-30)

Sources: [1] A. A. Santalov and L. Segal, *Soviet Union Yearbook, 1930* (London: Allen and Unwin, 1930), p. 206.
[2] U.S.S.R. Chamber of Commerce, *Economic Conditions in the U.S.S.R.* (Moscow: Vneshtorgizdat, 1931), p. 162.

THE PLACE OF THE CONCESSION IN THE ECONOMIC HISTORY OF THE U.S.S.R.

Analyses of Soviet economic growth and the processes by which it has been attained have been restricted by lack of accurate data and firsthand knowledge of decision-making processes. The Soviets have, in fact, continually attempted to disguise the true rate and process of this economic growth.

It has been almost universally accepted that the foreign concessions policy of the 1920s and 30s did *not* aid the industrial development of the U.S.S.R. Certainly this interpretation has been propagated by the Soviets. N. Liubimov, former professor of economics at the University of Moscow, argues:

> Any discussion of concessions in the Union of Soviet Socialist Republics must emphasize their relative unimportance in Soviet activity. . . .[11]

Western writers, whether Marxist or non-Marxist in orientation, have taken a similar viewpoint. For instance, Maurice Dobb, a Marxist, argues that:

> . . . the policy of granting concessions on a larger scale to foreign companies had little success, apart from one or two special cases, while the concessions which were granted were more often in the sphere of foreign trade than in production.[12]

[11] 'The Soviets and Foreign Concessions,' *Foreign Affairs*, IX, No. 1 (October 1930), 95.

[12] *Soviet Economic Development since 1917* (5th ed.; London: Routledge and Kegan Paul, 1960), p. 142.

Then he adds:

> The policy of granting concessions to foreign firms to undertake trading and industrial ventures was unsuccessful in yielding more than about 10 million rubles (gold) of foreign capital in the first years of the concession policy.[13]

This is a meaningless statement unless the period in question is indicated. Several concessions contributed much more than 10 million rubles of investment apiece.

Soviet sources, which would hardly overstate the investment of concession capital, give figures for 1927 and 1928 indicating an investment, at least five times greater than that given by Dobb. Nevertheless, Dobb continues:

> In the early '20s' an attempt had been made to invite the aid of foreign capital on a limited scale in the form of concessions grants. But we have seen that the policy did not meet with any great success. . . .[14]

Dobb's conclusions are, in fact, unsound and unsupported by the available concessions data.

Non-Marxist writers have also assigned a minor role to the foreign concession. A. Baykov[15] does not mention concessions. A. Yugoff[16] holds that they had only a slight effect on economic development. Their ineffectuality, he argues, was due mainly to a prohibitive currency policy and restrictions on the free export of foreign bills of exchange. On this basis, Yugoff generally discounts the technological and economic impact of the concession.

M. Hwang Jen[17] ignores restrictions on export of proceeds mentioned by Yugoff, and instead argues that export of proceeds was a source of loss to the Soviets, and that generally the concession was an inefficient vehicle for the transfer of either capital or technology. Jen is impressed with the ingenuity of the concession but concludes that it was unrealistic as a method of development.

There has been some difference of opinion within the executive branch of the United States government on the importance of the concession in Soviet economic development. The State Department has not considered the concession particularly important.[18]

[13] *Ibid.*, p. 150.

[14] *Ibid.*, p. 180.

[15] *The Development of the Soviet Economic System* (New York: Macmillan, 1947).

[16] *Economic Trends in Soviet Russia* (New York: R. Smith, 1930), pp. 221–3.

[17] *Le Régime des Concessions en Russie Soviétique* (Paris: Gamber, 1929).

[18] The importance of the concession has been in general toned down. For example, in submitting advice to Professor Raymond T. Bye for a speech before the American Economic Association, the State Dept. suggested that 'a few large concessions' be re-stated as 'one large concession' (316–109–807). (Numeral references to U.S. archival material are explained in Appendix A.)

On the other hand, United States Military Intelligence (MID) arrived at conclusions closer to the theme of this study:

> The lack of capital, the failure of the New Economic Policy to stimulate actively trade and production, and the exhaustion of raw material stocks have influenced the leaders to look outside of Russia for aid in bringing about economic recovery.[19]

and:

> By September 1927, Soviet authorities are reported to have granted 156 concessions, embracing practically all branches of national economy. In February 1928 there were 110 concessions in operation.[20]

In brief, despite the single contrary estimate mentioned, the concession has generally been regarded, in the West and in Russia, as a negligible factor in Soviet economic development. Further, it has been suggested that supportive data is unavailable. Keller claims concession operation records are buried in the files of each firm and that the Soviets will not release their data.[21]

In the light of this almost universal conclusion that the concession was insignificant as a development mechanism, certain essential questions must be clearly answered. Can the data on concessions and transfers be assembled? Is such data reliable? Does the assembled data support the current assumption of a negligible role for the concession? Finally, what was the contribution of the concession to Soviet technological and economic development?

METHODOLOGY OF THE STUDY

A simple but consistent methodology is utilized in this study. Our objective is to estimate in a quantitative manner the impact of Western technology on early Soviet economic development. Each plant in this fairly primitive economy is identified and the origin of its equipment and technical processes traced. Because many of the plants were operated by Western concession operations, the major research task has been to obtain extensive and accurate data on concession operations. This was a complex and time-consuming task, involving a search in sources originating in a dozen countries. The data generally comes from one of five sources distinguished by varying degrees of reliability. This variety however, allows for comparison and informed interpretation of data from different sources on many similar problems.

[19] U.S. War Dept., *Soviet Russia; on Economic Estimate*, March 18, 1928, p. 4319-h (U.S. State Dept. Decimal File, 316-110-306).

[20] *Loc. cit.* The estimate of 156 concessions is not inconsistent with table 1-1. MID probably counted only Type I concessions, while table 1-1 col. 2 includes Types I and II.

[21] Keller, *op. cit.*, p. 219.

The primary sources of data are the United States State Department Decimal File and the German Foreign Ministry Archives for 1917 to 1930. These are a superlative source of detail not available elsewhere; yet a few concessions were not recorded by their respective home governments. In general, concessions and similar agreements were noted in Western news media, but with scanty detail; it is rare that the German or American archives provide data on a concession unmentioned in some newspaper; about 10 percent are recorded only in the archives. Most concessionaires were reluctant to provide details, and considering the shabby treatment the majority received from the Soviets, it is unlikely they wanted to publish the amount of their losses. However Western governments were interested in the progress of concessions, and instructions went out to consular and other officials to acquire data. The U.S. Riga (Latvia) consulate was very active in this collection process.

The State Department Archives contain a number of firsthand reports of visits to Soviet plants made by United States company officials in search of business. In some cases, however, such as the W. A. Harriman manganese concession, the State Department had to glean its information from indirect sources such as European newspapers.[22] Archival sources are, then, incomplete. They have to be utilized concurrently with data from the four other sources.

The second source of data is Western news media and in general consists of voluntary information releases from those companies desiring to publicize their operations. During the 1920s fear of public opinion curbed news concerning the concessions of many companies.[23] Indeed, some concessions known from other sources, are not recorded at all in Western news media. The problem with this second group of sources is incompleteness of detail and possible corporate bias to protect a 'public image.'[24]

The third source of data, and a surprisingly lucrative source, consists of publications of Soviet trade representatives in Western countries. These sources have been treated with the same circumspection as data originating within the Soviet Union. However, it has been found that data from this source usually agrees with news media reports, with specific exceptions noted in the text. The major exception occurs in explanations for liquidation of concessions; official Soviet explanations often diverge considerably from the versions of the expropriated corporation. The explanation for the existence of detailed information in Soviet sources lies in the intent of the publications: to encourage further investment by Western companies. The information

[22] U.S. State Dept. Decimal File, 316–138–17/19.

[23] *New York Times*, August 17, 1925, p. 3, col. 5.

[24] The most useful Western newspapers are the *Times* (London), the *New York Times*, *L'Information* (Paris), and the *Russian Daily News* (Harbin, China).

had to be reasonably accurate—it could be checked, and the greatest problem of the Soviets then, as now, was to instill confidence. There was, however, no requirement to publish adverse information. Although these publications were used to print 'explanations' by some Western businessmen for the expropriation or failure of other concession enterprises, the 'explanations' were consistently pro-Soviet.[25]

A fourth source consists of data originating within the U.S.S.R., particularly in *Pravda*, *Izvestia*, and *Ekonomicheskaya Zhizn*. A series of five maps (dated 1921) suggests the vast plans, involving thousands of projected concessions, which characterized early Soviet thinking. These are reproduced in U.S. State Department Archives (130–1207/1234). An atlas of available concessions was also published in 1926 by the Central Concessions Committee *(Karty kontsessionnykh ob'ektov S.S.S.R.)* together with a few little booklets describing available concessions. These are useful as an indicator of the technological state of the plants being offered.

Soviet sources are viewed here in the light of the 1927 decree making the transmission of economic information prejudicial to Soviet concessions policy a crime against the state. Concessions and foreign companies working within the U.S.S.R. felt the sting of a decree against actions considered criminal only in the Communist world. Representatives of the Swedish firms Alfa Laval and Diabolo-Separator, manufacturers of dairy equipment (particularly cream separators) were accused of economic espionage in 1928 because they determined the probable future requirements of Soviet trusts for cream separators and reported the results of the market survey back to their respective firms in Sweden. The three defendants who worked for the Swedish firm were given five to eight years each in prison. Eight employees of Soviet trusts and commercial organizations, together with a German citizen named Bartsch, were given from one to three years each for accepting bribes and abetting economic espionage.[26] Consequently, after 1927, the flow of data from both the West and from the Soviet internal and external press declined substantially. Whereas detailed reports exist on industrial conditions up to 1927, few are found for the period from 1927 to 1930.[27]

The fifth source consists of a collection of miscellaneous material in several languages, including books written by engineers, consultants, and others who

[25] Amtorg Trading Co. *Economic Review of the Soviet Union* (New York: 1928), III, 373.

[26] Based on article in *Vossische Zeitung* (Berlin), July 1928, as reported by the American Legation in Berlin, Report No. 3750 of July 24, 1928 (U.S. State Dept. File, 316–109–754/5). Bartsch was promptly released.

[27] The report by M. Klemmer, a Western Electric Co. engineer, to the U.S. State Dept. (U.S. State Dept. Decimal File, 316–141–628) is clearly economic espionage within the Soviet meaning of the term. See also chap. 11.

worked in the U.S.S.R., and statistical summaries and handbooks published by Soviet representatives abroad.

In general, the problem of interpretation of Soviet data is not acute, although it is time-consuming. Data distortion had not at this time reached the quagmire stage; the major problem is incompleteness and the pervasive Soviet habit of omitting unfavorable facts and figures.

Use of data from several sources enabled cross-checking. As a general rule, data from Soviet and Western sources had to be consistent before it was utilized (exceptions to this rule are noted). Such a method avoids the problem of choosing between contradictory statements and statistics. For example, statements concerning the condition of the electrical equipment industry in 1922 can be found in the Soviet press which lead to the conclusion that it was, on the one hand, healthy and profitable,[28] and, on the other, in a state of near-collapse.[29] Evidence was also found that the electrical trusts were approaching foreign companies for help.[30] Subsequently foreign engineers entered the U.S.S.R. and their survey reports found their way into Western government archives.[31] With this support, the second conclusion could be accepted as reasonably factual.

Omission, at times, assumed significant proportions. Acceptance of the mineral production figures for 1927–8 published by the Leningrad Academy of Science Geological Committee would lead one to believe that neither gold nor platinum was produced in the U.S.S.R., and that the Lena Goldfields, Ltd., concession produced only limestone, dolomite, and quartz, whereas, in fact, it produced almost 40 percent of Soviet gold, 80 percent of Soviet silver, and significant proportions of copper, lead, zinc, and iron.[32] Similarly, the concession agreement with International Barnsdall Corporation omitted all reference to the specific geographic area covered by the agreement, although

[28] 'Experience proved that the electrical industries had improved very much under Government control. They were working satisfactorily and even giving profit to the State.' *Izvestia*, October 9, 1921 (paraphrased).

[29] Three months before the October 9 statement above, half the electrical plants in Petrograd had been closed due to a fuel crisis and the others drastically slowed, according to *Izvestia*, July 12, 1921. Eight months after the October 9 statement, the industry is described as having no working capital, no credits, no payments, '. . . the position is a very difficult one . . . electric lamps and cables can only be obtained by force . . .' according to *Ekonomicheskaya Zhizn*, No. 124, June 7, 1922.

[30] Electro-Technical Trust (GET) letter to International General Electric Inc., May 2, 1922 (U.S. State Dept. Decimal File, 316–139–58).

[31] Examples are the B. W. Bary report (1921) (U.S. State Dept. Decimal File, 316–139–11); and the Reinke report (1923) (U.S. State Dept. Decimal File, 316–108–672).

[32] V. I. Kruglyakova (ed.), *Sbornik statisticheskikh svedenii po gornoi i gornozavodsk promyshlennosti S.S.S.R. za 1927/8 gg.* (Moscow: 1930) pp. 60, 74, 90, 102, 106, 146, 150, 152. Limestone and quartz were used as a flux for the (statistically non-existent) Lena Goldfields gold-smelting operations.

the W. A. Harriman manganese concession agreement had its geography spelled out in minute detail.[33] A healthy dose of skepticism has proved to be an invaluable research tool.

[33] Reasons for omission in the case of Barnsdall are significant and are outlined in chap. 2.

CHAPTER TWO

Caucasus Oil Fields—
The Key to Economic Recovery

THE Caucasus oil fields are a major segment of Russian natural resource wealth. Baku, the most important field, was developed in the 1870s. In 1900 it was producing more crude oil than the United States, and in 1901 more than half of the total world crude output. The Caucasus oil fields survived the Revolution and Intervention without major structural damage and became a significant factor in Soviet economic recovery, generating about 20 percent of all exports by value; the largest single source of foreign exchange. The process by which the oil economy recovered from impending disaster and acquired modern refinery operations in a brief four or five years is the topic of this chapter.

COLLAPSE OF OIL FIELD DRILLING

Caucasian fields require continuous drilling to maintain an oil flow from producing wells. Therefore, oil production in this area is directly proportional to the amount of drilling undertaken. Before the Revolution, drilling averaged in excess of 35,000 feet per month, and had been as high as 50,000 feet in Baku alone.

The Bolsheviks took over the Caucasus in 1920–1, and until 1923 oil field drilling almost ceased. During the first year of Soviet rule '. . . not one single new well has started giving oil'[1] and even two years after Soviet occupation, no new oil-field properties had been developed. In addition, deepening of old wells virtually ceased. As a result, water percolated into the wells, and the flow of crude oil became first a mixture of oil and water and finally a flow of oily water.

[1] U.S. State Dept. Decimal File, 316–137–221.

Table 2–1 AVERAGE MONTHLY DRILLING IN RUSSIAN OIL FIELDS, 1900–21

1900	*1913*	*1920*	*1921*
48,496 ft.*	36,665 ft.	780 ft.	Jan. 336 ft.* Feb. 406 ft.*

Sources: 1900—A. Beeby Thompson, *The Oil Fields of Russia* (London: Lockwood, 1908), p. 120.
1913—G. Ghambashidze, *The Caucasian Petroleum Industry and Its Importance for Eastern Europe and Asia* (London: Anglo-Georgian Society, 1918), p. 9.
1920–21—*Ekonomicheskaya Zhizn*, May 20, 1921.

* Baku only.

Drilling records are an excellent indicator of the state of oil field maintenance, development, and production. The complete collapse after the Soviet takeover is clearly suggested in Table 2–1. In 1900, Russia had been the world's largest producer and exporter of crude oil; almost 50,000 feet of drilling per month had been required in Baku alone to maintain this production. By early 1921, the average monthly drilling in Baku had declined to an insignificant 370 feet or so (0.7 percent of the 1900 rate), although 162 rigs were in working order. This drilling was concentrated in only eight holes due to lack of steel pipe.[2]

The result was that, by 1922, half of the Baku wells were idle and the remainder were producing increasing quantities of water. In the Grozny field a greater portion of the wells were idle; only eight were in process of drilling, and the Old Grozny section was completely shut down. Smaller fields at Emba and Kuban were in similar chaos; both had received extensive drilling in 1915; consequently there were forty to fifty producing wells in 1922 but no new or maintenance drilling was in progress.[3]

The reasons for the catastrophic decline in oil-field production were four. First the number of available oil-field workers declined from about 40,000 in 1915 to less than 10,000 in 1920–1; coupled with this was the growing technical inefficiency of the remaining workers. Second, there was a breakdown in railroad transportation and a decline in pipeline capacity, because of lack of maintenance. Third, new oil-field supplies and equipment, including repair facilities were almost nonexistent. Last, there was a breakdown in the oil field electrical supply system. One of the largest Baku powerhouses, for example, had twenty-two water tube boilers, none were in operation in 1922.[4]

[2] U.S. State Dept. Decimal File, 316–137–442.

[3] The decline of the Caucasus oil fields is covered in detail in *Ekonomicheskaya Zhizn* for 1921–2.

[4] *Ekonomicheskaya Zhizn*, December 24, 1922 and February 10, 1923.

The paradox was the collapse of one of the few industries capable of generating sufficient foreign exchange for an industrial revival. Serebrovsky, Chairman of Azneft, put forward the program for recovery in a *Pravda* article. The plan for 1923 was to increase oil-well drilling to 35,000 sazhens per year (245,000 feet). This would require 35 rotary drills (to drill 77,000 feet) and 157 percussion drills (to drill 130,000 feet). Serebrovsky pointed out that Azneft had no rotary drills, and that Russian enterprise could not supply them. Rotary drilling, however, was essential for the success of the plan. He then announced:

> But just here American capital is going to support us. The American firm International Barnsdall Corporation has submitted a plan. . . . Lack of equipment prevents us from increasing the production of the oil industry of Baku by ourselves. The American firm . . . will provide the equipment, start drilling in the oil fields and organize the technical production of oil with deep pumps.[5]

During the next few years International Barnsdall, together with the Lucey Manufacturing Company[6] and other major foreign oil-well equipment firms, fulfilled Serebrovsky's program. Massive imports of equipment came from the United States. International Barnsdall inaugurated the rotary drilling program, initiated Azneft drilling crews into its operational problems, and reorganized oil-well pumping with deep-well electrical pumps.

INTERNATIONAL BARNSDALL CORPORATION

Numerous British, Swedish, Dutch, Greek, German, and American oil-field concessions were rumored from 1919 onward, but there is no evidence that any were granted and implemented, in spite of many extravagant claims, before the three Barnsdall concessions in 1921–2.

The first International Barnsdall concession was signed in October 1921,[7] and was followed in September of 1922 by two further agreements. There is no doubt that Barnsdall did work under the first agreement. *Pravda* reported groups of American oil-field workers on their way to the oil fields,[8] and a couple of months previously the United States Constantinople Consulate had reported that Philip Chadbourn, the Barnsdall Caucasus representative, had passed through on his way *out* of Russia.[9] In particular, the U.S. State Department Archives contain an intriguing quotation from Rykov (unfortunately with no stated source), dated October 1922:

[5] *Pravda*, September 21, 1922.

[6] Captain J. F. Lucey, founder of the Lucey Manufacturing Co., was the first Chairman of the Committee on Standardization of Rotary Drilling Equipment, organized by the United States petroleum industry in 1926.

[7] *New York Times*, March 29, 1922, p. 24, col. 2.

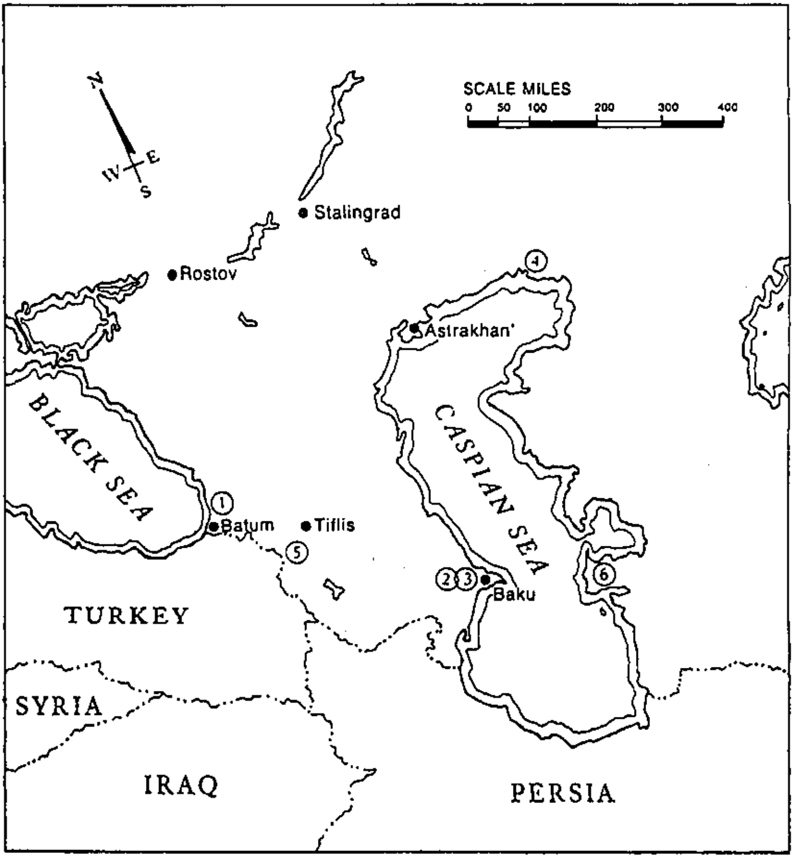
[8] October 22, 1922.

[9] U.S. State Dept. Decimal File, 316–130–1201/2.

The one comparatively bright spot in Russia is the petroleum industry, and this is due largely to the fact that a number of American workers have been brought into the oil fields to superintend their operation.[10]

MAP 2-1

FOREIGN OIL DRILLING CONCESSIONS IN THE CAUCASUS, 1921-8



Legend: 1. British Petroleum Co. Ltd., Gouria concession (1923, Type I)
2. International Barnsdall Corp., Baku concession (1921-2, Type III)
3. Duverger Baku concession (1923, Type I)
4. Duverger Emba concession (1923, Type II)
5. Società Minere Italo-Belge di Georgia, Shirak concession (1923, Type I)
6. F. Storens concession in Busachi (1925, Type I)

[10] *Ibid.*, 316-107-1167.

In September 1922, two extensive agreements were signed by Serebrovsky, representing Azneft, and Mason Day, president of the International Barnsdall Corporation, a New York-based oil company.[11] Barnsdall agreed to drill for oil in the 'Baku district in the Balakhani oil-field area (sic)'[12] within an area of 400 dessiatins, or 1,080 acres. The work was to consist of deepening old oil wells and drilling new wells under the supervision of a mixed commission containing both Soviet and American members. The maximum depth of these wells was to be 450 sazhens (3,150 feet) with a starting diameter of at least 20 inches and a finishing diameter of not less than 4 inches. Barnsdall agreed to import tools and equipment for the simultaneous drilling of 20 wells; and to drill at least 10,000 feet in the first year, no less than 20,000 in the second, and no less than 30,000 annually thereafter. Electric power, derricks, water, clay, timber, cement, and workshops (without equipment) were to be supplied by Azneft.

Barnsdall imported equipment at its own risk, with cost plus 5 percent to be repaid by Azneft on arrival at the drilling site. Azneft had the option of paying in either gold rubles or oil and oil products at market price. Each oil well drilled was paid for on a schedule based on 80,000 gold rubles per each sazhen (7 feet) drilled for the first 100 feet in each hole, and 10,000 gold rubles for each additional sazhen. As in the case of the equipment, payment could be made either in gold rubles or in oil or oil products, at the option of Azneft. A royalty of 20 percent in oil was paid to Barnsdall on either new or deepened wells, and the term of the agreement was set at fifteen and a half years.

The second Azneft-Barnsdall agreement was an oil-well-pumping contract under which International Barnsdall undertook to install modern pumps in both shut-down and watered wells and in new wells drilled under the first contract.

There was a specific requirement in the pumping contract for electrical deep pumps to be installed in all wells except fountains, gushers, and those requiring air-lift. During the first year, sufficient equipment was to be imported by Barnsdall to develop deep pumping in a minimum of 40 wells, with a further 100 pumps to follow each year for the 15-year term of the agreement. Electrical power was to be supplied free by Azneft.

No payment was made by Azneft for the pumping equipment, which was to pass to the Soviets at the expiration of the agreement. A royalty payment of 15 percent of the gross crude output of each well was assigned to International Barnsdall, with free tank storage at Baku.

[11] The Barnsdall agreements were not published. Mason Day, after some pressure, supplied a copy to the U.S. State Dept. This copy is now in the Archives, and is the basis for this section. Mason Day later joined forces with Sinclair and was convicted in the Teapot Dome oil scandal. Barnsdall financing was by Blair and Co., of New York.

[12] U.S. State Dept. Decimal File 316–137–510.

OIL FIELD PROPERTIES COVERED BY THE BARNSDALL AGREEMENT

To assess the impact of Western technology on the development of the Caucasus oil industry, it is necessary to determine the areas of the Baku fields covered by the Barnsdall agreements. The technological impact was in two forms: the direct oil-field work undertaken by Barnsdall engineers and crews; and the installation by Azneft engineers of equipment supplied by the Lucey Manufacturing Company, Metropolitan-Vickers, Ltd., and other companies and only partly under the technical supervision of Barnsdall.[13]

The geographical area to be covered by the agreement was deliberately obscured not only to the Western public but also to the U.S. State Department. There were major discrepancies in the statements of Mason Day and the Soviet press concerning the actual area placed under development.

The property rights of the prerevolutionary owners and lessees of Baku oil lands were in question, and the probability existed that these claimants would restrict Barnsdall and other Western company operations by legal action. It was therefore important for the U.S.S.R. to convey the impression that all Barnsdall work was being done on land formerly owned by the Crown, so that former private owners and lessees would have no cause for injunctive action in Western courts.

The contract clearly states that the area covered by the first, or drilling, contract, was 400 dessiatins in the Balakhani area of the Baku oil fields, with the option of extension to Sabunchi and Ramuni. A dessiatin is 2.7 acres. In talks with the U.S. State Department, Day used a conversion factor of 1 dessiatin=7/8 acre, and Barnsdall press releases talked about 400 acres rather than 400 dessiatins. In other words, there was a deliberate attempt on the part of Barnsdall to make the area covered by the agreement appear considerably smaller.

The area covered was, in fact, 1,080 acres, and as the location of previously privately-owned and leased property in the Balakhani section was known, it was concluded by the U.S. State Department that:

> There can be no doubt . . . that the vested rights of private owners or lessees will be infringed on from the very outset under either the first or the second contract.[14]

[13] International Barnsdall obtained $1.5 million credit in the United States from Lucey Manufacturing for oil-field equipment. In addition, Lucey obtained a substantial order directly from Azneft. Hill Electrical Drills, EMSCO (Los Angeles), and Metropolitan-Vickers, among others, secured significant orders for oil-field equipment. [W. A. Otis, *The Petroleum Industry of Russia*, U.S. Dept. of Commerce, Trade Information Bulletin No. 263, p. 24. Also *EMSCO Derrick and Equipment Company* (Los Angeles: Banks Huntley, 1929), pp. 26–7].

[14] Memorandum, Durand to Herter, February 1923 (316–137–586).

The substance of the State Department assessment was that it would be difficult, if not impossible, to find 400 dessiatins *not* previously operated or leased by private persons or companies.

A comparison of the four sections of the Baku oil field supports this position.

Table 2–2 DISTRIBUTION OF CRUDE OIL PRODUCTION AND PROPERTY OWNERSHIP IN THE BAKU OIL FIELDS, 1915

Baku Oil Field Section	*Percent Total Production*	*Percent Previously Owned or Leased*
Balakhani	19.5%	93.0%
Sabunchi	41.7	100.0
Ramuni	15.7	100.0
Bibi-Eibat	23.1	100.0

Source: Memorandum, Lewery to Durand (316–137–580/3).

The Sabunchi, Ramuni, and Bibi-Eibat sections had been completely under private ownership or leasing arrangement at the time of the Revolution. The Balakhani section was the only section with some open state land, but this amounted to only 7 percent of the total oil land in the section. The area of this unworked Crown land, which would not be subject to private claims, was less than 45 dessiatins. The balance of this section and the other three sections would all have been subject to injunctive action if worked by International Barnsdall.

The agreement stated that work was to be done on the Balakhani section, i.e., the only section with some Crown land, but contained an option to extend the work to the Sabunchi and Ramuni sections under instruction from Azneft. It was also verbally understood to extend to the Bibi-Eibat section.[15] The technical-assistance and pumping agreements covered all sections of the Baku field; so did the equipment sold by Lucey and other suppliers to Azneft.

In brief, the news releases attendant upon the International Barnsdall contract limited public discussion to 400 acres or less in the Balakhani field for good reason: to avoid legal action in Western courts.

> Whatever may be the purpose of the Barnsdall group, the contract reads as if the Russian authorities expected and intended to assign them for improvement and pumping wells which have been confiscated from former private owners, mostly foreigners.[16]

[15] U.S. State Dept. Decimal File, 316–137–581.

[16] Memorandum, Durand to Herter, February 8, 1923 (316–137–587).

The agreement was intended to cover the whole of the Baku field. Both the Soviets and International Barnsdall, considered it prudent to misrepresent the area covered by the contract.[17]

EXTENT OF BARNSDALL DRILLING

Barnsdall was required to undertake a minimum of 10,000 feet of drilling in the first year of operations and additional amounts in subsequent years, under the direction of a mixed committee, which included Azneft representatives. There is substantial reason to believe that Barnsdall undertook more drilling than the minimum required by the contract, which again may have camouflaged a private agreement. There was certainly substantial financial incentive for Barnsdall to exceed the minimum.

Analysis of drilling reports suggests a rate in excess of 180,000 feet per year. In the month after the arrival of the first group of engineers (June 1923), Barnsdall put down 15 wells in the Kirmaku area of northwest Balakhani.[18] Given an average depth of 1,000 feet for Baku wells, this equalled 15,000 feet a month, or 180,000 feet a year.[19] Also, Barnsdall had six American engineers in Baku, a number hardly warranted by a drilling rate of only 10,000 feet a year. One drilling agreement was in operation for two years. International Barnsdall was 'driven out' of the U.S.S.R. in 1924 after incurring 'very important material losses.'[20] Louis Fischer says the agreement lapsed 'by mutual consent' in 1924.[21]

CHANGES IN DRILLING TECHNOLOGY AT BAKU

Although the exact area and footage drilled will probably never be known, a complete change in Soviet drilling technology has been recorded. The old labor-intensive percussion methods gave way completely to the United States-developed rotary drilling techniques. This changeover is summarized in table 2–3.

[17] Morris, Chief of the Petroleum Division, U.S. Dept. of Commerce, made the succinct comment, ' . . . the Russians knew exactly what they were doing when they assigned Barnsdall's territory' (316–137–584). Lucey Manufacturing later confirmed to the State Dept. that Barnsdall was working throughout the Baku area irrespective of former ownership (316–137–745).

[18] Otis, *op. cit.*, p. 25.

[19] This would be equivalent to sinking 180 wells averaging 1,000 feet each. Scheffer noted that 300 wells were put down in Baku between October 1923 and October 1924 [Paul Scheffer, *Seven Years in Soviet Russia*, (New York: Macmillan, 1932), p. 94].

[20] W. Kokovtzoff, 'Le gouvernement des soviets et les concessions aux étrangers,' *Revue des Deux Mondes*, XXXV Sept. 1, 1926, 158–81.

[21] *Oil Imperialism* (New York: International, 1926), p. 169.

There was no substantial rotary drilling in the U.S.S.R. before 1923.[22] However, in the five years following, the percussion method was almost completely abandoned and the American rotary method substituted. By 1928 the percussion method accounted for only 2 percent of drilling (against 100 percent in 1913) and rotary drilling accounted for 81 percent (against none in 1923). The cable technique had brief use but was abandoned in favor of rotary methods. It should be noted that the Soviet-developed turbine drill had an early but insignificant utilization, and did not gain wide acceptance until later in the 1930s.[23]

Table 2–3 OIL-DRILLING TECHNIQUE,
PERCENTAGE UTILIZATION BY AZNEFT (BAKU), 1913–28

Year	OIL-DRILLING TECHNIQUE			
	Rotary	*Cable*	*Percussion*	*Turbine*
1913	—	—	100.0%	—
1924	36.0%	8.0%	56.0	—
1925	54.3	7.7	37.2	0.8%
1926	62.6	20.6	16.2	0.6
1927	71.3	19.7	7.3	1.7
1928	81.3	14.0	2.1	2.6

Source: Adapted from Alcan Hirsch, *Industrialized Russia* (New York: Chemical Catalog Co., 1934), p. 146. Hirsch was Chief Consulting Engineer to Chemtrust.

Note: These figures are supported by less detailed data in *Le Pétrole Russe* (Paris: Editions de la Représentation Commerciale de l'U.R.S.S. en France, 1927) No. 6, p. 5, where the following figures are given for rotary drilling:

1923–4: 34.7% 1924–5: 54.2% 1925–6: 63.7% 1926–7: 71.0%

The insignificant turbine drilling is confirmed in Kruglyakova, *op. cit.*, p. 120. It is stated that, of a total 367,480 meters drilled, 7,164 meters (or 1.9 percent) were turbine-drilled. Of this, 5,685 meters were drilled at an experimental hole at location No. 24, Surachanskaya.

The substitution of rotary drilling for the old percussion methods increased speed of drilling by a factor of ten and reduced costs by more than one half between 1924 and 1928.[24]

Neftsyndicat provides more detailed data which is consistent with Hirsch's statement. In 1920–1, when no rotary drilling was utilized, average drilling rates were 6.8 meters per drill-month. This jumped to 69.8 meters in 1925–6,

[22] A Russian mining engineer, Adiassevich, imported a rotary drilling rig and tools from California and completed a few 22-inch holes between 1913 and 1915 (316–137–210).

[23] These percentages contrast with those of the 1960s. By denying the Soviets Western rotary drills and drill pipe, we have forced them to utilize the turbine and electric drill techniques and to incur the cost of both development and a less efficient technique. The final cost to their oil economy has been substantial.

[24] Alcan Hirsch, *Industrialized Russia* (New York: Chemical Catalog Co., 1934), p. 146.

with a maximum figure of 640 meters. The same source suggests that a 600–700 meter hole required in 1927 only 70–80 days for drilling, whereas under the old drilling system it had required one year. In terms of cost, the advantages were just as significant. In one year, from 1923–4 to 1925–6, drilling costs fell from 413 rubles to 218 rubles per meter, and the number of workers required for one drill-month of operations fell from 49 to 30.[25]

CHANGES IN PUMPING TECHNOLOGY AND OIL FIELD ELECTRIFICATION

There was a parallel revolution in pumping technology. In 1922 oil-well pumping was undertaken by bailing (a primitive, inefficient technique) or by air-lift. About 10 percent of production was free-flowing and did not require mechanical assistance. A small portion was collected by surface methods. There was no deep-well electrical pumping in 1922, and no oil field pumps were produced in the U.S.S.R. until the initiation of the Maschinenbrau A-G technical-assistance agreement with Mosmash,[26] in the mid-1920s.

Table 2–4 CRUDE OIL EXTRACTION TECHNOLOGY IN BAKU OIL FIELDS, 1921-2 AND 1927-8

Method of Extraction		1921–2	1927–8
Bailing	OLD	49.3%	0.0%
Air-lift	OLD	40.3	27.9
Gushers		9.8	26.0
Pumping	NEW	0.0	44.8
Surface	NEW	0.6	1.3
		100.0%	100.0%

Source: 1921–2, Otis, *The Petroleum Industry of Russia*, p. 19
1927–8, U.S. State Dept., Decimal File, 316–137–1130.

On the other hand, electrical deep-pumping was at this time in general use in the United States and elsewhere and was considerably cheaper than the more primitive extraction methods. The second part of the Barnsdall contract required installation of deep-well pumps in Barnsdall-developed wells; pumps were also purchased from the United States and Germany for Soviet operations. Acquisition of pumps was so rapid that four years after the signing of the Barnsdall contract, 45 percent of Baku crude oil was being pumped rather than bailed.

[25] *Le Pétrole Russe* (Paris: Editions de la Représentation Commerciale de l'U.R.S.S. en France) No. 6 (1927), p. 6.

[26] See page 35.

The change in extraction technology in the Baku fields is summarized in table 2–4. Bailing declined from 49.3 percent in 1921–2 to zero in 1927–8, while pumping increased from zero in 1921–3 to 44.8 percent of output in 1927–8. The other significant change was the increase in production from free-flowing wells (gushers) from 9.8 percent to 26.0 percent, reflecting the increase in new well-drilling activity by International Barnsdall, in Type I concessions, and in newly equipped and trained drilling crews of Azneft. In absolute numbers, there were only 38 wells equipped with modern pumps in May 1924; one year later, in July 1925, over 500 wells had modern pumps.[27]

The general operation of the Baku oil fields was electrified in the same period; by September 1928, of 3,312 oil wells in operation, about 3,212 (97 percent) had pumping powered by electricity, 3 by steam engines, and 96 by gasoline engines. This compares to only 30 percent electrification in 1913. The oil-field electrification program, including the supply of some switchgear and other equipment, was undertaken by Metropolitan-Vickers, Ltd. (United Kingdom), a subsidiary of Westinghouse,[28] while between 1927 and 1930,

> . . . large quantities of General Electric products began to furnish the motive power for drilling oil wells and for pumping oil in the rich fields of Baku and Grozny.[29]

Details in *Le Pétrole Russe* suggest that the electrification program was also concentrated into a very few years and in old wells involved a substitution of electric for gasoline and steam engines rather than just the introduction of electric motors.

Table 2–5 ELECTRIFICATION OF THE GROZNY OIL FIELDS, 1923–7

	Number of Engines (by Type) on Oct. 1				
	1923	*1924*	*1925*	*1926*	*1927*
Steam engines	145	137	127	91	31
Gasoline engines	37	31	27	22	21
Electric motors	76	126	192	276	396
Total	258	294	346	389	448
Percent electric motors	29.5	42.9	55.5	71.0	88.3

Source: Le Pétrole Russe, No. 6, p. 6.

[27] *Financial Times* (London), May 25, 1923.

[28] This was one of the largest of the Metropolitan-Vickers contracts with the U.S.S.R. The breach of relations between the United Kingdom and Soviet Russia in 1927 (following the 'Arcos affair') did not disturb Metropolitan-Vickers. The company worked continually in the U.S.S.R. on a substantial scale from 1921 until after the trials of 1933, when six of their engineers were accused of sabotage and expelled.

[29] *Monogram* (Schenectady: General Electric Co.), November 1943, p. 16.

In Grozny, for example, the number of oil-field motors increased from 258 in 1923 to 448 in 1927. Electric motors formed only 29 percent of the total in 1923 but 88 percent in 1927. During the same period steam engines were virtually eliminated and the number of gasoline engines reduced by almost half.

The same change took place in Baku. At the beginning of 1925–6 there were 1,821 electric and 175 steam engines in Baku. By August 1927 there were 2,810 electric motors and only 27 steam engines.

This technological substitution greatly reduced the cost of producing oil. In 1913 the Baku fields used 1.3 million tons of crude oil (about 15 percent of the total produced) as fuel in the oil fields. By September 1925 this total had fallen to 8.4 percent; and by July 1927 to 3.9 percent. In brief, the substitution of electricity for oil reduced operating costs and also released considerable quantities of crude oil for export.

This export of Western technology—primarily American—was first concentrated in the Baku fields, and later in the Grozneft and Embaneft regions. The lag in regional application is supported by the statistics. In the Azneft field 36 percent of the drilling was done by the rotary method in 1924, but a comparable percentage (35 percent) was not attained by Grozneft until 1927. Whereas Azneft had 54 percent rotary drilling in 1925, Grozneft did not attain this percentage until 1928.

Neither Grozny nor Emba had specific technical-assistance contracts for crude oil production. Their production problems, much less acute, were overshadowed by those of transportation and marketing. Consequently the three-year transfer lag was not of major importance.

Although the first, International Barnsdall was not the only vehicle for technological transfer in the oil fields. This transfer was designed to modernize the most prolific of the oil fields (which was also the field with the most serious production problems) by developing new wells and instituting a rational organizational and technical structure for deepening old wells. The transfer was a complete success.

THE 'PURE' OIL CONCESSIONS

Another transfer vehicle used, outside the Baku field, was the pure (Type I) concession. The fields offered for pure concessions were more remote or smaller, or in less-developed areas. Although Baku, Grozny, and Emba were offered on this basis, there were no serious negotiations for pure concessions after 1925. A typical offering for a pure concession was the Cheleken Island field in the Caspian Sea. As early as 1830, there were more than 3,000 hand-dug oil wells up to 250 feet deep, and production continued until the Revolu-

tion. By 1923 only 12 wells were still producing; the rest were inoperative. The field was then offered for concession.[30] There were at least five operating concessions of this type between 1922 and 1928.[31]

In February 1925 the Chief Concessions Committee concluded an agreement with F. Storens, a Norwegian firm, for the industrial and mineral exploitation of the Busachi Peninsula in the Caspian Sea. The area covered 12,000 square versts on the eastern part of the peninsula. Storens was required to make an expenditure of 800,000 rubles on exploration work within five years. The life of the concession was set at 40 years, although the Soviet government had the option to buy out Storens in 30 years. All equipment was imported duty-free, but unstated dues and fees were payable, including 5 percent of any metals output and 15 percent of any oil produced (50 percent if a gusher). A deposit of 50,000 rubles was accepted as a guaranty of the execution of the contract.[32] [33]

At the end of 1923, a concession agreement was concluded between the Società Minere Italo-Belge di Georgia of Turin, Italy, and the Chief Concessions Committee, under which the company agreed to conduct oil exploration on 50,000 acres of the Shirak Steppes near Tiflis. The Società was given the right to explore and drill for three years, and production concessions could be subsequently granted for 30 years, the U.S.S.R reserving the right to buy out the undertaking after 20 years. During the exploration period the grantees paid the Soviet government a royalty for each dessiatin explored. At the end of the exploration period, the company was required to make a report and hand over equipment and all oil produced to the Soviets.

The company was also required to pay a percentage on gross product, pay export taxes, and comply with Soviet law on taxation and labor. At the end of

[30] Amtorg, *op. cit.*, II, No. 24 (December 15, 1927): 'Cheleken Oil Field proposed for concession,' p. 6.

[31] These were Storens, Italo-Belge, British Petroleum, the Japanese Sakhalin, and the French Duverger group. Others were rumored. At one time the Chief Concessions Committee was considering 62 applications for oil concessions, but little has been recorded concerning their operation. The Comparre Oil Company of New Jersey was formed by W. Averell Harriman specifically for a Baku oil concession.

Type II (mixed company) concessions were not common in oil operations; apart from the Dutch-Soviet trading company mentioned in the text, there was only Duverger and the Turkestan Co. for Raw Materials Preparation, jointly operated by Sorgagen A-G (Germany) and Neftsyndikat (316-111-819).

[32] *Ekonomicheskaya Zhizn*, No. 33, February 10, 1925.

[33] 'One of the most important and largest concessions granted is that for mining and oil concessions given to the Norwegian Company Storen. . . . According to the geological reports, this area is very rich in oil. Considering that it has never been worked before and operations will be more difficult than usual, the concessionaire was given many special privileges.' [L. Segal and A. A. Santalov, *Soviet Union Year Book: 1926* (London: Allen and Unwin), p. 165.] According to *Karty Kontsessionnykh ob'ektov S.S.S.R.* (Moscow: 1926) the Busachi Peninsula oil deposits were known but not worked or delineated at this time.

the concession period, the entire property reverted to the Soviets without compensation. A bond was required from the grantees, who were also required to introduce the latest methods of drilling and oil production.[34]

An extension of the agreement was applied for and granted in September 1926. Preliminary work was completed, and the area for development was increased from the original 415 to 1,515 hectares. The extension was granted with the stipulation that the company sink four oil wells, each at least 500 meters deep.[35]

In 1923 an agreement was signed between the Gouria Petroleum Corporation, Ltd. (United Kingdom), and the Chief Concessions Committee covering the development and exploitation of 1,100 square miles in Gouria, on the Black Sea, between Poti and Batum. A 40-year concession stipulated that rental payments and part of the production were to be assigned to the Soviets, who also had an option to purchase the whole output.[36]

The Duverger group (France) obtained oil concessions in 1923 in both the Baku and the Emba fields. The lease of 'state' lands in Baku was subject to an annual percentage of profits or oil payable to the U.S.S.R. The concessionaires had full management control. The Emba concession was a Type II mixed company arrangement for exploitation of the fields between Samar and Tashkent. The initial capitalization required payment of five million francs.[37]

OIL DEVELOPMENT IN THE SOVIET FAR EAST[38]

Protocol B of the January 1925 convention between the U.S.S.R. and Japan contained the conditions under which petroleum and coal concessions were granted to Japan in North Sakhalin. In effect, these replaced the 1922 Sinclair Exploration Company concessions, cancelled by the U.S.S.R.

The petroleum concessions gave the Northern Sakhalin Petroleum Company (Kita Sagaren Sekio Kigio Koumiay, succeeded by Kita Karafuto Sekio Kabushiki Kasha) the exclusive right to explore and exploit half of the two known oil fields for a period of forty-five years. The other half of each field remained in the hands of the Soviets. In addition to the original area of 2,200 dessiatins, a further area was later granted for exploration work, on the under-

[34] *Corriere Diplomatico e Consolare*, February 10, 1924, and *Ekonomicheskaya Zhizn*, No. 62, December 13, 1923. Oil seepages had been known in the area for many years, but prerevolutionary exploration had not been profitable.

[35] U.S. Consulate in Riga, Report, September 10, 1926 (316–137–991/3).

[36] 'The concessionaire company is extremely reticent concerning the details of the arrangement and the London press has . . . referred to the matter only in a cursory way.' (U.S. Embassy in London, Report No. 14817, March 23, 1923.)

[37] *New York Times*, July 19, 1923, p. 23, col. 2.

[38] This section is based on evidence in the U.S. State Department Decimal File (Rolls 137, 176 and 177 of Microcopy 316).

standing that half of any oil field discovered was to be transferred to the U.S.S.R. for Soviet operation. A royalty was payable on all output, ranging from 5 percent for production not in excess of 30,000 tons per year up to 15 percent for production in excess of 630,000 tons. A royalty of from 15 to 45 percent was payable on gushers depending on yield. For natural gas the royalty ranged from 10 to 35 percent, depending on the composition of the gas. Foreign skilled labor was allowed to the extent of 50 percent of the total labor force and unskilled to 25 percent of labor force. All disputes were subject to the law and courts of the U.S.S.R.

Soviet Far Eastern oil development was completely dependent on Japanese concessions and technical assistance. Beginning in 1925, the Japanese began exploring and developing the extensive oil strata of North Sakhalin.

Table 2–6 NORTH SAKHALIN OIL PRODUCTION, 1926–31

Year	METRIC TONS PRODUCED			Percent
	Japanese Concessions	*Soviet Production*	*Total Production*	*Produced by Japanese Concessions*
1926	29,829	—	29,829	160.0
1927	78,700	—	78,700	100.0
1928	104,000	17,000	121,000	85.9
1929	187,000	26,065	213,065	87.8
1930	195,040	96,268	291.308	66.9
1931	275,000	133,172	408,172	67.4

Source: V. Conolly, *Soviet Trade from the Pacific to the Levant* (London: Oxford 1935), p. 43.

The Soviets started work in 1928, after obtaining the necessary credits and technical assistance from the Japanese.[39] As the areas were divided into checkerboard development plots, the Soviet plots alternating with the Japanese, the Soviets were able first to develop their plots by obtaining credits and aid from the Japanese. When the Japanese concessions were expropriated, the whole area came under Soviet control.

OIL EXPLORATION TECHNOLOGY

The adoption of electrical well-logging, one of several methods of well-logging, is an excellent example of the priority given to the acquisition of

[39] 'It is characteristic that in the first place the Russians had to seek a three year credit from Japan, so as to obtain the necessary boring materials, pipes, etc. to start work. . . .' [V. Conolly, *Soviet Trade from the Pacific to the Levant* (London: Oxford, 1923), p. 43.] Conolly refers to a one-million-yen loan granted in 1928 and repaid in crude oil. [*Oil News* (London), September 1, 1928.]

the latest in Western science and technology. Schlumberger and coworkers started working on this technique in France in 1922, and, although he was joined by other researchers throughout the world, this group played an essential and primary role in its development. The first use of electrical well-logging is reported by Schlumberger from France in 1927. A company was formed—the Société de Prospection Electrique Procédés Schlumberger—which almost immediately made a technical-assistance agreement with Azneft to introduce electrical prospecting and subsurface techniques into the U.S.S.R. It appears that Azneft, along with Venezuela, was used as a test field.[40] By 1933 the U.S.S.R. had eighteen electrical well-logging crews in the field, compared to four in the United States and five in Venezuela.

Azneft concluded another contract, with the Radiore Company of Los Angeles, for technical assistance in electrical prospecting (presumably using magnetometer and gravimetric techniques), but no further data is available.[41]

Similarly, well-cementing techniques (Perkins) and core and rock bit manufacturing technology were introduced in the same period.

PIPELINE CONSTRUCTION, 1925–8

Production problems at Baku were, by 1924–5, well on the way to solution. Rotary drilling and deep-well electrical pumps had revolutionized oil-field technology. The bottleneck now became transportation: particularly the means to move an increasing flow of crude oil to the Black Sea ports for export. The pipeline program initiated in 1925 as the solution to this problem is an excellent example of the intricate interlocking of foreign technologies and skills utilized in Soviet economic development. In this sector we find Type I, II, and III concessions with foreign firms and individuals, in addition to the import of equipment, supplies, training skills, supervisory ability, semi-manufactured materials, and oil-field services for cash, credit, or a share in anticipated oil profits.

After the occupation of the Caucasus, two pipelines were available for oil shipments. The 560 miles from Baku on the Caspian Sea to Batum on the Black Sea were spanned by an eight-inch kerosene line built in 1905 by the Nobel interests. Capacity was about 600,000 tons a year, but by 1921 the line operated only at about 50 percent of capacity and was in need of substantial overhauling. By 1922 shipments were only 22 percent of capacity, and half

[40] In September 1931, the following instructions were issued to the Schlumberger field personnel: 'The results in Russia and Venezuela are remarkable. It has been decided to run the SP surveys in all wells.' [American Petroleum Institute, *History of Petroleum Engineering* (New York: 1961) p. 535.] Schlumberger used electrical well-logging at Baku as early as 1929.

[41] U.S.S.R. Chamber of Commerce, *Economic Conditions in the U.S.S.R.* (Moscow: Vneshtorgizdat, 1931), p. 226.

of Azneft oil was moving to Black Sea ports on the overcrowded, badly maintained rail system which paralleled the pipeline.[42]

Table 2–7 RUSSIAN OIL PIPELINES BEFORE 1930

Pipeline	*Km*	*Diameter in inches*	*No. of Stations*	*Years Completed*	*Service*
Baku-Batum	883	8	16	1896–1906	Kerosene
Grozny-Petrovsk	162	8	4	1910–13	Kerosene
Tukha-Krasnodar	102	8	6	1910–11	Crude oil
Grozny-Tuapse	649	10	7	1926–8	Crude oil
Baku-Batum	834	10	13	1927–30	Crude oil

Source: Robert E. Ebel, *The Petroleum Industry of the Soviet Union* (New York: American Petroleum Institute, 1961), p. 143.

The Grozny oil field was linked to Petrovsk on the Caspian Sea by a 110-mile line, used in 1921 only for fuel oil and residues, and operating at about 70 percent of capacity. At Grozny the problem was even more one of transportation than production. Recovery had been aided in 1923–4 by two large gushers. When these ceased in 1926, however, output was cut back by 65 percent.[43] Grozneft's main requirement was a pipeline to the Black Sea, rather than to the Caspian, to connect with European markets.

In brief, the essential problem in 1925 was to get Caucasus oil to the Black Sea ports. This was not within the technical scope of either Azneft or Grozneft; the railways were operating at capacity and were themselves in need of reorganization and new equipment. The rails and ballast were in need of replacement and the tank cars 'in bad shape.'[44]

The position was critical. Over 37 miles of line required replacement on the Baku-Batum line, as well as 18 new diesel pumping engines. It was estimated that repairs to restore prewar capacity would require $1 million. On several occasions between 1923 and 1925, both the Baku and Grozny fields were shut down, as the oil storage tanks at the terminals were full and no transport existed to move the crude oil.[45]

In 1915 Royal Dutch Shell had proposed a Grozny-Novorossisk pipeline, this proposal, together with one to build a 10-inch Baku-Batum line, was later revised. It was decided to build first a 10-inch crude line from Grozny to Tuapse (near Novorossisk) on the Black Sea, then a 10-inch crude line from

[42] U.S. State Dept. Decimal File, 316–137–744.

[43] U.S. State Dept. Decimal File, 316–137–977.

[44] U.S. State Dept. Decimal File, 316–137–1059.

[45] Dobb, *op. cit.*, p. 168, suggests, incorrectly, that the shutdown was part of the general 'sales crisis' afflicting Russian industry in 1922–3. The oil was needed in fact, to fulfill foreign purchase contracts.

Baku to Batum, and then to rebuild the existing 8-inch Baku-Batum pipeline. These lines were put into construction in 1925–6 and scheduled for completion by 1928.

The construction of a pipeline may be broken into a standard sequence of operations. Assuming that the route is surveyed and cleared, the first operation is trenching, followed by welding and inserting the pipes, and finally by covering them. The critical skilled functions are those of welding, trenching, and covering. The major inputs are the steel pipe itself, welding equipment, and skilled welding labor. Engines are required for installation at pumping stations along the route. Table 2–8 lists these operations for the two pipe-lines built between 1925 and 1928, together with the enterprise undertaking each operation.

Table 2–8 SOVIET CONSTRUCTION OF THE GROZNY-TUAPSE AND BAKU-BATUM PIPELINES, 1925–8

Sequence	*Construction of Operation*	*Undertaken By*
1.	Manufacture of line pipe	German pipe mills under Russgertorg contract*
2.	Supervision of pipe transportation	Otto Wolff Co.*
3.	Purchase of trenching equipment	Purchased in United States
4.	Training of welders	J. I. Allen Co. (Los Angeles)
5.	Purchase of welding equipment	Purchased in United States by Ragaz (Russian-American Compressed Gas Co.)**
6.	Welding of pipeline	Ragaz**
7.	Supervision of welding	J. I. Allen Co. (Los Angeles)
8.	Purchase of line pumping engines	9 provided by Crossley Co. (United Kingdom) and 30 Mann engines made by Gomza***

Sources: * See chap. 16.
** See chap. 12.
*** Gomza had a Type III concession agreement with Mann A-G (Germany). See chap. 10.

The 10-inch steel pipe required for the lines was bought in Germany by Russgertorg[46] on five-year credit terms. Twenty ships were required to transport the total quantity of 51,000 tons of pipe from Germany to the Black Sea, and German transportation specialists were hired by Wolff to ensure safe arrival of the cargo at Poti, on the Black Sea.[47]

[46] The Otto Wolff Trading Concession (Russgertorg) is covered in detail in chap. 16. Soviet trusts were also trying to get the order for pipe, but their prices were higher (3.85 rubles/pood versus 2.71 rubles/pood), and quality was far inferior to that of the German pipe.

[47] U.S. State Dept. Decimal File, 316–137–1082.

The critical task of welding the line was handled by the Russian-American Compressed Gas Company (or Ragaz) a Type II concession owned jointly by the International Oxygen Corporation of Newark, New Jersey, and Metalosindikat.[48] One of the seven plants manufacturing compressed gases established by Ragaz was at Baku and produced the large quantities of welding gases required for construction. The $100,000 worth of welding and electrical equipment necessary for this operation was purchased by Ragaz in the United States.[49] Automatic thyratron and ignition welding equipment was later manufactured in the U.S.S.R. with the technical assistance of General Electric.[50] The 150 Russian welders were trained by the J. I. Allen Company of Los Angeles. The latter then supervised work on the site under the general contract supervision of Ragaz.[51] It does not appear that either of the two special schools established by Ragaz for the training of welders was used for the pipeline welders. The trenching equipment was purchased in the United States.[52]

Table 2-9 COMPARATIVE PRICE AND DELIVERY SCHEDULES FOR 300-HP DIESEL ENGINES FOR BAKU-BATUM PIPELINE

	Germany	*Russia* (Gomza)
Delivery	8 within 6 months All within 18 months	8 within 14 months All within 27 months
Price	87 rubles per hp.	180–186 rubles per hp.

Source: Adapted from Confidential Report No. 5419 of Polish Consul General, Tiflis, May 25, 1928.

Azneft wanted to purchase all pumping engines for the line stations from abroad and cited lower costs to support its case. A comparison between the relevant German and Russian offers is summarized in table 2-9; Azneft was instructed by Gosplan and Vesenkha, after nine engines had been ordered in the United Kingdom, to purchase the balance of thirty from Gomza (the Soviet State Machine Building Trust).

Thirty Mann-type 300 horsepower diesel engines were finally supplied by the Gomza works and nine by the Crossley Company (United Kingdom). The pumps were supplied by the Moscow machine-building trust, built under

[48] The concession agreement between Metalosindikat and the International Oxygen Corp. was signed in January 1926 and is discussed in detail below.

[49] Amtorg, *op. cit.*, III, No. 14–15 (August 1, 1927).

[50] *Monogram*, November 1943.

[51] *New York Times*, April 9, 1928, p. 5, col. 2.

[52] U.S. State Dept. Decimal File, 316–137–1082.

license and the technical supervision of German companies, operating under Type III concession agreements.[53]

REFINERY CONSTRUCTION[54]

Prerevolutionary refineries were small units, located primarily at Baku and producing fuel oil, kerosene, and lubricating oils.

The Soviet objective of utilizing crude oil as a means to generate foreign exchange for industrial development required a different approach to refining. Refining had to produce those oil products in demand in the Western world, at a cost reasonably close to that of Western refineries. There was no refinery technology within Russia in the 1920s to design plants of this type;[55] this technology could be found only in Germany and in the United States. There were no cracking units in the U.S.S.R. before 1928. Of nineteen refineries and cracking plants built between the Revolution and 1930, only one had some units manufactured in the U.S.S.R. and even that was under British technical supervision, using the United States Winkler-Koch process.

Although the first United States patent had been granted for a cracking process in 1860 (United States Patent No. 28,246, to L. Atwood), it is usually accepted that 1926 was the year in which it was universally recognized that gasoline from the cracking process was better than that produced by straight distillation.[56] The United States was far ahead of foreign producers in 1926, with more than 2,500 cracking process patents issued, some 26 processes in

[53] Both the state machine-building trust (Gomza) and the Moscow machine-building trust (Mosmash) had technical-assistance agreements with German companies. Gomza had an agreement with Maschinenfabrik Augsburg-Nürnberg A-G to build under license and with technical assistance both two- and four-cycle motors, with and without compressors, and Mann-type diesel motors. Mosmash was formed from nine large prerevolutionary machine-building works in Moscow, including those of the Bromley Brothers, Danhauer and Kaiser, and other Russian, British, French, and German companies. Mosmash had several Type III technical-assistance agreements, and one with Maschinenbrau A-G of Saarbrucken included the manufacture of pumps. See chap. 10 for details.

[54] The refinery section is based extensively on the monthly *Le Pétrole Russe* (a supplement to *La Vie Economique des Soviets*), published by the Neftsyndikat representative in Paris between 1927 and 1930. Although the principal objective of the journal was to further Soviet penetration of Western oil markets, the 22 issues published contain a wealth of detail on Soviet oil-field development and refinery construction. The only complete set in the United States is in the Hoover Institution, Stanford University.

[55] A sample examination of *Neftianoe Khozaistvo*, a Soviet monthly devoted to the oil industry, for 1928 suggests that the problems receiving research attention were those of applying foreign technology to the U.S.S.R., the examination of domestic oil deposits, and the structure of world oil markets. Nothing, except the development turbine drill, suggests any Soviet contribution to world oil technology.

[56] Cracking is a process of breaking down and rearranging oil molecules by high temperatures and pressures. The older straight-run distillation process could produce only a limited amount of gasoline, but cracking enables fuel oil, for example, to be converted into gasoline.

commercial operation, and another 28 in experimental or demonstration pilot plants. There was an enormous American investment in these processes—not only in those utilized commercially but also in those that fell by the wayside.

Russian crudes have gasoline fractions running only 5–10 percent, but the gas-oil fractions are greater, averaging 35–40 percent; consequently cracking is very important for the Soviet petroleum industry. Until the installation of the refinery complexes in 1927–8, only straight-run distillation was used, and this resulted in both a small total production of gasoline and low recovery percentages. To increase both production and recovery percentages, some form of cracking process was vital.

Exports of crude oil had begun again in 1922, and in 1926 an extensive program of refinery and cracking plant construction was begun to upgrade the products exported. Two locations on the Black Sea were selected (Batum and Tuapse) and two in the oilfields (Baku and Grozny) as initial sites for refinery complexes. These complexes were built entirely by Western companies, with the exception of some minor equipment and the partial duplication of a Baku refinery by Azneft in 1929.

Batum, on the Black Sea, was the site of the largest development. Three petroleum refineries, two cracking plants, an asphalt plant, and a kerosene plant were built between 1923 and 1930.

In April 1927 construction was begun on the first petroleum refinery. This utilized the latest United States technology, with a capacity of 1,600,000 tons a year of petroleum products. At the same time two other refineries, duplicates of the first, were placed on order.

The first Batum refinery was built by Craig, Ltd. (United Kingdom), for ten million rubles, advanced on six-year credit terms.[57] The other two units, built by German companies (Heckmann, Wilke and Pintsch) were financed from a 1926 revolving credit of 300 million marks from the German government. A large part of the amount was used for oil-field equipment. These units were financed on four-year credit terms.[58]

The units listed in table 2–10 were fabricated abroad and erected in the U.S.S.R. by Western engineers, some of whom worked on behalf of their own companies and some of whom were employed by Azneft as consultants. Between 1926 and 1929 more than $20 million was expended in the United States alone for oil-field and refinery equipment—by far the greater part on long-term credits.[59] A substantial portion of the 1925–6 German credits was also used for oil-field and refinery equipment. The Batum petroleum refineries utilized the latest United States continuous sulphuric acid process,

[57] U.S. State Dept. Decimal File, 316–137–1031.

[58] U.S. State Dept. Decimal File, 316–137–980.

[59] Alcan Hirsch, *op. cit.*, p. 152.

Table 2-10 CONSTRUCTION OF THE BATUM REFINERY COMPLEX, 1927-30

Unit	*Construction by*	*Capacity**
Refinery I (1928)	Craig Co. (United Kingdom)	1,600,000 tons per year crude oil
Refinery II (1928)	Heckmann (Germany)	1,600,000 tons per year crude oil
Refinery III (1929)	Wilke, Pintsch (Germany)	1,600,000 tons per year crude oil
Cracking Plant I (1928)	Winkler-Koch system (manufactured by Graver Corp.)	Not available
Cracking Plant II (1929)	Winkler-Koch system (manufactured by Graver Corp.)	Not available
Kerosene Plant (1927)	Standard Oil Co. of New York	150,000 long tons per year

Sources: Le Pétrole Russe, various issues, 1927.
U.S. State Dept. Archives.
Amtorg, *op. cit.*

* Refinery capacities are approximate only; several figures exist for each unit. These are maximal. Columns 1 and 2 are confirmed by several sources.

although built by British and German companies.[60] The four gasoline cracking units were built by the Graver Corporation of Chicago as part of an order for ten units valued at $2 million and supplied on long-term credit for installation at Batum, Tuapse, and Yaroslavl. Graver also had a technical-assistance agreement with the U.S.S.R. which covered petroleum refineries.[61] The cracking units utilized the Winkler-Koch and Cross systems of cracking, and the Winkler-Koch Engineering Company, of Wichita, Kansas, also had a technical-assistance agreement with the U.S.S.R. to facilitate the transfer of its cracking technology.

The 150,000-ton kerosene plant was built in 1927 by the Standard Oil Company of New York and then leased back by Azneft. Standard operated the plant under a three-year, Type II contract, loading company tankers with kerosene at Batum for shipment to Middle East and Far East markets.[62]

[60] Azneft ' . . . a choisi le procédé américain de raffinage du pétrole par l'acide sulfurique, en les mélangeant d'une façon uninterrompue par le moyen d'injecteurs.' [*Le Pétrole Russe*, No. 2 (Oct. 5, 1927), p. 15.] Also, Amtorg, *op. cit.*, IV, No. 1 (January 1, 1929), and *Ekonomicheskaya Zhizn*, No. 161, July 17, 1929.

[61] The usual claims of prior discovery were made for the cracking process: ' . . . the eminent constructor Choukhov' discovered the process long before the Americans. Why the Choukhov process was not utilized is left unanswered. (*Le Pétrole Russe*, No. 12, May 5, 1928, p. 18.)

[62] At least ten photographs were traced of a Standard Oil of New York unit at Batum. These were dated between 1927 and 1930, but the unit was described variously as a refinery, kerosene plant, fuel oil plant, etc. It is presumed, but not known with certainty, that there was only one Standard unit—a kerosene plant. While Standard

This was the first United States investment in Russia since the Revolution. There is no evidence that Azneft constructed or fabricated parts for any of the Batum refineries; there was complete reliance on imported technology, supervision, and equipment.

Tuapse, on the Black Sea north of Batum, was the site of the second refinery complex oriented to Western oil products markets. This complex was run by Grozneft, the Grozny oil trust.

Table 2–11 CONSTRUCTION OF THE TUAPSE REFINERY COMPLEX, 1927–30

Unit	*Construction by*	*Capacity*
Refinery I	Heckmann*	1,000,000 tons per year
Refinery II	Heckmann*	1,000,000 tons per year
Cracking Plant I	Cross system (Graver Corp.)	Not available
Cracking Plant II	Cross system (Graver Corp.)	Not available

Source: Le Pétrole Russe, various issues, 1927–9.

* The refinery construction is known to be German, but the firm is not precisely known; it was probably Heckmann.

The equipment for the refineries at Tuapse came from Germany, and the two cracking units were manufactured and installed by the Graver Corporation, of Chicago. The Burrell-Mase Engineering Company (United States) reorganized, modernized, and expanded the overall gas and petroleum production and refining facilities for Grozneft, and between 10 and 20 Burrell-Mase engineers were occupied with the project for a period of two years. One interesting comparison between refinery construction at Tuapse and Batum involves the length of time required to build a refinery under Soviet conditions. Burrell points out that a refinery which could be built in five months in the United States took two years to build in the Soviet Union under Grozneft.[63] On the other hand, a Standard Oil construction engineer, Tompkins, building the Standard-leased Batum refinery for Azneft, is quoted as saying that the company was able to complete construction in only three months 'in light of the complete assistance of Soviet authorities.'[64] This comparison supports

of New York was thus aiding Soviet development at Batum, Soviet agents were busy in the Far East endeavoring to undermine its market position, with the lavish use of bribery and threats. [Naval Intelligence Report No. 159, May 11, 1928 (316–137–1084/5).]

[63] George A. Burrell, *An American Engineer Looks at Russia* (Boston: Stratford, n.d.), p. 269. Burrell has 37 publications in the field of gas and petroleum engineering listed in the Library of Congress card catalog, and was an outstanding expert in the field.

[64] Amtorg, *op. cit.*, II, No. 18 (September 15, 1927), 5.

the observation made elsewhere that Azneft under Serebrovsky was a far more efficient concern in this period than either Grozneft or Embaneft. Serebrovsky was later shifted by Stalin to the gold trusts, to repeat his Azneft success.

Foreign equipment was used throughout these complexes, including even American fire extinguisher equipment and such auxiliary facilities as machine shops.[65] Electrical equipment for refineries, i.e., pumps, compressors, and control apparatus, was largely supplied by the General Electric Company.[66]

Table 2-12 CONSTRUCTION OF THE SOVIET INLAND REFINERIES, 1927–30

Unit	*Constructed by*	*Capacity*
Baku		
Refinery I	United Kingdom technical supervision in Baku	470,000 tons per year
Cracking Plant I	Winkler-Koch system (United Kingdom)*	—
Cracking Plant II	Winkler-Koch system (United Kingdom)*	—
Heavy Oil Plant	Steinschneider (Germany)	3,600,000 tons per year
Grozny		
Refinery I	Borman (Germany)	365,000 tons per year
Refinery II	Pintsch (Germany)	365,000 tons per year
Cracking Plant I (3 Units)	2 Dobbs (Germany); Sakhanov & Tilitchev (Germany)	—
Emba		
Vara Refinery (lubricants)	Borman (Germany)	128,000 tons per year

Source: Le Pétrole Russe, various issues, 1927–9.
* Probably by Vickers.

In both Tuapse and Batum other American corporations—in particular the Foster-Wheeler Corporation of New York, E. B. Badger and Sons of Boston, and the Winkler-Koch Corporation of Wichita—played an important part in the design and construction of cracking units.[67]

The inland refineries at Baku depended more on German and United Kingdom construction aid; but two new factors are apparent. The refinery

[65] The only manufacturer of fire extinguisher equipment in the U.S.S.R. was the concession Boereznsky (Lithuania).

[66] *Monogram*, November 1943.

[67] The Winkler-Koch Corp. of Wichita, had a technical-assistance agreement with Neftsyndikat for the construction of cracking plants. [American-Russian Chamber of Commerce, *Economic Handbook of the Soviet Union* (New York: 1931), p. 101.]

at Baku was partly built by Azneft under a British technical supervisor, but the tuyères and some of the other pipe work were built by Azneft—the only case of Soviet oil-field construction in that decade. In addition, the cracking plant at Grozny was partly Soviet-designed by Sakhanov and Tilitchev but constructed by German companies. These are the same procedures noted in other industries. Soviet construction was at first limited to the simple and the straightforward (i.e., pipework) in less strategic locations (the inland refineries) and then gradually moved into more complex and more important functions at more important locations. Either Soviet designs were first made abroad or prototypes were made both abroad and in the U.S.S.R., presumably for comparison purposes, before complete development was tackled in the U.S.S.R. However, Soviet design and technology were almost nonexistent, and such examples as we have may have been no more than the 'Sovietization' of an existing Western technology; this name-changing was typical in the electrical equipment industry.

ACQUISITION OF FOREIGN MARKETS FOR PETROLEUM PRODUCTS

The technological revolution in oil-field production, construction of new pipelines, repair of pre-Revolutionary pipelines, and the refinery construction program on the Black Sea coast put the Soviets in a position to collect on their investments and development strategy.

Production of crude oil almost tripled from 1923 to 1928, and exports followed a similar development, from 185,000 tons in 1922 to 1.9 million tons in 1927–8. The refinery program enabled a greater proportion of oil derivatives, of higher value (especially gasoline) to be exported. Before 1923 no gasoline had been exported, and most petroleum product exports consisted of kerosene and oils.

In 1923 almost half of Soviet oil exports consisted of kerosene, or heating oil, which could be produced by prewar straight-run distillation refineries. By 1928, as a result of the new refinery and cracking-unit construction programs, the proportion of kerosene dropped to less than one-quarter, and gasoline now made up more than one-quarter of total exports. There was also a significant increase in total petroleum exports, from 430,000 tons to almost 2.75 million tons—a sixfold increase. Light oil fractions figured among the 1928 exports but not in 1923 exports.

In brief, table 2–13 indicates both a very substantial increase in the quantity of oil exported and an increase in the product quality. Both factors resulted directly from the refinery construction program. By 1928, the value of oil exports was 124 million rubles, or 19.1 percent of the value of all Soviet exports, and the largest single earner of foreign exchange.

Table 2–13 COMPOSITION OF SOVIET OIL EXPORTS, 1923 AND 1928

Product	*1923* *Tons*	*Percent*	*1928* *Tons*	*Percent*
Crude oil	35,000	8.1	244,542	8.9
Gasoline	50,000*	11.6	725,840	26.5
Kerosene	200,000	46.5	680,360	24.9
Fuel oil	—	—	640,822	23.4
Gas oil	—	—	191,787	7.0
Solar oil	—	—	49,145	1.8
Light oil	—	—	22,472	0.8
Lubricating oil	100,000	23.3	179·861	6.6
Other types	45,000	10.5	—	—
Totals	430,000	100.0	2,734,829	99.9

Source: Imperial Institute, *The Mineral Industry of the British Empire and Foreign Countries, 1928–30* (London: H.M.S.O., 1931).

* These early (1923) gasoline exports were derived from a German process utilizing natural gas, natural gasoline, and straight-run distillation.

In May–June 1923, coinciding with the start of the Barnsdall drilling and pumping work, a mixed or Type II, agreement was made with Sale and Company of London, for the immediate sale of 30,000 tons of crude oil and follow-on sale of 100,000 tons of kerosene per year. The company was capitalized at £250,000 sterling; both Sale and Company and the Soviets held an equal number of directorships. Neftsyndicat reserved the right to buy out all shares of the company after ten years, no doubt looking forward to the time when they would be strong and knowledgeable enough to establish their own distribution network in the United Kingdom.[68] This appears to have been the first major breach in the solid front presented by the world oil companies against the purchase of Russian oil, or 'stolen oil' as it was called in contemporary business terminology. Royal Dutch Shell then argued that self-interest dictated the purchase of 30,000 tons (and an option for a further 170,000).[69] The Soviet estimate of oil products available for export in 1923 was 430,000 tons; these two sales alone made a sizeable contribution to the re-entry of the U.S.S.R. into the world oil markets.

[68] *Izvestia*, No. 104, May 12, 1923.

[69] Standard Oil in the United States, British, French, and Italian companies had been buying Soviet oil on a minor scale before the 1923 contracts. Vlessing in Holland acted as the agent for continental Europe. It would be difficult to match the hypocrisy displayed by both major oil groups. Sir Henri Deterding, of Royal Dutch Shell, was blasting Standard of New York for buying 'stolen oil' while himself buying it in large quantities and negotiating for a monopoly arrangement with the U.S.S.R. Standard switched dramatically from an anti-Soviet to a pro-Soviet stand in 1927, and its public relations man, Ivy Lee, put out a sycophantic *U.S.S.R.—a World Enigma* (London: Benn, 1929) to reinforce its position. This got Standard of New York into a conflict with Standard of New Jersey.

This breach was followed by the formation of a Dutch-Soviet mixed company for the export of Soviet oil, under an agreement signed on May 11, 1923 between Royal Dutch Shell and the U.S.S.R. Capital participation was 50:50, with £1.25 million sterling being subscribed. The head office was in London and the company sold Soviet oil abroad through exclusive dealerships. The agreement lasted for ten years, and the company earned a 10 percent commission.[70]

In 1924 Royal Dutch Shell was purchasing oil via this mixed company on behalf of Standard, the purchases being split between the two major oil groups. This, however, presented a united front to Neftsyndicat and the trade organization—a front which offset the bargaining power of the Soviet trade monopoly. Since 1924 the Soviets have vehemently protested the formation of such foreign trade groups.

The first goal in the expansion of oil exports at this time was to establish trading relations with existing distributors in each foreign market. The Standard Oil Company handled the Near and Far East markets, and the Blue Bird Motor Company and British-Mexican Petroleum Company handled imports into the United Kingdom and cracked Soviet kerosene in the United Kingdom until refineries were built later in the U.S.S.R. Asiatic Petroleum bought oil for distribution in India and Ceylon. Turkey and Spain bought large quantities (532,000 tons in 1928) for distribution through their government monopoly networks. A five-year agreement in 1925 between Neftsyndicat and Bell Pétrole covered delivery of Grozny crude to France.

Later, when the acceptance of Soviet petroleum had been established, the Soviets began to establish their own distribution networks. Russian Oil Products (ROP), owned jointly by Arcos and Neftsyndicat, was founded in the United Kingdom. By 1925 ROP had established a chain of oil depots in the United Kingdom and was engaged in extensive price warfare with existing distributors. In the mid-1920s the Soviets canceled their agreements with German distributors and established their own subsidiary, the Deutsche-Russische Naptha Company, which established the Derop chain of gasoline service stations in Germany. In Sweden, the Nordiska Bensin Aktiebolaget was established and promptly drove prices down 30 percent to gain entry into the market. Gradually by the end of the decade the Soviets controlled their own distribution networks in most of their major markets, although they still relied on Standard Oil for distribution in the Middle and Far East, while in Spain a mixed company arrangement with the Argus Bank of Barcelona had exclusive rights for Spain, Portugal, and their colonies, with Neftsyndicat receiving 25 percent of the profits and the losses. The export of petroleum

[70] *Handelsblad*, May 12, 1923 (quoted in 316-137-844).

products to Persia was handled through the Persian-Azerbaidjian Naptha Company (a subsidiary founded by Azneft) and Shark (the Russian-Persian Import and Export Company), a Type II concession.[71]

Several very large orders were placed directly by Western governments for Soviet oil. The Italian Navy bought 150,000 tons in 1927, the French Navy bought 33,300 tons in 1927, and the United States Shipping Board bought 200,000 tons—at a time when there were no official diplomatic or trade relations between the two countries.

SUMMARY OF SOVIET OIL DEVELOPMENT, 1917–30

No new oil fields were developed in the 1920s; all the producing fields had been developed by prerevolutionary operators. This inheritance was intact in 1921, when the Caucasian oil fields were occupied by the Soviet armies, but world technological advances, primarily American, put these fields and their products at a distinct competitive disadvantage. Further, the early Bolsheviks had no ability in oil-field operation, and production rapidly declined by 1922–3.

Serebrovsky, Chairman of Azneft, was instrumental in focusing Soviet attention upon foreign oil production techniques and within seven years the Soviet oil fields were modernized: two new pipelines were completed, and three distinct refinery complexes, comprised of nineteen major identifiable units, had been put into operation. Exports by 1926–7 were double those of 1913.

It is overwhelmingly obvious from the preceding discussion that the importation of foreign oil-field technology and administration, either directly or by concession, was the single factor of consequence in this development. Statements that this achievement was 'without foreign assistance and capital'[72] are obviously propagandistic nonsense. Development of an indigenous oil technology comparable to the contemporaneous American technique was not a useful alternative. The only available elements for an indigenous technology were the turbine drill and the Choukov cracking process, and these were more or less dismissed from consideration by the Soviets.[73] The development of domestic technology would have been costly in both time and expense,

[71] U.S. State Dept. Decimal File, 316–137–900.

[72] Such statements may be found in Louis Fischer, *Oil Imperialism* (New York: International, 1926), p. 110; and in T. Gonta, *The Heroes of Grozny, How the Soviet Oil Industry Fulfilled the Five Year Plan in Two and a Half Years* (Moscow: 1932).

[73] The turbine drill did a small percentage of drilling; the Choukov process has never been used. The Export Control Act of 1949 forced the Soviets to develop the less efficient turbine drill (it overheats below about 8,000 feet) and so incur some of the costs of development.

and the oil fields were in no condition to wait; they were rapidly watering, and maintenance operations were nonexistent.

The only rational solution from the Soviet viewpoint was to introduce American rotary drilling and electrical deep-well pumping, while continuing the tsarist oil-field electrification program. This, together with refinery complex construction, was implemented, except in the case of the tuyères of one Baku refinery, by Western firms, engineers, and consultants with Western skills and equipment. This alternative cost far less than developing an oil-field technology from scratch. The marginal cost of supplying refining and cracking units by Western firms to the U.S.S.R. was insignificant, as the research and development cost had already been recouped from units built in the West. Any return in excess of direct costs was profit.

There was no domestic Russian demand for gasoline, and little for light fractions, but there was an urgent demand for foreign exchange to finance the industrialization program.[74] With the installation of modern cracking plants, penetration of Western markets became possible. This overall development strategy was so successful that the declining petroleum industry of 1922–3 was able by 1928 to contribute 20 percent of Soviet foreign exchange. The Soviets developed a completely up-to-date refining and cracking industry within a few years of the United States—an industry destined to play a great role in the Soviet industrialization drive of the early 1930s.

[74] There was no production of automobiles or trucks in the U.S.S.R. until the implementation of the Fiat and Ford Motor Co. agreements of 1928–9. There were very few imported automobiles and trucks, and no motor buses at all until after 1924. The internal demand for oil products was for heating and lighting oils; i.e., fuel oil and kerosene.

CHAPTER THREE

Coal and Anthracite Mining Industries

YEARS OF CRISIS AND STAGNATION

THE most productive Russian coal fields are in the Donetz Basin (Donbas). In 1910 these supplied more than 18 million tons of a total of 24 million tons of coal and anthracite produced in Russia. This prerevolutionary industry was highly labor-intensive, employing 123,000 workers in coal mines and 19,000 in anthracite pits, with little mechanical equipment apart from primitive hand-propelled mine cars. About 4.6 million tons of coal and coke were imported.

From the Revolutions until the mid-1920s, the coal and anthracite mining industries endured a series of crises involving over-production, severe under-production, bad quality, lack of skilled labor, and general technical backwardness. The blame for these crises was laid at a bewildering number of doors: the Revolution, the Civil War, the Intervention, flooding of the mines, housing shortages, food shortages, labor shortages, bad attendance and sickness, lack of bread, 'central authorities,' lack of fireproof bricks, lack of technical materials, non-payment for output, reorganization, inefficient railroads, lack of shipping, technical backwardness, and non-payment of wages all received their share of the blame.

Looking at the situation as a whole one sees two factors that stand out as prime causes for the catastrophic crises: first, the attempt to transform a capitalist system into a socialist system without a clear understanding of the operation of either system; and second, the very low level of technical and economic knowledge of those who assumed the burden of transformation. The causes listed in the contemporary Soviet press were generally no more than symptoms of an imperfect transformation.

These difficulties led to a policy of concentration and a subsequent reduction in the number of operating coal mines. In 1921 there were 1,816 coal mines in the Donbas of which 857 (47 percent) were closed. Of the remaining 959

mines, some 387 (or 41 percent) were leased to former operators or peasants.[1] The 572 state operated shafts were reduced to 202 shafts in 1922, and after several crises further reduced to 175 in mid-1922 and to 36 by mid-1923.[2] These 36 nationalized collieries produced 78 percent of the total Donbas output, 16 percent being produced by other state and railroad trusts and 6 percent by private leased coal pits. An attempt to export coal to earn foreign exchange through an organization formed specifically for the purpose (Exportugol) also failed.

Lack of the technical facilities to produce coal was only part of the problem. Although the mines were not mechanized, the conveyor and mine rail equipment was, according to *Ekonomicheskaya Zhizn*, 80 percent in order.[3] The output per worker was, on the other hand, miserably low; about 5 tons per worker *per month* compared to about 48 tons per worker in the United States. This was barely sufficient to supply enough coal to keep the pits operating, and at one point in 1921 the Donbas mines produced only enough coal for themselves and had no surplus production for shipment. This was due partly to the lack of mechanization and to inefficient organization, and partly to problems created by the attempt to impose 'socialist organization' on a technically backward enterprise. Together they resulted in chaos. Average daily shipments of coal from the Donbas dropped to 57 carloads in the summer of 1921, normally the most advantageous season for mining and transportation. Coal was imported into the Donbas from both the United Kingdom and the United States in 1921–3: truly a case of 'carrying coals to Newcastle.'[4]

From 1923 onward, efforts were made to lease more coal mine operations and smaller pits to private individuals, artels and joint-stock companies, and an effort was made to induce foreign concessionaires into the coal regions.

UNION MINIÈRE AND THE DONETZ BASIN COAL MINES

The major effort in coal mine mechanization was handled under Type III technical-assistance agreements with United States companies between 1927 and 1930, but there were also a number of pure Type I concessions. With one exception, these were on the more distant borders of the U.S.S.R.—those areas more difficult to develop.

[1] P. Zuev, *Ugol'nya Promyshlennost' i ee Polozhenie* (Moscow: 1921), p. 9.

[2] *The Engineer*, November 16, 1923, p. 529.

[3] *Ekonomicheskaya Zhizn*, No. 66, March 21, 1924.

[4] 'In 1870 they produced 9 million poods . . . so we have gone back to the conditions of 50 years ago.' *Pravda*, October 28, 1921.

The single exception was the operation of coal mines in the Donbas by the Union Minière group. Before 1917 part of the Donbas output had been controlled by a French company, Union Minière du Sud de la Russie, whose properties were expropriated after the Bolshevik Revolution. It was reported

Table 3-1 OPERATING FOREIGN CONCESSIONS IN THE U.S.S.R. COAL AND ANTHRACITE MINING INDUSTRY, 1922–30*

Concession Holder	*Country of Origin*	*Concession Type*	*Work Undertaken in U.S.S.R.*
Companies			
Union Minière Group	France	I Production	Opening Krivoi Rog mines
Anglo-Russian Grumant Co., Ltd.	United Kingdom	I Production	Operating Spitzbergen mines
Polar Star Concession	Unknown	I Production	Operating coal mines Spitzbergen, railroad in Murmansk
Kita Karafuto Sekio	Japan	I Production	Opening Sakhalin coal mines
Mitsui Shakeef	Japan	I Production	Opening Sakhalin coal mines
Lena Goldfields, Ltd.	United Kingdom	I Production	Opening Kuzbas coal mines and anthracite mines
Bryner and Company, Ltd.	United Kingdom	I Production	Operating Far East coal mines (Tetiukhe)
American Industrial Corp.	United States	II Production	Operating Kemerovo coal mines
G. Warren, Inc.	United States	II Trade	Importing anthracite to United States
Roberts & Schaefer, Inc.	United States	III Technical assistance	Reorganizing Donbas coal mines
Allen & Garcia, Inc.	United States	III Technical assistance	Reorganizing Donbas coal mines
Stuart, James and Cooke, Inc.	United States	III Technical assistance	Reorganizing Donbas coal mines
Thyssen A-G	Germany	III Technical assistance	Sinking shafts in Donbas coal mines
Stein A-G	Germany	III Technical assistance	Sinking shafts
Goodman Manufacturing, Inc.	United States	III Technical assistance	Providing technical assistance on manufacture of coal cutters
Hilaturas Casablancas S.A.	Spain	III Technical assistance	Providing technical assistance on manufacture of coal cutters
American Commune	United States	Commune	Operating mine No. 2, Donbas
Individual consultants			
J. W. Powell	United States	III Technical assistance	Providing assistance to Giproshaft
T. G. Hawkins	United States	III Technical assistance	Providing assistance to Giproshaft
C. Pierce	United States	III Technical assistance	Providing assistance to Giproshaft.

Source: See text.

* This table contains the important concession agreements. It does not include agreements for supply of equipment, which also included training and installation clauses, such as the Krupp and Sullivan contracts for supply, installation, and operator training for heavy coal cutters.

in December 1923 that an 'extremely valuable' concession to exploit the Donetz Coal Basin had been granted to a French group, and evidence points to the operation of these mines by Union Minière. In the statistical annual for 1927–8, eleven very large coal mines in Makeevka were listed as 'Union' and two in Ekaterinovsk were listed as 'Franco-Russky.'[5] Given the proclivity of the Bolsheviks to propagandize, it is unlikely these shafts would have continued for ten years under their prerevolutionary name except for a specific reason. On the other hand, there was every reason for the Union Company to have completely obscured public knowledge of a concession. There were some two million tsarist shares and bonds held in France, with active representative organizations fighting for total settlement of prewar debts. This was a parallel to the International Barnsdall situation.

THE KUZBAS PROJECT OF THE AMERICAN INDUSTRIAL COLONY

This project is of more than purely historical interest; it enables us quantitatively to establish the effect of United States management methods on a backward Soviet enterprise of the early NEP period. The Kuzbas operation counters any argument that it was lack of equipment alone, or the ravages of the Revolution, that delayed economic development. The removal of socialist methods of operation and substitution of profit-oriented methods, even by a group ideologically sympathetic to the Soviet 'experiment,' brought about an immediate and significant upward change in output. Within six months of the take-over of Kemerovo mines by American workers, output of coal, coke, and sawmill products almost doubled; this occurred *before* the injection of modern equipment.[6] Rutgers, director of the Kuzbas project, held that the Soviets looked upon Kuzbas as a Soviet state enterprise run on American lines and 'unfortunately' needing Americans, strongly implying that counterrevolutionary activity at least hindered Soviet development, but that American labor discipline and organizational methods were required ahead of the

[5] V. I. Kruglyakova, *op. cit.*, p. 175. The original report was in the *New York Times*, November 14, 1923. It was also announced by the Soviet Embassy in Berlin in December 1923 (569–3–150) and confirmed by the United States Consulate in Riga (569–3–155). A hint that the concession operated for at least two years is in a *Times* (London) report of March 30, 1926: 'Following consultation of representatives of all the big French enterprises in Russia, among them. . . . Union Minière du Sud de la Russie . . .'

[6] 'These mines were lying almost idle when they were taken over by the Americans . . . the presence of the Americans has a stimulating effect upon the Russian workmen, there is already a tendency to increase production.' *Ekonomicheskaya Zhizn*, No. 19, January 28, 1923. The 'stimulating effect' is rather overstated, as the Russian workers were, at the least, hostile to these new foreign elements.

machinery itself.[7] A similar situation was reported from the Donbas. A group of American miners near Youzovka nearly trebled former production.[8]

In early 1922 a concession agreement was concluded between the U.S.S.R. and a group of American workers represented by Bill Haywood and an 'American Organization Committee,' formed in New York by the Society for Technical Aid to Soviet Russia, which had the objective of persuading American skilled workers to go to the U.S.S.R. This unit was to exploit the 'almost idle' plants of the Nadejdinsky and Kuznetsk regions. The concession included iron ore and coal mines, forests, and auxiliary industries in Nadejdinsky, and the coal mines, chemical by-products plant, and supplementary industries at Kemerovo. In addition, the unit operated brick kilns, a leather-shoe factory at Tomsk, the Jashkinsky cement plant, Guriev Zavod (pig iron) and other enterprises.

According to the terms of the agreement,[9] the group undertook to import 2,800 fully qualified workers to Kemerovo and 3,000 to Nadejdinsky. A capital subscription was required by the Soviet government of $100 in machinery and $100 in food per worker. These were imported along with the workers. The Committee was responsible for organizing the purchase of machinery and raw materials abroad. The U.S.S.R. undertook to pay expenses and buy machinery to the value of $300,000. The total product of the concession was the property of the U.S.S.R, but some surpluses of coal, wood, bricks, and agricultural produce accrued to the settlers.

In January 1923, five groups of colonists arrived and began work under skilled mining engineers. The total population ultimately reached 400 Ameri-

Table 3-2 EFFECT OF UNITED STATES MANAGEMENT IN KEMEROVO (KUZNETSK) COAL MINES, 1923

	Average Output Per Month	
	Aug. 1, 1922 to Feb. 1, 1923 (Soviet management)	*Feb. 1, 1923 to Aug. 1, 1923 (United States management)*
Coal produced	6,950 metric tons	10,657 metric tons
Coke produced	160 metric tons	288 metric tons
Sawmills	16,800 cubic feet	29,600 cubic feet

Source: Nation, August 8, 1923, p. 146.

[7] R. E. Kennell, 'Kuzbas: A New Pennsylvania,' *Nation*, May 2, 1923. The American Industrial Colony published its own journal, *Kuzbas*. Only issue No. 3 of Vol. I appears to have survived in the United States (at the Hoover Institution Library, Stanford University).

[8] *Pravda*, No. 246, October 31, 1922.

[9] Complete text is in U.S. State Dept. Decimal File, 316-111-1270.

cans and 2,000 Russians. S. J. Rutgers was the chief director; Grindler, the chief engineer; and A. Pearson, technical director, at the Kemerovo project. Despite local opposition from 'counterrevolutionaries,' the group took over full management control on February 1, 1923.

The effect of introducing American skills and methods of organization was both immediate and substantial (table 3-2). One of the first steps was to reduce the number of employees by 20 percent and simultaneously increase output per worker. The Colony installed three sawmills, re-equipped the coal mines, built fifty coke ovens, new bridges, and railroads, and after a year in operation had set up a completely autonomous industrial colony.

Those colonists (the 'White Feather Groups') who, disillusioned with the 'socialist paradise,' made efforts to leave Russia were treated harshly. It took all winter for some to get out of Russia; they were stranded periodically and finally reached Riga, Latvia, destitute and hungry. A graphic and moving story by one of these colonists, a young woman, written at the request of the the United States Consulate in Riga is in the U.S. State Department files.[10]

PURE CONCESSIONS IN REMOTE AREAS

The Anglo-Russian Grumant Company continued to operate its coal concession in the 'no-man's land' of Spitzbergen. Another concession was made in 1923 to the Polar Star Company to operate other mines on Spitzbergen Island and railroads in the Murmansk area. Lena Goldfields operated a Kiselev coal mine and two Yegushin anthracite mines (numbers 1 and 5) in Siberia as part of its 1925 concession.

The Tetyukhe (Bryner) concession operated coal mines in the Far East, as did Japanese concession operators. Only twenty coal mines were in operation in the Far East in 1924; of these six were state-owned enterprises, six operated by Japanese concessionaires on Sakhalin Island, and one operated as a concession by Bryner and Company near Vladivostock.[11] In 1924 the state mines in the Far East produced about 46 percent of total output of coal and lignite while the privately operated concessions (Japanese and Bryner) produced about 54 percent.

The two Japanese Sakhalin coal concessions granted under Protocol B of the 1925 U.S.S.R.-Japanese convention became an important export source later in the 1920's, their export rising from 4,000 metric tons in 1925 to

[10] U.S. State Dept. Decimal File, 316-110-795/801. However, the autonomous industrial colony (AIK) at Kuzbas was not broken up until late 1927, when few of the original Americans remained (316-108-391).

[11] U.S. Embassy in Tokyo, Report 13, March 1925. This last concession is of interest in relation to the 'arm's length hypothesis.' One of the partners was suspected of being in the pay of the Soviets (Decimal File 861.00/11270).

115,500 in 1929.[12] However, total Far East coal and lignite output was only about 3 percent of the total Soviet production.

In 1920 the independent Georgian government concluded an agreement for the operation of the Tkwarozly region coal mines with the Italian company ILVA Alti Forni e Acciaierie d'Italia s.p.a. The Soviet government offered ILVA a renewal of the agreement, but this was not taken up by the company. The mines, although investigated by several commissions, remained dormant until at least 1928.[13]

TECHNICAL ASSISTANCE FROM GERMANY

Pure technical-assistance (Type III) agreements for the coal mines and particularly Donugol, were sought prior to any others. In the latter half of 1925, a commission of Ruhr industrialists and economic experts began examining the Donbas coal mines. This commission was invited by the U.S.S.R.,

> . . . because it wanted objective economists to make a report to industrialists in Germany on the exact conditions in the Don district . . . and to confer . . . on the basis for collaboration between the two countries.[14]

Dr. Rechlin, a member of the commission, argued that such collaboration was entirely possible because the coal deposits of the two countries were similar from the geological and physical viewpoints; consequently the same type of coal-cutting machines could be used in the Donbas as in the Ruhr. By 1926, Thyssen A-G and other coal-machinery-making firms in Germany were receiving orders for equipment, and coke ovens had been ordered from Koppers A-G in Essen. The anticipated purchase of the Rhenish-Westphalian Metal Products and Machine Company, manufacturers of locomotives in Dusseldorf, by the U.S.S.R. did not materialize.

The Soviets were not completely satisfied with German techniques and in 1926 appointed a commission to make an extensive study of comparative coal mining methods in Germany, France, England, and the United States. 'The result was a victory for American methods and engineers. . . . '[15]

TECHNICAL ASSISTANCE CONTRACTS WITH STUART, JAMES AND COOKE, INC.

In early 1927, Amtorg reported that American coal-mining methods and a major emphasis on mechanization were to be adopted throughout Soviet coal mines. Concurrently with this announcement, Charles E. Stuart, of Stuart,

[11] Amtorg, *op. cit.*, V, 354; and *Times* (London), January 11, 1926. The agreement on Sakhalin coal concessions is in U.S. State Dept. Decimal File, 316–176–426.

[12] U.S. Legation in Warsaw, Report 1699, April 23, 1928 (316–136–1244).

[14] U.S. Embassy in Berlin, Report 1407, August 17, 1926 (316–136–1232).

[15] Amtorg, *op. cit.*, II, No. 7, p. 2.

James and Cooke, Inc., coal-mining consultants in the United States, was making a preliminary inspection of Soviet coal mines:

> . . . with a view to their mechanization in accordance with the most modern American practice and methods. Mr. Stuart stated that several shafts will be operated under the direction of the firm to serve as model mines for the purpose of gradually extending the methods and systems.[16]

Between 1927 and 1930, Stuart, James and Cooke, Inc., signed four technical-assistance contracts with Soviet trusts. Two of these were with coal trusts (Donugol and Moskvugol), the latter for technical assistance in the reorganization of the Dubovaya Balka and October Revolution coal mines in the Moscow area.

Charles E. Stuart was an active promoter of American assistance to the Soviet Union. In a speech before the 1928 annual convention of mining engineers, he stressed '. . . . the traditional friendship between the two countries,' and suggested that 'America will surely play the foremost part in the rehabilitation of Russia.'[17]

A year later, after the four technical-assistance contracts had been implemented, Stuart was even more generous in his praise of Soviet officials. In 1928 he was allowed to make a 10,000-mile trip throughout the U.S.S.R. and recorded it on movie film later shown to the American Association of Mining Engineers.[18]

The Stuart Company drafted a complete five-year reorganization plan for Donugol, modernizing equipment, layout, and working methods. Twelve American engineers, sent to Kharkhov in 1927 to implement the program, were supplied with Russian assistants, clerks and draftsmen. One year later the staff of Russian engineering assistants was arrested by the OGPU. Despite this demoralizing episode, the rationalization continued through the late 1920s and 1930s. At first German and then American coal mining equipment was utilized. Later Soviet-made equipment, manufactured under the Goodman, the Casablancas, and similar technical-assistance agreements, was used. A similar three-year reorganization plan was implemented by the Stuart company for the Moskvugol coal fields, in the Moscow sub-basin.[19]

[16] Amtorg, *op. cit.*, II, No. 7, p. 2.

[17] *New York Times*, February 23, 1928. Although there were no diplomatic relations between the two countries, the Soviets were allowed to operate *Amtorg* in New York, supposedly to facilitate trading relations. Saul Bron was the president of Amtorg.

[18] *New York World*, March 3, 1929. Stuart was hardly a prophet concerning Soviet intentions. For example, he stated: 'The prevailing opinion in the United States that the U.S.S.R. while endeavoring to bring foreign capital into its enterprises has the intention of seizing those enterprises in the future, is entirely wrong.'

[19] *Torgovo-Promyshlennaya Gazeta*, No. 246, October 24, 1929. *Izvestia*, No. 128, June 8, 1927. Stuart, James and Cooke, Inc., had similar contracts with Yurt, the

ROBERTS & SCHAEFER AND ALLEN & GARCIA CONTRACTS

In mid-1929 a Type III technical-assistance agreement was signed between Donugol and Roberts & Schaefer, mining consultants and engineers of Chicago. The agreement was to sink five new coal shafts in the Donbas to be completed within thirteen months, and to provide a production of 3.5 million tons per year. The firm manufactured the equipment, installed it in the mines, and brought the mines into operation. For this purpose engineers were sent from Chicago to the Donbas, and a number of Donugol engineers were sent to the United States for training.[20]

Another United States firm of mining consultants, Allen & Garcia, was given a three-year contract with Donugol in late 1927 to plan and build new coal pits in the Donetz Basin, including both surface buildings and shafts.[21] Two years later, in 1929, the firm received a second contract with Donugol to plan and build three new coal pits within three years. The firm provided thirty-five United States mining engineers and accepted ten Soviet engineers per year for training in the United States.[22]

In addition to contracts between American consulting firms and Donugol, there were a number of individual contracts between specialist American engineers and Giproshaft, the Institute for Designing Coal Mines, and Kuzbastrust.

In 1929, under the reorganization plan of the Donetz coal trust, three new large capacity shafts were sunk, with an aggregate output of 1.65 million tons of coal. The one in the Gorlov district had a capacity of 650,000 tons, the one in the Dolzhansk area an annual capacity of 600,000 tons, and the one in the Krindachev area a capacity of 400,000 tons per annum.

For the year 1929–30, some fourteen new shafts were planned, the largest with an output of 1.6 million tons per year. Brukh, chief engineer of Stein A-G coal mine in Germany, designed the 1.6-million-ton shaft in the Scheglov district, and Thyssen A-G designed a similar shaft in the Gorlov district, under the supervision of engineer Drost. Another million-ton shaft was designed by Stuart, James, and Cooke, Inc.[23]

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southern ore Trust; Kiseltrust, a Urals mining trust, and the Kuzbastrust, in the Kuzbas coal fields. The company apparently viewed these undertakings as pure concessions (316–136–372).

When Stuart, James and Cooke, Inc., issued their report on the reorganization of the coal mines in 1931, V. I. Mezhlauk ordered 10,000 copies to be printed and distributed to all executives down to foreman level in the coal and related industries. [E. M. Friedman, *Russia in Transition* (London: Allen & Unwin, 1933).]

[20] *Ekonomicheskaya Zhizn*, No. 143, June 26, 1929.

[21] U.S. State Dept. Decimal File, 316–136–1242.

[22] *Pravda* (Leningrad), No. 246, October 25, 1929.

[23] *Bank for Russian Trade Review*, II, No. 7 (July 1929), p. 10.

Lomov, a member of the Central Executive Committee, pointed out in 1929 that reconstruction of the Donetz Coal Basin was impossible without outside aid, as only 350 trained Russian engineers existed for 275 coal and anthracite shafts. The gap would have to be made up with foreign engineers, whom '. . . we are trying to employ on a large scale.'[24] He added that shafts were being designed by two German firms (Thyssen and Stein) and a number of American firms, and that an agreement was about to be concluded with an American firm to develop anthracite shafts. 'In this way we shall be able to solve the problem facing the Donetz Basin.'[25]

RESULTS OF THE MECHANIZATION OF COAL MINES

Russian coal mines before 1923 were highly labor-intensive; there was little, if any, mechanization even of an elementary nature. In 1923 the Donetz Coal Trust imported a few Sullivan coal cutters,[26] followed by seventeen in 1925 and another forty-five in 1926.

In August 1923, the purchase and installation of mining machinery from the United States was placed on a more formal and, from the Soviet viewpoint, more satisfactory basis. J. A. Meyerovitch, who represented in the U.S.S.R. a group of Milwaukee and Chicago equipment manufacturers including Sullivan and Allis-Chalmers, informed the United States Riga Legation that a concession had been concluded between the group and the U.S.S.R. Under this agreement the group was to arrange the export of Russian mineral products and to supply American mining equipment on a matching basis. However, Meyerovitch had the distinct impression that the Soviets were more interested in political recognition than in trade.[27]

Coal-mining equipment purchases were stepped up in 1925–6 and included a significant number of German and American heavy (178) and light (125) coal cutters, conveyors (30), hoists (32), and electric and gasoline tractors and chargers. Both the Sullivan Company and Krupp, the leading sellers, sent engineers to install and introduce the equipment to Soviet miners. Westinghouse installed electric tractors, and Jeffry front-end loaders, while Soviet purchasing commissions visited the United States.[28]

[24] 'Debates on the Five Year Plan,' *Pravda* (Moscow), April 28, 1929.

[25] *Ibid.*

[26] The contract was arranged by Meyerovitch, the Sullivan Co. representative in the U.S.S.R. It involved $210,000 worth of coal mining machinery, on terms of two-thirds cash and one-third in four months, one of the earliest trade credits granted by a Western company (316–130–1274).

[27] U.S. State Dept. Decimal File, 316–131–719. See also chap. 16 on RAITCO.

[28] Amtorg, *op. cit.*, II, No. 16 and No. 19.

Table 3-3 INTRODUCTION OF THE MANUFACTURE OF COAL MINING MACHINERY

Item No.*	Description	Production (Units) 1927–8	1928–9	First Soviet Output
Group A:	*First produced in 1928–9*			
26	Coal cutting machines:			
	Heavy	None	11	1928–9
	Light	None	48	1928–9
28	Pick hammers	None	29	1928–9
29	Mine ventilators (stationary)	None	206	1928–9
Group B:	*First produced in 1930 and after*			
13	Motors for electric mine locomotives	None	None	1932
17	Motors for coal cutting machines	None	None	1931
30	Mine ventilators (mobile)	None	None	1933
32	Mine safety lamps	None	None	1931
39	Grizzly screens for coke	None	None	1930
142	Belt conveyors	None	None	1930

Source: A. Gershenkron, *A Dollar Index of Soviet Machinery Output, 1927–8 to 1937,* (Santa Monica: RAND Corp., 1951).
* Refers to the category of machinery given in Gerschenkron.

There was no production of any type of coal mining machinery in the U.S.S.R. until the end of the decade. Priority was then given to the establishment of coal-cutter and underground-drill production, and Type III agreements were made with two Western companies: Goodman Manufacturing, Inc. of Chicago and Hilaturas Casablancas S.A. of Spain.[29] Production

Table 3-4 EARLY MECHANIZATION OF THE DONETZ COAL BASIN, 1922–8

Year	Number of Machines in Use* (all imported)	Metric Tons of Coal: Production per Machine (per year)	Metric Tons of Coal: Production per Worker (per month)
1922–3	32	6,264	5.8
1923–4	36	7,541	7.2
1924–5	48	10,682	8.7
1925–6	90	13,007	10.5
1926–7	225	14,196	11.5
1927–8	348	14,300	12.4

Source: L. Liberman, *Trud i Byt Gornitkov Donbassa* (Moscow: 1929), pp. 97–8.
* Heavy coal cutters only.

[29] *Pravda,* No. 246, October 25, 1929.

of electric motors was undertaken after 1930 (Group B) to a General Electric design described by them as unique and used only in Soviet-made coal cutters.[30]

The effect of imported and Soviet-made coal-cutting machinery was significant. In the Donetz Basin the number of coal-cutting machines in operation increased from none in 1921 to 348 in 1927–8, the last year in which the U.S.S.R. was completely dependent on imported equipment. In the peat mining industry reliance was completely on imported drag lines, and it was not until the 1930s that the hydro-peat method, using specially designed General Electric motors, was introduced.[31]

Increase in production per machine from 6,264 metric tons in 1922–3 to 14,300 metric tons per machine in 1927–8 (table 3–4) testifies to the success of the Stuart, James and Cooke rationalization scheme and to the efficient training of workers and installation of equipment by Western manufacturers. In terms of output-per-worker, the increase was also significant: from 5.8 tons per worker *per month* to 12.4 tons in 1927–8, compared to the United States average of 48 tons per worker per month.

Table 3–5 DONETZ BASIN: CHANGES IN NUMBER OF SHAFTS, TOTAL OUTPUT AND MINE AVERAGES, 1913 TO 1926–7

Date	*Number of Shafts*	*Production (in millions of metric tons)*	*Average per Mine (in metric tons)*
1913	1,200	25.3	21,083
1921–2	954	7.2	7,547
1922–3	577	8.1	14,038
1923–4	591	12.2	20,642
1924–5	238	12.5	52,521
1925–6	377	19.6	51,989
1926–7	480	24.5	51,042

Sources: 1913 to 1926–7 U.S. State Dept. Decimal File, 316–136–1304 (based on Central Statistical Office data). Not available after 1926–7.

The effect of Type III technical-assistance agreements can be traced very clearly in table 3–5 covering Donetz Basin output from 1913 to 1926–7. In 1913, 1,200 shafts produced a total of 25 million tons of coal, an average of 21,083 metric tons per shaft per year. The catastrophic decline in production through 1921–2 is followed by the policy of concentration; coincident with introduction of the American and German equipment and training in 1923, there is a climb in output to 12 million tons. The reduction of shafts from 591 to

[30] *Monogram*, November 1943.

[31] *Ibid.*

238 in the same period that output was increasing was due to concentration of the newly imported equipment into comparatively few mines, increasing the output per mine while ruthlessly closing down the non-mechanized mines. In 1925, beginning with German reorganization assistance and continuing with large imports of mechanical coal cutters and conveyors, output increased; and the number of operating shafts increased as the mechanization program spread. The dramatic rise in mine output accompanies the first introduction of mechanical equipment, and the output stabilizes at 51,000 tons per shaft at this date, indicating a methodical program of mechanization and training in an increasing number of mines.

Whereas in 1922–3 only 200,000 tons of coal were mined by machine in the Donbas by 1928–9 about 30 percent (or 7.6 million tons) were machine-mined; and the U.S.S.R. had not at that time begun to manufacture coal cutters.

The Warren Coal Corporation, coal distributors of Boston, concluded an agreement with Amtorg in May 1929 covering the distribution of 160,000 tons of Soviet anthracite per year in the United States. Warren became sole distributor for Russian anthracite in New York and the New England States.[32]

In critical stagnation at the beginning of the decade, the coal mines, technically backward and with inefficient, unskilled labor, were reorganized according to United States coal-mining procedures utilizing first German and later American coal-mining equipment. At the very end of the decade, arrangements were made with Spanish and American companies for technical assistance in the manufacture of coal-mining equipment, all of which had been previously imported. Pure concessions were not of major importance in the aggregate, except that Union Minière operated a number of large Donbas mines at a time when the majority of these mines were either closed or being re-equipped by German (later American) engineers. However, more remote mines, in the Kuzbas and the Far East were extensively operated by foreign concessionaires.

[32] Agreement is in U.S. State Dept. Decimal File, 316–136–1285.

CHAPTER FOUR

Early Development of the Soviet Metallurgical Industry

THE metallurgical industry, *primus inter pares* of the 'commanding heights' of the economy, was kept well within the control of the planning organs and the Party. The decade of the 1920s, which has been called by Clark the 'restoration period'[1] to distinguish it from the massive new metallurgical construction of the 1930s, suggests that only limited technical and economic advances could be made without Western technical assistance.

THE SOUTHERN ORE TRUST (YURT)

Yurt controlled iron ore in Krivoi Rog and manganese in the Nikopol deposits. After 1924 there was an agreement with Rawack and Grunfeld, of Germany, for the operation of these manganese and iron ore mines. Rawack and Grunfeld also held a monopoly for the sale of all South Russian iron ore and manganese in foreign markets. In 1924–5 the company sold 21 million poods of iron and manganese ores to Germany, Italy, Belgium, and the United Kingdom.[2] The Port of Nikolaev was equipped with ore loaders by the company to handle the export of these ores.

Only six mines were operated at the beginning of the year. The major restoration of the Krivoi Rog iron ore and manganese mines took place after 1925 under predominantly German technical assistance. In December 1925, fourteen iron ore and three manganese mines were reopened; these were tsarist mines closed since the Revolution. The mining equipment was purchased in the United Kingdom and Germany by Yurt, on nine months' credit. Company engineers from the United Kingdom and Germany assembled the equipment and put it into operation.

[1] M. Gardner Clark, *The Economics of Soviet Steel* (Cambridge: Harvard, 1956), p. 65.

[2] U.S. Consulate in Hamburg, Report 360, October 12, 1925 (316–108–1544).

At this point the mines at Krivoi Rog and Nikopol were inspected by a German industrial delegation headed by Steinitz, of Rawack and Grunfeld, which expressed the opinion that the newly equipped mines could produce 500 million poods of iron ore and 150 million poods of manganese within five years and that the members of the delegation were prepared to provide assistance to reach that objective. Its opinion was that new equipment to fulfill the five-year program need only consist of electrical mining equipment; Yurt was instructed by Vesenkha to consider the German suggestions, which were later implemented. It was also agreed that credit would be advanced by Germany to Yurt on the basis of the proceeds from the anticipated export of manganese ore from Nikopol.[3]

In October 1927 Yurt concluded a technical-assistance contract with Stuart, James and Cooke, Inc., for the further preparation of projects and consulting services.[4]

RECONSTRUCTION IN THE METALLURGICAL SECTOR

The position of the Russian iron and steel industry in 1920 was almost unbelievably bad. In 1913 there had been 160 blast furnaces operating in Russia; but in 1920 only 12 were operating intermittently. In 1913 there had been 168 Martin steel furnaces; but in 1920 only 8 were operating intermittently. Production of iron ore was 6 million poods, compared to 551 million poods in 1913. Production of cast iron was 6 million poods, compared to 231 million in 1916 and 6.6 million poods in 1718 under Peter the Great.

Production of rolled iron was 6.4 million poods, compared to 222 million in 1916, and so on. Of sixty-six cast-iron foundries available, only two were in production. However, employment had not fallen in the same proportion: whereas 257,000 were employed in metal works in 1913, there were 159,000 so employed in 1920 despite the catastrophic decline in output.[5]

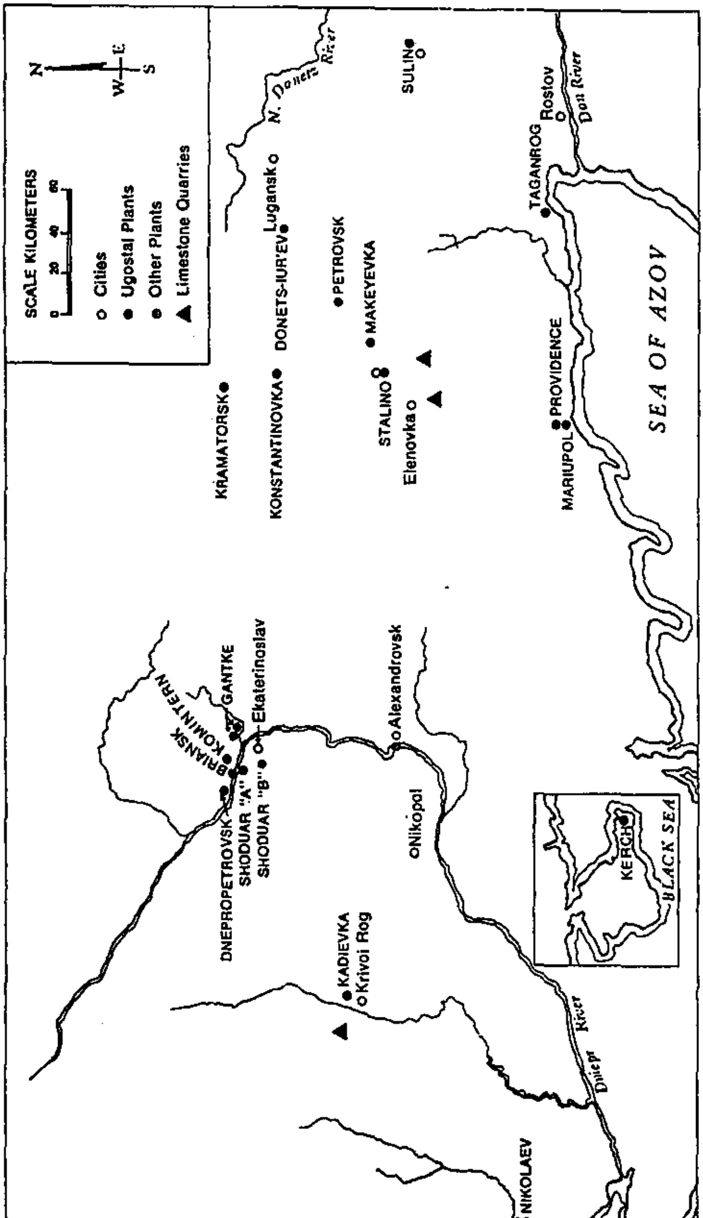
The metallurgical sector, however, received comparatively few concessions until the Type III technical-assistance agreements of 1927–9, which were a prelude to the Five-Year Plan construction. Although, production had partially recovered by the late 1920s, technologically the industry had remained at the level of the tsarist era. Independently attempted technical advances backfired and forced the Soviets to seek out Western assistance—another proof that Soviet development and technical progress in the twenties were essentially dependent on Western technical aid. Soviet-originated projects

[3] U.S. Consulate in Hamburg, Report 417, December 12, 1925 (316–108–1582).

[4] *Torgovo-Promyshlennaya Gazeta*, No. 229, October 7, 1927.

[5] These figures taken from a confidential report in U.S. State Dept. Decimal File (316–107–359). Also see report from General Wrangel's staff, December 1921 (316–107–569).

MAP 4-1 METALLURGICAL PLANTS IN SOUTH RUSSIA, 1926



were fumbling and technically inept, and made little contribution to reconstruction or development. The only successful Soviet work of the period was the restoration of seven small blast furnaces—not a particularly difficult task—and these, as Clark points out,

> . . . are almost never mentioned in Soviet technical or metallurgical literature. Perhaps the Soviets are ashamed of these first attempts, which certainly look like pygmies beside the giants built during the First Five Year Plan.[6]

The Donbas sector is by far the most important of the iron- and steel-producing regions. As shown in figure 4-1, Ugostal (Southern Steel Trust), formed in 1923, divided the inherited plants into four groups: the Donetz group proper, at the east end of the basin; the Ekaterinoslav group, at the western end of the basin and north of the iron-ore fields of the Krivoi Rog; the southern group of plants on the Sea of Azov; and the Kramatorsk and Hartman locomotive plants.

The Donetz group metallurgical industry was in a sorry state in 1921. All plants were closed except for Makeevka and Petrovsk. The latter had no blast furnaces in operation, and rolling was limited to available steel slab stocks. Whereas more than 233 million poods had been produced in all Russia in 1916, only 7 million poods were produced in 1920[7] (i.e., about 3 percent), and much of this was too bad in quality for use. In the Donetz area the position was even worse, with production less than .5 percent of the prewar level.

Contraction of the metallurgical industry continued into mid-1922. Most of the Donbas steel plants remained closed, reportedly because of a lack of purchase orders and working capital. Only South Briansk and Chaudoir operated on a continuous basis; Petrovsk, the largest, continued with one furnace working continually and the others either intermittently or not at all. Makeevka was partially closed in 1922.

In early 1923, the mines supplying Petrovsk became idle, as did the open-hearth steel-making plant. The plant was in fair condition technically but now lacked skilled labor. Makeevka was completely closed, although the workers were retained.

[6] Clark, *op. cit.*, p. 82. Soviet restoration was limited to the simplest of repair work; even furnace lining (a skilled but simple task) was difficult for them. For example, the Perin and Marshall engineers stated that in 1926 the unfinished No. 5 blast furnace at Petrovsk required only a 'comparatively small expenditure' to complete. The furnace had been under construction prior to 1914 and 'nearly all of the metal work (had) been erected for the furnace proper, stoves and skip bridge,' but 'much of the piping' was still lying on the ground where it had rested since 1914. The inference is that completion was beyond the technical capabilities of Ugostal. [Perin and Marshall, *Report on Improvement of the Ugostal Steel Plants of South Russia* (New York: 1926), p. 42.] Petrovsk No. 5 was not working as late as October 1928. (Kruglyakova, *op. cit.*, p. 70.)

[7] *Ekonomicheskaya Zhizn*, No. 106, May 18, 1921. Numerous articles in this and other journals in the period 1920–2 indicate a pitiable condition.

Table 4-1 UGOSTAL (SOUTHERN STEEL TRUST) PRODUCTION, 1913–28, DONETZ GROUP

Plant Name		*Output (metric tons)*						
Prerevolution	*Ugostal*	*1913*			*1923–4*			*1927–8*
		Pig Iron	*O.H. steel*	*Rolled steel*	*Pig Iron*	*O.H. steel*	*Rolled steel*	*Pig Iron*
Neurissiche A-G	Stalino	276,230	231,290	208,680	154,282	92,179	69,861	302,924
Briansk-Alexander	Petrovsk	348,200	315,165	279,040	—	—	—	296,293
Société Minière et Metallurgique 'Union'	Makeevka	229,940	154,835	128,790	—	12,604	12,017	200,881
Alchevsk	Donetz-Iur'ev	246,990	250,245	212,160	—	—	—	223,841
Société des Tuileries	Frunze	60,110	63,170	60,210	—	—	—	58,316

Sources:

1. Perin and Marshall, *Report on Improvement of the Ugostal Steel Plants of South Russia* (New York: 1926).
2. ——, *Report on the Steel Industry of South Russia* (New York: 1926).

One widely held view was that Ugostal should be disbanded and all the South Russian steel works closed. The area was being worked at a loss. There were few orders; most were being placed abroad. However, the trust employed 27,000 people: sufficient argument to keep the mills in intermittent operation!

A compromise was reached by formally closing Makeevka and discharging one half of the workers while transferring the other half to the Ugostal coal mines.[8]

In the next three or four years, several blast furnaces were rebuilt, with Western assistance and by 1927–8 pig-iron output was increased in four of the ten plants which constituted the prewar Donetz group. The Donetz group now produced more than 1 million tons of pig iron (compared to 1.6 million in 1913), including output from blast furnaces at Briansk-Alexander, the Donetz-Iur'ev works, and the Frunze (old Société des Tuileries) works. In 1928 all output from the Donetz section of Ugostal, the largest single group of metallurgical works, was from pre-Revolutionary plants which had been put back into operation.

The second group of works forming the Ugostal trust was in the Ekaterinoslav area, at the western end of the Donbas and to the northeast of the Krivoi Rog iron-ore deposits. This group comprised six prerevolutionary plants, only three of which (Dnieprovsk, Briansk, and Gdantke) had been pig-iron producers with blast furnaces. Of these three only Briansk was producing pig-iron in 1923–4; neither the Dnieprovsk or the Gdantke were operating as pig-iron producers. Consequently in 1923–4 only one of the six works situated near the Krivoi Rog iron ore deposits was producing any pig iron.

Two works, the Dnieprovsk and the Lenin (formerly the Shoduar 'A') were producing small quantities of open-hearth steel and rolled steel products.

In sum, this group was only producing about 140,000 tons of rolled steel products in 1923–4, compared to almost 826,000 tons in 1913.

The third group of Ugostal metallurgical works was the Azov Sea group of four prerevolutionary plants which produced 400,000 tons of pig iron in 1913. No blast furnaces in this group were operating in 1923–4, and only two produced any rolled steel: Zhdanov and Taganrog. As Taganrog produced no slab steel, it was probably importing slabs from the Zhdanov works (formerly the Marioupol), (table 4–3).

The old Providence works was first merged with the Zhdanov, a few miles to the South, and then closed down.

The Kertch works was first built by French and Belgian capital in 1900, but the owners had closed it down as unprofitable after a few years.[9] The

[8] *Pravda*, No. 48, March 3, 1923.

[9] Clark, *op. cit.*, p. 157.

Table 4-2 UGOSTAL (SOUTHERN STEEL TRUST) PRODUCTION, 1913–28, EKATERINOSLAV GROUP

Plant Name		*Output (metric tons)*						
Prerevolution	*Ugostal*	*1913*			*1923–4*			*1927–8*
		Pig Iron	*O.H. steel*	*Rolled steel*	*Pig Iron*	*O.H. steel*	*Rolled steel*	*Pig Iron*
Dnieprovsk	Dzerzhinsk	417,165	386,660	330,270	—	13,305	17,433	426,225
Briansk	Petrovsk	408,975	325,370	259,530	132,899	81,523	79,143	466,964
Shoduar 'A'	Lenin	—	100,730	39,205	—	51,084	17,385	—
Shoduar 'B'	Comintern	—	—	47,305	—	—	—	—
Gdantke	Karl Liebknecht	—	—	—	—	—	17,391	—
Krivoi Rog	Krivoi Rog	75,595	—	—	—	—	—	—

Sources: Perin and Marshall, *Report on Improvement of the Ugostal Steel Plants of South Russia* (New York: 1926); V. I. Kruglyakova (ed.), *Sbornik statisticheskikh svedenii . . .*, pp. 70–71.

Table 4–3 UGOSTAL (SOUTHERN STEEL TRUST) PRODUCTION, 1913–28, AZOV GROUP

Plant Name		*Output (metric tons)*								
Prerevolution	*Ugostal*	*1913*			*1923–4*			*1927–8*		
		Pig Iron	*O.H. steel*	*Rolled steel*	*Pig Iron*	*O.H. steel*	*Rolled steel*	*Pig Iron*	*O.H. steel*	*Rolled steel*
La Providence Russe	Providence } combined	165,670	173,695	145,180	None	None	None	None	None	None
La Providence Russe	Zhdanov } combined	69,675	78,230	53,750	None	56,746	28,650	180,648	None	None
Société Metallurgique de Taganrog	Taganrog (Andreev)	154,480	171,105	144,350	None	None	3,269	None	57,000	49,828
Société Metallurgique de Taganrog	Kertch (Voikov)	9,925	815	—	None	None	None	None	None	None

Source: Perin and Marshall, *Report on Improvement of the Ugostal Steel Plants of South Russia* (New York: 1926).

equipment had survived until 1925 in good condition, and the Soviets reopened the works according to plans drawn up by German and American engineers. The first blast furnace was ready for blowing-in by 1929. The cost of reconstruction, however, greatly exceeded even the most pessimistic estimates, and a search was put under way for the 'criminals' who had miscalculated. The major problem was that the furnaces would not smelt local iron ores.

> The failure of the Kertch works is typical of the actual conditions of the new industrial enterprises which have been organized by inexperienced and inefficient persons for the sake of political propaganda and without any regard of the conditions under which the new plant will have to work.[10]

By late 1929 only two of the projected three blast furnaces had been built, and capital costs already had exceeded 66 million rubles—far in excess of the 18 million originally estimated for the whole project. The operating costs were also significantly greater as local Lipetsk 40-percent-iron ore required additional fuel, which had to be transported from the Donbas. Use of this ore required an additional nine rubles a ton for transportation.[11]

THE STRUCTURE OF UGOSTAL IN 1929

At the end of the decade, Ugostal consisted of eight plants constructed before the Revolution and one reconstructed plant, the Kertsch, whose problems have already been discussed. These plants had produced 3.2 million metric tons of pig iron in 1913, whereas in 1929 they produced less than 2.5 million, with labor productivity about 50 percent below the prewar level. Real wages had declined heavily because of the many compulsory contributions required of the plant workmen.[12]

Several smaller works were included in the trust, including the former Handtke plant, producing iron pipes, and the former Sirius and Taganorog plants, producing railroad equipment.

Although a few American and Polish engineers worked on the Ugostal plants, the bulk of the rehabilitation was carried out by German engineers working under the post-Rapallo economic-cooperation contracts between Germany and the Soviet Union.

[10] U.S. State Dept. Decimal File, 316–139–252/8. The American and German engineers said their calculations were correct, but they had failed to take political considerations into account (316–133–858).

[11] U.S. State Dept. Decimal File, 316–139–252/8.

[12] Based on report from Polish Consulate General in Kharkov, June 5, 1929, from information supplied by a Polish engineer working for Ugostal and believed to be 'absolutely reliable' (316–139–251).

CONCESSION OFFERS IN METALLURGICAL CONSTRUCTION

Large new metallurgical projects and the rehabilitation of prerevolutionary plants were offered as concessions under the broadened post-1927 concessions policy.

The possibility of using the iron-ore reserves of Magnitogorsk with the extensive coking coal deposits of Kuznetsk had been discussed in Russia since the nineteenth century. The Magnitogorsk concession proposal was for a 656,000-ton-capacity plant (rolled products), to produce pig iron, together with steel-making and rolling facilities.[13] The rolling capacity of the suggested plant was planned as follows:

Heavy rails	245,000 tons
Large stanchions (structurals)	33,000 tons
Medium commercial iron and pit rails	65,500 tons
Small commercial iron products	230,000 tons
Casting iron	27,500 tons
	601,000 tons

A preliminary outline of the technical requirements was published. The plant was scheduled to include four blast furnaces, open-hearth and Bessemer furnaces, and rail and continuous blooming mills of American design. Three basic requirements repeatedly emphasized were that the plant had to operate on coke, that the coking had to be undertaken at Magnitogorsk from Kuznetsk coal, and that coke by-products were to be utilized. This emphasis is interesting as it relates to the basic economic weakness of the Magnitogorsk-Kuznetsk project and the technical weakness of the Soviets in coke by-products production.[14]

Given the long haul for coking-coal, transport costs were the major factor in determining profitability. Early discussion, beginning in the 1890s and continuing through the 1920s, had revolved around this point. As late as 1927, I. G. Feigin had stated that 'transportation of raw material and fuel for 2,000 kilometers is completely irrational.'[15] But the official party line was that transportation costs could not be a determinant of location in a Socialist economy, this being bourgeois Weberian theory.

The concession was offered a supply of coking coal from Kuznetsk, then being planned by Freyn and Company, Inc., at a rate of 0.38 kopecks per

[13] P. I. Egorev, *The Magnitogorsky (Magnet Mountain) Metallurgical Works* (Moscow: Glavnyi Kontsessionnyi Komitet, 1929). This was the same technical arrangement suggested by Perin and Marshall two years earlier and rejected as 'technically inadequate.'

[14] See chap. 12.

[15] Clark, *op. cit.*, p. 215.

ton-kilometer. Consequently, any concessionaire with the temerity to undertake construction of Magnitogorsk and install coking facilities dependent on Kuznetsk coal would have been completely at the mercy of the Soviet government. By merely raising transport rates to equal costs, the Soviets could have forced the concessionaire to abandon the project. This was in addition to the immense difficulties which could have been imposed on the concessionaire as a result of the single-track, inadequate, and overcrowded railway already straining under the weight of increased coal tonnages. It will be recalled that the major problem in getting American and British relief to this part of Russia had been a heavily overburdened and inadequate rail system which required several weeks for journeys of a few hundred miles, even though large segments of the population were starving.[16]

The estimated cost of building Magnitogorsk was 171 million rubles. The plant was to employ 6,216 people and return a profit of 10 percent. The concessionaire was given the option either to operate the plant for a number of years as a pure concession and then turn it over to the Soviet government, or to operate it as a credit concession in which erection and operation would be undertaken by the Soviets and the foreign company would grant a ten-to-twelve-year credit.

Clark states that the basic rate of 0.38 kopecks, also used in the argument over the construction of the shuttle under the Five-Year Plan, was about one-third the rate charged for coal hauled the same distance in the general rate schedule. The Magnitogorsk concession lay outside the control of potential concessionaires; one could have fulfilled an agreement, stayed within the cost estimates given, and yet within a few months or years been forced to abandon the concession operation.

Whether this was the intent or not is debatable. The history of other concessions gives support to the probability that this was indeed an aim of concession policy. Chernomordik, referring to the special discount or subsidy given to the Magnitogorsk-Kuznetsk shuttle says,

> The Soviet freight-rate system, based on the principle of costs, includes the use of freight rates as a lever of economic policy.[17]

In brief, the proposed Magnitogorsk concession could have operated only with a subsidy from the Soviet government to the foreign operator. It is unlikely this subsidy would have been long continued.

The restoration of other large metallurgical complexes was offered to foreign capital.

[16] H. H. Fisher, *The Famine in Soviet Russia* (New York: Macmillan, 1927), p. 173.

[17] D. Chernomordik, 'Toward a Theory of Railroad Freight Rates,' *Voprosy Ekonomiki*, No. 9, 1948, p. 32.

The Nadejdinsky Metallurgical Works in the Urals, founded in 1894, battered in the Revolution and Civil War, subsequently operated by the American Industrial concession, and still in a bad state of repair, was one such project. The works comprised the iron ore mines about 90 kilometers away, and the Bogoslovsky brown-coal mine about 50 kilometers away, together with extensive forest properties for the manufacture of charcoal, and both narrow- and wide-gauge railroads.

Production in 1929 was less than half of 1913 output, and the ore and coal mines had received little new equipment since 1899–1907, when the plant had first been placed in operation.

The equipment was out of date. The air and gas blowers dated from between 1905 and 1913. The six rail- and sheet-rolling mills dated from the mid-1890s and were classified in 1929 as only 50-percent fit (three mills), 70-percent fit (two mills) and 90-percent fit (one mill). Even if restored to normal operation, they would have been be well below current engineering standards. The blast-furnace plant operated on a fuel comprising a mixture of brown coal, charcoal, and wood; and occasionally one furnace operated on imported Siberian coke.[18]

Employment in 1929 was over 20,000 workers, producing about 163,000 tons of pig iron per year and converting this into 155,000 tons of steel.

The product totals produced by the plant in 1929 were:

59,600 tons rails
4,600 tons roofing iron
2,500 tons commercial iron
4,000 tons pit rails (light rails).

The concession offered required the prospective concessionaire to drop rail and tire production and rebuild the plant for roofing-iron production only. In effect, this involved the construction of a completely new plant (at a cost of between 47 and 52 million rubles) which, it was claimed, would produce 11.7 to 13.0 percent return on investment.[19]

The Taganrog Metallurgical Works dated from 1895, and was in a very poor state of repair.[20] The furnaces were oil-fired and produced just over 57,000 tons of steel ingots in 1927–8. Of six rolling mills, only the roofing mill was described as satisfactory. The electrical equipment dated from the period 1895–1907.

[18] I. N. Kostrow, *The Nadejdinsky and Taganrog Metallurgical Works* (Moscow: Glavnyi kontsessiony komitet, 1929).

[19] *Ibid.*, p. 21.

[20] *Ibid.*, p. 30. The four Martin furnaces are described as 'exceedingly worn out and of obsolete type.' The three Thomas converters are described as 'partly demolished . . . very much out of date.'

A concession was offered to produce 160,000 tons of roofing iron per year, with the stipulation that coke ovens were to be built together with a plant for the manufacture of chemical by-products. Profit was estimated at 10 percent.

There are interesting parallels between these metallurgical concession offers. Each stipulated (Magnitogorsk and Taganrog) or involved (Nadejdinsky) the construction of coke ovens and the utilization of coke as a fuel. Without control of coking-coal deposits the concessionaire could not have controlled the operation of the metallurgical plant. Using the weapon of transport costs, the Soviets could have squeezed out the concessionaires without violating the letter of the agreement.

The profit estimates, from 10 to 13 percent, indicate a rather naïve concept of the degree of inducement required to enter a new line of endeavor. Even without political risk, as in the United States or Great Britain, an estimated annual return of 20 percent would have been more suitable.

PURE (TYPE I) CONCESSIONS IN THE METALLURGICAL INDUSTRY

Pure concessions were not a major factor in the development of the iron and steel industry, the Soviets were obviously unwilling to allow Western elements to operate freely in the most strategic of the 'commanding heights.'

The Russian-American Steel Works was established in the Soviet Union by emigrant American workers in 1921. They were able to double output in the first year and then ran into problems; insufficient orders were forthcoming from the trust, and the works was diverted into supplying small orders for private firms and repairing automobiles and tools. There were insufficient raw materials—about 30 percent of the steel received was unfit for use—and shortages of oil and coal.[21]

An early Type I concession, perhaps better described as a commune, was granted to 3,000 emigrant American workers about 1922. The Nadejdinsky mines, in Perm okrug, and later part of the Uralmed trust was reportedly being operated along with associated coal mines and forests. They were granted 20,000 dessiatins of land for agricultural use and a loan (at 7 percent) of 350,000 gold rubles for working capital. Each worker was required to bring $100 in cash and $100 worth of tools. The government purchased 50 percent of production and the balance accrued to the concession.[22]

At least two metallurgical works were leased to Russian concessionaires. The Randrun foundry, at Omsk, was leased back to its former owner in

[21] *Pravda*, No. 79, April 12, 1923.

[22] Haywood contract with the Soviet of Labor and Defense (316–111–1270). See chap. 3 for details of the Haywood (American Industrial Corp.) contract.

October 1921 on condition that he undertake the necessary repairs to get it back into production. As soon as the foundry was back in operation, the former owner was again ejected and the Soviets took over operations.[23]

Another large works, the Goloborodov—part of the Eketerinslav group in southeast Russia—was leased for five years with a rent based on output.[24]

In 1924 the Viksun Metal Works, in the Urals, nominally part of the Gomza trust, was leased for forty years to the German firm, Bergman, on a pure concession basis. Bergman was required to restore the equipment and put the plant in operating condition before May 1925. Forests, mineral rights, and mines over a 250-square-verst area were handed over to Bergman for exploitation. The company had the right to hire and fire, with the restriction that foreign personnel were not to comprise more than 25 percent of workmen, 45 percent of foremen, and 75 percent of technical personnel. The only assistance from the Soviets was to provide labor. The concessionaire was required to make payments, beginning in 1928, to comprise 30 percent of the final manufactures (heavy machinery, etc.) or semi-manufactured materials and minerals output in the lease years three through ten. A minimum conversion of five million poods of ore into metal was required, with a corresponding manufactured output. The concessionaire was required to manufacture heavy machinery and various metal goods including guns, shells, and small arms.[25]

The Lena concession operated the blast furnaces and steel works at Sissert and Revda, in the Urals. The company first renovated seven iron ore mines, three limestone quarries, and two quartz quarries in Polevskoi rayon, installed new iron works plant at the Seversky blast furnace, and renovated the Revda iron and steel works. By 1927 the annual combined output of these works was 100,000 tons of roofing iron, almost 30,000 tons of wire, 1,400 tons of nails, and 3,000 tons of cast iron shapes. This was achieved in a plant producing nothing when taken over in 1925 by Lena, who spent more than $2.5 million on imported equipment for these works.

The available evidence indicates that foreign labor was not generally utilized—apart from that in these pure concessions—before about 1927. The Polish Foreign Ministry concluded as late as mid-1929 that:

[23] U.S. State Dept. Decimal File, 316-107-203.

[24] U.S. State Dept. Decimal File, 316-107-52.

[25] The agreement contained a clause that military production could be exported, so it may be assumed that this agreement was part of the wider German-Russian military co-operation of the 1920s. This was not one of the GEFU shell-making plants (316-139-191).

There was also a report from the United States Riga Consulate in late 1923 to the effect that a number of the Krivoi Rog coal and iron ore mines had been turned over to the munitions firm Crouardi for the production of armaments. (U.S. State Dept. Decimal File, 569-3-99.)

> Very few foreigners are among the technical personnel of the JUGOSTAL; but such foreigners as are employed are engineers or skilled workmen from Germany or Czechoslovakia, and occasionally Poles.[26]

The Perin and Marshall report[27] on the reconstruction of the South Russia iron and steel industry was centered around reconstruction and enlargement of one works, the Petrovsk, while including the Stalino, Makeevka, and Donetz-Iur'ev works in a subsidiary role; the others were scheduled to be closed down.

In essence, the Perin and Marshall report proposed three new 750-ton skiploaded blast furnaces and completion of an existing 600-ton furnace to replace smaller hand-fed units. Steel was to be made in three departments: an open-hearth plant with three modern open hearths replacing four obsolete furnaces, a new Bessemer plant, and a duplex plant to make steel from an all hot-metal charge (to overcome the scrap shortage).

The major technological change suggested by Perin and Marshall was installation of a powerful blooming mill to break large ingots into slabs before rolling them into finished products—a very successful process in the United States but not then introduced in Europe or Russia.

> The (consequent) large supply of relatively cheap billets and blooms will permit the small and medium shape, merchant and sheet mills of the Donbass steel works to be remodeled so as to reduce the amount of work which these mills must do with a reduction in labor and an increase in tonnage.[28]

The report pointed out that these proposals would not interfere with existing Ugostal plans but would generate a substantial increase in capacity at reasonable cost. The metallurgy of the duplex process lent itself to the high-sulfur coking coal available. Semi-skilled labor could be used, as was typical in the United States.

A contract was concluded in October 1927 between Percival Farquhar (an American financier) and the Soviet government to develop the Donetz Basin. The contract was based on the findings of the Perin and Marshall report.

[26] Report of the Polish Consul General at Kharkov, June 5, 1929 (316–139–255/8). This was reasonably accurate for the period before 1929; T. H. McCormick had a two-year contract as technical director of the Poltava steel mills for 1928–1930, and the Frank Chase Company, Inc., had a contract in 1928 to reorganize the foundry department of the Podolsk plant, but no others, except the Freyn-Gipromez technical agreements, have been traced at this time.

[27] Perin and Marshall, *Report on Improvement of the Ugostal Steel Plants of South Russia* (New York: 1926). This was one of three reports prepared for Percival Farquhar in his negotiations for a large concession based on the Don railroad and metallurgical industries. The Farquhar documents covering these negotiations are in the Hoover Institute Library, Stanford University.

[28] *Ibid.*, pp. 59–60.

In order to implement this agreement, Farquhar proposed the formation of a Delaware company, the United American German Corporation, which would administer the contract. The capital was to be $2 million: one half subscribed by Percival Farquhar, Ingersoll-Rand Company, and Dillon Reed, and the other half by Vereinigte Stahlwerke and Otto Wolff in Germany.

The contract consisted of two parts: first, a definite agreement to construct a large, modern one-million-ton-capacity iron and steel mill with all ancillary equipment 'according to American standards, specifications and patents in the coal and iron ore district of South Russia';[29] and second, optional for the company, was the reconstruction of the railroad transportation system of the Don 'on American standards,' together with the construction of iron ore concentration plants at Krivoi Rog and elevators, docks and shipyards at Stalingrad.

Under the first part of the contract, the United American German Corporation was to receive drafts from the Soviet State Bank to the amount of $40 million, bearing 6 percent interest, amortizable over a period of six years. The Corporation would then sell in the United States $20 million worth of 6-percent debentures 'guaranteed unconditionally (as to) principal and interest by the German Government.' The balance of the capital would be provided by manufacturers' and bankers' credits. This was not acceptable to the State Department or to the Treasury Department, on the grounds that the benefits would accrue to Germany rather to the United States, and that the transaction would be, in effect, Russian financing and the employment of American credit for the purpose of making an advance to the Soviets. It was held to differ only in form, not in substance, to previous unacceptable proposals.

Subsequent to the failure of this move, an agreement was signed between the Farquhar-Otto Wolff group and the Soviets involving a $40 million credit for the reorganization of the Makeevka metallurgical trust, on a six-year-loan basis. This was a straight credit arrangement involving neither concessions nor sale of the property.[30 31]

In 1928, Gipromez, staffed by the Freyn Company, rejected the Farquhar proposal for Makeevka as containing serious defects. It was argued that costs were underestimated. Technical defects were found in the rolling-mill arrangement, the equipment selection was not justifiable on either technical or economic grounds, and the project contained no provision for either internal

[29] Based on memorandum submitted to Secretary of State Kellogg by P. Farquhar, dated October 5, 1927 (316-131-975/6). The contract is in U.S. State Dept. Decimal File, 316-131-977/92.

[30] Those readers wishing to explore the Soviet-Farquhar contract in more detail should examine the four boxes of Farquhar's personal papers at the Hoover Institution, Stanford University.

[31] German Foreign Ministry Archives (quoting a Tass report of January 21, 1928), T120-3032-H109353.

transport or power supply. The connection between the rejection of the Farquhar project, the subsequent conclusion of a technical-assistance agreement with Dr. Kuppe (a well-known German rolling-mill specialist), and the earlier agreement between Gipromez and Freyn, under which planning assistance was given to new iron and steel projects, is unknown. It would be reasonable to assume that the events were not disconnected. There is no hard evidence of active competition between the American and German concessionaires and planners, but such competition was certainly not beyond the realm of possibility.[32]

TECHNICAL-ASSISTANCE AGREEMENTS WITH GIPROMEZ

The agreement between Vesenkha (Supreme Council of the National Economy) and the Freyn Company, Inc., of Chicago, signed in August 1928, was the first milestone in the transfer of Western metallurgical technology. This was an extension of an earlier agreement, signed in 1927, under which Freyn gave technical assistance in reconstructing existing metallurgical plants and construction of new plants in the U.S.S.R., and was especially concerned with the design of the new Kuznetz iron and steel plant, estimated to cost $50 million and planned as a key element in the forthcoming Five-Year Plan, and the reconstruction of the old Telbiss iron and steel mill. The second 1928 agreement enabled Gipromez (the State Institute for Planning Iron and Steel Works) to create a new metallurgical section staffed by 'the most prominent' Freyn engineers, twelve of whom took up permanent residence in the U.S.S.R.[33] At the same time, six Gipromez design engineers went to the United States for three to four months, 'visiting American plants and consulting American engineering authorities.'[34] In addition, access was now given to Freyn archives

[32] The real reason for turning down the proposal was that the Soviets were not too assured Farquhar could raise the required capital, and in any event they objected to the sale of 'German machinery at American prices.' He was paid $600,000 for his technical services. (316–131–1088/9, U.S. Embassy in Berlin, Report 4121, November 19, 1928.)

See also Charles A. Gauld, *The Last Titan: Percival Farquhar* (Stanford: Stanford University, Institute of Hispanic American and Luzo-Brazilian Studies, 1964). Gauld makes the point that the Soviets are impressed by those capitalists who suffered their losses in silence. Farquhar lost about $100,000 on the Donetz project but said nothing publically: 'Farquhar's silence impressed the Kremlin . . . (he) was surprised when later the Soviet planners, on resuming the Donetz project, invited him to return to help co-ordinate it. But he had had enough of semi-Asiatic dealings with Soviet 'state capitalism.' He declared 'I learned that capitalists cannot do business with amoral, cynical Communists' (p. 205). Farquhar's impression was not typical—see W. Averell Harriman's adventures, pp. 89–91 below.

[33] 'American Technique Assists Soviet Metallurgy,' *Ekonomicheskaya Zhizn*, No. 182, August 8, 1928, and Clark, *op. cit.*, p. 65. Gipromez was founded April 10, 1926 and was comprised of a council of 237 professors and engineers. The utilization of Freyn designs will be traced in Vol. II.

[34] Amtorg, *op. cit.*, II, No. 14 (July 15, 1927).

and standard metallurgical drawings; and all Soviet project planning was transferred from the United States, where it had been conducted to that time, to the U.S.S.R. In other words, the design and technical experience of the leading United States steel works designer was now at the disposal of Gipromez. The first basic 'Soviet' blast furnace design resulting from this agreement was, according to Clark, used for twenty-two blast furnaces, each with a capacity of 930–1,000 cubic meters and an output of 1,000 tons or more a day—substantially larger than that of any previous Russian furnace.

Under the second agreement, Freyn contracted to plan and supervise the reconstruction of forty metallurgical plants and the building of eighteen completely new iron and steel plants, at an estimated total expenditure of over $1 billion.[35] These plants were to form the basic structure for the Five-Year Plan. In addition to the Freyn assistance, Dr. Kuppe, a prominent German steel-rolling specialist, acted as a consultant to Gipromez.[36]

Amtorg was able to conclude in 1928 that although the U.S.S.R. lagged behind in iron and steel, the 'enormous technical advances made during recent years in . . . the United States and other countries are now being incorporated in the new plants under construction in the U.S.S.R.'[37]

Thus Russia was able to utilize wide-strip mills, a fundamental innovation in iron and steel technology, within six or seven years of their introduction in the United States and at least two years *before* utilization in Europe.[38]

[35] Amtorg, *op. cit.*, IV, No. 6 (March 15, 1929).

[36] U.S. State Dept. Decimal File, 316–131–1075.

[37] Amtorg, *op. cit.*, III, No. 2 (January 15, 1928) p. 24.

[38] The first wide-strip mill in the United States was installed in 1926; the first in Europe was the Richard Thomas, Ltd., mill at Ebbw Vale, South Wales, completed in 1937. German continuous mills of the 1920s were not able to produce steel strip wider than 30 inches.

CHAPTER FIVE

Non-ferrous Metal Mining and Smelting; The Manganese Concessions

LEAD-ZINC MINING AND SMELTING

ZINC, lead, silver, and copper production, both in the form of mined ore and smelted metals, are examined in this chapter separately, although in practice they are mined jointly and smelters produce separate metals, as well as by-products.

Some lead-zinc ores were mined and exported in tsarist times, but no smelting on a sizeable scale developed until the 1910 opening, by the British Urquhardt (Ridder) concession, of lead-zinc mines in East Kazakhstan, near the Chinese border. The company installed 120 kilometers of narrow-gauge railroad and the Altai smelting plant. The immediate post-revolutionary history of this complex was unhappy:

> When the Bolsheviks took over the mines, they spent enormous sums for new equipment, much of which deteriorated or was completely ruined through ignorance and deliberate sabotage. From the viewpoint of waste it might have been better . . . if the mines had been developed by foreign capital.[1]

The Ridder mines covered an area of 15,000 square miles and were reopened after the Revolution by the Lena Goldfields, Ltd., Type I concession with the long-term financial assistance of the Deutsche Bank.[2]

The Ridder lead-zinc-silver smelting plant established by the Urquhart concession was not let out to concession after the Revolution, although extensive negotiations took place between the Russo-Asiatic Company and

[1] J. D. Littlepage and D. Bess, *In Search of Soviet Gold* (New York: Harcourt Brace, 1938), p. 266.

[2] *Times* (London), November 20, 1928. V. I. Kruglyakova, *op. cit.*, omits all mention of either the mining or smelting of lead, zinc, or silver ores by Lena Goldfields, Ltd. However, Soviet sources (see page 96 below) confirm Lena operations.

the Soviets toward this end.[3] In 1924, the Ridder smelter became part of the Altai Polymetal Trust, which was formed in lieu of the rejected Urquhardt concession. A commission under the direction of a Professor Gubkin approved a plan for reorganization of the non-ferrous mining and smelting industry submitted by an engineer, van der Better;[4] however, apart from uniting the copper smelters at Kyshtim, Tanalyk, and Kalat with the lead-zinc smelter at Ridder under the same organizational roof, no significant development of mines and smelters was undertaken until the Altai Polymetal Trust made a technical-assistance agreement with Frank E. Downs, who became Technical Director (at $20,000 per year) in 1928.[5]

A New York corporation held the Belukha concession for mineral prospecting in the southern Altai mountains from 1925 to 1927.[6]

Table 5-1 summarizes the sources of metallic zinc production for 1926-32. In 1926 the only operating zinc smelter was the old Sadon-Buron (Alagir), built by a prerevolutionary French concessionaire and operated by Zvetmetzoloto (the Non-Ferrous Metals Trust) but fed with ore mined by 'concessions.'[7] Sadon-Buron produced 1,888 metric tons of metallic zinc—the total Soviet production. By 1932, production had risen, with the help of foreign engineers, to 4,892 metric tons: just under 36 percent of total Soviet zinc metal production.

The Lena Goldfields concessions of 1925 included the construction of a new lead-zinc smelter at Altai, fed with ore from the prewar Ridder mines. The new Altai smelter was built more or less on schedule, started, and expropriated in 1930. In 1932 the plant produced 4,578 metric tons of zinc metal, or almost 34 percent of Soviet production.[8]

[3] The agreement signed by Krassin and Urquhardt, and later rejected by Lenin, covered an extraordinarily large territory in Siberia, including twelve developed metal mines, coal mines, four non-ferrous smelters, a refinery, iron and steel mills, twenty sawmills, the Ridder lead-zinc mines and smelter, the Spassky copper mines, Karaganda coal mines, and other mine and smelting properties in the Altai and Urals regions. (*Le Petit Parisien*, October 27, 1922.) The significance for this study is that all the properties *were in good technical condition and ready to be operated.* [U.S. Embassy in London, Report 1717, September 26, 1922, in U.S. State Dept. Decimal File, 316-136-172/5).]

[4] *Izvestia*, No. 32, February 8, 1924.

[5] U.S. Embassy in Berlin, Report 3114, January 21, 1928 (316-136-512). In 1927-8 the Altai Polymetal Trust was able to smelt only 67 kgs of silver. (Kruglyakova, *op. cit.*, p. 152.)

[6] U.S. State Dept. Decimal File (316-136-1240).

[7] Kruglyakova, *op. cit.*, p. 152, reports the ore was mined by a concession (unnamed). It is inferred that this was the Siemens-Schukert concession.

[8] Liubimov, *op. cit.*, states that the smelter was *not* built. Amtorg, *op. cit.*, IV, 1929, p. 33, and other Soviet sources make clear, however, that it was in fact completed in 1929-30. *The Engineering and Mining Journal*, October 1936, has photographs of the smelter and supporting operations.

Table 5–1 SOURCES OF ZINC METAL PRODUCTION IN U.S.S.R., 1926–32

Operator	*Ore Mines*	*Smelter*	*1927–8*[1]	*1929* (*in metric tons*)	*1930*	*1932*	*Percent (1932)*
Polymetal Trust	North Caucasus	Sadon-Buron (prewar Alagir)	2,246	N.A.*	N.A.	4,892	35.9
Tetyukhe Mines, Ltd.	Far East	Belovo (1930)	—	—	*Startup*	4,152	30.5
Lena Goldfields, Ltd.	Ridder	Altai (1928)	*Startup*	1,600	N.A.	4,578	33.6
Altai Polymetal Trust	Ridder	Ridder (prewar)	*Startup*	N.A.	N.A.	N.A.	N.A.
Total zinc metal production			2,246			13,622	100.0 (excluding Ridder)
Percentage produced by concessions			100.0				64.1

Source: 1. Kruglyakova, *Sbornik statisticheskikh svedenii* . . ., p. 152.

* Not available.

The Tetyukhe mines (Bryner and Company), another Type I concession, made a significant contribution to Soviet foreign exchange earnings from 1927 to 1930 by the export of zinc concentrates. The company re-established the mines, and until the smelter was ready to produce zinc metal, the zinc ore was beneficiated and exported. Conolly gives the exports as 9,000 tons in 1927, 15,000 tons in 1928, and 18,000 tons in both 1929 and 1930. Exports dropped to 6,000 tons in 1931 as the new smelter came into production.[9] The Tetyukhe (Bryner) concession, signed in 1924, exceeded its annual quota of 20,000 tons of zinc and 10,000 tons of lead concentrate by 1928. The plant was equipped with the latest imported equipment in the flotation mill. The company then proceeded to build the Belovo zinc smelter to produce 5,000 tons of lead metal and 10,000 kilograms of silver per year, by 1932 producing 30 percent of Soviet zinc metal.[10]

In 1927–8 lead ore was mined and concentrated at five locations. The Ridder mines of the Altai Polymetal Trust produced 3,699 tons, and the prerevolutionary Alagir mines produced a little in excess of 2,000 tons of lead concentrates. The Auli-Atinski mines of the Atbassvetmet produced just over 1,000 tons of concentrate. The Tirinski Development Company, a privately leased operation, produced just under 150 tons, and the Igergol mine of the Svintsovii Artel produced 16 tons.[11] In brief, these were small operations incapable by themselves of supporting a large-capacity smelter,

Table 5–2 SOURCES OF LEAD METAL PRODUCTION, 1927–8

Smelter Name	*Method of Organization*	*Origin of Smelter*	*1927–8 Production (in metric tons)*
Alagir	Polymetal Trust	(prewar)	939
Igergol	Artel	—	5
Tirinski	Joint Stock Co.	—	96
Ridder	Altai Polymetal Trust	(prewar)	1,225
Auli-Atinski	Atbassvetmet	(prewar)	327
Lena-Altai	Lena Goldfields, Ltd.	(prewar and new)	2,300
Belovo	Tetyukhe Mines, Ltd.	(new)	—
Total lead metal production			4,892
Percentage produced by concessions			47.0%
Percentage produced by concessions and prewar smelters			100.0%

Source: Kruglyakova, *Sbornik statisticheskikh svedenii . . .*, pp. 148–9.

[9] Conolly, *op. cit.*, p. 7.

[10] *Bank for Russian Trade Review*, II, No. 1 (January 1929), 7.

[11] Kruglyakova, *op. cit.*, pp. 148–9.

but able to produce comparatively small quantities of metallic lead from local smelters, as shown in table 5–2.

A concession was also granted in December 1925 to operate the Priamur Mines, developed in the Far East during the tsarist period. The concession was set up to last for thirty-six years, the first three of which were to be spent prospecting—at a cost of 400,000 rubles—in Primorska Gubernia. A land rental of 1.25 rubles per hectare and a royalty on production were payable; the concessionaire undertook to build a port and establish a smelter.[12] Production did not begin before 1930.

COPPER MINING AND SMELTING INDUSTRY; SILVER

Copper ore mines flourished in prerevolutionary Russia in the Urals, the Caucasus, the Khighiz Steppes, and Siberia. These mines were high-grade operations and did not beneficiate low-grade ores; the Atlas Mines, for example, operated on 10–20 percent copper ore and the Spassky on 7–22 percent ore. Geographical isolation required completely self-supporting operation; and all the mining complexes made iron products and owned and operated forests for charcoal. Most of them also operated coal mines, power facilities, and communications. The Kyshtim mine even operated a boot and shoe factory to supply its miners with work boots. All had granaries and food stores.

Tsarist Russia was almost self-sufficient in copper metal production. Output in 1910 was 22,000 tons and in 1912 about 33,000 tons of smelted copper, of which a small quantity was exported. Imports consisted only of electrolytic copper, of which production was insignificant.

Mining operations collapsed with the Revolution. In 1921–2 only an insignificant 13,266 tons of copper ore was mined from the single operating mine, the Korpushinsk, which was part of the Kalatinsk smelter complex in the Urals. A shipment of copper ore in 1922 enabled the Kalatinsk smelter to smelt the first copper metal since 1918, but as *Pravda* said, 'All other copper establishments in Russia are now in a state of technical preservation.'[13] Between 1922 and 1925 only the Kalatinsk smelter was in operation.[14]

Uralmed (the Urals Copper Trust) was formed in December 1921 and took over operation of copper mines in the Verkh-Isset, Revdinsk, and Syssert districts, together with the Kalatinsk, Lower Kyshtim, Kishmino-Kluchevsk,

[12] *Ekonomicheskaya Zhizn*, No. 188, August 20, 1924; and U.S. State Dept. Decimal File, 316–136–357.

[13] No. 184, August 17, 1922.

[14] The Soviets claimed that copper smelters were in a state of 'technical preservation' because there was no demand for copper. However, copper metal imports in 1913 were only 1,150 tons, whereas they were 5,325 tons in 1925–6, 10,921 tons in 1926–7, and 23,087 tons in 1927–8. About one-half of the imports came from the United States. (*Ekonomicheskaya Zhizn*, No. 161, July 17, 1929.)

and Karabash copper-smelting works. Most of the mines and all four smelters were in working order.

Similarly, the Caucasus mines and smelters, the Spassky and Atlas works in the Kirghiz, and the Julia mine in the Yeniseisk region were closed.

Briefly, in 1925, some eight years after the Revolution, of the half-dozen smelters and the dozen copper mines which had survived more or less intact, only the Kalata smelter in Uralmed was producing any copper metal at all: 2,807 tons of copper metal in 1923–4 and 5,588 tons in 1924–5. The missing ingredient for production was the technical ability to get existing mines and smelters into production. This ingredient was provided by the Lena and Siemens concessions and by Type III technical-assistance agreements.

Considerable emphasis was placed by the U.S.S.R. on the development of its non-ferrous potential, clearly for strategic reasons. By the end of the 1920s, the non-ferrous mining and smelting industry (lead, zinc, copper, and silver) employed 65 engineers and 157 technicians from the United States alone.[15] The overall plan for reconstruction was developed by an engineer, van der Better, under the auspices of Uralsvetmet,[16] which united the copper smelters in the Urals with the lead-zinc complex at Ridder. Capital sums of $5 million were then allocated to Kyshtim and Ridder and $1.5 million to Kalata.

The component sectors of the copper mining and smelting industry are divided (table 5–3) into seven groups. The largest in terms of 1927–8 production was the Kalata-Karabash combine (Group I), consisting of numerous mines and smelters developed before the Revolution. The chief engineer for this group was Littlepage,[17] and with the aid of American engineers the group rebuilt ore tonnages and copper smelting substantially after 1925. Group II also consisted of Urals mines and smelters, and was taken over by the Lena Goldfields concession in 1925. The tsarist-era Gumishev copper smelter was restarted, and a new much larger smelter, the Degtiarka, was completed by 1930. By 1927 Lena had the new smelter, including a 500-ton-per-day concentrating plant, under construction. This was the first use in the U.S.S.R. of selective flotation of ferrous sulphides in copper production.[18] The mines to feed Gumishev and the new smelters were reorganized tsarist mines at Soyuzelski and Degtiarinskii. In 1928 these were also producing 53,000 tons of sulphur pyrites—the first production of pyrites in the U.S.S.R.[19] By the end

[15] V. Karmashov, 'Non-Ferrous Metal Industry of Soviet Russia,' *Engineering and Mining Journal*, CXXX, July 24, 1930. Karmashov was employed in the Technical Bureau of the industry. These engineers, such as Woods who supervised copper mining for Armmed, and Lerva, an engineer at Uralmed, were hired on renewable two-year contracts (316–136–512).

[16] *Izvestia*, No. 32, February 8, 1924.

[17] Littlepage and Bess, *op. cit.*, p. 108.

[18] *Torgovo-Promyshlennaya Gazeta*, No. 221, September 28, 1927.

[19] Kruglyakova, *op. cit.*, p. 150.

Table 5–3 COPPER ORE MINES AND SMELTERS, PRODUCTION 1923–4 TO 1927–8

Group	*Mine Number*	*Mine Name*	*Combinat/Trust*	*Smelter Supplied*	*1923–4*[1] *Metric tons of ore mined*	*1927–8*[2] *Metric tons of ore mined*
			Uralsvetmet			
I	1	Belorachenskii	Kalata Combinat	Kalata	167,004 (mines 1–7)	15,455
	2	Kalatinskii	Kalata Combinat			67,690
	3	Korpushinski	Kalata Combinat			62,070
	4	Obnovlennie	Kalata Combinat			21,768
	5	Pervomaiski	Karabash Combinat	Karabash		97,424
	6	Rykovski	Karabash Combinat			131,969
	7	Stalinski	Karabash Combinat			43,160
II	8	Sissert (Polesvski)	Lena Goldfields	Polevski (Degtiarsky)	—	28,212
	9	Dagtiark (Pourvouplosk)	Lena Goldfields			6,285
III	10	Kompaneiski (Bogomolstroi)	Kalata Combinat	Bogomolstroi	—	51,061
	11	Levichinski	Uralsvetmet		—	18,450
	12	Third International	Tagilsk Combinat		—	15,870
IV	13	Tubinski	Bashgortrest	Bashgortrest (South Urals)	—	9,280
	14	Julia	Bashgortrest		—	11,795
	15	Sibersl.i	Bashgortrest		—	4,868
V	16	Djerkasganski	Atbastvetmet (1929)	Kazakh	—	269
VI	17	Lenin (Kovart)	Armmed	Zanguezour (Red November) (mines 17–18)	—	48,541
	18	Lenin (Bashkend)	Armmed		—	5,078
	19	Allarverdy	Armmed	Bambak (Karl Marx) (mines 19–20)	—	60,230
	20	Shamblugski	Armmed		—	60,230
VII	21	Kedabekski	Agespromcombinat		—	598

Sources: 1. *Ekonomicheskaya Zhizn*, No. 236 (October 15, 1925).
2. Kruglyakova, *Sbornik statisticheskikh svedenii . . .*, p. 102.

of 1927, Lena Goldfields engineers had blocked out more than six million tons of 2.5-percent copper ore at these mines.

The Group III mines were developed by the Kalata combine to feed the $38 million Bogomol copper smelter. This latter was brought into production in the Five-Year Plan and also built by Western companies. Groups V and VII were in the development stage, and mines in Group IV, including the tsarist Julia mine, were being developed to feed the new Bashgortrest smelter, also built after 1930.

The Caucasus smelters and supporting mines were renovated (one with the aid of a Siemens-Schukert concession) and later grouped into the Armmed trust. The Zanguezour district group of copper mines, including the Kovart and Bashkend mines, which had been in operation since 1840, were renamed the Lenin Group and put into the Armmed trust. It is known that they came through the Revolution in good operating condition and required only to be placed into production. In 1927–8 they produced 53,619 tons of copper ore. This ore was shipped to the old prerevolutionary Ougourchaisk copper smelter, renamed the 'Red November', and yielded 665 tons of black fired copper metal, or about 75 percent the prewar capacity.[20]

The Atbastvetmet trust, in the Kazakh area, did not make its contribution until late in the 1920s. This trust included the Karsak Pai 5,000-ton smelter, with a 250-ton-per-day flotation plant which had been begun as a prerevolutionary enterprise and was completed at the end of the 1920s, and also included mines opened up before the Revolution.[21]

Two trusts were completely new: the Bogomolstroi and the Bashgortrest, in the South Urals. These were extensively aided by Western companies, particularly the Southwestern Engineering Corporation and Arthur E. Wheeler of the United States.[22]

The reconstruction and expansion of the copper-mining and smelting industry can be divided, then, into three segments. There was the reconstruction, somewhat delayed, of the prerevolutionary copper smelters in the Urals (Kalata and Karabash complexes) and the Caucasus. Second, and quite distinct from these operations were the Type I pure concession operated by Lena Goldfields in the Urals around the old Gumishev and Polevsky smelters and the new 12,000-ton Degtiarka smelter (which replaced Gumishev), and

[20] *Ibid.*, p. 104; and U.S. State Dept. Decimal File, 316–136–1066.

[21] J. W. Wardell, *In the Kirghiz Steppes* (London: Galley Press, 1961); and letter from Wardell (manager of the prewar operation at Karsak-Pai) to the writer, 1965.

[22] Southwestern Engineering Corp., of Los Angeles, had a technical-assistance agreement with the Non-Ferrous Metals Trust for the design, construction, and operation of non-ferrous metal plants. Archer E. Wheeler and Associates, of New York, had a technical-assistance agreement with the same trust for equipment of the plants. [American-Russian Chamber of Commerce, *Economic Handbook of the Soviet Union* (New York: 1931), p. 101.] See Vol. II.

Table 5–4 CAPACITY, PRODUCTION AND TECHNICAL ASSISTANCE OF SOVIET COPPER SMELTERS, 1929

Smelter	*1929 Capacity Copper Metal*[1] *(in metric tons)*	*Production of Black Fired Copper*[2] *(in metric tons)*	*Origin*[3]	*Foreign Assistance*
Karsak Pai	5,000	—	Partly built prewar by United Kingdom concession. Finished 1928–9.[3]	See col. four.
Degtiarsky / Polevski-Gumishev	3,000	2,950	New and reconstructed.[4] Completed 1929.	Lena Goldfields, Ltd.
Bashkirtrest	3,000	1,747	New.	South Western Engineering, Inc.
Kalata	12,000	5,569	Prewar reconstructed.	United States engineers.
Karabash	15,000	2,629	Prewar reconstructed.	United States engineers.
Armmed	3,000	2,038	Reconstructed.	Siemens-Schukert concession and United States mining engineers.

Sources:

[1] V. Karmashov, 'Non-Ferrous Metal Industry of Soviet Russia,' *Engineering and Mining Journal*, CXXX (July 24, 1930), 67.

[2] Kruglyakova, *op. cit.*, p. 106; and Amtorg, *op. cit.*, III, 34.

[3] Wardell, *op. cit.*, and letter of April 1965.

[4] Amtorg, IV, 33.

the Siemens-Schukert Type I concession at the Arhaham mine, south of Batum, in the Caucasus. Third, construction of three new smelting plants began within this period, but these had little impact on copper metals output until the early 1930s. They included the completed Karsak Pai smelter, begun before the Revolution, and two new smelters: the Bogomolstroi and the Bashkirtrest, in the South Urals.

Although technical-assistance agreements (Type III) were successfully utilized for construction of copper smelters, it is not clear that agreements made for assistance to the copper mines were equally successful before 1930. Chief engineer Goncharov of Bogomol, while on a study visit to the United States in 1927, invited an American engineer, McDonald, to work at Uralmed, the Urals copper trust responsible for new copper-mine development. MacDonald was installed as manager of all underground mining and adviser on planning mine extensions, particularly for the Kompaneisky group—the largest of those supplying Bogomol. There was overt hostility on the part of Russian mining engineers, and McDonald apparently beat a retreat back to the United States without achieving very much in the way of planning.[23]

At the end of the decade, these trusts were absorbed, along with the gold industry, into Svetmetzoloto, and two further technical-assistance agreements were then made, with the W. A. Wood Company and with Norman L. Wimmler, both of the United States; but these had no impact within this decade.[24]

In 1928 the Lena Goldfields Company produced 80 percent of Russian silver. The Tetyukhe concession, in the Far East, was required to produce 6,000 kilograms of silver per year. It was reported in 1928 that Tetyukhe was fulfilling its agreement. Thus in 1928 all Russian silver was produced by foreign concession.

Even if the technical competence to operate the zinc, lead, silver, and copper mines had been available, the Soviets would have faced enormous difficulties in attempting to restart operations without Western help. These mines had been operated by Western companies before the Revolution, and records of some twenty-five years of work—most importantly of drilling experience and the solution of metallurgical problems—was stored in the home offices. This accumulated knowledge was required to make rational progress, certainly in underground operations.[25] Without it the Soviets could perhaps at some point have restarted the mines and smelters, but only at an enormous cost.

[23] *Pravda*, No. 239, October 16, 1929.

[24] American-Russian Chamber of Commerce, *op. cit.*, p. 101.

[25] Urquhardt estimated that the complete records of 100,000 feet of drilling in Siberia, Caucasus, and the Urals, together with the geological evaluation of thousands of Russian ore deposits, were stored in London and unavailable to the Soviets. [*Times* (London), October 24, 1922.]

A NON-COLLUSIVE DUOPSONY; THE MANGANESE CONCESSIONS

The Soviets acquired modern mining and transportation facilities for their manganese deposits at Chiaturi and Nikopol, acquired foreign exchange, and finally shattered American foreign policy concerning loans to the U.S.S.R., in a series of astute business agreements with the Harriman-Guaranty Trust group in the United States and the Rawack and Grunfeld group in Germany.[26]

In 1913, tsarist Russia supplied 52 percent of world manganese, of which about 76 percent, or one million tons, was mined from the Chiaturi deposits in the Caucasus. Production in 1920 was zero, and by 1924 had risen only to about 320,000 tons per year. The basic problem was

> that further development was seriously retarded by the primitive equipment, which was considered grossly inadequate even according to prewar standards.[27]

The Chiaturi deposits, situated on high plateaus some distance from Batum, were mined in a primitive manner, and the ore was brought on donkeys from the plateaus to the railroads. There was a change of gauge en route, and the manganese had to be transshipped between the original loading point and the port. When at the port the ore was transferred by bucket: a slow, expensive process.

The other deposits of manganese were at Nikopol in the Ukraine and, although somewhat smaller than those at Chiaturi, were significant. These deposits were reopened, before the Rapallo Treaty, by a group of German companies, through a joint-stock company, Tschemo A-G., with a 30-year monopoly grant. The Soviets then demanded a 55-percent share of Tschemo A-G., and, when refused, nationalized the company. They then began negotiations with W. Averell Harriman and the Deutsche Bank, and the Rawack and Grunfeld group.[28]

On July 12, 1925, a Type I concession agreement was made between the W. A. Harriman Company of New York and the U.S.S.R. for exploitation of the Chiaturi manganese deposits and the extensive introduction of modern mining and transportation methods. In the first full year of operation, the Harriman syndicate was able to extract 762,000 tons of ore.

[26] As this study is concerned with the impact of technology on the economy, the Harriman negotiations are not described. The interested reader is referred to over 300 pages of documents in the U.S. State Dept. Decimal File, 316–138–12/331, and the German Foreign Ministry Archives. Walter Duranty described the Harriman contract as 'utterly inept' and von Dirksen of the German Foreign Office as 'a rubber contract.' The full contract was published [Vysshii sovet narodnogo khoziaistva, *Concession Agreement Between the Government of the U.S.S.R. and W. A. Harriman & Co. Inc. of New York* (Moscow: 1925)].

[27] Amtorg, *op. cit.*, II, No. 23 (December 1, 1927), 8.

[28] U.S. State Dept. Decimal File, 316–138–50.

Harriman was associated with Gelsenkirchner Borgwerke A-G. and the Disconte Gesellschaft, to whom a royalty of $1 per ton of manganese ore was payable as settlement for prerevolutionary interests. As the result of a London conference on June 29, 1925, this group obtained 25 percent, 51 percent remaining with Harriman, and the balance going to other interests, including an English group.[29]

Under the Harriman concession agreement, $4 million was spent on mechanizing the mines and converting them from hand to mechanical operation. A washer and reduction plant were built; and a loading elevator at Poti with a two-million-ton capacity and a railroad system were constructed, together with an aerial tramway for the transfer of manganese ore. The expenditure was approximately $2 million for the railroad system and $1 million for mechanization of the mines.[30]

After the conclusion of the Harriman agreement, the Soviets negotiated with Rawack and Grunfeld A-G. for the exclusive sales and export rights for the Nikopol deposits. The latter also mechanized the mines with German technical assistance.[31] The Nikopol-Nikolaev loading equipment was rebuilt by German engineers, using German and British equipment, at a cost of two million rubles on nine months' credit.[32]

Table 5-5 MANGANESE PRODUCTION IN U.S.S.R., 1913-29

Year	*Chiaturi (Harriman)*	*Nikopol (Rawack and Grunfeld)*	*Total U.S.S.R. Production*	*Percent Produced by Concessions*
		(in metric tons)		
1913	970,000	270,000	1,240,000	N.A.***
1922-3	52,177	22,000	74,177	none
1923-4	320,132	173,531	493,663	none
1924-5	335,994*	382,223	676,000**	24
1925-6	772,000	415,000	1,334,000	100
1926-7	775,700	527,000	1,109,000	100
1927-8	540,000	615,000	766,000	100
1928-9	644,300	612,500	1,415,000	100

Source: A. A. Santalov and L. Segal, 'Concessions production,' *Soviet Union Yearbook, 1930* (London: George Allen and Unwin, 1931), p. 135.

* 160,000 tons of the 1925 output produced by the Harriman concession.

** Between 1926 and 1929 the total U.S.S.R. production does not equal the sum of the outputs from Chiaturi and Nikopol. A reconciliation would require taking account of stockpiles, ore fines, transport losses, and the small Urals output.

*** N.A. Not available.

[29] U.S. Embassy in Berlin, Report 334, July 14, 1925 (316-138-12/331).
[30] U.S. Embassy in Berlin, Report 300, June 25, 1925 (316-138-12/331).
[31] U.S. Embassy in Berlin, Report 1775, December 9, 1926 (316-138-12/331).
[32] U.S. Consulate in Hamburg, Report 149, December 12, 1925 (316-138-12/331).

By the end of 1925, the Soviets had thus made agreements on both their major manganese deposits. In both instances they had previously pushed production as far as possible, given the primitive state of mines. To increase production they then had to turn to Western technical assistance and equipment. The agreements differed. Whereas Harriman and his German associates were committed to make specific royalty payments whether or not the output was sold, and also to undertake major capital improvements, the Rawack and Grunfeld group was acting as a sales agent and was paid for its technical assistance. However, so far as the world market was concerned, the Soviets had now placed both concessionaires in a competing position. Table 5–5 indicates that both concessions were able to raise output; this was also their undoing. Prices began to fall, and both concessionaires got into trouble with rising costs and declining returns.[33]

Walter Duranty, writing in the *New York Times* considered the original Harriman contract to be 'utterly inept,' and said that after three years of a 'checkered and unprofitable existence, (it was) about to expire quietly.'[34]

At the time of the Harriman withdrawal it was suggested that a fall in world manganese prices made continued mining of the Chiaturi concession unprofitable; the Soviets certainly utilized the Harriman price policy as its reason for the failure of the concession.[35]

Although market prices for manganese ore dropped in the late 1920s, the decrease was hardly sufficient to force a well-managed mining company out of business. In 1927–8 manganese quotations fell about 2 cents per long ton unit, from the 40-cent average for 1926. Prices in 1929 touched 35 cents toward the end of the year, but it will be noted that this reasonably steep decline came *after* the surrender of the concession. Most metal prices fluctuate, and a fluctuation of 2 cents to 5 cents per long-ton unit is not of major consequence.

Even if some actual contract prices in 1928 were below quoted market price—not an unusual occurrence—they would be reflected fairly quickly in the open market quotations.

Essentially the reasons for failure appear to be threefold:

1. The harsh treatment by the local Georgian government, and the unfavorable attitude of the Soviet government soon after the signing of the agreement in 1925. In one year the concession had to endure visits and inspections from various control commissions on 127 working days.

[33] U.S. Consulate in Hamburg, Report 12, January 16, 1927 (316–138–12/331).

[34] *New York Times*, June 17, 1927, III, p. 3, col. 5. Also see J. E. Spurr, 'Russian Manganese Concessions,' *Foreign Affairs*, V, No. 3 (April 1927), 507. Spurr considers that the terms of the Harriman concession were too hard in the face of world competition.

[35] *Bank for Russian Trade Review*, No. 14, December 1928, p. 15.

2. High production costs. The 'professional proletarians' were constantly demanding more wages.

3. Weaknesses in the original contract: particularly the requirement to pay between $3.00 and $4.00 royalty per ton of ore irrespective of tonnage removed.

THE IMPLICATIONS OF THE HARRIMAN FAILURE

The Harriman negotiations had begun in the United States at the end of 1924 with unofficial representatives of the Soviet government. The State Department was unaware of the negotiations, and Harriman did not inform them.[36] The first word of the agreement reached the State Department via a speech made by Prime Minister Ramsay MacDonald in the House of Commons and reported back by the American Embassy in London.

As word of the negotiations spread, Western governments protested and inquired whether there was a change in United States government trade policy.[37] The British government, for example, pointed out that other companies had been trying to get the concession and that the Soviets desired an agreement for political purposes only:

> Viz., for the purpose of establishing the fact that a big American concern had taken the properties which belonged to foreign concerns and thereby recognizing the right of the Soviet Government to nationalize property.[38]

The Harriman negotiations caused some confusion in the State Department, which for reasons not clearly established by the files did not wish to initiate an investigation, although obviously disturbed by the whole affair.[39]

Harriman was not the first businessman to attempt to circumvent United States policy on trade with the U.S.S.R. There were attempts throughout the 1920s, and the policy had in fact been substantially eroded by 1929. Policy up to 1927 was to view long-term loans and credits with disfavor if they

[36] U.S. State Dept. Decimal File, 316-138-17/19, Washington to London Embassy: 'The memorandum transmitted by you embodies the first information received by the Department concerning the concession other than that which has appeared in the public press.'

[37] The protests of the German, Belgian and Georgian (exile) governments are in the U.S. State Dept. Decimal File, 316-138-17/20/41/84. The German Foreign Office Archives contain a letter from von Dirksen to the United States Embassy in Berlin concerning the effect of the Harriman concession on German firms and, in diplomatic language, implying a breach of agreement.

[38] U.S. State Dept. Decimal File, 316-138-18. Memorandum from U.S. Embassy in London dated October 28, 1924.

[39] Such a move, i.e., to initiate an investigation, was held to be 'very unwise.' (Memorandum, State Dept. to Commerce Dept., U.S. State Dept. Decimal File, 316-138-28.)

involved floating a loan in the United States or using American credit for the purpose of making advances. The State Department stated their policy on three occasions during the 1920s, each time as the result of an attempt of American financiers to utilize a German front group to advance credit to the U.S.S.R.

On July 15, 1926, the State Department informed the New York Trust Company that it would view with disfavor an arrangement to discount certain Russian obligations endorsed by German firms (40 percent) and the German government (60 percent), the discounting to be carried out by American banks, and the financing of Soviet purchases of equipment to be completed in Germany.

On October 14, 1927 Percival Farquhar was informed by the State Department that a scheme to sell $20 million of bonds in the United States in order to place the proceeds at the disposal of the Soviet government for the purchase of goods and materials in Germany would not be viewed with favor.

It must be made clear the State Department argument in these cases did not rest upon non-recognition of the U.S.S.R., but upon the fact that the benefits of the loan would accrue to German rather than United States manufacturers. The State Department had not interposed, for example, when Chase National in 1925 arranged a short-term credit for cotton shipments destined for the U.S.S.R., nor in the provision of loans by the International Harvester Company.

Their position was reviewed in the case of the American Locomotive proposal in October 1927 and weakened to the extent that no objection was raised to American manufacturers of railway equipment granting long-term credit to the Soviets for the purchase of locomotives, cars, and other railroad materials from the United States.[40]

The only position not breached in late 1927 was that on long-term *loans* to the Soviet government. The Harriman concession was utilized by the Soviets to give the coup de grace to what was left of American trade policy with Russia. Harriman was induced to accept long-term bonds as compensation for expropriation.

Discussion between the Harriman interests and Soviet representatives in July and August 1928 led to an agreement to cancel the concession, and the Soviets agreed to repay Harriman the estimated $3,500,000 investment. However, Harriman was 'to arrange a commercial loan for the Soviet authorities to develop the manganese industry.' The acceptance by Harriman of a

[40] This was apparently decided at the Presidential level. There is the following handwritten notation by RFK (Kelley of Division of Eastern European Affairs) on the file copy of the letter to American Locomotive: 'Drafted after discussion of the matter by Secretary with Mr. Mellon, Mr. Hoover and the President.'

long-term credit arrangement and position as Soviet fund-raiser as compensation for expropriation was the final breach in the American policy of restriction on trade with the U.S.S.R.[41]

According to the United States Commercial Attaché in Prague, after the Harriman collapse the Soviets went about Europe bragging they could borrow money from Harriman at 7 percent; therefore their credit must be good.[42]

With the departure of Harriman, the Soviets had two sizeable manganese deposits, both with up-to-date mining and loading equipment supplied on credit terms. In addition, they had Rawack and Grunfeld to continue operating the Nikopol deposits, take over operation of the Chiaturi deposits, and continue as exclusive sales agent for the U.S.S.R. on the world market. As Rawack and Grunfeld now controlled output from both deposits, they were no longer in the position of duopolists competing price down to zero, although they still had to face competition from newly opened deposits in Brazil and West Africa. It is also very interesting to note that *one-half* of the 1927–8 output of Chiaturi was from the Perevessi Hill deposit,[43] the high-grade area which had been left out of the Harriman concession. In other words, Harriman had been induced (on top of all else) to mechanize production of the *low-grade* deposits and install loading facilities so that the Soviets could take advantage of these low-cost loading facilities to ship high-grade, almost surely low-cost, ore.

Sales of manganese ore were further facilitated in 1929 by the negotiation of a five-year contract with United States Steel Corporation for an annual supply of between 80,000 and 150,000 tons.[44]

[41] This was the State Dept. assessment (316–124–45). Harriman's recollection is subtly different: 'In 1926 I was back there on business, representing a group that was mining manganese in the Caucasus. I found Stalin and Trotsky in disagreement about foreign concessions like ours. I talked to Trotsky for four hours, concluded that we should give up the concession and got our money out—paid in full with interest and with a small profit.' ('How Harriman "Earned a Dinner" from Khruschev', *Life*, August 9, 1963, p. 29.)

[42] The interested reader is directed to the four-page report from the attaché, which summarizes very well the impossibility of normal commercial dealings with the Communists, although, as the attaché pointed out, 'Harriman and Company are not saying very much.' (316–138–332/5.)

[43] Kruglyakova, *op. cit.*, p. 100.

[44] *Ekonomicheskaya Zhizn*, No. 182, August 10, 1929.

CHAPTER SIX

Gold Mining, Platinum, Asbestos, and Minor Mineral Concessions

GOLD MINING AND FOREIGN CONCESSIONS

RUSSIA has excellent gold ore reserves. In tsarist times the Lena River gold mining area in Siberia, reputedly one of the richest in the world, measured by both extent of reserves and metal content of the ore, was operated by concessionaires. In 1913 there were 39 foreign and Russian companies operating 770 mines in the Lena River area; of these 121 were actually producing gold and employed over 10,000 workers. 'These mines had excellent equipment, full electrification and large hydroelectric installations. . . .'[1]

British companies held several concessions from the tsarist government, including some for development of the Siberian gold and platinum mines in the Lena River region. These were developed as self-supporting industrial entities complete with iron and steel plants, smelters, and agricultural and small-consumer goods manufacturing works. The departure of the Western owners with the Revolution significantly reduced Russian gold production.

There was a catastrophic decline in the condition of the Siberian gold fields, of which Lena-Vitim was the most important, from about 1921 onward. The Urals' 1913 gold production of 25,700 pounds dropped to just over 8 pounds in 1921, the West Siberian output from 7,200 pounds in 1913 to 33 pounds in 1921, the East Siberian output from 103,000 pounds in 1913 to 8 pounds in 1921, and the Yenessei output from 5,000 pounds in 1913 to 140 pounds in 1922.[2]

The Siberian Revolutionary Council suspended operations in the Lena-Vitim area in early 1921, with the arguments that the labor force of 9,000 was producing significantly less than before the war and that it was costing

[1] *Ekonomicheskaya Zhizn*, No. 196, September 2, 1922.

[2] *Izvestia*, No. 213, September 22, 1922.

two zolotniks of gold to produce one zolotnik. However, the Council was overruled by the Soviet of Labor and Defense, and the fields were ordered to continue working. Shortly thereafter, the 1920 decree which had forbidden private interests from mining gold was replaced by a decree authorizing special concessions for gold and platinum operations. This was followed by the organization of the Lenzoloto trust in December 1921. This trust had the exclusive right to mine gold on the right bank of the Lena River, although individual prospectors continued working both elsewhere and for Lenzoloto itself on a contract basis.

It was argued in *Ekonomicheskaya Zhizn* that the mines had suffered from two years of civil war in the Urals, were badly equipped, and were exhausted by 200 years of continual mining.[3] However, the report which formed the basis for the foundation of Lenzoloto gives a more detailed and substantially different picture. In substance, the gold mining equipment was in good operating condition.[4] However, the reasons for conversion into a trust are obvious from the catastrophic decline in output.

> Mining of gold by prospectors almost ceased in 1921, as it was impossible to send supplies to the prospectors and also there were persistent attempts on the part of local organs to turn prospectors into ordinary State workmen, who receive payment in money and goods regardless of the amount of gold they find.[5]

Conditions did not improve much in 1922–3. Employment dropped to just under 5,000 men because of lack of food and supplies; there were financial difficulties and equipment needed repair. It was believed that the richer gold areas would only last another seven to eight years. Dredges, not manufactured in Soviet Russia, were required to develop the low-grade areas on a profitable basis. The average gold content was 65 zolotniks per cubic sazhen, while the average of the extensive poorer area was in the neighborhood of 44 zolotniks per cubic sazhen. An article in *Ekonomicheskaya Zhizn* recommended turning part of the Lena fields over to private enterprise in accordance with the 1921 decree and also recommended the purchase of foreign dredges to operate poorer areas.[6]

Conditions apparently had not improved much one year later. Only the Feodosyer placer among the hydraulic operations was working, and underground production was curtailed. There were the perennial financial problems, and no move had been made to obtain the 17-foot Bucyrus dredge, ordered from the United States in 1916 and stored at San Francisco. It was estimated

[3] *Ekonomicheskaya Zhizn*, No. 172, August 4, 1922.
[4] *Ekonomicheskaya Zhizn*, No. 196, September 2, 1922.
[5] *Ekonomicheskaya Zhizn*, No. 172, August 4, 1922.
[6] *Ekonomicheskaya Zhizn*, No. 196, September 2, 1922.

it would take two years and another $1.5 million to move it to Siberia. Later in the year the government speeded up payments to Lenzoloto to relieve the financial crisis but refused to import the dredge, as low gold reserves would not warrant the expenditure.[7] However, dredging was the only solution to the long term Siberian gold problem.

The situation was so abysmally bad that in a 1923 report on Soviet gold mines in *Ekonomicheskaya Zhizn*, it was seriously suggested that it was no longer worthwhile to continue working the deposits. Production was too small and the costs too high to justify the expenditures of materials and labor. An almost unbelievable cost-revenue ratio of 25:1 was quoted. A dredge was considered to be the only solution.[8]

In mid-1923, a French mining expert, Professor E. N. Barbot-de-Marni, was hired by the Soviets to make a report on the Siberian mines, including those in the prewar Lena group. The report stated that there had been no illicit digging of gold, but that work had been concentrated in high-grade mines, while low-grade mines were ignored. The equipment was prewar and utilized in an inefficient manner. Barbot-de-Marni pointed out that, although the Lena mines possessed the most advanced drilling equipment in Russia (forty steam drills of the Keystone type), no exploration and development work was in progress. In brief, the higher-grade properties were working and so could work at a profit, whereas lower-grade properties and exploration work required for future development were ignored. Barbot-de-Marni's recommendation was for state assistance to get development under way.

In mid-1923, thirty-four leasing contracts were made with private individuals and enterprises in the Lena-Vitim area. There were seventeen contracts in the platinum mining areas of Semipalatinsk. Nine mines were leased in the Northern Yenessei and five in the Southern Yenessei district, together with eleven gold mines in the Altai Mountains.[9]

After 1925, gold began to assume its key role in Soviet development as a major earner of the foreign exchange required to pay for imports of foreign equipment and technology utilized in the industrialization program. Gold mining was, consequently, put in the vanguard of the Soviet mineral exploitation program: an effort characterized by Shimkin as 'the merciless and insatiable Soviet quest for gold.'[10]

[7] *Ekonomicheskaya Zhizn*, January 16, 1923. The original cost of the dredge was $495,367, of which $432,135 was paid before the Revolution. However, spares, freight, customs, and assembly required an estimated total expenditure of $1,532,836.

[8] *Ekonomicheskaya Zhizn*, February 20, 1923.

[9] *Ekonomicheskaya Zhizn*, No. 143, June 29, 1923.

[10] Demitri B. Shimkin, *Minerals: A Key to Soviet Power* (Cambridge: Harvard, 1953), p. 172.

The Lena Goldfields, Ltd. (United Kingdom), concession was concluded on April 30, 1925. It was to extend for a period of thirty years in the Lena gold mines and for fifty years in the Ural and Altai Mountain districts. The area included in the concession was that previously leased from the tsarist government and operated by a Russian subsidiary, the Lensky Zolotopromishlennoie Tovarichestvo. In the 1925 agreement the properties of the former Sissert copper mines and the Altai District Mining Company were also operated by Lena Goldfields.

The Lena concession therefore, covered the following properties:[11]

1. The Sissert copper mines (described in chapter 5).
2. The Nikolopavdinsky platinum mines, reportedly. However, nothing has been traced of any post-revolutionary development of this property by Lena Goldfields.
3. The copper, lead, and zinc deposits on the Irtish River (discussed in chapter 5).
4. The north Kuznetsk (Kiselov) coal mines (discussed in chapter 3).
5. The anthracite mines at Yegoshin in the Urals (discussed in chapter 3).
6. Gold mines on the Lena-Vitim Rivers in Siberia. This is the only development covered in this chapter, and a major part of the Lena complex.
7. The Zirianovsky, Zmeynogorsky, and Pryirtishky districts (discussed in chapter 5).
8. The copper and iron smelters at Sissert and Revdinsky (discussed in chapters 4 and 5).
9. The Degtiarinsky copper mines (discussed in chapter 5.)
10. The Gumeshevsky copper smelter (discussed in chapter 5).
11. Wire- and nail-making factories in the Urals (discussed in chapter 13).
12. The Bodaibo railroad in the Lena-Vitim area, the Degtiarinsk railroad in the Urals, and the shipping system on the River Lena, under a separate agreement with the People's Commissariat of Ways and Communications.

The concession did not include Soviet participation in either operations or management, but the Soviet government received a royalty equal to 7 percent of the total output of gold, and the concessionaire received the right to export any surplus duty-free.

The company was granted unrestricted freedom of hiring and firing labor, and, in regard to social insurance and railroad rates, treatment equal to that afforded government trusts.

[11] Based on an interview with Lyman Brown by the United States Consulate at Riga, Latvia in May 1925 (316–136–419). There is some doubt whether the Nikolopavdinsky platinum mines were operated by the Lena concession, but they were part of the tsarist-granted prerevolutionary concession.

Arbitration of disputes was to be by an arbitration court composed of an equal number of representatives from both sides, with an umpire selected from either the faculty of the Freiburg Mining School, in Saxony or the King's Mining School, in Stockholm.

The agreement was a departure from previous agreements in that it permitted extensive industrial and commercial operations without the joint management of the Soviet government, and in addition gave the concessionaire practically unlimited control of real property (at least on paper), although title was not established, together with control of labor and the right of unrestricted export.[12]

In 1928 the Lena Goldfields Company was producing 35 percent of all the gold mined in the Soviet Union.[13] It was also by far the most efficient producer.[14]

Table 6–1 SOURCES OF GOLD PRODUCED IN THE SOVIET UNION, 1913–28

Year	*Kilograms of Gold Produced By:* *U.S.S.R.*	*Lena Concession*	*% Produced by Lena Concession*
1913	—	11,728	—
1921	—	966*	—
1922–3	11,179	2,588*	—
1923–4	20,000	4,734*	—
1924–5	25,258	6,749*	—
1925–6	25,149	8,364**	33
1926–7	23,152	8,552**	37
1928	27,965	7,953**	28

Sources: 1913–24: B. P. Torgashev, *The Mineral Industry of the Far East* (Shanghai: Chali, 1930), p. 102.

1925–28: Amtorg, *Economic Review of the Soviet Union*, III, 34.

* Operated by Soyuszoloto.

** Operated by Lena Goldfields Co. This production is in excess of the 6,500 kg. annual production required by the concession agreement.

[12] Based on interview between Lyman Brown, representing the concession, and F. W. B. Coleman, the United States Consul at Riga, Latvia, printed in Report No. 2838, May 12, 1925. Coleman makes pointed comment on the value of the concession, and history was to bear him out almost exactly: 'While my opinion may be a passing one and gratuitous, I think that Mr. Brown is too optimistic and that nothing will come out of the agreement in the shape of profits. Asked what security he had that the party of the first part would fulfill the terms of their contract, Mr. Brown said that they 'could not afford to do otherwise; which, in view of the past records, is adjudged very slim security.' (316–136–426.)

[13] *Times* (London), September 3, 1930, p. 13. The Soviet estimate is also 35 precent. (Amtorg, *op. cit.*, III, 116.)

[14] The Lena Co. employed 8,000 workers and was producing 2.73 kgs of gold per worker per year. The Soviet national average was between 0.44 and 0.59 kgs of gold per worker per year. (Amtorg, *op. cit.*, III, 285.)

Lena Goldfields fulfilled its agreement to produce more than 6,500 kilograms of gold per year. Both Soviet and Western sources agree on this point. Reference to table 6–1 indicates that, during the life of the concession, Lena consistently exceeded the agreed gold output, and averaged more than one-third of Soviet gold production between 1925 and 1928.

According to Soviet sources, Lena also fulfilled the other requirements of the concession.[15] A summary of the first three years of operations (1925–8) stated that Lena had installed a 17-foot dredge in the Bodaibo section of the Lena-Vitim fields 'before the time set in the agreement.' This in itself was a massive undertaking, as a large, complex piece of equipment had to be moved from the United States to the far interior of Siberia, installed, and put into operation. Special roads and equipment were built, and the dredge was put into operation in July 1928. A yearly average 8,000 kilograms of gold was produced between 1925 and 1928, with a slight drop at the end of 1928 because of the changeover from hand to machine methods. It was estimated that the dredge alone, apart from re-equipment of the underground mines operated by Lena, would double Soviet gold production almost immediately.[16]

By March 1929, Lena had invested, according to *Izvestia*,[17] over eighteen million rubles in new equipment, and in addition had restored old plants to operation. However, the Lena Goldfields honeymoon was not to last for long. In April 1928, just as the dredge was being finally readied for production, an article by I. Maisel in *Ekonomicheskaya Zhizn* entitled 'It must be ended' began the harassment which was to culminate in the expulsion of Lena in 1930. Maisel argued that Lena had turned exploitation over to starateli (private prospectors) and to artels comprised of former hired laborers. That this was the arrangement also used by the Aldenzoloto trust was not mentioned. The article cataloged alleged complaints against the operation and specifically stated that the company was 'manifesting a quite unjustified and inadmissible intolerance and stubborness' in relation to the miners' economic provisions: i.e., social insurance payments and allotments for cultural needs. The crux of the argument was, however, the organization of artels, the company preferring a

[15] Amtorg, *op. cit.*, IV (February 1929), 33.

[16] The dredge was one of four placer dredges built for Russia by the Bucyrus Co. (United States) in 1916–7. Of these, two were delivered and one canceled. The fourth was the Lena dredge, a massive piece of equipment, as high as a six-story building. It was delivered to Lena in 1927 after being moved from South Milwaukee to Baltimore on seventy-five flat cars, to Murmansk by steamer and to Irkutsk by rail, then 200 miles on a mountain trail by wagon and sledge, and then to Kachuca by barge on the River Lena. At Kachuca it was reloaded on small boats for a 700-mile trip up the River Vitim to Bodaibo, just 11 miles short of its final destination. Delivery and assembly took 18 months. [*Designed for Digging: The First 75 Years of Bucyrus-Erie Company* (Evanston: Northwestern University Press, 1955), p. 156.]

[17] *Izvestia*, March 26, 1929.

simple association of miners while the Miners' Union wanted an organization similar to labor artels under which the artel also became a contractor. The time was picked well—the start of the gold-mining season—and the union called for a revision of company policy, irrespective of a concession agreement which clearly gave the Lena company a clear option in this aspect of labor relations.

This article was followed eighteen months later by one in *Izvestia* of October 22, 1929, which made a derisive attack on the profits being made by Lena: 'The profits of the concessionaire are growing—what a victory.' As the Lena concession got into full operation, it was attacked as a 'weed in the socialist system' which required attention. Two months later the GPU searched the company offices and arrested several Lena employees.

Continual Soviet interference with production by labor strikes, management fines, and similar harassment slowed output after 1928.[18] The Soviets then claimed that the reduced output was non-fulfillment of paragraph 39 of the concession agreement, *ergo* the agreement 'has lost its validity owing to the one-sided and unlawful action of the Lena Goldfields. . . .'[19] Liubimov was thus enabled to make the statement that gold production was 'below agreement,'[20] although previously published Soviet figures (table 6–1) had indicated a production well in excess of the agreement.

In February 1930 it was reported that the Soviet government had given notice of its intention to annul the Lena concession in the first week of April 1930. Lena denied the validity of this report on the basis that the Soviet government had no authority under the concession agreement to give any such notice or to annul the concession.

The labor disturbances had started in earnest in January, and on January 30 the Soviet courts sentenced the Lena manager to eight months' forced labor and a fine of $62,500 for alleged late payment of wages.

On February 12, 1930, Lena sent the Soviet government a telegram asking for arbitration and nominated Sir Leslie Scott as its representative. There was no direct reply to the telegram, but on February 28 the Soviets agreed to arbitration via *Izvestia*, which published a long indictment of the Lena Company alleging that:

(a) The company had insufficient capital to undertake the program.
(b) It had failed to reach its production and construction program in the last year.
(c) It had failed to utilize the latest technical methods.[21]

[18] *Times* (London), September 3, 1930, p. 13.

[19] *Documents Concerning the Competence of the Arbitration Court Set Up in Connection with the Questions Outstanding Between the Lena Goldfields Company Limited and the U.S.S.R.* (Moscow: Glavnyi kontsessionnyi komitet, 1930), p. 32.

[20] Liubimov, *op. cit.*, p. 139.

[21] *Izvestia*, March 6, 1930.

The article alleged failure to meet foreign obligations and breakdowns in the dredge and the Urals copper smelter as evidence of the validity of these charges.

Three weeks later, four Russian employees of the concession were placed on trial on charges of espionage and sabotage, and on May 9 all four were jailed.

In the meantime, the Arbitration Court had been established in Berlin with Professor Stutzer as Chairman. On May 10, Moscow recalled its delegate to the Court. Stutzer decided to continue hearings and stated that the concession could be abrogated only by a decision of the Court. At the end of May, the Soviet government instructed the Commissariat of Transportation to take over the steamships and other transportation property of the Lena concession.

On August 7 the Special Court of Arbitration opened its hearing with the Soviets absent. It was established without question that Lena had fulfilled the terms of the agreement. Whereas the agreement called for an expenditure of $11 million in seven years, Lena had actually spent $17.5 million in four and a half years. Evidence of adequate financing was presented. On the other hand, extensive evidence was presented that after 1929 the Soviets had started to use physical pressure against Lena, first by cutting off supplies, and then by ejecting the company from the Sissertsky limestone deposits by armed force. (Limestone was essential as a flux in the Lena smelter operations.) An independent arbitrator valued the Lena property at more than $89 million.

The Soviets did not put in an appearance; the Court found for Lena, but the concession passed into the pages of history. A booklet was published by the U.S.S.R. in both German and English, as a rather superficial attempt to explain what was clearly completely unjustifiable expropriation.[22]

In retrospect, there can be no other conclusion than that the Soviets deliberately enticed Lena into the U.S.S.R. to get the massive dredge installed and also as much else as they could along the way. It is, in the light of history, a clear case of premeditated industrial theft on a massive scale.

Before Lena Goldfields entered the Siberian gold fields, some 75 percent of all Russian gold output was being produced by hand methods, and there was no mechanical equipment. Consequently, output per worker was both very low and fluctuating: '. . . even the record of the most efficient producer, the foreign concession at the Lena Goldfields, was unimpressive.'[23] With the

[22] *Materialien zur Frage der Zustaendigkeit des Schiedsgerichts in Sachen 'Lena Goldfields'—Union d.S.S.R.* (Moscow: Glavnyi kontsessionnyi komitet, 1930), published in English as *Documents Concerning the Competence of the Arbitration Court Set Up in Connection with the Questions Outstanding Between the Lena Goldfields Company Limited and the U.S.S.R.* Also see, for the Soviet side, S. A. Bernstein, *The Financial and Economic Results of the Working of the Lena Goldfields Limited* (London: Blackfriars, n.d.). This title must be a classic among misnomers. The booklet contains not a single statistic concerning 'results.'

[23] Shimkin, *op. cit.*, p. 168.

introduction of the Lena dredge, however, the stage was set for a massive increase in production at a much lower production cost, and the field of operations could be extended into the low-grade-ore-bearing areas. By 1928 Herbert Guedella (Chairman of Lena) in his annual report to shareholders reported that the results of capital expenditures were beginning to show. There had been an intense reorganization of production during the previous three years; large orders for plant equipment had been placed (in addition to the dredge), and these had been financed with the aid of the Deutsche Bank in Germany.[24] In brief, by 1930 the technical reorganization was almost complete. In addition, the Soviets decided to utilize American technology. Consequently, Lena, held predominantly by British interests, could be expropriated without fear that political repercussions would affect further technical acquisitions.

THE LESSER GOLD CONCESSIONS

Smaller gold-mining and exploration concessions were located in the Far East, in the Amur River basin, Okhotsk, and Northwest Siberia.

Table 6–2 LESSER SOVIET GOLD MINING CONCESSIONS LEASED TO FOREIGN OPERATORS, 1921–8

Concessionaire	*Country of Origin*	*Location*	*Years*	*Investment*	*Work*
Vint concession	United States	Amur Basin	1921–8	N.A.*	Mining
Far Eastern Prospecting Co. Inc. (formerly Smith concession)	United States	Amur Basin	1923–4	125,000 rubles	Prospecting
Ayan Corporation, Ltd.	United Kingdom	Okhotsk	1925–7	400,000 rubles	Prospecting
Yotara Tanaka	Japan	Kamchatka	1925–?	N.A.	Mining
Shova Kiuka Kabushiki Kaisia	Japan	Far East	1925–?	N.A.	Mining
D.A. Hammerschmidt	United States	Amur Basin	1926–8	$375,000	Prospecting

Source: U.S. State Dept. Decimal File, see text.
* Not available.

The first such concession was granted to J. C. Vint in 1921 and was followed by at least five others. Apart from direct concessions, there were also attempts by the Soviets to get Chinese capital and labor for the Okhotsk and Amur fields.[25] As late as 1928, when the trust Dalzol (Far East Gold Trust) had been

[24] *Times* (London), November 20, 1928.
[25] *Harbin Daily News*, May 27, 1924.

organized to operate the Amur River mines, the Soviets had agents in Harbin, China, to recruit 3,000 coolies and were also utilizing United States gold mining machinery and mining specialists.[26]

The Vint gold mining concession, granted in December 1921 for 20 years, covered 1,600 dessiatins along the River Smirtak, in the Amur Region of the Far East, and gave Vint the right to exploit prerevolutionary mines at Ftoroi, Blagovestchensky, Petrovsky, Zaharievsky, Novopoktovsky, Beregovi, Evdokievsky, and Codachny, and the placer deposits in the Smirtak River valley for two versts upstream from the Codachny gold mine. As late as 1923 this concession represented 'practically the only organized effort either in Russia or Siberia to produce gold.'[27] Vint was required to install a dredge, with a capacity of not less than 2 cubic feet, not later than June 1, 1922. Extra dredges had to be installed before July 15, 1925 to excavate not less than 50 cubic sazhens per day.[28]

In lieu of the deposit of 35,000 gold rubles required in the concession agreement, Vint was allowed to purchase a dredge already on the Smirtak River.

Vint had both British and American partners and raised capital in the United States, Britain, Belgium, and China at various times during the life of the concession, which lasted at least until 1927.

The Vint concession is especially interesting from the viewpoint of the heavy tax burden placed upon more successful concessionaires. According to information given in an interview with the U.S. State Department, Vint was subjected to the following taxes:

1. A 'dessiatin tax' of one gold ruble per year for each of the 1,600 dessiatins in the concession.
2. A land tax of 0.75 ruble per dessiatin.
3. A workmen's insurance tax equal to 10 percent of the wages paid.
4. A workmen's association tax equal to 2 percent of wages paid.
5. An assessment of 10 gold kopecks per dessiatin for the 'gold miners' association.'
6. A 6-percent tax on turnover in the general merchandise store which Vint was required to operate as part of the concession.
7. A local tax not in excess of 30 percent of the total state tax (items 1 through 4 above).
8. The cost of providing a school for the miners' children.

[26] 'The Soviet mining officials are unable to work these mines without foreign mining experts and without the labor of Chinese coolies who work more efficiently and with less wages than do Russian laborers.' [U.S. Consulate in Harbin, China, Report, July 23, 1928 (316–136–675).]

[27] U.S. Consulate in Riga, Report 1480, November 20, 1923.

[28] There is a copy of the Vint agreement in the U.S. State Dept. Decimal File, 316–136–348, with other data scattered throughout 136.

9. A 5-percent royalty on gross output to the government, which in any event reserved the right to fix the price of gold and required all production to be delivered to government laboratories.

Vint held that he was unable to make the proposition pay and that taxes were continually raised—eventually to the point of eliminating profits. Apart from that, he argued that locally concluded agreements were not always honored in Moscow, and that on taking a local agreement to Moscow for ratification he would be 'chipped down' even further. Although the concession may have been profitable from Vint's viewpoint in 1923, continuing tax pressure made it unprofitable from about 1924 until its demise some time after 1927.

C. Smith, a mining engineer and former employee of the Inter-Allied Railway Commission, in Siberia, was the operator of a gold mining concession in the River Karga area of the Amur Basin. The concession, granted in November 1923, was for the exploration and production of gold. One year was allowed for initial prospecting, during which all gold had to be turned over 'without payment,' and a further twenty-three years was allowed to mine any prospects discovered in the initial prospecting period. The agreement contained the usual terms: customs-free import of machinery and equipment, a land rental fee and 5–8 percent output tax, together with state and local taxes. At the end of the concession period, all equipment and properties were to be turned over to the Soviet government in good condition.

It is certain that Smith did some work. He brought in a mining engineer, three American drilling specialists, and fifty Russian laborers. The concession was transferred to a United States registered company, the Far Eastern Exploration Company.[29] Drills and supplies ordered through this company were shipped to the Drazhud gold fields. At this point the history of the concession becomes vague. It was reported that more than $125,000 was spent in the first nine weeks of exploration, but that the expenditure was made in looking at oil-well borings and that the imported drills were not used. It can reasonably be assumed that the concession lasted only a short while—probably less than one year—and that it made an insignificant contribution to Soviet gold fields development in the Far East.[30]

[29] *New York Times*, October 30, 1923, p. 8, col. 2, reported that the Far Eastern Exploration Company, headed by Henry T. Hunt, had received concession prospecting rights to 3,500 square miles of placer fields in the Amur Basin; there was no mention of C. Smith.

[30] U.S. State Dept. Decimal File, 316–131–147. The Smith concession is more interesting in relation to the 'arm's length hypothesis' discussed in chap. 17. Smith was suspected by the U.S. State Dept. of being in the pay of the Soviet Union, was a member of the Peasant International, and later, in 1926, became Moscow representative for the American-Russian Chamber of Commerce, which had such prestigous members as Westinghouse, International General Electric, and Deere.

In early 1925, a gold prospecting and mining concession was granted to the Ayan Corporation, Ltd., of the United Kingdom. The company acquired the right to prospect for, and mine, gold in the Okhotsk uyezd, Kamchatka. The concession had a nominal life of thirty-six years; during the first four years the company was required to expend 600,000 rubles in prospecting work, deposit 100,000 rubles as security, and purchase all buildings and existing physical property at market value. Modern prospecting and mining techniques were to be imported by the concessionaire, who was also required to build roads and communications, with the right to run aerial communications if desired.

The entire gold output was to be delivered to government laboratories for purchase by the Soviet government. A rental was paid on land explored, a 5-percent royalty on the total output of gold, and an overall 5-percent tax. The company organized food stores and was required to abide by the labor laws and to hand over all buildings and property intact at the end of the thirty-six years.[31]

After two years the concession was cancelled at the request of the Ayan Company, in the light of unpromising prospecting results.[32]

A protocol of the 1925 Treaty of Friendship and Recognition between Japan and the U.S.S.R. made provision for gold concessions in Kamchatka and Okhotsk. The Kamchatka concession was taken up by two Japanese firms, Yotara Tanaka and Shova Kiuka Kabushiki Kaisia.

The D. A. Hammerschmidt concession to prospect and mine gold in the Amur Basin was signed on November 12, 1926. The American concessionaires were required to transfer not less than $375,000 capital to a joint-stock company, and the founder members were to be subject to the approval of the Soviet government. The initial prospecting period was to expire on March 31, 1928 and the mining period on March 21, 1948. During the initial period, Hammerschmidt and his associates were required to undertake 2,000 meters of drilling and do trenching on an exploratory basis. Any gold mined was to be deposited with the Soviet government, and the concession was to be voided if mining did not commence before March 31, 1928. A royalty of 3 percent was to be paid to the U.S.S.R., in addition to an annual land rent, plus 4 percent of the gold mined, in lieu of national and local taxes. The mine was to be turned over to the U.S.S.R. at the end of the concession period.

The concession was subject to the Labor Code, and the lessee 'agreed to admit . . . for purposes of study, Soviet geologists, engineers and technical personnel.'[33]

[31] *Izvestia*, No. 103, May 8, 1925.
[32] U.S. State Dept. Decimal File, 316–136–667.
[33] *Ekonomicheskaya Zhizn*, No. 275, November 27, 1926.

These smaller concessions did not have the same magnitude of capital investment as Lena Goldfields, but they were required to introduce modern mining and exploration equipment and techniques.

Those gold mines that did not come within the sphere of concessionary activity were equipped with modern equipment, and Western mining engineers were hired to establish and plan future production. The Kockar gold mine, in the Southern Urals, previously a French concession, was the first to be equipped in this manner, in 1928. According to Littlepage, who was in a position to have accurate data, by the end of the 1920s *each* gold mine, outside the concessions, had four or five United States mining engineers and employed 'thousands of foreign workers.'[34]

It is estimated, therefore, that in 1928 about 40 percent of Soviet gold was being produced directly by foreign concessions utilizing modern dredges and ore-crushing and sorting plants. This estimate is indirectly confirmed by other data from Soviet sources. It was reported in 1928, for example, that 56 percent of gold was being produced by 'individual prospectors and purchased from them by the large companies'—presumably Soyuszoloto and the other gold trusts. The balance of 44 percent was being produced by 'organizations using hired labor'—presumably Lena and the smaller concessions.[35]

DISCOVERY AND DEVELOPMENT OF THE ALDEN GOLD FIELDS

In 1924 a rich gold field was discovered and exploited in Northwest Siberia: the Alden. There are two features worth noting about this discovery: first, this was the initial gold discovery under Soviet rule and the only major discovery in the 1920s, and second, it was not opened up to foreign concessions for development. The question then logically arises: how is such a development, remote from Western influence, consistent with the hypothesis of this study?

Under the 1922 decree, private leasing and exploration had been restored in gold and platinum mining. The Alden discovery was made in 1923 by Kuzmin, a private digger working on his own account and not employed by a State organization.[36] The report of the discovery spread rapidly, and the response was a typical Western-style gold rush. Thousands of prospectors flocked into the Alden area, under the inducements offered in newspaper

[34] J. D. Littlepage and D. Bess, *In Search of Soviet Gold* (New York: Harcourt Brace & Co., 1937), pp. 68, 87–8. Littlepage was chief production inspector for the Soviet Gold Trust at this time; he later became deputy chief engineer of the same trust.

[35] The heavy reliance on individual prospectors or 'Russian concessionaires' is confirmed by Littlepage and Bess, *op. cit.*, p. 121.

[36] *Izvestia*, No. 1, January 1, 1927

publicity.[37] The result was a decrease in the working force of the Far Eastern province mines from 12,238 in 1923 to 8,222 in 1924, as workers moved to the Northwest.[38] The field was then closed to private claims, and in mid-1925 the 12,000 or so workers who had moved to Alden were organized into artels. A trust, Aldenzoloto, was then created and a few months later the Yakut Autonomous Socialist Soviet Republic was closed to outsiders.[39]

In brief, this remarkably rich deposit was prospected and initially developed by individual 'Russian concessionaires,' as Littlepage calls them, rather than foreign concessionaires. The state trust was formed three years after the initial discovery and development.

The extraordinary inefficiency of the state trust (even the best-run) has been described by Littlepage, who was in a position to observe. The Soviet Gold Trust was run by Serebrovsky, the best of the trust directors in the 1920s. Serebrovsky hired Littlepage as his technical administrator, but the difficulty of efficient administration is seen in the examples given by Littlepage. The Alaska Juneau gold mine, one of the largest in the world, had five people in the office and could provide figures promptly. Littlepage describes the typical trust gold mine with 150 in the mine office, and a fraction of the United States output. It could take weeks or months to get comparable figures.[40]

PLATINUM EXPORTS

Before World War I, the Urals provided almost all the world's supply of the platinum group metals. Production of platinum in 1901 was 14,000 pounds and in 1914 10,700 pounds. In general, the platinum producing areas escaped the ravages of war and revolution, and demand was certainly stimulated between 1917 and 1919 by vigorous pre-emptive buying on the part of the Allies to prevent platinum from falling into German hands. The provisional Omsk government required sale to government sources but little else of a restrictive nature. The area was occupied by the Soviets in 1919 and within two years production dropped to between 700 and 1,000 pounds per year.

> The condition of the platinum industry appears to be no better than that of the gold industry. All the events which caused the collapse of the gold industry . . . refer as well to the platinum industry.[41]

By 1921, production had fallen to 360 pounds, concentrated in three areas along the River Isse. Apparently some production was on an 'irregular' basis,

[37] *Harbin Daily News*, December 7, 1924.
[38] *Ekonomicheskaya Zhizn*, No. 355, December 9, 1924.
[39] *Izvestia*, No. 23, January 29, 1926.
[40] Littlepage and Bess, *op. cit.*, p. 216.
[41] *Ekonomicheskaya Zhizn*, No. 173, August 4, 1922.

and platinum was exported to the West through Latvia in substantial quantities until choked off by more effective Soviet border patrols in 1925.[42]

From about 1923 to 1926, Rusplatina used the London chemical firm of Johnson, Mathey and Company as a world distributing agent, although at rare intervals platinum was also shipped via the Compagnie de la Platine, in Paris. This trade was on the basis of a yearly renewable contract. In 1926 Johnson, Mathey and Company became a little high-handed and the Soviets established Edelmetall Verwertungs Gesellschaft in Berlin, which apparently had the effect of bringing the London firm back into line.

This was followed by an active campaign of price cutting to regain the prewar share of the market. In order to accomplish this, the industry had been reorganized and equipped with imported modern electric shovels. This meant that platinum could be mined profitably where the ore content was as low as 1/30 pennyweight platinum content per ton, in contrast to the requirement for 1/10-pennyweight per ton under earlier conditions. By 1926, production was restored to 5,800 pounds per year, all of which was exported. However, this was hardly a major contribution to foreign exchange earnings, as the price of platinum had been forced down from $112–$120 in 1925 to $62 per ounce in 1927.

Two platinum-refining works had been started by the Russian government in 1914 under the pressure of changing wartime conditions. These plants were started again in the early 1920s, with the assistance of Professor L. Duparc (France), described as 'the greatest platinum expert in Europe.'[43]

BAUXITE AND THE ALUMINUM COMPANY OF AMERICA

A Type I concession agreement was signed in April 1926 between the U.S.S.R. and the Aluminum Company of America (ALCOA) which gave the latter the right to explore for bauxite, the raw material for aluminum, throughout Russia during a period of two years. Although no details were published concerning this agreement, representatives of ALCOA were interviewed from time to time by U.S. State Department officers, and it appears that nine ALCOA engineers prospected for bauxite in several locations—mainly south of Tikhvin.

The Tikhvin area blocked out by ALCOA contained four deposits of Grade I bauxite, estimated to contain 2.8 million tons of 'probable' ore, together with additional tonnages of 'possible' ore. The ore had a high silica content,

[42] The figures for 'irregular exports' are available, as Latvia produces no platinum and Latvian platinum exports for this period are all of 'irregular' Russian platinum. Export figures for 'regular' platinum are not available, but these were approximately 40,000 oz. per year, compared to just under 10,000 oz. for 'irregular' exports.

[43] *Annuaire*, *op. cit.*, page XI.

together with iron oxide (an impurity), and the project was abandoned at the end of 1927, as the engineers considered the deposits not of commercial value and unworthy of further development.[44]

The Soviets did not give up. Tikhvin was their best bauxite deposit, and they were determined to build an aluminum industry. In 1929 the German firm Vereinigte Aluminumwerke A-G., which had perfected a reduction process applicable to the Russian bauxite grades, reported that the Soviets had been attempting '. . . for some time to secure the patent rights for Russia or at least operating rights to this process, but the negotiations have remained negative due to the failure of the Soviets to furnish certain guarantees.'[45]

Nevertheless, by 1930 technical-assistance agreements had been made to cover most aspects of aluminum manufacture. An agreement in 1930 with Compagnie de Produits Chimiques et Electrométallurgiques S.A. (France) covered the reduction of aluminum; and another contract, with Dr. Ing Straube of Karlsruhe, covered the manufacture of aluminum hydroxide, synthetic cryolite, and aluminum electrodes. A third agreement, with the Société du Duralumin S.A. (France), covered the manufacture of duraluminum.[46] A fourth agreement with Frank E. Dickie, an independent American engineer, provided technical assistance to Aluminstroi, the Construction Bureau for Aluminum Plants.[47]

MICA MINING AND THE INTERNATIONAL MICA COMPANY, INC.

The largest mica deposits in the U.S.S.R. were included in a Type I concession agreement in 1924 with the Russian-American Mining and Engineering Corporation, a subsidiary of the International Mica Company, Inc., of the United States. The concessionaire agreed to produce 35 tons of mica in the first year, increasing quantities gradually to 175 tons in the fifth year. A 5-percent royalty was paid on all production, and export was allowed by the operator. Modern mining equipment was imported and installed by the company.

[44] U.S. State Dept. Decimal File, 316–136–363 and 1230; 316–131–388 and 316–108–2008. The analyses of Tikhvin ore are in Geologicheskii komitet, *Godovoi Obzor Mineral'nykh Resursov SSSR za 1925/6* (Leningrad: 1927), pp. 47–8.

[45] *Vossische Zeitung*, November 18, 1929.

[46] Vneshtorgizdat, *op. cit.*, pp. 228 and 230. By 1930 Soviet aluminum production was on a pilot basis. The problems of development and the partially successful transfer of Western technology will be covered in Vol. II.

[47] A. A. Santalov and L. Segal, *Soviet Union Yearbook, 1930* (London: Allen and and Unwin) p. 358.

ASBESTOS PRODUCTION IN THE URALS

The Urals' asbestos deposits have been mined since the 1880s. The most important group of mines was at Baskenovo, about 90 miles northeast of Sverdlovsk; this group produced 96 percent of the 24,000 metric tons asbestos produced in Russia in 1914. Just before the Revolution, mines at Alapaievsk and Iltchirsk (in Irkutsk Province) were equipped and brought into production. The Neviask and Ostanino deposits were known but not exploited. In 1912 Russia exported 13,260 metric tons of asbestos, but exports ceased completely during the Revolution.

The impact of the Revolution was significant. No maintenance was done for several years, many of the mine buildings fell into disrepair, and the open-cut workings became watered. The essential problem, however, between 1917 and 1920 was to organize production and transport the mined asbestos to foreign markets.

Table 6–3 ASBESTOS PRODUCTION IN RUSSIA, 1913 AND 1923

Mines	*1913*		*1923*
	All grades, in metric tons		
Baskenovo Group:			
Grasmuchka River	1,300		None
Korevo	11,500	22,350	7,850
Reftinsk	8,000		
Mukhanovsk	1,400		
Okunevsk	150		
Alapaievsk	N.A.		350
Neviask	1,000		None
Ostanino	170		None
Iltchirsk (Irkutsk Province)	N.A.		None

Source: L. Berlinraut, 'Russian Asbestos Mining Reviving,' *Engineering and Mining Journal-Press*, CXXI, No. 4 (January 23, 1926), 164.

In 1920 only 1,300 tons of asbestos were produced (all from the Baskenovo group of mines), and of this more than 75 percent was of inferior grades.

The Alapaievsky, Neviask, Ostanino, and Iltchirsk mines were closed because of the lack of engineering and managerial skills.

In November 1921 a Type I concession was granted to the Allied Chemical and Dye Corporation of the United States, whose subsidiary, the Allied American Corporation, owned by the Hammers, had been operating under license in the U.S.S.R. since 1918. The concession was to restore and operate the Alapaievsky asbestos mines. The concessionaire repaired the buildings and organized production, and by 1922 had more than 1,000 men employed, or 44 percent of all asbestos mine workers in the U.S.S.R., as shown in table 6–4.

The agreement was made with the Ural Industrial Bureau for twenty years, and Allied was required to start work within four months. A sliding scale of required output was established, progressing from 1,200 tons in the first year to 2,580 tons in the fifth and subsequent years. The government had the right to purchase the concession after five years, and was to receive 10 percent of all production.[48]

Table 6–4 WORKERS EMPLOYED BY URALASBEST AND HAMMER CONCESSION, 1921–4

Producer/Year	*1921–2*	*1922–3*	*1923–4*
Uralasbest	1,385	2,487	3,067
Hammer	1,100	1,617	1,227
Total	2,485	4,104	4,294
% Employed by Hammer	44.30	39.40	28.60

Source: Annuaire Politique et Economique, p. 161.

Hammer has described the pitiful conditions of the workings when operations began.[49]

Six months after the concession agreement was signed, the company received 'one very deteriorated asbestos mine.' Piles of asbestos blocked the passages; there was a heap of 1,200 cubic sazhens of waste ore. There were no communications and no housing for workers or management. The company built 4,800 feet of mine passages and repaired shafts, workers' barracks, houses and schools. Within a year 1,200 poods of high grade material had already been shipped, 20,000 poods of ore were ready for shipment, and 1,100 workers were employed during the summer mining season. To achieve this, the concession imported modern mining and transportation equipment and built a sawmill and a 2½ verst narrow-gauge railroad.[50]

By 1925 the concession began to show a profit.

Uralasbest was created in 1921 to operate the Baskenovo group of mines, but it took many years and many major setbacks before Ruykeyser, an American asbestos mining engineer and consultant to Uralasbest, was able to perform his 'brilliant construction feat . . . in creating the Ural Asbestos Works.'[51] All the problems of Soviet development during the 1920s seem to be found in this trust: lack of working capital, personal jealousies, sabotage, inefficient foreign contracts, fire—but through sheer persistence, and at tremendous cost, a workable enterprise was finally built up.

[48] *Krasnaya Gazeta*, January 4, 1922.

[49] Armand Hammer, *The Quest of the Romanoff Treasure* (New York: Payson, 1932).

[50] *Ekonomicheskaya Zhizn*, No. 280, December 10, 1922.

[51] Shimkin, *op. cit.*, p. 226.

The Baskenovo open-pit mines are by far the most important asbestos deposits in Russia. In the early 1920s, production was primitive and without facilities for upgrading.[52] However, some asbestos was produced, despite the shortage of working capital, under the technical direction of Svedberg, who had been the prewar director and was retained by the Soviets as consulting director. The limitations on output were the extremely primitive mining methods and the absence of a mill to upgrade the mined chrysotile asbestos ore.

The first major step was taken by Uralasbest in 1928, when it concluded a Type III concession agreement with the Humboldt Company (Germany) to build a mill for upgrading the asbestos fiber and to reorganize mining methods.[53] Ruykeyser's description of the circumstances surrounding the mill contract is quoted in full:

> In 1928 I had fulfilled a contract with Amtorg in New York to lay out the preliminary designs, along generalized lines, for the proposed asbestos mill. The plans were accompanied by an extensive report covering all phases of the processes involved. I had pointed out wherein my ideas, based on actual experience with the subject, were at variance with the technical norms sent me as a basis for the drawing, ideas from which I could not depart. But disregarding such advice, without heed of consequence, a contract had been given a large German firm to build the plant. The flowsheet, or schematic arrangement of machines and processes, had been made by the engineers of the Trust under the direct supervision and approval of the technical director. This flowsheet was also contributed to by the Germans, a paltry five-ton sample of the ore being worked on laboratory scale in the preliminary testing. I was told that none of the Russian or German personnel had ever seen a chrysotile asbestos mill in operation; and yet, they had attempted to build what was to be one of the largest mills of its kind in the world.[54]

Not surprisingly, this mill failed to produce the desired results, although there is some evidence that sabotage was at least partly responsible for its failure. There are reports, for example, that wood chips, fatal to asbestos quality, were found along the production line. The mill was destroyed by fire in May 1929, and, as a result of the subsequent investigation, three Russian civil engineers were shot by the GPU and two sentenced to twenty years' hard labor. Svedberg, the technical director, was arrested for negligence.[55] The Soviet response was to order another mill—a copy of the first; this also failed

[52] Photographs in W. A. Ruykeyser, *Working for the Soviets* (New York: Covici-Friede, 1932) indicate quite clearly the hand methods in use before Ruykeyser reorganized production in 1929.

[53] U.S. State Dept. Dispatch No. 1528, Finland, Dec. 7, 1929. (Decimal File, 361.60d21/1.)

[54] Ruykeyser, *op. cit.*, p. 60.

[55] U.S. State Dept. Dispatch No. 1528, Finland, December 7, 1929. (Decimal File, 361.60d21/1.)

Table 6–5 ACQUISITION OF ASBESTOS MINING AND MILLING TECHNOLOGY BY URALASBEST, 1921 TO 1930

Year	*Mines*		*Design*	*Mill Construction (Stroiuralasbest)*	*Power Station*	*Final Products (Spinning and Manufacture)*
	Technology	*Railroad*				
1917	Hand methods	Prewar equipment	—	—	—	Exported only
1926	Hand methods					Hammer* Moscow plant concession with Czechoslovak management[1, 2]
1928	Ruykeyser Reorganization and mechanization.[1]	Purchased from Austria (1927)	I—Humboldt*** Svedberg[1] II—Humboldt[1]***	Humboldt[1]*** Krupp**	Swedish General Electric	Multibestos Company (United States)[1] and equipment purchased in United States[3]
1930			III—Smith** Ruykeyser[1]	Smith** (Canada)[2]		

Sources: [1] Ruykeyser, *op. cit.*
[2] Berlinraut, *op. cit.*
[3] U.S. State Dept. Decimal File.

Notes: * Type I pure concession.
** Type III technical assistance agreement.
*** Maschinenbau-Anstalt Humboldt of Cologne.

to perform. The consequence was the contract with Ruykeyser, and later with the C. V. Smith Company, of Thetford, Canada, to design a mill suitable for milling chrysotile asbestos fiber using Canadian experience. This was done, and finally, on the third attempt, the Soviets acquired a mill which would perform adequately. As late as 1939, this third mill was producing 95 percent of Russian asbestos fiber.

ASBESTOS ROOF SHINGLES MANUFACTURE

Asbestos products were manufactured in prewar Russia at the Red Triangle Works in Moscow. This works continued producing at about 25 percent of capacity (see table 6–6) for a few years after the Revolution, and closed in 1923.[56] In 1926, Hammer (Allied American) started to build a factory in Moscow, under a concessionary agreement, to manufacture asbestos roof shingles utilizing raw material from the Alapaievsky asbestos deposits, which had been operated by Allied since 1921. The plant utilized imported modern equipment and was managed by Dr. G. L. Rosenbaum, formerly head of a similar plant in Czechoslovakia.[57]

Table 6–6 MANUFACTURE OF ASBESTOS SHINGLES BY FOREIGN COMPANIES

Year	*Output (Millions of Shingles)*
1921–2	2.17
1922–3	2.75
1923–4	3.92
1924–5	11.9
1925–6	16.6
1926–7	21.6
1927–8	38.5
1928–9	51.3
1929–30	65.9

Source: G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton, N.J.: Princeton University Press, 1962), p. 429.

Production of shingles accordingly doubled in a brief period; but this was apparently insufficient, as a Type III technical-assistance agreement was signed in 1928 with the Multibestos Company of the United States for the construction and equipping of another asbestos products plant.[58]

[56] *Ekonomicheskaya Zhizn*, No. 14, October 17, 1923.

[57] *Ekonomicheskaya Zhizn*, No. 124, June 1, 1926.

[58] Another technical-assistance agreement between E. Waite and the Rubber Trust, is listed for asbestos products in American-Russian Chamber of Commerce, *op. cit.*, p. 101. E. Waite however, probably represented Multibestos Company in the U.S.S.R., so that this may not have been a separate contract.

CHAPTER SEVEN

The Industrialization of Agriculture

THE transfer of Western technology and labor skills in agriculture was attempted along five channels. Each was part of a complex set of aims; enlarging the scale of farming, substituting machinery for labor, converting the farming sector into an industry, and removing the class enemy—the *kulak.* The five transfer channels were: the large farming concessions, communes manned by foreign sympathizers, model seed and breeding farms, the modernization of the agricultural implement industry (particularly the tractor, which had a place of honor equivalent to electrification in the industrial sector), and the technical-assistance programs.

Bolshevik interest in large-scale agriculture began in 1924 and has been viewed as an anti-*kulak* measure, but it was equally a method of industrializing the farm sector. The *kulak* was the ideological enemy, but his ability to outproduce the *bedniak* and the *seredniak* made him, at least up to 1928–9, indispensable. There was a basic, naïve assumption (which saturated the thinking of the planners) that a large scale of operations would effect infinite economies in agriculture.[1] The large farms of the American and Canadian prairies attracted the attention of Gosplan and the Commissariat of Agriculture, not because their yields were significantly greater than those in the U.S.S.R., but because the sheer scale of operations and the massive substitution of capital for labor promised a simultaneous solution for two basic problems in the Russian economy: the technical backwardness and hostility of the peasant, the latter stemming from the policy of *prodrazverstka* (forced requisition of grain) and the growing demand for agricultural products from cities and planned industrial complexes. Perhaps a more obvious pressure was Russia's complete failure to regain her prewar position as a major grain exporter or even to reduce the grain imports necessary in 1928–9. The grave decline

[1] The Gigant, largest of the State farms (500,000 acres), had higher costs than less favored and smaller state farms, however.

in Soviet grain procurements in 1929 (down 23 percent from the previous year) was an immediate incentive to action.[2]

In 1928 the People's Commissariat for Agriculture drafted a proposal for the establishment of very large grain farms, and thirty experts were sent to the United States, Canada, and Australia to study large-scale foreign agriculture.[3] Zernotrust (the grain trust), which had been organized to develop large-scale farms, sent two further groups.[4] The Zernotrust program for 1928–9 provided for establishment of fifteen large grain farms with a total area of 150,000 hectares in the Northern Caucasus and Volga regions, to be cultivated by 635 tractors.[5]

THE KRUPP AGRICULTURAL CONCESSIONS

The first attempt to introduce large-scale farming was made with the aid of Krupp in 1924, after an announcement by the Commissariat of Agriculture that it considered agricultural concessions necessary to the development of livestock breeding, sugar beets, and silk worms. Processing and equipment enterprises were thought to be in particular need of foreign help.[6] However, the Krupp agreement, after two major changes, ended in failure. The new Zernotrust farms were consequently modeled on American and Canadian practice.[7]

The Krupp agricultural concessions were an ambitious attempt on the part of the Soviets to introduce modern agricultural large-scale methods into the U.S.S.R., but for Krupp the objective was to develop a market for German agricultural implements and equipment. The concession was also designed to revive Russian agriculture, eliminate the possibility of famine, and turn the U.S.S.R. once again into a grain-exporting country. Krupp'sche Landconcession Manytsch G.m.B.H. was partly financed by a United Kingdom company, Russian Land Concession Manytsch, Ltd., registered in London. The function of the latter was to finance the German company to the extent of 75 percent of the funds required for exploitation of the concession. The United Kingdom company had a basic capital of £40,000, of which £30,000

[2] *Ekonomicheskaya Zhizn*, No. 187, August 16, 1929. See map of crop conditions on p. 2.

[3] *Izvestia*, No. 114, May 18, 1928.

[4] *Izvestia*, No. 92, April 21, 1929.

[5] *Pravda* (Moscow), No. 168, July 21, 1928.

[6] *Ekonomicheskaya Zhizn*, No. 331, November 11, 1924.

[7] M. Farbman comments, 'The big American and Canadian farms served as a model for the new experiment and American agronomical engineers and experts were engaged to start it, while the great virgin plains in the southeast of Russia, where the meteorological and soil conditions resembled those of the wheat belt in America, were chosen as the scene of operations.' [*Piatiletka: Russia's Five Year Plan* (New York: New Republic, 1931), p. 130.]

was subscribed by the English group and £10,000 by Krupp. There was an obligation to raise a further £80,000 if required.

A model farm was established in the Don district of the Ukraine, equipped with the most modern equipment and operated according to the latest methods. The final agreement, signed on April 3, 1922, covered an area of 162,000 acres. In a further agreement later in the same year, this area was reduced to 67,500 acres in the Saal section of the Don district. The concession company was obligated to place 3,780 acres under cultivation annually until a total of 63,450 acres was under cultivation at the end of the sixth year.

The Soviet government had an option to buy the whole output at world market prices. At the end of the twelve years the Soviets might purchase the entire concession settlement, and either party would have the absolute right to cancel the agreement in any sixth year. The period of the concession was set at thirty-six years, at the end of which time the concession, with all its equipment, would revert to the U.S.S.R. in good condition; the government would reimburse Krupp for all improvements that had not been amortized.

A special tax was imposed, equal to 17.5 percent of the total annual crop yields, calculated at world market prices on the basis of Rotterdam Grain Exchange quotations; this was in addition to the usual taxes. Krupp was authorized to employ foreign labor to 50 percent of the total labor force and foreign administrative workers to 75 percent. There was a board of arbitration; books and administrative procedures by the company were under the supervision of a government inspection board. Workshops were established to repair, assemble, and improve agricultural machinery.[8]

A new concession agreement for farming in the North Caucasus area was signed by Krupp with the Concessions Committee in 1927. The purpose was changed from grain-growing to sheep-raising. Apparently substantial quantities of the land originally granted in 1923 could grow grain only at a considerable loss.[9] Liquidation was first considered but then replaced by the new agreement. Under the new agreement, 12,000 acres were to be used for grain and the balance of 66,000 acres for sheep-raising. Two thousand sheep were to be imported immediately, and 36,000 to be grazed within eight years.[10] Ten percent of gross receipts were paid to the U.S.S.R., which also had the right to buy the wool at world prices. The wages paid by the concessionaire were 30–40 percent higher than average Russian wages.[11]

[8] U.S. Consulate in Konigsberg (Germany) Report No. 2110, February 17, 1923, and *Ekonomicheskaya Zhizn*, No. 13, January 19, 1923.

[9] U.S. Embassy in Berlin, Report 2561, August 9, 1927. (316–133–626.)

[10] Amtorg, *op. cit.*, II, No. 18 (September 15, 1927), 2.

[11] U.S. Embassy in Berlin, Report 2561, August 9, 1927. (316–133–626.)

A significant change was that the Soviets now agreed to participate in losses (previously they had only participated in profits) and in the burden of financing and management on an equal basis. A mixed enterprise (Type II), the German-Russian Krupp Manushka Company was formed. Krupp's share of the capital was 3 million rubles and the Soviets' 1.5 million rubles. The capital invested by the Krupp concern was 'guaranteed,' and in the event that the undertaking was not successful, it was repayable in 1937.[12]

The soil was too salt, and tractors were more expensive to use than animals. Buildings were built and experiments conducted, but when things went wrong the bureaucratic process was slow and corrections could not readily be made. Grain raising failed, so cattle raising was substituted, and, when this failed, sheep raising—but too long a period elapsed between the substitutions.[13]

OTHER 'PURE' FARMING CONCESSIONS

An agreement between the U.S.S.R., the Volga-Deutsch Bank in the Volga region, and the Berlin firm Deutsch-Russische Agrar A-G (Druag) in late 1923 covered an agricultural concession on 67,000 acres of land in the Volga region. The land was to be used for any purpose seen fit by the German concessionaires. The Soviet government had an option on any products, although any portion not so taken might be exported. A tax equal to 14.5 percent of the total output was paid during the first two years of the life of the concession, but increased to 17.5 percent during the next two years and to 19.5 percent during the remaining years. Rent was equal to 10 percent of gross revenue and additional taxes equalled a further 10 percent.[14]

An extensive agricultural concession was also granted to the German Volga Bank, a Soviet joint-stock company, despite its name. This concession covered 270,000 acres in the German Volga and in the cantons of Federov, Krasnokutsk, and Palassov near the German Autonomous Commune. The concession was then broken up and sublet to German sub-concessionaires in areas of about 50,000 acres each. One such sub-concession was made to the German-Russian Agrarian Association. The company was required to cultivate the land according to an approved plan: 10 percent in the first year, 30 percent in the second, 80 percent in the third, and 100 percent in the fourth. The concession was set up to last for thirty-six years. The company paid to the bank a percentage of total production: 14.5 percent in the first year, 17.5 percent in the next two years, and 19.5 percent thereafter—an arrangement somewhat more liberal than in the Krupp concession. All state and local taxes had to be paid,

[12] U.S. Embassy in Berlin, Report 3923, September 18, 1928. (316–133–823.)

[13] *Berliner Tageblatt*, October 6, 1928.

[14] U.S. Embassy in Berlin, Report No. 2110, November 19, 1923. (316–131–140.)

and upkeep of the roads in the area was a concession responsibility. The bank had the right to buy out the concession after twenty-five years.[15]

An Italian-Russian concession for agricultural and mineral development in the Kuban district was ratified in September 1922. One of the signatories, Commendatore Ferdianando Bussetti, discussed the matter with the U.S. Embassy in Rome shortly after signing the agreement. He indicated that the operation of the 100,000-hectare concession would be under the supervision of the Italian Agricultural Confederation, and that the objective was to grow wheat for export to Italy. Under the contract, 15 percent of production was to be paid to the Soviet government, a further 35 percent was to be sold locally, and the balance was to be exported. It was suggested that 30,000 Italians were to be transported to work the concession, and that they were to be free from Soviet law and under Italian jurisdiction.[16]

An agricultural concession was granted to Harold M. Ware of the United States in 1924. Ware formed the Prikumskaya Russo-American Association and established farms on several thousand acres near Piatigorsk, in the North Caucasus. His main objectives were to train Russian agriculturists in American methods and organize model agricultural enterprises in the U.S.S.R.[17] Ware brought a number of tractors and fifteen American specialists with him.[18]

Another concession agreement signed in 1923 transferred 15,000 dessiatins to the Nansen Mission for the organization of model and demonstration farms. The objective of the concession was to produce high-quality seeds and high-grade animals, together with the organization of model seed-cleaning stations and cooperative butter and cheese factories.[19] A much larger seed-growing concession, however, was Deutsche-Russische Saatbau A-G (Drusag).

15 *Pravda* (Moscow), No. 244, October 27, 1923.

16 U.S. Embassy in Rome, Report No. 456, October 2, 1922 (316–130–1242). This is a little far-fetched. There is no evidence that such a large number of Italians ever went to work in the U.S.S.R.

17 U.S. State Dept. Decimal File, 316–136–1241.

18 *Pravda* (Moscow), No. 198, September 2, 1924. Previously Ware had organized the export of tractors to the U.S.S.R. through the Society of Friends of Russia. The Ford Delegation of 1926 met Ware on several occasions and made unfavorable comments on his personal operations and ethics. For example, 'He intimated that provided we could arrange to give him a complete repair outfit (practically everything on his farm had been a gift) much good would result on both sides. . . .' (Presumably Ware was going to use his 'influence' with the Soviets on behalf of Ford.) Later, with reference to some tractors which Sherwood Eddy had prevailed upon the Ford Motor Co. to give to Ware, he commented to the Delegation that the tractors did good work, 'but that the Company failed to send along the tractors equipped with fenders, pulleys and assorted spares. We thought this a somewhat curious statement from one who had received the tractors as a gift.' [*Report of the Ford Delegation to Russia and the U.S.S.R. April-August 1926* (Detroit: 1926), Ford Motor Company Archives Accession No. 49, p. 145–6.]

19 *Izvestia*, No. 166, July 26, 1923.

GERMAN-RUSSIAN SEED CULTIVATION COMPANY[20]

Drusag was founded in 1923 by Stinnes, the City of Königsberg, and a group of German agricultural implement firms including Sack, Kemna, and Lanz, together with the Soviet Commissariat of Agriculture. The concession was granted two properties: one in the Kuban area, suitable for seed growing, and the other near Rostov, used as a cattle-breeding station. Substantial investments were made in buildings and machinery, and within two years a greater area was under cultivation than that called for under the agreement.

In 1925 a new agreement replaced the old contract. The main alteration was that the rental fee, based on gross profits, was decreased. Further relaxations were granted in order to allow the concession to export from the Soviet Union so as to purchase foreign machinery and to pay interest on loans raised in Germany. The concession apparently operated well for a year after the reorganization, and in 1926–7 a profit of 450,000 rubles was reported. Then difficulties developed, so that further German and Russian investment was required. By 1927 a debt of more than 300,000 rubles was owed to Gostorg, in addition to the unamortized part of the original German loan. A further 600,000 rubles was borrowed: 450,000 from the German government and the balance from the City of Königsberg and German implement-manufacturing companies. Of this sum, 150,000 rubles was used to repay the balance of the German debt, 300,000 rubles was used to settle various Russian claims, and the balance was used as working capital to carry the enterprise over until the 1927 harvest. However, in 1927 the German obligation had grown to some one million marks, and the Soviets began to move the enterprise toward compulsory liquidation. Further negotiation kept the enterprise alive until 1932.

The existence of the Drusag concession from 1923 to 1932 enables us to make a brief comparison between 'tractorization' undertaken in the late 1920s and the experience of the concession—an island of private enterprise in a sea of collectivization.

The mass introduction of the tractor, the high cost of depreciation, the cost of fuel, the almost total lack of repair facilities, and the rough treatment the machine received in the hands of the peasant made it an extremely wasteful method of farming. The Drusag concession, farming land of good quality in a large plot of 27,000 acres, found animal power was often more economical than mechanical power. Animals, especially oxen, were cheap: a unit consisting of eight yoke oxen, a four furrow plow, and two men did the job as efficiently as, and at less cost than, a tractor. The tractor only came into its own when speed was a factor.

[20] The information in this section is based on the German Foreign Ministry Archives.

> The Russian however is inclined to think that, because the tractor turns over the soil at a prodigious rate and with lots of cheerful noise and bustle it is doing it more economically and efficiently than any other method.[21]

The contribution of Drusag was not, therefore, to a more efficient allocation of agricultural resources. For a period of ten years the enterprise contributed seed and pedigreed cattle to the state and collective farms, and although Gostorg made sizable investments from time to time, these were repaid, while the innovations developed by the concessions were contributed free of charge.

TECHNICAL ASSISTANCE IN AGRICULTURE

An early form of technical assistance was given by the International Agrarian Institute, established in 1923 by the International Peasant Soviet.[22] The institute consisted of five departments, for the study of peasant agriculture, agrarian legislation, agricultural practices and methods of work, the attitude of local Communist parties to this work, and the contribution made by peasant economies in the world toward the achievement of a higher standard of living. The institute established a library and published a monthly, *The Agrarian Question.*

The main objective of the institute was the world-wide collection of information concerning the peasant and his relation to agricultural technique and economics.[23] In 1924 the institute established an agricultural bureau in New York to study the theory and practice of agriculture in the United States, Canada, and the Latin American countries.[24] In the same year an American citizen, Coleman, founded an agricultural school in the U.S.S.R. with an American staff.[25]

The acquisition of agricultural technology increased as delegations went from and visited the U.S.S.R. A Soviet Agricultural Commission of twelve experts, headed by P. B. Asaultschenko, visited Denmark in June 1926 to study Danish agricultural methods. The commission purchased some animals for breeding purposes, although fewer than had been expected in Danish trade circles.[26] A Swedish model farm was established and stocked with

[21] L. E. Hubbard, *Economics of Soviet Agriculture* (London: Macmillan, 1939), pp. 260–1. Hubbard points out that the consumption of fuel alone by a tractor would in 1935 be 63 litres, or the equivalent of 630 kilos of grain—very nearly the whole yield.

[22] Charles H. Smith, of the American-Russian Chamber of Commerce, formerly with the U.S. State Dept., was also a member of the International Peasant Soviet.

[23] *Izvestia*, No. 3, January 4, 1924.

[24] *Pravda* (Moscow), No. 116, May 24, 1924.

[25] *Pravda* (Moscow), No. 198, September 2, 1924.

[26] U.S. Legation in Copenhagen, Report 216, July 25, 1927. (316–133–622.)

Swedish pedigreed animals. Nineteen Ardenne horses were delivered personally by the Director of Sweden's General Agricultural Service, who commented on the model farm being established:

> The Swedish model farm will be of a very great service for the demonstration of Swedish products and the use of Swedish agricultural machinery as well as for instruction in Swedish agricultural methods.[27]

A group of American specialists was induced to go to the U.S.S.R. One of them, Professor A. A. Johnson, was 'unduly enthusiastic' and voiced his 'unstinted praise' of Soviet development to the U.S. Consul at Berlin in September 1928 after a three-month visit to the U.S.S.R., where he had received an offer to act as agricultural adviser.[28]

This search for specialists extended throughout the range of agriculture. The grain elevators at Vladivostok and at Harbin, first operated by the Chinese Eastern Railway, were later operated on a concession basis when the area came under the control of the Soviet authorities. A group of Russian businessmen in the Far East joined with the railway administration and formed a joint-stock company to operate existing elevators and construct new ones. Such a move suggests the inability of the Soviet authorities to either operate or construct such units. As the elevators were handling nearly 100 million poods of grain a year, this was no small operation.[29] Attempts to make a similar agreement with a group of Italian grain importers for operation of Black Sea elevators was not successful; after extensive negotiations, the Italian group refused to participate without a Soviet guarantee of investment protection.[30]

Thomas Campbell,[31] according to *Izvestia* 'the biggest American farmer and one of the most prominent experts on the organization of grain production,' was invited to the U.S.S.R. by Zernotrust in 1929. The organization of Campbell's Montana farm had been noted by Soviet experts and the processes 'reproduced on a film 2,000 feet long which he has brought to the U.S.S.R. with him.' Campbell farmed 95,000 acres in Montana with 109 tractors and only 200 workers. The object of his visit was to advise in development of ten million acres for wheat growing. The scheme envisaged expenditure of $100 million on agricultural machinery and another $50 million on trucks and road-making equipment. Campbell was reported to have been interviewed

[27] U.S. State Dept. Decimal File, 316-133-631.

[28] U.S. Embassy in Berlin, Report No. 3924, September 15, 1928. (316-134-255.)

[29] A translation of the extensive agreement is in U.S. State Dept. Decimal File, 316-134-860 to 891.

[30] Several detailed reports on the negotiations are in U.S. State Dept. Decimal File, 316-134-782 and 316-134-791.

[31] Thomas D. Campbell, *Russia: Market or Menace?* (New York: Longmans Green, 1932). Campbell's book is of the 'I'm not a Communist but. . .' genre and contains nothing specific concerning his work in the U.S.S.R.

and approved by both President Coolidge and Mr. Herbert Hoover before his 1929 visit.[32]

While these ingredients for agricultural improvements became part of Soviet agriculture, the *kolkhoz* yield was less at the end of the decade than the yield on private estates had been during the first ten years of the century, although it represented a marginal improvement over the yield of prewar peasant farms.[33] The uneconomic replacement of the horse by the tractor and the persecution of the more effective peasants were disastrous to Soviet agriculture, and incipient transfer of advanced Western agricultural techniques was drowned by an intemperate ideology.

COTTON IRRIGATION

In July 1923 it was reported by the American consul in Riga that a group of German financiers, including Krupp and Stinnes, had formed an organization with the objective of reviving and enlarging the cotton industry of Turkestan. The Turkestan cotton crop had received numerous setbacks from drought, hot winds and marauding bands of *basmachi* who had succeeded in extensively damaging the Fergana irrigation system, essentially devoted to cotton. The population had fled to the towns as a result of the disturbances, so that the cotton fields remained uncultivated. Production had consequently declined heavily. In Bokhara, 1921 production of cotton fiber was less than 100,000 poods compared with 2.5 million before 1917. Between 1909 and 1914, the total Russian production of cotton had averaged 13 million poods per year; this declined to less than 2 million by 1922.[34]

In 1911 a mixed group of American and Russian engineers had visited the Karakouma Steppe in Transcaucasia to determine its suitability for growing cotton. The expedition, financed by John Hays Hammond, confirmed the prevailing opinion in Moscow that the steppes were not suitable for irrigation or cotton growing.[35] The 1911 expedition was led by Arthur P. Davis, a well-known American irrigation engineer. In 1929 the Soviets invited Davis to undertake complete supervision of the operation and extension of the irrigation system of central Asia, Sredazvodkhoz.[36]

[32] *Bank for Russian Trade Review*, I, No. 2 (February 1929), p. 16. This claim was marked with a marginal question mark in Decimal File 316-133-1167.

[33] L. E. Hubbard, *op. cit.*, Chap. XXII, 'Effects of Mechanization on Production.'

[34] U.S. Consulate in Riga, Report No. 1337, October 6, 1923. (316-139-361.)

[35] U.S. State Dept. Decimal File, 316-134-410/429.

[36] *Ekonomicheskaya Zhizn*, No. 133, June 13, 1929. By extraordinary good fortune, extensive documentation exists for the work of one of the consulting engineers to *Sredazvodkhoz*. This collection, now at the Hoover Institution, Stanford University, forms the basis of a chapter in Vol. II.

One unusual—and successful—experiment was the establishment of a Russian experimental station for cotton growing *in Persia*. This was established in 1926 in Mazanderan Province, the country's largest cotton-growing district. The station consisted at 222 acres with a large Soviet and Persian staff. Experimental work was done with all varieties of cottonseed, including the American types Weber and Acala, which did well, and Pima, which did less well. By improving seed quality and making cash advances to the planters in the surrounding areas, the Soviets came to dominate the area. The cotton was exported to Russia. Records of the experiment were transferred to the cotton-growing areas of Turkestan.[37]

Later in the decade the Chief Cotton Committee sent a delegation to the United States to study latest American achievements in cotton growing and cotton ginning; the ten specialists remained in the United States about six months. Particular attention was given to organization and mechanization problems. An agreement was also negotiated with a 'large cotton growing firm' for the establishment of a seed farm in the U.S.S.R. and for the mechanization of Soviet cotton gins. The Committee argued that the contract would 'permit the Commission to successfully bring the experience of American cotton cultivation to the Soviet Union.'[38]

MERINO WOOLS AND AN AUSTRALIAN EMBARGO

A decline in the breeding of sheep had become catastrophic by 1923. Said the President of the Wool Syndicate, 'The breeding of Merino sheep must be considered as completely ruined.'[39] As a result of the Revolution only 98,000–110,000 head of Merinos were left, compared to the more than two million head in 1912. Commercial sheep farming had almost ceased, as sheep farmers had left Russia and their flocks had dispersed. In 1923, only

Table 7-1 PRODUCTION AND IMPORTS OF MERINO WOOL IN U.S.S.R., 1923–6

Year	*Clipped in U.S.S.R.*	*Imports*
1923–4	20,000 poods	480,000 poods
1924–5	28,000 poods	350,000 poods
1925–6	30,000 poods	None

Source: *Possibilities of British-Russian Trade* (London: Anglo-Russian Parliamentary Committee, 1926), p. 50.

[37] U.S. Consulate in Teheran, Report, August 6, 1926. (316–135–275.)

[38] *Ekonomicheskaya Zhizn*, No. 171, July 28, 1929.

[39] *Ekonomicheskaya Zhizn*, December 9 and 12, 1922.

20,000 poods of Merino wool was clipped, and less than half of all available supplies was collected. There was a parallel decline in the wool manufacturing industry.[40]

The solution came in two stages. Large quantities of Merino wool were imported in 1923–5, followed by heavy imports of Merino and other stud sheep for breeding. The latter created sufficient concern in Australia to cause the imposition of a ban on the export of Merinos, still effective in 1962. Between 1919 and 1927, Soviet purchases of Merinos for breeding were not too great: about 2,000 head during the whole period. In 1928–9 the Soviets stepped up buying far beyond normal and on one order purchased 30,000 stud Merinos. The subsequent outcry led to the embargo on stud Merinos on November 28, 1929.[41]

Supplementing the import of sheep, a group of Australian sheep breeders with capital and a flock of 1,500 Merinos settled in the southeast portion of the R.S.F.S.R., under an agreement with the People's Commissariat of Agriculture.[42]

Large purchases of high-grade pedigreed sheep were also made in the United States to improve and build up Russian stocks. In 1924, 2,766 sheep were purchased; in 1925, 1,621; in 1926, 2,628; and in 1927, 8,414.[43] They were shipped in groups of 1,000 to 3,000. For example, in 1927 four Russian peasants arrived in the United States to escort 2,700 pedigreed animals purchased in Utah, Montana, Oregon, and Ohio. This group included 1,550 prize stock Rambouillets, 1,000 prize Hampshires, and 150 Shropshires, purchased for a total of $160,000.[44]

REPLENISHMENT OF LIVESTOCK HERDS

The 1922 famine left the Soviet Union, particularly the southeast, with a much-depleted livestock population; most of the animals had been killed and marketed. The restocking project was offered for concession. In the Volga A.S.S.R., it was indicated that there were forty-five large cattle ranches, each of which could be put in order for £50 sterling, although livestock and supplementary equipment would cost a total of more than £1 million. It was suggested that the enterprise would be profitable; but there were no takers.[45]

[40] U.S. Consulate in Helsingfors, Report No. R-2100, February 28, 1923.

[41] Commonwealth of Australia, *Parliamentary Debates*, '12th Parliament, 1st Session,' p. 358.

[42] *Izvestia*, No. 35, February 12, 1924.

[43] Amtorg, *op. cit.*, II, No. 24 (1927).

[44] Amtorg, *op. cit.*, II, No. 19 (1927).

[45] *Russian Information and Review*, I, No. 20 (July 15, 1922), 462.

Breeding herds, as well as herds for sale, had been reduced to minute proportions. In July 1921, just after the establishment of a commission to reorganize and improve the livestock-breeding industry, it was found that, although breeding establishments occupied more than 35,000 acres, they contained very few breeding stock. Only 1,000 pedigreed horses, 114 bulls, 1,700 cows, and a few pigs, sheep, and goats remained in the breeding farms. Some improvement was made the following year by purchasing small herds from peasant farmers, but a decline of this magnitude required replenishment from outside.[46]

The failure of tractor production, a 175,000-head shortage of horses, the lag in agriculture, and possibly a military demand produced an unusual transaction in halter-broken wild horses in 1927–8. Britain had broken with the U.S.S.R. over the Arcos affair and Canada had immediately followed suit, so that officially there were no diplomatic relations between Canada and the U.S.S.R. However, the Canadian Department of Agriculture made four shipments, totaling 8,000 horses, from the western Canadian ranges to Leningrad, under official auspices. Canadian officials rounded up the horses and made the purchases, and two Canadian officers escorted them to Leningrad. Further, the price was only $30 per head! The horses were taken to a military camp outside Leningrad, inspected by General Budenny and cavalry officers, and then shipped down to the Ukraine.[47]

LIVESTOCK AND DAIRY INDUSTRY CONCESSIONS; UNION COLD STORAGE, LTD.

The Union Cold Storage Company, of the United Kingdom, had several concessionary arrangements with the U.S.S.R. The first was signed in May 1923 with the North Western Trade Department. The Trade Department assembled animal products in the R.S.F.S.R., with the technical and financial assistance of Union Cold Storage, who then exported and sold them abroad guaranteeing a minimum profit of 10 percent. This profit was then split: 67 percent to the Department and 33 percent to Union Cold Storage.[48]

G. H. Truss and Company, also of the United Kingdom, had a similar agreement with Khelboprodukt, concerning bacon exports, and provided equipment and technical assistance to build two bacon factories to produce for export. These were supplied on a credit basis.[49]

[46] *Ibid.*, pp. 461–2.

[47] *Ekonomicheskaya Zhizn*, No. 193, May 27, 1924.

[48] *Ekonomicheskaya Zhizn*, No. 102, May 11, 1923.

[49] A. Troyanovsky, *Eksport, import i kontsessii soyuz S.S.S.R.* (Moscow: Dvigatel, 1926) Troyanovsky adds the comment that ' . . . the Soviet purchasing-export organizations have conducted their eggs-exporting business mainly with the use of foreign capital.' P. 145.

Khleboprodukt concluded two further concession agreements in 1924 with Union Cold Storage. The first was a concession for the export of woodcocks, hazen-cocks, and partridges. Combined with this was a technical-assistance agreement in poultry-farming development with a view to the subsequent export of poultry. Union Cold Storage advanced credit, and the initial agreement lasted until September 15, 1927. The second concession agreement covered pig breeding. In 1922 there were only twenty pig-breeding farms left in the Soviet Union, with a total of 843 pedigree animals, compared to a total pig population of over 21 million animals in 1916.[50] [51] Union Cold Storage agreed to facilitate the export of pork to England through company distribution channels on credit, and also to provide technical assistance in Soviet pork production until September 15, 1929.

The Gostorg butter-export office in Leningrad also concluded an agreement with Union Cold Storage, in August 1924 for export of butter to the United Kingdom, the latter granting financial and machinery credits to facilitate the contract.[52]

The 'Arcos break' interrupted Union Cold Storage concessions, but, upon resumption of trade relations in 1928, they were the first United Kingdom concessions to be renewed. Under the 1928 agreement, the Union Company agreed to advance a credit of $2.5 million in exchange for the right to handle all Soviet imports and dairy produce for United Kingdom market. The credits, utilized for the purchase of machinery in the United Kingdom for the Soviet dairy industry, were spread over three years and were granted in addition to a credit of 80 percent of the value of dairy goods shipped. The dairy produce was sold by Union Cold Storage on a commission basis and credit was made available upon receipt of the produce in London.[53]

Butter production and export in 1924 were also facilitated by a concession agreement forming the Danish-Siberian Company (Sibiko), under which a Danish company obtained for five years the right to produce and export butter from Siberia. First-year production was set at a minimum of 200,000 poods, with 300,000 poods as the minimum annual quantity thereafter. This con-

[50] *Pravda* (Moscow), No. 182, August 13, 1924.

[51] Henry Wallace noted that the Siberian pigs were Yorkshires descended from 800 imported from the United Kingdom in the early 1920s. [*Soviet Asia Mission* (New York: Regnal & Hitchcock, 1946), p. 222.]

[52] *Izvestia* (Moscow), No. 189, August 21, 1924. Union Cold Storage was handling almost all Russian exports of butter and eggs in the middle of the decade (including exports to Latvia, reexported to the United Kingdom) except for a small quantity handled by Truss, another Type II United Kingdom concession, and IVA, a German concession. [L. Segal and A. A. Santalov, *Soviet Union Yearbook, 1925*, (London: Allen and Unwin, 1925), p. 243.]

[53] *New York Times*, March 16, 1928, p. 5, col. 3. Sir Edmund Vestey, who controlled Union Cold Storage, was quoted: 'We have been doing business with Soviet Russia for some time, and have found it quite satisfactory.'

stituted a considerable portion of Russian butter production at the time. The Danish company received half the profits made by Sibiko.[54]

A report from the Danish Legation in Moscow to the Danish Foreign Office in early 1925 suggests that the Soviets had problems even in butter production. The butter trust, Maslocentr, operated some 5,820 dairies and 680 cheese factories (about 80 percent of the prewar total), but production was only about 31 percent of the 1913 total. There were problems with 'irregularities' in distribution; by keeping producer prices low, regional dairy associations were able to make substantial profits for their own organizations which were not passed on to producers. A certain amount of Danish capital was involved in the regional associations. It was indicated that future attention would be concentrated on product standardization, training, and improved techniques.

These butter and egg exports were of major importance as, together with lumber, they replaced the lost grain exports on which the Soviets had placed major reliance for foreign exchange.[55] Hens had been nationalized soon after the Revolution, and eggs were nationalized under a decree signed by Lenin on March 3, 1920. A quota was allotted each farm to be delivered to government collecting points.[56]

FOREIGN AGRICULTURAL COMMUNES IN RUSSIA

The Ira commune was established in April 1922 in Tambov Province, on the estate of Prince Obolensky. Another commune, the Seyatel, was established on an estate requiring considerable repair, by about 1924. Local peasants and the Communists were reportedly friendly, and the former were reportedly impressed by such novelties as the welding of broken farm implements and the artificial hatching of eggs.[57]

In 1923 some 200 returned emigrants arrived in the U.S.S.R. from the United States and were organized by the Society for Technical Aid to Russia (which had about thirty branches in the United States) into five communes: the New World, the John Reed, the Red Banner, the Labor Field, and the Estonian. They were settled in the Ukraine and the Don Basin with $130,000 worth of equipment brought from the United States. About 20 percent were party members and the rest were sympathizers.[58]

[54] *Ekonomicheskaya Zhizn*, January 11, 1922.
[55] U.S. State Dept. Report No. 3945, September 25, 1928.
[56] U.S. Consulate in Vibourg, Finland, Report No. 69, April 8, 1920. (316–125–713.)
[57] *Izvestia*, No. 124, January 7, 1923.
[58] 'Longing for Home' *Izvestia*, No. 82, April 15, 1923. The Society for Technical Aid to Russia, located in New York, was performing the functions of a consulate (supposedly denied to the U.S.S.R., as there was no diplomatic recognition at the

Another group of repatriated emigrants, mostly metal and textile workers, arrived later in the year and also settled in South Russia. Their communes were organized according to city of origin in the United States. The Trud Commune had members predominantly from Boston; Harold (a dairy farming commune), from Chicago; Proletarian Life, from Cleveland; Krasny Loutch, an agricultural commune in Nikolaev, from Chicago; and so on.[59]

At Perm a group of returned agricultural laborers was given 10,000 dessiatins (27,000 acres) to farm.[60]

The California commune was established by an agreement between the Soviet of People's Commissars and a group of American agricultural workers largely from the western United States. The commune was granted 2,700 acres in Don *oblast* to establish various agricultural enterprises on a lease basis for twenty-four years. A fee equal to 5 percent of all crops grown was to be paid the Soviet government, with the first payment falling due after the third harvest. On expiration of the contract, the commune was to hand over all equipment and livestock.[61]

This commune was not destined for success; it was near bankruptcy within nine months. The major blow was the loss of three railroad cars containing the equipment and possessions of the settlers. These cars wandered about Russia for six months despite '348 inquiries to the railroads.' Two were permanently lost, and the commune had to pay the freight charges for the wanderings of the third, placing an impossible burden on their finances.[62]

Lenin had the announced aim of settling one model American group in each *uyezd*, which would have required about 250–300 such groups, a long way from the 25–30 that actually were settled.[63]

The communes, particularly the American communes, appear to have been utilized in an attempt to transfer more advanced agricultural practices into the surrounding areas. For example in the village of Posovka, Americans founded a commune in 1920 which created for a period of at least three years a series of 'circles' devoted to various problems: seed selection, agricultural exhibition, horticulture, and similar activities.

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time). See, for example, the document issued to L. F. Rautanen in New York which is, in essence, a visa. (316–110–719.)

The Society for Technical Help to Armenia was also organized in the United States to return qualified Armenian laborers from the United States, to establish trade schools in Canada and Armenia for training specialists, and to maintain relations. (*Pravda*, No. 210, September 18, 1923.)

[59] *Pravda* (Moscow), No. 232, October 13, 1923.

[60] *Pravda* (Moscow), No. 246, October 31, 1922.

[61] *Ekonomicheskaya Zhizn*, No. 19, January 28, 1923.

[62] 'Now the Agricultural Communes Are Perishing,' *Pravda*, No. 260, November 16, 1923.

[63] *Pravda* No. 246, October 31, 1922.

> The young Americans are continuing their efforts quietly, without noise. Their example was not fruitless. In various neighboring villages similar circles with agricultural purposes have been formed.[64]

The Finnish commune comprised a group of Finns and a few Americans on about 100 dessiatins of land fifteen miles from Leningrad, farmed on a cooperative basis. The commune failed because local peasants stole the equipment, there was lack of harmony in the group itself, and finally, taxes, at 5,000 rubles per year, proved to be too much of a burden.[65]

Another Finnish settlement was the Seattle Commune, started by Finns deported from the United States in 1921. This was more successful. The commune was visited in 1930 by M. Farbman, who reported that its wheat fetched higher prices than neighboring state farms.[66]

Gigant State Farm … … … …	128 kopecks/pood
State Farm No. 2 … … … …	175 ,, ,,
Seattle Commune … … … …	193 ,, ,,
Average all peasants … … … …	120 ,, ,,

An agricultural union of Dutch descendants in the Ukraine concluded a foreign loan of $1 million for purchase of foreign equipment.[67]

Communes were supported by the Czechoslovakian government to the extent of fifteen million crowns in agricultural equipment, but, as this was distributed to all communes regardless of nationality, it is impossible to assess how much of this sum went directly to the aid of Czechoslovakian communes. The Czech Mission in the U.S.S.R. was also (in 1923) given the right to rent and organize shops for the assembly and repair of agricultural machinery.[68]

An Australian commune was established with help from the Society for Technical Help to the U.S.S.R. in Australia. Mainly from North Queensland, the group settled in 1921 in the Ukraine (with equipment brought from home) as the Australian Commune.[69]

There was a Canadian Dukhorbor commune with some 2,500 members—but this sect and the Mennonites tended to leave Russia, near the end of the decade when anti-religious pressures were applied.[70] There was also a

[64] *Pravda* (Moscow), No. 276 (December 5, 1923).

[65] U.S. Consulate in Helsingfors, Report, October 8, 1928 (316–133–843). This report is based on the experience of Lauri Rautanen, a United States citizen of Finnish descent; it is useful as being among the most balanced and objective of the excommunard reports. Although he had lost $1,500 and wanted to return to the United States, Rautanen did not regret his experience; '. . . he wanted to see how it worked in Russia. He would advise nobody to go to Russia.'

[66] Farbman, *op. cit.*, p. 148.

[67] *Izvestia*, No. 246, October 27, 1923.

[68] *Pravda* (Moscow), No. 279, December 8, 1923.

[69] *Pravda* (Moscow), No. 247, October 31, 1923.

[70] U.S. State Dept. Decimal File, 316–135–251.

'Canadian commune' near Odessa formed by the Canadian Society for Technical Aid to Soviet Russia. They were allotted 1,500 dessiatins and employed several hundred Canadians and a few Russians. They brought equipment for their workshops from the United States.[71]

The Austrian commune, Imkommune Uhlfeld, was supported by both the Austrian government and the City of Vienna. The former contributed 800 schillings ($125) for each immigrant (the investment required by the U.S.S.R.). The City of Vienna gave a similar amount to commune members from Vienna. There were about 600 members in the commune, which settled in the Kirghiz Republic with the intent of founding an Austrian city based on regional agricultural development.[72]

JEWISH LAND SETTLEMENT PROGRAMS

With financial support from the Jewish community in the United States, Jewish settlers were encouraged to settle on various parts of the U.S.S.R. and particularly to undertake farming.[73] The act organizing the Committee for Settling Jewish Toilers on the Land was published in *Izvestia* on October 13, 1926, which outlines the land distribution and budgetary considerations in the program. Quite unknowingly, this organization aided the Bolshevik drive on private trade, renewed in 1924.

American assistance was organized under the Jewish Joint Distribution Committee, which had cooperated with American Relief in Russia and maintained a representative in the U.S.S.R. In 1925 land was set aside for these settlers, and the Joint Committee supplied tractors and other equipment, dug wells, provided cattle, gave loans for housing and farm building, and gave instruction in farming. By October 1925, the committee had settled 6,000 families on 500,000 acres in the Ukraine and Crimea.

Apparently the land settled could be used only with foreign assistance, as it was arid and water wells had to be drilled to a depth of 300–400 feet: hence the comment that 'this is why the country can be settled only by Jews who receive money from abroad'.[74]

[71] *Pravda* (Moscow), No. 47, March 2, 1923.

[72] The commune had a 12-page agreement with the Soviets. A translation is in the U.S. State Dept. Archives at 316–131–343.

[73] It should be noted that Jewish leaders in the United States, unlike many business men, took precise care to discuss their plans and actions with the State Department and ascertain the government viewpoint on such financial support, in order to avoid any possible misunderstanding. (See U.S. State Dept. Archives, 316–127–304.) There were similar organizations in other countries, but little is known of their activities. For example, Verein ORT, Gesellschaft zur Forderung des Handwerke und der Landwirtschaft unter den Juden, a German organization, registered to undertake operations in the U.S.S.R. *Ekonomicheskaya Zhizn*, No. 248, October 25, 1928.

[74] *Izvestia*, No. 157, July 11, 1926.

The Joint Committee also provided American plants and administrators for distribution and cultivation.[75]

Another 4,000 Jews settled by mid-1926. This number was held to be 'more than in the preceding 100 years, from the foundation of Jewish colonies during the reign of Nicholas I.'[76] Early in 1928, the Soviet government set aside for colonization by Agro-Joint some ten million acres in Eastern Siberia, between the Ussuri Railway on the north and the Amur River on the south. The administrative office was established in the spring at Khabarovsk and soon after, tractors, buses, automobiles, and settlers began to arrive. Adverse conditions forced half the settlers back to their homes in the first year, but very gradually a settlement was carved out of this previously unsettled land.[77]

Ikor, another United States Jewish organization interested in colonization, sent Dr. Charles Kanz to Siberia in 1928 to investigate conditions at first hand. Some 32,000 people, including the 1,000 immigrants who had arrived the previous year, lived in a total area of 42,000 square kilometers. Through Ikor and Ozet (a Soviet organization for establishing Jewish workers' settlements), quantities of equipment were shipped to the settlers during the 1929–30 season. A commission sent by Ikor to render technical assistance to the colony arrived in the U.S.S.R. in July 1929.[78]

The Joint Tractor Commission (1924) was an American-Jewish organization with the objective of generally developing Russian agriculture. At this time the commission had 135 tractors, which it rented out to peasants on condition that they create artels in groups farming not less than 20 dessiatins of adjoining land. Payment ranged from one to five poods of wheat per dessiatin.[79]

In 1923 the Jewish-American Committee imported 200 tractors, of which 75 were Waterloo Boy (make unknown) and the rest were Fordson. These were put to work in the Ukraine, generally at the disposal of collectives lacking horses.[80]

A joint-stock company, Akotprom, was formed in June 1923 to undertake commercial and industrial business in order to aid the Jewish Committee for Relief.[81] French Jewish circles also aided agricultural colonization. In 1923

[75] *Izvestia*, No. 64, March 10, 1923.

[76] *Izvestia*, No. 140, June 20, 1926.

[77] U.S. Consulate in Harbin, Report January 22, 1929. However, there are two sides to this story. Reports indicate that the Soviets had great difficulty after the first year in getting anyone to go to Biro-Bidjan, in Siberia, and gave each village and town a quota to fill for settlers to populate this 'God forsaken [sic] country.' [Report May 26, 1929, (316–108–529).]

[78] *Pravda* (Moscow), July 6, 1929.

[79] *Izvestia*, No. 140, June 20, 1926.

[80] *Pravda*, No. 166, July 26, 1923.

[81] *Ekonomicheskaya Zhizn*, No. 142, June 26, 1923.

some three million French francs were sent under an agreement, renewable annually, to Jewish families settling on the land.[82] In retrospect, one can only conclude that these settlements were little more than attempts on the part of the Soviet Union to extract foreign Jewish assistance. None of the settlements have survived.

THE FATE OF THE AGRICULTURAL COMMUNES

In early 1923 reports began to filter out of the U.S.S.R. concerning the desperate state of foreign communes. Many settlers were left without land allotments; others were in need of assistance, and some were caught in the squeeze between rising costs and low prices for grain and dairy produce.[83]

The commune was a failure, and its fate is well described in a *Pravda* article of late 1923. The author pointed out that incoming communes should have had every chance to become models of efficient agronomy. They brought in modern equipment, totaling to that time some $600,000 in value, and the membership, skilled and efficient, contained a large percentage of Party members. 'In general they are energetic, businesslike, Americanized people.'[84]

It was pointed out that in areas where land was lying idle, the commune Echo was given 'wild prairie' without a single building, with two of the sections connected by a narrow corridor 1 kilometer wide and 15 kilometers long. The Canadian commune in Odessa lost five baggage cars for six months; finally only three of the cars arrived.[85] The John Reed Commune in Podol Province did not obtain land for nine months, and then received a ruined estate. The Red Banner Commune waited seven months for land, and after working it for a while was expelled and force to sell its equipment to pay moving costs. The Novy Mir Commune received buildings infected with foot and mouth disease. The communes, it was stated, were breaking up. Some members were going back to the United States, and some were wandering all over Russia. Said the Soviets, ' . . . we are losing very precious and important breeding stations of agricultural knowledge; we are killing the cause with our own hands.'[86]

On the other hand, some communes must have survived for several years, as they were still importing American equipment in 1926. The Ira imported $35,000 worth of agricultural equipment in early 1926, the Agro-Joint

[82] *Ekonomicheskaya Zhizn*, No. 18, January 27, 1923.
[83] IS Report, December 8, 1923. (316–133–339.)
[84] *Pravda* (Moscow), No. 260, November 16, 1923.
[85] *Pravda* (Moscow), No. 260, November 16, 1923. Elsewhere it is stated that two cars out of three were lost.
[86] *Ibid.*

commune just over $39,000 worth of equipment, and AIK, in the Kuzbas, $4,345.[87]

In the end, however, they all perished.

THE AGRICULTURAL EQUIPMENT MANUFACTURING INDUSTRY

Toward the end of the nineteenth century, Russian farming, as a result of the introduction of modern agricultural machinery and implements, underwent extensive technical improvement. Peasant credit associations, funded by government banks and the zemstvos (district councils) encouraged this trend. Spurred by these changes, the manufacture of agricultural implements expanded rapidly; by 1908 there were over 500 plants, not including peasant industries, also of considerable importance. In 1908 the plants produced more than 390,000 ploughs, 8,800 seeders, 61,000 reapers and mowers, 22,000 threshers, and 31,000 winnowers.[88] By 1913 the number of establishments increased to more than 800, employing 39,000 workers and including very large plants funded with Western capital. By far the largest was the International Harvester plant, covering sixty-two acres at Lyubertsy, near Moscow. This plant, opened in 1911, provided employment for 2,000. The company had an extensive and well organized service network in Russia; the Omsk (Siberia) branch of International Harvester was the largest overseas branch operated by the company.[89]

Agricultural exhibitions, credit associations, and other forms of government aid enabled Russia to develop a relatively advanced agricultural economy before World War I. Agricultural products were exported on a large scale; at the turn of the century Russia had become the world's largest exporter of wheat.

The equipment plants survived the Revolution; exactly the same number (825) were reported available for use in 1923 as in 1913, but their output had declined catastrophically. In 1923, the Soviets produced only 12 percent of the ploughs, 70 percent of the scythes, 26 percent of the sickles, and between 1 and 8 percent of other implements which had been produced in 1913.[90]

The early 1920s were characterized by continuing crises in the industry. The 1921–2 plan for agricultural machinery was less than 50-percent fulfilled,

[87] *Amerikanskiai torgovlia i promyshlennost'* (New York: Amtorg Trading Company, June 1926), p. 40.

[88] *Russian Yearbook: 1912* (New York: Macmillan, 1912), pp. 157–61. This evidence appears to refute the numerous statements that agricultural machinery output in prewar Russia was negligible. For an example, see Friedman, *op. cit.*, p. 81.

[89] *World Harvester*, November–December 1953.

[90] *Biednota*, No. 1427, January 26, 1923.

and productivity per worker only 43 percent of prewar.[91] *Kooperativnoe Delo* for June 1922 describes the chaos into which the industry had descended. Of the 825 enterprises working in 1913, only 73, or 9 percent, were working at all, and most of these in a half-hearted manner.

To overcome production difficulties, the industry was consolidated. Prerevolutionary works in the Ukraine were now grouped into two trusts: Ukrselmashtrest and Zaporozhtrest. In October 1923, eleven of the twenty-one plants in these two trusts were combined in the Vseukrainsky Selmashintrest, and the remaining ten were closed down. Specialization of output was increased. Drill seeders were now produced at Elvorty, Helferlich-Sade (in Kharkhov), and Kiranon-Fuks. Reapers were produced by the Donsky (Nikolaev) and Kopp (Zaporozhia) works. Threshing machines were produced at Elvorty, Helferlich-Sade, and Lepp-Valman. However, major deficiencies reported for 1925–6 suggest that concentration did not get to the root of the problem.[92]

Selmashstroi reported in 1923 that the decline was due to the high cost of production and inadequate financing. The deficiencies had now become monumental. Production and imports together failed even to offset normal wear and tear, and peasants were reverting to the use of primitive, hand-made wooden equipment.

ATTEMPTS TO DEVELOP A SOVIET TRACTOR, 1922 TO 1926

The Soviets made numerous unsuccessful attempts to produce a workable tractor in the early years of the 1920s. These ended in failure, and the Soviet Union then turned to the United States for assistance in constructing the massive tractor plants of the Five-Year Plan.

Two designs were completed in the Soviet Union about 1923, both by I. B. Mamin. The 'Gnom' design was selected as being suitable for Russian agricultural conditions, and Mamin was sent to Germany (with 130,000 rubles) to purchase the necessary production equipment. The Balakov factory in Samara was turned over to 'Gnom' mass production. It was anticipated that 150 of these small, 16-horsepower, oil-driven tractors would be built in the first year and 250 to 300 per year thereafter. No complete units were produced, although some engines were used for a while as stationary power units.

The other Mamin design was the crude oil tractor, 'Karlick,' with a one-cylinder 12-horsepower engine. This was built at the Old Neurepublik works at Marmstadt on the Volga. Some were produced, but, like the 'Gnom', they

[91] *Pravda* (Moscow), No. 279, December 8, 1923.
[92] U.S. State Dept. Decimal File, 316–129–969.

were too heavy, too clumsy, and insufficiently powered for field use, and were used only as stationary power units.[93] Another tractor, the 'Bolshevik', a 4-cylinder, 20-horsepower machine was also attempted at the Bolshevik Works in Leningrad. Only a small number were produced, in 1923–4, and production ceased entirely before 1926. The Ford Delegation suspected it was for military transport work, as it was too large and clumsy to perform as a tractor.[94]

The 'K.P.Z.' tractor was a 4-cylinder, 50-horsepower machine built at the Kharkov Locomotive Works. This was a copy of the German tractor, 'W.D.' It was expensive (15,000 rubles) and much too clumsy for field use. Production stopped before 1926.[95]

Several hundred of the 'Zaporojetz' were built at the Ukraine Agricultural Machinery Trust. This was a 3-wheeled, 1-cylinder, 12-horsepower machine, very heavy (2 ton) and useful only as a stationary power unit. It was priced at 5,000 rubles, expensive when compared to the imported Fordson (1,800 rubles).[96]

Two additional tractor models were attempted at the Kolomensky Machine Works at Golutviko near Moscow. One was the 'Mogul', a 4-cylinder, 12–25-horsepower machine: an 'exact copy of an American tractor by the same name.'[97] The other was a 2-cylinder, crude-oil copy of the Swedish tractor, 'Avance,' but with transmission and gears as in the 'Mogul', built in the same plant. Production of both was very small and ceased by 1925–6.[98]

Work was also started on an experimental electric plow: an example of Lenin's preoccupation with electrification. A contract was issued in 1923 to plow 16,000 dessiatins with 16 electric plows. When the season was over, only one had worked any length of time, and only 477 dessiatins had been plowed. In the following year, 5 plows undertook 4,000 dessiatins, but actually plowed only 300. The trailer was found to be 'extremely heavy and constantly buried in the ground.'[99] It was expensive and impractical; the experiment was discontinued in 1926, although it has been revived at intervals since that time.

Work also started on several models of oil-fueled tractors. 'An exact copy of an American tractor built in 1922'[100] (100 'Holt') was placed in production at the Bolshevik plant, near Leningrad. The carburetors, ignition system, and other parts were imported from the United States. Work continued for one

[93] *Report of the Ford Delegation to Russia and the U.S.S.R. April–August 1926* (Detroit: 1926), Ford Motor Company Archives Accession No. 49, p. 42.

[94] *Ibid.*, p. 41, The report has photographs of these Russian models.

[95] *Ibid.*

[96] *Ibid.*

[97] *Ibid.*, p. 40.

[98] *Ibid.*, p. 46.

[99] *Ibid.*, p. 102.

[100] *Ibid.*, p. 103.

year. Between 1924 and 1926 the plant only made spare parts, but this also ceased in 1926. The Ford Delegation (1926) reported the 'Russian Holt' to be a product of extremely high cost and poor quality.

INTERNATIONAL HARVESTER COMPANY AND NATIONALIZATION

According to Keeley,[101] the International Harvester plant at Lyubertsy, just outside Moscow, continued operation through both revolutions and the winter of 1919–20 with only a single three-day strike. Cromming, the German manager, produced equipment for the Bolsheviks on a cost-plus-10-percent basis, the percentage to cover the living expenses of the chief executives and himself. Cromming agreed with the Workmen's Committee to supply food (no small promise), in return for complete authority over technical operations of the plant. Cromming apparently acted on his own initiative; he was reported as not knowing whether the parent United States company had even wanted to continue operations after the Revolution.

In 1921 the Soviets offered an agricultural equipment manufacturing concession to an unknown United Kingdom tractor manufacturer. The offer was passed along to International Harvester, who in turn passed it on to the State Department with a notation that the company was cool to the proposition but worried lest British and German interests accept a concession to manufacture tractors and freeze out International.[102]

It is clear that, although Cromming operated the Moscow plant and International Harvester was concerned for the welfare of employees inside the U.S.S.R., including several engineers sent in 1921, the company did not press for modification of United States policy. Mr. Legge of International is quoted as saying, 'Nothing has occurred up to the present which would justify considerations of change in policy of this Government.'[103] In 1924 rumors circulated about an impending takeover of the Moscow plant[104] which was, in part, accomplished before the end of 1924. The enterprise immediately slumped into substantial deficit, a subsidy of 1.8 million rubles and a credit of 466,000 rubles being required on expenses of 3.49 million rubles. Even more catastrophic was the effect of the August decree of the Council of Labor and Defense equalizing prices for domestic and imported tractors. In February 1925,

[101] U.S. State Dept. Decimal File, 316–107–97.

[102] A copy of the proposed concession agreement is in U.S. State Dept. Decimal File, 316–130–1162. There is a marginal notation, marked HH (Herbert Hoover), that great importance was attached to this offer—presumably on the part of the Administration.

[103] U.S. State Dept. Decimal File, 316–108–23.

[104] Rumors noted in 361.115 of the Decimal File, 316–108–1279.

Glavmetal confirmed the first year's program of 1,000 hay harvesters and 600 reapers planned for Lyubertsy. The hay harvesters were estimated to cost 130 rubles apiece, against 190 rubles for imported harvesters. Glavmetal then reversed itself and requested Vesenkha to dismiss the 'acceptance committee' which had been taking over the factory from the International Harvester Company.[105]

A rapprochement took place in 1925. In August, International Harvester was granted permission to conduct trading operations within the U.S.S.R. and supply spare parts for agricultural machinery.[106] The company then began to advance substantial credits for the purchase of American-made equipment.[107] At the end of 1925, all International plants were denationalized; according to the German Embassy, they were found too complex to operate and International Harvester temporarily re-entered its own factories.[108]

The Bolsheviks had the last word. The Selmash trust was liquidated November 16, 1926 and a committee established to wind up business, including the claims of the Lyubertsy works of International. On March 7, 1927, the trust was placed under moratorium, and all claims against it suspended. The United States Riga consul comments:

> Thus the legal guarantees which existed at the time when the creditors entered into business with the syndicate [i.e., trust] were suddenly withdrawn, leaving the creditors of a Government organization at the mercy of a Government commission and depriving them of a part of the lawful interest on their money. It will be noted that the moratorium is entirely one sided and does not suspend the obligations of the syndicates debtors . . .[109]

As late as 1929, International was still trying. It negotiated a contract for the sale of 5,900 International tractors on three-year credit terms, including clauses which allowed the U.S.S.R. to send technicians to the United States for training and required International engineers to give consulting services on the establishment of a network of tractor-repair shops.[110]

The contribution of Lyubertsy and the International Harvester Company to Soviet industrialization is best summed by a Soviet publication:

> The Lyubertsy enterprise is a shining example of the good sense of 'Nep.' The Harvester Company rendered the hated Bolsheviks the same service that Harriman performed in Chiatury and Krupp in the Ukraine.

105 *Ekonomicheskaya Zhizn*, No. 29, February 5, 1925.

106 *Torgovo-Promyshlennaya Gazeta*, No. 185, August 15, 1925.

107 German Foreign Ministry Archives, T120–3033–H10945. The company advanced $2.5 million on 18-month terms.

108 *Ibid.*

109 U.S. Consulate at Riga, Report 4449, April 12, 1927. (316–111–924.)

110 *Izvestia*, No. 149, July 3, 1929.

> These firms helped them to train a nucleus of skilled workers in these enterprises and to learn the process of production which soon enabled them to continue production without the capitalists. Today there are few concessions left in Soviet Russia and not even the Vorwaerts dares to assert any longer that the Bolsheviks have introduced capitalism. . . .[111]

At the same time, 1,300 60-horsepower Caterpillar tractors were purchased for delivery in November–December 1929, with similar clauses for technical assistance. Caterpillar sent engineers and technicians to the U.S.S.R. to instruct in the operation of tractors, and Russian engineers went to Caterpillar plants in the United States for further instruction on maintenance. The company opened a permanent office in Moscow to solve problems arising in the utilization of their tractors.[112]

POSITION AT MID-DECADE

The 1924–5 plan for tractor manufacture concentrated production in larger prewar plants taken over by Glavmetal; Krasnyi Putilovets was planned to produce 500 tractors, Gomza 500, and the Kharkhov plant 120.

These targets were not achieved, and attempts to create a tractor industry were described by Dr. G. Schlesinger, a German tractor expert, as 'creating a laughable impression and extremely amateurish.' In an effort to induce the peasant to buy the miserable product of the Soviet tractor factories, a decree was published in August 1925 equalizing prices for Soviet-made and the much cheaper and better-quality imported tractors. In effect, the prices for imported tractors were raised.

Table 7–2 PRICE SCHEDULE FOR SOVIET AND FOREIGN TRACTORS (DECREE OF AUGUST 1925)

Russian		*Rubles*	
Krasnyi Putilovets (copy of Fordson)	(with plow and spares)	1,800 (cost 4,000 rubles)	
Kolomenets	(with plow and spares)	2,500	
H.P.Z.	(without plow)	8,000	
Zaporozhets	(with plow and spares)	2,000	
Karlik	(with plow and spares)	2,000	
Bolshevik (planned)	(with plow and spares)	8,000	
American			
Fordson	(with plow and spares)	1,800	(now including 165 rubles tractor subsidy tax)
International (30 h.p.)	(with plow and spares)	4,000	

Source: Ekonomicheskaya Zhizn, August 18, 1925.

An implementing decree of the Council of Labor and Defense had the stated objective of providing the largest possible distribution of tractor power

[111] Theodor Neubauer, *Lyubertsy; a Cross Section of the Five Year Plan* (Moscow: Co-operative Publishing Society of Foreign Workers in the U.S.S.R., 1932), p. 17.

[112] *Ekonomicheskaya Zhizn*, No. 160, July 16, 1929.

for the improvement of land cultivation.[113] Imported Fordsons and Internationals normally sold well below the prices of the few domestic tractors; after the 1925 decree the imported Fordson and the Krasnyi Putilovets copy of the Fordson both sold at 1,800 rubles, as indicated in table 7–2. The stated objective, of course, was not fulfilled: the domestic product was far below the imported quality. The peasant preferred the imported tractor, but surplus accruing from taxation of the imported tractor was used to offset the deficit in domestic production, and in effect subsidize domestic tractors.[114] Agricultural productivity suffered while industry tried to overcome production problems.

Russian tractor works in this period were chronically inefficient. The Putilovets required 350 man-days per tractor produced, and at the Kharkov Works the assembly of a tractor motor required eight man-months.[115] In 1926 an inspection of the agricultural machinery factories of Riazan, Tula, Orel, and Belokhuminsky revealed that the raw-material supply, particularly that of iron and steel, was hopelessly deficient. Tula, for example, received only 8 percent of its iron and steel requirements in 1925–6. In addition, equipment was out of repair and in need of replacement.[116]

The dismal plight of the tractor-building industry was investigated in June 1925 by the above-mentioned Dr. Schlesinger, at the invitation of Orgametal. Conditions must have been pretty miserable; *Ekonomicheskaya Zhizn* made the point that 'one must not become downhearted.'[117]

Schlesinger's specific recommendation was a plant to built 10,000 tractors a year 'with the special machine tools that are being built by American factories for Ford,' to replace the outmoded tractor works.

The 1925–6 plan for domestic tractor-building allowed for only 1,800 tractors:[118]

Type 'FP' (Fordson-Putilovets)	900 tractors
'Kolomenets'	250 tractors
'Zaporozhets'	300 tractors
'Karlik'	100 tractors
'Bolshevik'	100 tractors
'Comintern'	150 tractors
	1,800 tractors

[113] Decree is reprinted in *Ekonomicheskaya Zhizn*, No. 186, August 18, 1925.

[114] This was almost the supreme insult so far as the Ford Motor Company is concerned: the unauthorized Soviet copy of the Fordson was subsidized at the expense of the imported Fordson. The 'subsidy tax for Russian tractor industry' was 165 rubles on a Fordson—about 8 percent of cost.

[115] U.S. Consulate at Riga, Report No. 3237, September 28, 1924. (316–133–516.)

[116] *Ekonomicheskaya Zhizn*, No. 87, April 16, 1926.

[117] *Ekonomicheskaya Zhizn*, No. 130, June 11, 1925.

[118] *Ekonomicheskaya Zhizn*, No. 290, December 19, 1925.

The intent in 1925–6 had been to supply 16,750 tractors, of which 1,800 were to have been made in the U.S.S.R. The balance of 14,950 tractors (89.2 percent) were planned as imports.[119] Actually, less than 900 tractors were produced, and most fell to pieces after a few weeks or months in operation; in effect, almost all usable tractors were imported.

KRASNYI PUTILOVETS AND THE FORD MOTOR COMPANY

Although the International Harvester plant had been the largest in tsarist Russia, the oldest and most famous undoubtedly was the Putilovets in St. Petersburg, which was founded in 1801, and 100 years later was claimed as the largest manufacturing plant in Russia and also the largest in Europe, apart from Krupp in Germany and Armstrong in the United Kingdom.[120] The firm had licensing agreements with Western companies; one with the Bucyrus Company (United States) dated from the early 1900s and covered the manufacture of placer dredges and steam shovels.[121] The Revolution dispersed its skilled workers and managers, and it was not until January 1922 that some sections began operating again, with German engineering assistance. We do know something of the mechanical condition of the plant during the period 1917 to 1922 (the five years of 'technical preservation'). A report exists which indicates that equipment was intact, although '60 percent worn out'; blame for non-operation was placed on the enemies of the people:

> It was at that moment impossible without any prepared plan to put all in order, because of the opposition (not shown openly) of the different specialists towards the Working Peasant Power.[122]

Later some émigrés from Detroit were sent to Putilovets, and the 1926 Ford Delegation reported that the works was well equipped with United Kingdom, German, and American machine tools, and that it was

> . . . not at all badly arranged, with machines in progressive order, and it was the only shop visited that was provided with special tools and fixtures to any extent. The manufacturing methods, jigs and fixtures strongly reflected Ford practice at the old Dearborn plant.[123]

The plant had then been reopened about a year before, and employed some 800 workers. The delegation estimated production at three tractors per month.

[119] U.S. Consulate at Riga, Report 3529, January 18, 1926. (316–133–559.)

[120] *The Works 'Red Putilovez': A Short Historical Description.* Typewritten ms, undated, origin unknown. Hoover Institution, Stanford University.

[121] *Designed for Digging: The First 75 years of Bucyrus-Erie Company* (Evanston: Northwestern; 1955), p. 85.

[122] *The Works 'Red Putilovez': A Short Historical Description*, p. 15.

[123] *Ford Delegation Report (1926)*, pp. 48–9.

There was a sprinkling of ex-Ford Motor Company employees throughout the plant, including the final inspection area.

Ford, the arch-capitalist, then attracted the envious attention of the Communists. *Fordismus* and *Fordizatsia* as work methods became bywords; if Ford methods would work in a capitalist country then they must surely work in a socialist country.[124] The initial relationship between the Ford Motor Company and the Soviets was purely one of trade. Between 1922 and 1926, Ford sold 20,000 tractors to the U.S.S.R., each with its own set of replacement parts. By 1927, more than 85 percent of all trucks and tractors used in the U.S.S.R. were Ford-built from Detroit. The balance was a mixture of imported Fiats, Case, Internationals, and some United Kingdom models, together with the scrambled output of the A.M.O. plant in Moscow (attempting to reproduce Fiat trucks and repair White trucks), the ex-International Harvester plant, and the decrepit prerevolutionary tractor plants in Moscow and Kharkov.

The 1926 Ford Delegation to the U.S.S.R. found Ford products everywhere. The Ukrainian government owned 5,700 tractors, of which 5,520 were genuine Fordsons. Azneft had 700 automobiles, of which 420 were Fords. The major problem facing Soviet organizations was servicing, and this was also the primary interest of the five-man Ford team. The delegation traveled throughout the U.S.S.R. giving lectures and lessons on servicing and cost reduction, and setting up training schools and service organizations along Ford lines elsewhere in the world. The existing servicing was found to be 'wretched.' Charts and diagrams produced in abundance on request meant nothing: in practice, little in the way of either maintenance or repair was being done:

> Our surprise can be imagined when we arrived in the Ukraine, the richest tractor district in Russia, and were unable to find a single Fordson repair shop worthy of the name. No special repair equipment existed anywhere, although fourteen full sets of Fordson (repair) equipment had lately been received for Ukraine alone. . . .[125]

In 1923 the State Trade Commission had been given the responsibility of developing a network of sale and repair shops to be tied in with the major repair points established by the Fordson sales organization in the U.S.S.R. Apparently the trade commission had not established its repair shops, and the Fordson shops had been neglected.[126]

The 1928 Sorensen mission to Russia inspected the Krasnyi Putilovets plant, and, as Sorensen relates it:

[124] 'Fordismus,' *Bolshaya Sovetskaya Entsiklopediya* (1933).
[125] *Ford Delegation Report (1926)*, p. 49.
[126] *Ekonomicheskaya Zhizn*, No. 48, March 3, 1923.

> We came into . . . the assembly room and I stopped in astonishment. There on the floor lines they were building the Fordson tractor. . . . What the Russians had done was to dismantle one of our tractors in the Putilov Works, and their own people made drawings of all the disassembled parts.[127]

However, as Sorensen pointed out, it was a long way from pulling a machine to pieces to building workable copies, and the Russians had neither the specifications nor the skills to turn out good copies. The Fordson-Putilovets tractor experiment provided little more than technical education.

In brief, at the mid-point of the 1920s, the Soviets had five prewar agricultural machinery plants, suitable for small-scale tractor construction. However these plants were costly to operate and technically backward. They made a hopelessly insufficient and inefficient contribution to agricultural development.

The solution was to turn to American technology. The poor Krasnyi Putilovets works was therefore completely re-equipped with American equipment[128] and, by technical-assistance arrangement, placed under the management of the engineering consultants Frank Smith, Inc.[129] A series of large-scale tractor building plants was then envisaged, utilizing the latest American mass production methods. The first of these was the Stalingrad (followed by the Chelyabinsk and Kharkov), designed by Albert Kahn, a United States construction design firm, and built by McClintock and Marshall, also of the United States.[130]

Albert Kahn had been the builder of the large mass-production plants of the American automobile manufacturers, and he incorporated the skills and ideas of American experience in mass production. The Stalingrad tractor plant was designed to produce 40,000 tractors a year in two shifts. With United States assistance, the Soviets produced similar tractor and automobile plants in the 1930s.

The Soviets had a clear concept of the advantages to be gained from importing this technology *in toto*, and the contribution it would make to the achievement of the first Five Year Plan:

> The utilization of its [i.e., Kahn's] technical assistance assures the execution of the construction work of the Traktorstroi within the specified time and guarantees the employment of all the achievements of modern American technique.[131]

[127] Charles E. Sorensen, *My Forty Years with Ford* (New York: Norton, 1956), p. 202. The plant certainly did not impress Sorensen, who suggested they take some sticks of dynamite and 'blow it out of its misery.'

[128] Friedman, *op. cit.*, p. 238.

[129] U.S. State Dept. Decimal File, 316-131-654.

[130] *Ibid.*

[131] The agreement between Albert Kahn and Glavmashinostroi is reported in *Torgovo-Promyshlennaya Gazeta*, No. 109, May 16, 1929.

The Kahn company prepared construction plans in the United States while at the same time instructing a group of engineers from Traktorstroi. The company then hired American engineers to handle the erection of the buildings, worth about 8 million rubles ($3 million). The production equipment was purchased in the United States.[132]

Table 7–3 TECHNICAL-ASSISTANCE AGREEMENTS (TYPE III) WITH THE POST-REVOLUTIONARY TRACTOR CONSTRUCTION INDUSTRY TO 1930

Technical Process	*Western Partner*
Preliminary consulting	Dr. Ing. G. Schlesinger (Germany)
Gear-cutting technology	Brown Lipe Gear Co. (Syracuse)
Electrical-equipment manufacturing	The Electric Auto-Lite Co. (Toledo)
Axle-manufacturing	Timken-Detroit Axle Company (Detroit)
Engine technology	Deutz A-G, Hercules Motor Company (U.S.)
Plant design	Albert Kahn, Inc. (Detroit)
Plant steel structure erection (Stalingrad)	McClintock and Marshall (U.S.)

Source: American-Russian Chamber of Commerce, *Economic Handbook of the Soviet Union*, pp. 97–101.

Although the tractor industry, heralded as the basis for socialist agriculture in the same manner that electrification had been associated with industrialization, was a major problem for much of the decade, the gravest shortages occurred in production of the simpler kind of equipment. Scythes, sickles, pitchforks, plows, harrows, and winnows were prohibited from import, as it was planned to supply all internal demand from Russian factories. The simpler kinds of agricultural equipment were subject to a heavy duty of 4.5 rubles per 100 kilograms, whereas the more complicated mechanical equipment was allowed in duty-free; reapers, binders, disc harrows, and all newly invented or improved equipment required by model farms were allowed in without duty. However, the massive shortages of simple equipment reduced the ability of the peasant to work his land, and in some areas the peasant actually returned to the use of wooden implements.[133]

We may conclude therefore, that in agriculture the transfer of Western technology was not notably successful. The hostility of the peasant, the collectivization of agriculture, the undue attachment to imaginary massive

[132] *Bank for Russian Trade Review*, II, No. 7 (July 1929), 4; and U.S. State Dept. Decimal File, 316–132–28/44.

[133] U.S. Consulate at Riga, Report 3481, December 5, 1925. (316–133–540.) The deficiency in 1925 amounted to 140,000 plows, 614,000 harrows, and 17,000 winnows.

economies of scale, and the misunderstanding of the factors making for success in Western large-scale agriculture made for ineffective transfer.

Kuibyshev's lengthy report of April 1927 suggests the great gap between the Soviets' achievement and their fantastic claims. While Krasnyi Putilovets was struggling to make a few ersatz copies of the Fordson tractor, the effort was thus described by Kuibyshev:

> . . . a mass of difficulties has been solved brilliantly, the production of tractors is getting cheaper and cheaper and the quantities produced by the Red Putilovets are ever increasing. . . .[134]

In the agricultural equipment industry, nothing of substance was achieved in tractor production until the very end of the decade, and implement manufacture was unfortunately ignored in favor of the tractor—the favored Bolshevik symbol of industrialization. The failure of adapted prerevolutionary plants to make tractors, whether of native design (the Gnom) or stolen design (the Fordson) forced the Soviets to arrange for Western tractor manufacturers to install packaged 'knocked-down' plants in the U.S.S.R.[135]

CREDITS GRANTED BY AGRICULTURAL MACHINERY PRODUCERS TO THE SOVIET UNION, 1925

The Soviet Union had no trouble purchasing agricultural machinery on credit terms. The *Ford Delegation Report (1926)*, for example, notes:

> International Harvester, which lost huge sums of money in Russia through nationalization of its property and equipment, are now extending two years credit to the Soviet Government.

An International Harvester invoice dated August 18, 1925, indicates that the cost of the International 15–30 tractor to the Soviet government was $1,150 and the 10–20 tractor $775 (both f.o.b. New York). Terms were as follows:

50 percent three months after purchase
16.6 percent August 15, 1926
16.6 percent November 15, 1926
16.6 percent May 15, 1927

Interest was charged at 8 percent in the first year and 6 percent in the second.

Case Machinery was granting about the same terms. Advance-Rumley, which had about 600 to 800 of its 'Old Pull' tractors in the Soviet Union, was offering less favorable terms, and this limited its sales. An invoice dated August 12, 1925, places cost to the Soviet government at $1,000, and offers terms at 10 percent with order, 40 percent against documents in New York, and 25 percent in each of two payments, to be made November 1, 1926, and November

[134] *Izvestia*, No. 94, April 27, 1927.

[135] Construction of the Stalingrad and other tractor plants is covered in Vol. II.

1, 1927. Dodge Brothers was offering nine-month terms with only 6-percent interest for lots of more than 50 tractors, but required 50-percent payment against documents for any size of purchase. Massey-Harris, in Canada, sold 300 binders in August 1926 on terms of 10 percent with order, 20 percent against documents, 10 percent three months from date of delivery, and the balance in August 1927. Fordson, who sold the bulk of the tractors in the U.S.S.R., required 25 percent down and the balance over nine months or one year. These terms were not, however, as favorable as those obtained by the Soviets for automobiles and trucks. Steyer in Austria and Mercedes in Germany both gave three-year credits, and Renault in France two years.

Of a total 24,000 tractors in Russia in August 1926, 20,000 were Fordsons, 2,400 were International Harvesters, 700 were Advance-Rumley, and 900 were miscellaneous (including Soviet makes).

In the light of these statistics, statements that the Soviet Union developed without foreign financial assistance are seen to be manifestly untrue.

CHAPTER EIGHT

Fishing, Hunting, and Canning Concessions

THE small group of fishing, hunting, and canning concessions was more important as a contributor to foreign exchange earnings than as a channel for the direct transfer of technology. Furs, for example, were the second most important Soviet export and indirectly, by generating foreign exchange, aided the technological transfer process.

NORWEGIAN FISHING CONCESSIONS

In early 1923, an agreement was made between the Norwegian firm Vinge and Company and the People's Commissariat of Supplies, under which the Norwegians were given the privilege of hunting 'sea animals' within the territorial waters of North Russia. The company equipped fifty-six ships for this purpose. Vinge and Company paid 200,000 Norwegian crowns for this right.[1]

For the second year of operations the Soviets demanded negotiation with the ships' owners who had been organized with Vinge as their bargaining agent in the first year. In the second year, rental was set at $10 per ton for ships employed hunting seals, with a minimum payment of $40,000. Provision was also made for Russian scientists to study fishing methods and fishing locations, on board the 'best' of the ships in the fleet.[2]

An additional contract was also concluded for the 1924 season, under which Vinge was granted the right to fish for white sturgeon along the Russian Arctic coast.[3]

A concession was granted to the Norwegian citizen Christensen in May 1923 to hunt whales and reduce these to food products within a zone extending along the Arctic coast of Russia. It was granted for a period of fifteen years, and the

[1] *Russian Economic Review*, III, No. 8 (June 10, 1923), 12.
[2] *Ekonomicheskaya Zhizn*, No. 71, December 23, 1923.
[3] *Ekonomicheskaya Zhizn*, No. 303, October 7, 1924.

Soviet government received a portion of the profits unstated but not less than £2,000 sterling per year. Each ship manned by Christensen was required to have at least six Russian seamen, and shore enterprises operated by the concession were required to employ not less than 25 percent Russian workmen.[4]

A group of German fishing firms working in the Murmansk area was granted a concession in 1924 to fish in certain northern waters disputed by the U.S.S.R. and Germany. The group holding the concession was known as Wirtschafteliche Verband der Deutschen Hochseefischerein and was based in Bremen.[5]

FUR AND SKIN CONCESSIONS

The Hudson's Bay Company of the United Kingdom and Canada concluded a concessions agreement with Vneshtorg in April 1923, under which the company agreed to export to Kamchatka, in the Far East, goods to the value of $350,000, at prices not exceeding the London market price plus 20 percent. The company could also purchase furs on the peninsula in cooperation with Vneshtorg. The furs were to be exported to London, where 10 percent of the value was payable to Vneshtorg, and any profit resulting from the ultimate sale of the furs was to be divided equally between Hudson's Bay and Vneshtorg. A similar agreement was reported with Glavconcern for smoked fish and furs.[6] The company was required to pay all state and local taxes, license fees, and export and import taxes.

The winter buying season did not go untroubled for Hudson's Bay. There were petitions from Kamchatka in which hunters requested the government

> . . . to free them from the criminal activities of the Hudson's Bay firm . . . agents of the firm deliberately value furs at 50 percent below last year, and sables of the highest quality are valued at the same price as skins of the lowest quality. . . . The firm has double income whereas the population suffers treble losses.[7]

The Persian lamb fur market in the United States was dominated by Brenner Brothers, of New York. In the fall of 1922, Kalman and Feival Brenner made a buying trip into Russia and purchased 'a considerable quantity of furs,' for delivery to Paris and New York. They considered uncertainty too great to warrant more extensive dealing, although they were offered an 'attractive proposition.'[8]

[4] *Izvestia*, No. 113, May 24, 1923.
[5] U.S. State Dept. Decimal File, 340-5-806.
[6] *Rigasche Nachrichten* (Riga, Latvia), April 14, 1923.
[7] *Pravda* (Moscow), No. 40, February 19, 1924.
[8] U.S. Consulate at Riga, Report 2729, September 25, 1922. (316-107-1034). This deal apparently went through because Brenner's Siberian representative had a brother who was a 'high government official in Moscow.'

Karl Brenner, a partner of the firm, was approached by Arcos agents in 1924 with another $1 million proposal. In return for the exclusive right to purchase furs within the U.S.S.R., they could buy at 15 percent under the market price or be repaid at an interest rate of 10 percent. Brenner pointed out that Arcos had overheads of 35 percent in handling furs while Brenner had a 50 percent markup. They considered the U.S.S.R. had reached the end of its financial resources and refused to deal.[9] The company registered for business and purchased 500,000 rubles of furs in the 1924–5 season.[10]

In the same season, J. Wiener, of New York, was registered for operations in the U.S.S.R. and purchased 400,000 rubles worth of furs.[11]

Probably the largest of the fur concessions was that of Eitingon-Schild, which in 1924–5 handled 4 percent of the total trade turnover between the United States and the U.S.S.R.[12]

A dispute between the Eitingon-Schild concession partners in United States courts revealed the substantial profits made by a few successful concessions. Representing Eitingon-Schild, Otto B. Shulhof, of New York City, went to London and then to Moscow in 1922 to negotiate a contract for the marketing of Russian skins and furs. Eitingon himself was a Russian émigré and had considered himself persona non grata so far as the Soviets were concerned. Shulhof held that when the concession was about to be signed (he had all required signatures except those of Krassin and Bogdanov) he found that Eitingon had signed a fur concession directly with Arcos, Soviet trade representatives in London. Shulhof sued for $1 million damages for breach of contract, in lieu of the 10-percent commission. Just before going into court, he raised the damage claim to $2 million. Examination of Eitingon-Schild accounting records indicated that the concession profits for two years were over $1.5 million. Net sales of the concession had been $7,340,178, which after deduction of cost and 7 percent royalty, left a net profit of $1,846,759.[13] The contract had run initially for one year, during which Eitingon-Schild advanced the Soviets 50 percent of the value of the skins and furs and split profits equally with them. During the second year, the concessionaire was required to make more substantial advances, and his profit was limited to 15 percent of the selling price of the furs.[14] Apart from the Hammer operations, no other case is known where large profits were made from concessions.

[9] U.S. Consulate at Riga, Report 2550, December 8, 1924. (316–108–1277.)

[10] U.S. Consulate at Riga, Report 927, January 17, 1925. (316–111–915.)

[11] *Ekonomicheskaya Zhizn*, No. 192, August 25, 1925.

[12] U.S. State Dept. Decimal File, 316–108–1543.

[13] An independent accountant in later evidence held that profits were only $1,079,973 over two years.

[14] *New York Times*, various issues, November 1927.

SIBERIAN FISH CANNERIES

In the Soviet Union the only variety of fish canned in 1923 was salmon, of which about 30 million pounds were canned annually and almost all exported. Of the twenty canneries in Siberian waters, fifteen were owned and operated by Japanese, two by Russians, two by Americans, and one by the British. There were also eighteen crab canneries, of which fifteen were Japanese-owned and operated and three were Russian. The entire Siberian fishing industry in 1923 employed about 34,000 persons, of whom 29,000 were Japanese. The Japanese also leased 62 percent of the fishing stations.[15]

AMERICAN CONSTRUCTION OF SALMON CANNERIES IN KAMCHATKA

In 1927–8, two large salmon canneries, one with five canning lines and one with three canning lines, were built to can salmon for export. The construction of these new canneries indicates a complete dependence on the most advanced Western engineering achievements. Nearly all the firms involved in construction came from the Pacific coast of the United States.

Table 8–1 CONSTRUCTION AND EQUIPMENT OF KAMCHATKA SALMON CANNERIES, 1928

Structural Equipment Supplied	*Company*
Coolers	Isaacson Iron Works, Seattle
Steam engines	Nagle Engine and Boiler Works
Steel barges	Wallace Bridge and Structural Co.
Conveyers	International B.F. Goodrich Co.
Boilers	Pennsylvania Boiler Works
Diesel engines	Fairbanks Morse
Transmission equipment	Link Belt
Canning Equipment Supplied	
Electric strapping equipment	EBY Co.
Lift trucks	Parker
Cannery equipment	Seattle-Astoria Iron Works
Canning equipment	Smith Canning Machine Co.
Pumps	Worthington Pump Co.
Tinplate	Bethlehem Steel and United States Steel
Fish cutters	Wright and Smith
Fillers, retorts	Troyer-Fox
Lacquering machines	Seeley
Nailing machines	Morgan

Source: Amtorg, *op. cit.*, III, No. 7 (1928).

15 U.S. Embassy at Tokyo, Report 13, January 29, 1925. (316–108–1310.)

A floating crab cannery with a capacity of 500 48-pound cases a day was manufactured for the U.S.S.R. by the International Packing Company in Seattle, in 1928.[16]

After a Russian fishing industry delegation had visited the United States, the equipping of nearly all Siberian and Far Eastern canneries was given over to American firms.[17] Similarly, an Odessa fish cannery with a capacity of 10 million cans of fish a year was equipped with Western canning machinery.[18]

In brief, fur concessions enabled the Soviets to enter the foreign market and, with the help of Western partners, build this into their second largest generator of foreign exchange. The canneries, also a significant exchange generator, were equipped completely by Western manufacturers, primarily from the United States.

[16] Amtorg, *op. cit.*, III, No. 7 (1928).
[17] Amtorg, *op. cit.*, III, No. 2 (1928).
[18] Amtorg, *op. cit.*, III, No. 12 (1928).

CHAPTER NINE

Restoration of the Russian Lumber Industry 1921-30

SEVEROLES TRUST AND FOREIGN LUMBER COMPANIES

RUSSIA has extensive forestry resources—probably the finest in the world. Under the tsars, lumber trade possibilities were not fully recognized and the industry developed slowly in the years immediately preceding World War I. In 1913 Russia had exported 10 million cubic meters of sawed timber; by 1929 this volume of exports had been almost regained.

There were no Soviet exports of lumber in 1919–20. In 1921 the industry recovered slightly and exported 35,000 standards, or about 3 percent of the average yearly prewar shipment. Reorganization in 1922–3 created four trusts: Severoles in the northern forest area, Sapodles in the western forest area, Dvinoles in the Dvina forest area, and Exploles in the Far East.

The trusts, however, were incapable of increasing production. Penetration of prewar markets was impossible, owing to their inability to organize production; shortages of equipment, tools, provisions, and labor made sizable production impossible.

Negotiations for assistance were opened with foreign lumber companies in 1921 and resulted in the formation of four mixed companies (Type II concession agreements, with some elements of the Type I and Type III), which took over the operation of the greater part of the northern forests in the Severoles trust. The foreign companies were predominantly British and German and held 49 percent of the shares, 51 percent being held by the Soviet government. The Soviets also had the right to grant further concessions to build sawmills and woodworking mills in the trust areas. The foreign companies were entrusted with entire management of forests and mills and had the obligation to supply machinery, tools, housing, and food for those workmen supplied by the Soviet government. The poor state of the railroad system meant that only areas close to rivers and ports could be exploited.

For timber in the Luga and Pliussa forests, near the Estonian border, the Soviets made an agreement with the Estonian companies Arbor and Narova. These companies were entrusted with the operation of the sawmills, but export arrangements were left in the hands of the Soviet government.

In the Dvina forests, the Dvinoles trust owned shares in a mixed Russo-Latvian company organized along lines similar to those of the Severoles agreement.

Sapodoles was dependent on Polish and Lithuanian technical assistance.[1]

Table 9–1 THE SOVIET LUMBER TRUSTS AND FOREIGN CONCESSIONS

Trust	*Foreign Operator of the Trust Area*
Severoles	Russangloles, Ltd. (United Kingdom)
Onega	Russnorvegloles, Ltd. (Norway, United Kingdom)
North Dvina-Vichegoda	Russhollandoles, Ltd. (Holland, United Kingdom)
Sapodoles	Polish and Lithuanian lumber companies
Dvinoles	Russo-Latvian Company (Latvia)
Exploles	Rorio Rengio Rumian (Japan)
	Raby-Khiki Kansha (Japan)
	Rorio Rengio Kumai (Japan)
Non-Trust Area	
Mga-Rybinsk	Holz Industrie Aktien Gesellschaft Mologa (Germany)

Sources: 1. U.S. State Dept. Decimal File, 316–135–479.
2. Troyanovsky, *Eksport, import i kontsessii soyuz S.S.S.R.*, p. 16.

RUSSANGLOLES, LTD.

Russangloles, Ltd. was a stock company organized under British law, and the most important of the lumber joint-stock or mixed companies. It was registered on February 7, 1922 with a nominal capital of £150,000. Its objective, noted in a Memorandum of Association, was to develop timber properties, sawmills, and transportation (including docks, railroads, roads, etc.) in order to merchandise timber products. The company could borrow money to achieve this objective.[2] Of the six company directors, three were Russian, two were British, and one was Latvian. The foreigners had all been in the lumber business.

Russangloles was the operating arm of an earlier concession agreement made between Severoles and the London and Northern Trading Company, Ltd., on December 31, 1921. This company had been organized in the United Kingdom

[1] *Timber News and Sawmill Worker* (London), June 10, 1922.

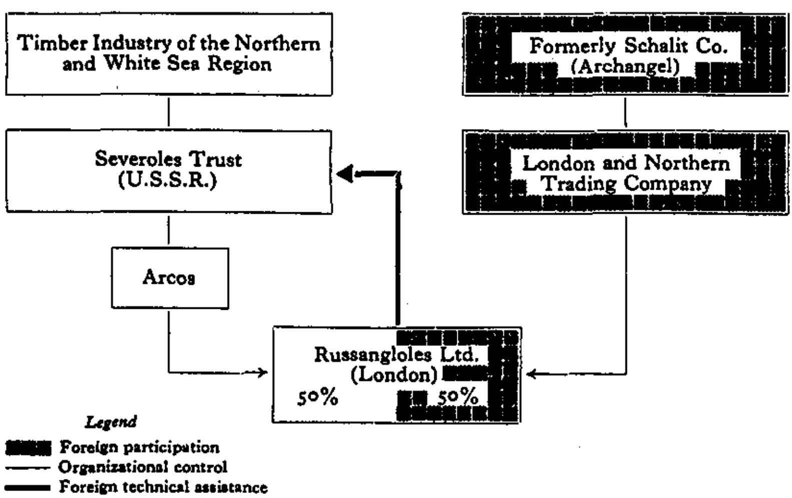
[2] The complete Memorandum of Association is available in a dispatch, dated February 16, 1922, from the American Vice Consul in London (316–135–479).

on September 20, 1919 with a nominal capital of £1 million to operate sawmills in the Archangel area and merchandise substantial quantities of lumber already stored there. Four of the directors of the London and Northern Trading Company were British and one Russian—Morduch Schalit, earlier a timber merchant in Archangel and the former owner of the property taken over by the company.

It was not unusual for concessions to be in operation before official announcement, and this was the case with Russangloles. There is in the State Department files an agent's report, dated August 1921, describing a stormy meeting held at the town of Petrozavodsk, in Olonetz Province, concerning 'the question of handing over to the English the working of woodlands and forests in the province.' This concession was submitted to the regional committees and commissariats to enlist local support, as local peasants objected to losing their timberlands.[3]

Russangloles was given the right to exploit timber lots in the Pomozdinsky and Kontzegorsky areas for a term of twelve years. The rental consisted of a gross income percentage, a stumpage fee, and a separate fee for sawmills and

Chart 9-1 ACQUISITION OF FOREIGN LUMBER MARKETS: PHASE I (1922–4)



[3] The agent reported that the 'meeting was so stormy . . . it was almost necessary to have recourse to troops but they also voted for a second discussion refusing to attack the people.' (316–135–477.) It has been noted elsewhere that concession operations often caused local trouble (apart from the Party-inspired 'strikes'), and a case could be made that the concessions were seen locally as a means of perpetuating an unwanted Bolshevik rule.

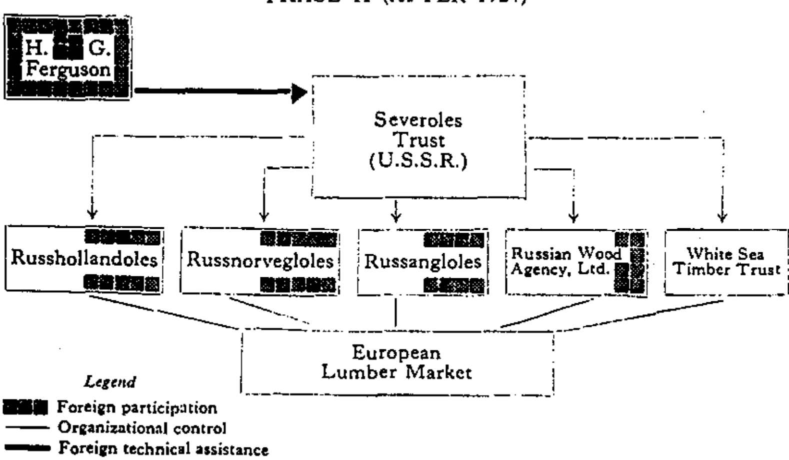
building and transportation facilities. In addition, taxes were levied by the central and local governments. Export duty was payable, and the Soviet government reserved the right to purchase any timber prepared for export.[4]

Severoles was the largest of the Soviet timber trusts, covering the whole of the gigantic white wood resources of the Russian northland. It was this enormous area that was taken over, developed, and operated by Russangloles. The other two trusts in the western area, Sapadoles and Dvinoles, were considerably smaller and were operated by Estonian and Latvian companies in mixed company arrangements with the U.S.S.R.

Severoles was also the principal shareholder, along with British lumber companies, in the White Sea Timber Trust, Ltd. (organized in the United Kingdom to sell sawed lumber on the European market), and its auxiliary concerns: the Russian Wood Agency, Ltd. (a timber brokerage firm), the Russ-Norwegian Navigation Company, Ltd., and the Norway-Russian Navigation Company, Ltd., which used leased Norwegian ships to transport timber materials and products to foreign markets.[5]

In each of these trusts, and in the Far East trust discussed later, timber development, construction of sawmills, transportation, and ancillary operations were undertaken by foreign companies. In effect they transferred their skills to Russian operations, and in each area created extensive and successful timber operations.

Chart 9-2 ACQUISITION OF FOREIGN LUMBER MARKETS: PHASE II (AFTER 1924)



[4] *Ekonomicheskaya Zhizn*, No. 60, March 17, 1923.

[5] Troyanovsky, *op. cit.*, p. 16.

Sales were made through a wholly Russian-owned trust. As the original agreement has never been published, it is impossible to determine precisely the part played by Western firms. Severoles acted as a broker, obtaining sawed lumber from concessions and selling it to Western timber merchants for advance royalties. This operation generated scarce foreign exchange.

Lumber sales to Germany, however, did not go through the trusts. The German Mologa concession output was substantial and financed on credit by Deruwa (the German-Russian Merchandise Exchange Society) and the Berlin branch of the Russian Bank of Commerce (the Aschberg concession). Advance payments were made through Deruwa beginning in 1923 for all lumber sold through the organization in Germany.[6]

RUSSHOLLANDOLES, LTD. (RUSSIAN-DUTCH TIMBER COMPANY)

Russhollandoles, Ltd. was a mixed company similar to Russangloles formed in the spring of 1922 by Severoles and a Dutch timber firm, Altius and Company, with some British financial participation. The objective was to develop for a period of twenty years the forest resources of the North Dvina and Vichegoda River area in the Archangel region. The area covered over 400,000 dessiatins and included property formerly belonging to the Altius company. Half the shares were owned by the Soviets and the other half by the Dutch and United Kingdom concessionaires. Operations began in August 1922, and in the first three months a quarter million railroad sleepers and the stock of 2,500 standards of lumber had been exported to the United Kingdom and Holland.[7]

Another very large timber concession, Russnorvegloles, was concluded in July 1923 with a group of Norwegian firms and a Dutch company (Backe and Wigg, of Dramman; Backe and Wagner, Prytz and Company, and Altius and Company). The capital stock was set at £300,000 divided equally. The Soviets were granted the right to contribute their share in timber instead of cash. The company was registered in the United Kingdom. The area covered was about 2.9 million dessiatins, of which about two million was forest land in the Onega River area. The term of agreement was twenty years, after which all equipment and buildings became the property of the U.S.S.R.[8] The capital stock was divided proportionately between Severoles and the Dutch and Norwegian companies.

[6] U.S. Consulate in Königsberg, Report, March 6, 1923. (316–135–501.)

[7] *Ekonomicheskaya Zhizn*, No. 53, March 9, 1923.

[8] *Ekonomicheskaya Zhizn*, July 6, 1923; and U.S. Consulate in Christiania, Norway, Report, July 19, 1923. (316–135–531.)

The three mixed companies—Russangloles, Norvegloles, and Hollandoles—organized by Severoles advanced 15 million rubles credit in the first year of operation, as well as providing necessary working capital and technical assistance to get the northern timber areas back into operation.

British lumber companies also had an arrangement with Dvinoles known as Dvinoles Export, Ltd. There was in addition an agreement between Finnish companies and Dvinoles called Repola Wood, Ltd. Both companies exported unsawed timber. The cutting operations were financed by the foreign partners; the wood was exported and cut by foreign mills.[9]

In brief, to restore timber cutting operations and renew contact with Western markets, the Soviets used the good offices of the former owners, although a superficial examination of the organizational structure of the Soviet trusts and the mixed companies does not indicate the full extent of these arrangements.

EX-CHANCELLOR WIRTH AND THE MOLOGA CONCESSION

An important Type I concession was the 'Society for Economic Relations with the East' (Gesellschaft fur Wirtschaftliche Beziehungen mit den Osten), headed by ex-Chancellor Wirth and ex-Reichstag Deputy Haas, and including the German firms Himmelsbach, Dortmund Association, Bop und Reiter, Schuckart und Schuette, Voegele, and others—and signed in October 1923. It included timber production and export, and the construction of a railroad in Northwest Russia. By the end of 1923, the Mga-Rybinsk railroad alone had received an investment of almost 25 million rubles.

Under the agreement, which created an operating company, Holz Industrie A-G Mologa, one million dessiatins of forest land was granted to the concession and 5,000 dessiatins was required to be cut annually. In addition, the concessionaire built a wood sleeper-treating plant for 1,000,000 sleepers annually, together with a pulp and chemical works, including ten plants for the chemical treatment of tree stumps. The Soviets received a royalty which varied between 2.5 and 22 rubles per cubic sazhen marketed by the Mologa concession. The railroad construction had to be completed within three years. The life of the concession was twenty-five years, with provision for an extension to thirty-five years upon mutual agreement. At this time properties would revert to the Soviet state.[10]

The concession got under way in 1924; seven ships of timber were loaded in the first nine months, and the Mga-Rybinsk Railroad was started. There was a report of a labor disagreement on the railroad construction in September

[9] Troyanovsky, *loc. cit.*

[10] U.S. Embassy in Berlin, Report 135, October 12, 1923. (316–135–545).

1924, but this was settled and the threatened strike collapsed when Mologa submitted to the demands of the workers.

By 1926 Mologa work was not going well, and Dr. Wirth visited Leningrad in April to renegotiate the concession. The proposals made by Wirth were briefly as follows:

1. That the royalty payable to the Soviet government be reduced by 30 percent. (A 15 percent reduction was granted.)
2. That machinery for use in the concession enter the Soviet Union duty-free instead of at the previously agreed preferential tariff. (This was granted.)
3. That railroad freight charges be reduced to 50 percent of those normally paid. (This was not granted.)
4. That permission be granted to bring in timber specialists from Germany. (This was granted.)
5. That labor hours be increased by 20 percent. (This was not granted by the Soviets, but it was agreed that overtime be paid at 40 percent above the regular wage rates.)

In addition, Dr. Wirth agreed to build a cellulose factory, two additional sawmills, and an electric power station on the Mologa River to serve the concession area. At this time, between 25,000 and 32,000 men were employed by the concession in cutting and shipping lumber to Germany.[11]

In early 1927, the Mologa representatives in Moscow (Levin and Berdichevsky) were alleged to have bribed Soviet officials, specifically those employed by Mostroi (the Moscow Construction Trust), the Lyubertsy Agricultural Machinery Works (formerly the International Harvester Plant in Moscow), and officials of Grozneft. The trial opened in 1927. The Soviet officials were sentenced to death and Levin, the Mologa representative, to five years' imprisonment.

By mid-1927 Mologa was again in a very precarious position, and the Germans decided to withdraw and allow the Soviets to take over.

Mologa was exceptional in that it received preferential treatment. The renegotiation of 1926, for example, was clearly favorable to German interests. The accusation of bribery was a characteristic move to force expulsion of the concession as soon as production was organized and sufficient equipment introduced into the concession areas.[12]

[11] U.S. State Dept. Decimal File, 316–135–595.

[12] Coleman, U.S. Consulate at Riga, Report 4516, May 19, 1927. (316–135–615.) Coleman's conclusion reads: 'Ksandrov's assurances of friendliness to the Mologoles merely confirms the long known fact that this concession has been particularly favored by the Soviet Government who saw in it one of the concrete manifestations of a Soviet-German rapprochement. But incidentally they also reveal that in spite of

In an interview published in *Ekonomicheskaya Zhizn*, No. 85, March 22, 1927, Ksandrov, deputy chairman of the Chief Concessions Committee, argued that the real reasons for the Mologa financial difficulties lay outside both the concession agreement and the attitude of the U.S.S.R. toward the agreement. He stated that the Society for Trade with the East had been formed in Berlin in 1923 and this company formed also the Holz Industrie Aktien Gesellschaft Mologa with an initial capital of 300,000 marks, increased in 1926 to 3 million marks. During the first year, the company erected ten frame saws instead of the stipulated six, and a major part of the investment—about 2.35 million rubles—was made in the first year, resulting in an operating loss of 576,000 rubles. This induced Mologa to request changes in the agreement. Ksandrov pointed out that the changes were made; consequently the 1925–6 production was 1 million rubles, compared to 4.5 million rubles in 1924–5. Also the concession was granted a two-year extension on the railroad construction program, a postponement of stumpage payments, and a grant of Soviet financial support. Up to March 4, 1927, credits from Gosbank amounted to 4.5 million rubles, in addition to 420,000 rubles loaned by the Bank of Trade and Industry, a revolving credit of 3 million rubles, and a government subsidy of 2.2 million rubles granted in January 1926 and repayable in March 1927. Ksandrov then concluded that 'the main reason for the financial difficulties of the Mologoles is a lack of a solid financial basis.' The initial capital of 300,000 marks was used during the initial organizing period; the concessions then had to borrow capital at high interest rates (15 to 16 percent in the first year, 13 percent interest in the second year, and 7 to 8 percent in the third year), and Anglo-American capital, which was anticipated at lower rates of interest, was not forthcoming.

Therefore, Ksandrov said:

> In view of the economic and political importance of this concession, the Soviet Government granted considerable privileges already at the conclusion of the agreement, that assured large profits from the concession to German capitalists.

A rather different explanation of the decline and liquidation of the Mologa concession is given by M. Klemmer in his 1927 report to Western Electric Co. and is the basis for his advice that pure concessions, as distinct from technical-assistance agreements, were not suitable objects for investment. Klemmer reported that the Mologa concession developed normally in its first years, but

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the exceptionally friendly attention shown to Herr Wirth's concession, the prominent German interests backing the latter proved unable to overcome the reluctance of the international money market to make investments in the Soviet Union. . . . It is a striking coincidence, characteristic of the Soviet regime, that the failure of the concessionaires *(sic)* to obtain new investments was immediately followed by sentences in a Soviet criminal court of several officers of the Mologoles to prison for alleged bribing of employees of Soviet commercial institutions. . . .'

then 'the cost of labor and all the prices went so high up' that export did not pay; the concession then acquired permission to sell on the internal Soviet market. This appeared profitable, as lumber prices were two to three times higher than in the previous years. However, Soviet organizations paid only after long delays, and, coupled with rising prices for materials and labor, this put Mologa in another difficult financial position. Klemmer points out that Gosbank loans were insufficient to meet commitments, and Mologa was forced to go abroad for financial assistance.[13]

It would appear, then, that credits were advanced by the U.S.S.R. to Mologa, but that these were insufficient to offset the disadvantages of selling on the internal market. Any foreign enterprise operating within the U.S.S.R. and this certainly applied also to Harriman and Lena—faced insurmountable difficulties in an environment where normal business facilities, such as credit and terms of trade, were controlled by an arbitrary organization whose interests were not coincident with those of the Western organization.

In conclusion, the Mologa 1925–6 balance sheet indicated a profit. This profit did not satisfy the Concessions Committee, and in February 1927 Ksandrov proposed reorganization of the concession:

> It is obvious . . . that the fate of the concession enterprise depends entirely on a thorough solution of the financial problem, and that the failure of the concessionaire to solve this problem in a satisfactory manner will make the liquidation of the concession inevitable.[14]

Two months later, according to *Ekonomicheskaya Zhizn*, the Soviets liquidated Mologa.

The German government, it was argued, had refused to continue financing Mologa; therefore the concession was unable to establish a stable financial basis and 'a friendly agreement was reached by both parties to liquidate the concession.'[15] It was also stated that Mologa would be reimbursed the fair value of the concession property and a committee was appointed to appraise its value. Operations were then transferred to the Northwestern Lumber Trust (Severoles).

The only reimbursement was a payment for raw materials taken over. In the final analysis, the reimbursement for the 20 million marks invested by German firms was about 5.7 million marks, or 25 percent of the investment. Nevertheless, this was a considerably more favorable settlement than any other concession received. The creditors received 27 percent of their debts; the stockholders lost their investment.[16]

[13] Klemmer Report (1927), pp. 22–3 (316-60-95).
[14] *Ekonomicheskaya Zhizn*, No. 85, March 22, 1927.
[15] *Ekonomicheskaya Zhizn*, No. 120, May 29, 1927.
[16] *New York Times*, September 29, 1928, p. 21, col. 2.

THE EXPLOLES TRUST IN THE FAR EAST

In early 1923, the Soviet government completely reorganized the timber industry in the Far East. All timber resources east of Lake Baikal, except those areas under concession or reserved for concessions, were grouped into the Exploles trust. This included timber lands and wood product factories, including sawmills and veneer plants. Plants within the trust were not immediately nationalized; there were eight private sawmills and six nationalized mills. The veneer factory was privately owned—an essential feature, as the trust was in its early years financed by private capital from émigré Russians in Harbin. The trust then negotiated concessions with foreign capital.[17] An agreement was concluded in early 1923 between the Far Eastern Revolutionary Committee, the forerunner of the Far Eastern Soviet Government, and the Japanese syndicate, Ookura Gumei.[18] The grant was six million acres covering seven forest districts in Maritime Province, six for a period of twenty-four years and one for one year.[19]

The 1925 Treaty of Friendship and Recognition between Japan and the U.S.S.R. contained several protocols concerning concessions. Protocol 'B' led the way to more timber concessions in the Far East. The Far Eastern Timber Industry syndicate and Rorio Rengio Rumian were later relinquished because of difficulties imposed by the Soviets concerning the erection of sawmill and paper factories and the application of labor regulations.[20]

In 1927 a third timber concession was granted to a group of Japanese lumber companies in the Primorsky District.[21] The Raby-Khiki-Kansha concession was formed to exploit some 5,400,000 acres of forest and to ship the timber to Japan. The period of the concession was six years (until 1933), and renewal could be discussed during the sixth year. At least 7.5 million board feet of lumber had to be removed annually. Twenty-three dwellings were erected for Soviet lumber inspectors; and 350,000 rubles (a special fee), a royalty, and stumpage fees were paid after sale on the Japanese market. Sawmills and pulp mills were erected. Foreigners were employed but could not comprise more than 25 percent of total employment except in sawmills. There was a requirement to employ Soviet technical students in all operations.[22]

Another agreement was signed in April 1927. The Rorio Rengio Kumai, which employed 2,000 men, consisted of 2.7 million acres near the Tartar Straits, with an annual output of 7.5 million cubic feet.[23]

[17] U.S. Consulate in Vladivostok, Report, March 1, 1923. (316–135–502.)
[18] U.S. Embassy in Tokyo, Report 579, April 30, 1923. (316–108–455.)
[19] *Russian Daily News* (Harbin), May 13, 1923.
[20] C. Conolly, *op. cit.*, p. 45.
[21] Amtorg, *op. cit.*, II, No. 7 (April 1, 1927), 1.
[22] U.S. Embassy in Tokyo, Report 399, January 11, 1927. (316–135–435.)
[23] Amtorg, *op. cit.*, IV, No. 8 (April 15, 1929).

Later in 1927 an effort was made to attract foreign timber concessionaires on a much larger scale. It was announced, for example, that large unexploited timber regions of the Far East, extending for some 62,000,000 acres, had been divided into fifty-one blocks and that concessions could be obtained for these regions.[24]

ACTIVITIES AFTER THE DEPARTURE OF THE CONCESSIONS

Exit of Western companies and their concession operations was followed by the operation of the same northern lumber areas by prison labor: specifically political prisoners and *kulaki* under the management control of the OGPU. Although this proposition will not be examined in depth, there is considerable evidence that those lumber stands developed by the concessions (Dvina, Onega, and Komi in the northern forest areas) were precisely those areas turned over to OGPU prison camp operations. The loading of foreign ships with the sawed lumber was also undertaken by forced labor.[25]

New sawmills constructed were, however, still built by Western companies and with Western equipment after the departure of the concessionaires. The Dubrovsk sawmill, with a capacity of 5 million cubic feet of lumber a year, was built by the Bolinder Company in 1928 and 'largely' utilized Swedish equipment.[26] Another large sawmill, built in 1928 at Volinkinsky, near Leningrad, with a capacity of 2.5 million cubic feet per year, utilized equipment from both the United States and Sweden.[27]

The technical backwardness of the Russian lumber-processing industry, even as late as 1929, is suggested by the admission by Lobov that only 1 percent of Russian lumber was kiln-dried, compared to more than 60 percent in the United States.[28]

PULP AND PAPER MILLS

All pulp and paper mill technology was imported from Western countries. The Kondopozh (Lake Onega) paper mill, built in 1928, with an annual capacity of 25,000 tons of newsprint, had two turbo-generators built in Sweden and a 3,000 kilowatt steam plant and paper-making machine from

[24] Amtorg, *op. cit.*, II, No. 20–1 (November 1, 1927), 10.

[25] A. Pim and E. Bateson, *Report on Russian Timber Camps* (London: Benn, 1931). Swianiewicz, who had personal experience of the Soviet prison system, makes the point that lumber had to take the place of grain in generation of foreign exchange. In 1920–30 an acute manpower shortage developed; this led to OGPU operation of the northern forest areas. (S. Swianiewicz, *Forced Labour and Economic Development*, London: Oxford University Press, 1965, pp. 113–4.)

[26] Amtorg, *op. cit.*, III, No. 2 (1928), 23.

[27] Amtorg, *op. cit.*, III, No. 3 (1928), 41.

[28] Amtorg, *op. cit.*, IV, No. 4 (1929), 77.

Germany. Nine Soviet paper technicians studied paper-making in Canada before returning to operate the plant.[29]

In 1926–7 the total Russian output of paper was 267,000 tons. A single plant, the Balakhna paper mill on the Volga River in Nijnhi-Novgorod Province, with a capacity of 105,000 tons, raised this overall capacity in 1928–31 by just under 50 percent. The Balakhna mill had three paper-making units: one bought in Germany and two in the United States. The larger of the two United States units had a bed width of 234 inches and, at the time of installation, was the fastest American sectional-drive paper machine in the world. Its finishing delivery speed was 1,200 feet per minute. The complete electrical installation for the mill was supplied by General Electric, whose engineers supervised installation and initial mill operations. The final unit was not completed before 1931.[30]

TECHNICAL ASSISTANCE IN THE LUMBER INDUSTRY

The mixed trading company agreements of 1923–4 contained technical-assistance clauses. The British, Norwegian, German, and Dutch lumber companies were required to cut and transport the lumber. In undertaking these operations, they entered the timber areas of the U.S.S.R. to organize production and shipping. There is little doubt that these concessions granted in the timber and sawmill industry between 1922–27 worked closely with the Soviet government on the technical sphere and furnished considerable capital for lumber operations.[31]

In every case, operations ultimately proved unprofitable, and by 1928 the last foreign operations in the lumber industry had closed, except for the Japanese concessions in the Far East. The technical-assistance components, however, persisted. Harry Ferguson, Ltd., provided technical assistance under the Russangloles, Ltd. agreement, and his contract for assistance was still in operation in 1929, several years after the ejection of the British concessionaires.[32]

After closing the concessions, the Soviets purchased technical assistance in the form of Type III agreements. For example, in September 1928 the Stebbins Engineering and Manufacturing Company, a firm of architects and engineers of Watertown, New York, was approached by Amtorg with a request for a consultant to make a report on Soviet pulp operations.[33]

[29] Amtorg, *op. cit.*, III, No. 8 (1928), 195.

[30] *Monogram*, November 1943.

[31] See, for example, the United States Consulate Report from Helsingfors dated December 24, 1929. (316–135–663.)

[32] U.S. State Dept. Decimal File, 316–131–642.

[33] The Amtorg letter reads in part, 'We wish your representative to come to the U.S.S.R. in a consultant capacity on organization and production problems.'

In 1929 the British-European Timber Company, a United Kingdom firm, sent a group of engineers to forested areas in Mezen, Pechora, and Siberia.[34]

SOVIET LUMBER TRADE FROM 1921 TO 1928

As a result of these transfers of foreign skills and technology, Soviet exports of sawed lumber grew from a mere 48,000 standards in 1921 to 569,000 standards in 1928—an increase greater than tenfold. However, 569,000 standards was still less than one-half of 1913 Russian export of sawed lumber.

The destination of these exports was significantly oriented to the operation of the mixed trading companies. In 1913 about half of sawed lumber exports went to the United Kingdom. The most important of the Type II agreements (made in the 1920s) was made with United Kingdom lumber merchants and lumber importers. In 1928 some 389,000 standards went to the United Kingdom—about 60 percent of the amount exported to Britain in 1913. However, the total 1928 Soviet lumber exports were only 46.7 percent of those in 1913. In other words, the relative proportion of lumber going to the United Kingdom was considerably greater in 1928. Holland and Germany, who possessed concession arrangements in lumber, show a similar increased importance as importers of Soviet lumber, whereas France and Belgium, with no concession arrangements, took an insignificant proportion of their 1913 imports of Russian lumber (13.9 and 20.1 percent, respectively).

Table 9–2 EXPORTS OF SAWED LUMBER FROM THE U.S.S.R., 1913–28, BY DESTINATION

Destination	*1913*	*1926*	*1927*	*1928*	*1928 as percent of 1913 exports*
		(Export in Standards)			
United Kingdom	642,800	217,542	332,597	389,610	60.0%
Germany	194,100	15,634	41,607	48,318	24.9
France	83,700	16,406	2,116	11,666	13.9
Holland	161,200	41,720	40,334	66,292	41.1
Belgium	70,000	6,114	6,099	14,095	20.1
Others	65,800	15,908	14,799	39,257	49.5
Total	1,217,600	313,324	437,552	569,238	46.7%

Source: U.S. Consulate at Helsingfors, Dispatch Number 1370, July 10, 1929.

An examination of lumber exports by type of lumber suggests a similar orientation toward countries with concessionary arrangements. Almost all sawed lumber (87 percent) was marketed by means of the United Kingdom

[34] Amtorg, *op. cit.*, IV, No. 6 (1929), 117.

Type II concessions, using the maıket knowledge and skills of the private concessionaires. Part of the balance was shipped through the German Mologa concession. Beams, alder veneer, and pit props also show a strong orientation toward the United Kingdom market.

Companies underwriting timber contracts with the U.S.S.R. had complaints about Soviet trading practices, as the Soviets entered the market on their own account after 1924–5. The Soviets had a practice of appearing in the lumber market at the last minute and underselling not only Swedish and Finnish timber but also their own earlier contracts, and thus 'disturbing' the market, from the veiwpoint of the British trade. Twenty leading United Kingdom timber merchants formed a coalition on 1929 and made arrangements to purchase all Russian timber in specific grades forthcoming in a particular year at agreed prices.[35]

More than 90 percent of all Soviet timber exports during the 1920s was going to countries with mixed company arrangements. In brief, all Soviet timber was produced and most marketed with foreign capital and technical assistance.

[35] U.S. Embassy in London, Report 3342, February 7, 1929. (316–135–647.)

CHAPTER TEN

'Sovietization' of the Tsarist Machine-Building Industry[1]

THE LENINGRAD MACHINE-BUILDING TRUST (LENMASHSTROI)

THERE was a well-established general and precision machine-building industry in Russia before the Revolution. This was located primarily in Petrograd and Moscow and included the locomotive construction plants in the Ukraine. After the Revolution, the industry went through a chaotic transformation.

Table 10–1 PLANTS COMPRISING THE LENINGRAD MACHINE-BUILDING TRUST IN 1923

Prerevolutionary Name	*Soviet Name*	*Position in 1923*
Putilovets	Krasnyi Putilovets	Open, under War Commissariat
Aivaz	Engels	Working intermittently
Atlas	Economizer	Under War Commissariat
Pneumatic	Pneumatic	Under War Commissariat
Truba	Krasnaya Truba	Not known
Metal Petrograds	Metallic (Stalin)	Under War Commissariat
Nobel	Russky Diesel	Under War Commissariat
Lessner	Karl Marx	Closed
Arthur Koppel	International	Closed
Struk-Ekval	Ilytch	Closed
Phoenix	Sverdlov	Closed
Tilimans	Northern Mechanical and Boiler Works	Closed
Vulcan Pipe Works	Vulcan	Closed

Sources: 1. *Ekonomicheskaya Zhizn*, No. 10, October 12, 1923.
2. *Spravochnyi katalog rossiskoi promyshlennosti* (VSNKh, Moscow: 1923).
3. U.S. State Dept. Archives.

[1] Agricultural machinery is covered in chap. 7 and transportation equipment in chap. 14, except for aircraft manufacture, which is covered in chap. 15.

In Petrograd, half the machine-building plants were closed in 1923, and those open were working on an intermittent part-time basis and were later trustified.[2]

The Putilovets in Petrograd employed more than 6,000 before the Revolution. In 1920, renamed the Krasnyi Putilovets, the works employed 1,000 but produced almost nothing. Continual strife between the technical executive staff and the workmen's committee was aggravated by the fact that unskilled workers received higher pay and more food than skilled technicians and managers. The plant remained more or less in this condition through the early 1920s. In 1929 the Putilovets arranged a technical-assistance contract with Frank Smith Co., Inc., of the United States.[3] The Ford production chief, Sorensen, also visited the plant in 1929 and, when asked by a Soviet official what he thought of it, suggested they put a few sticks of dynamite in the middle of the shop floor and blow it out of its misery.[4]

Other operating plants were in little better condition. The Nobel Gas Engine Works (renamed Russky Diesel) was well equipped in 1921, but produced only a few repair jobs. The Arthur Koppel works, formerly a producer of fire escapes and light structural steel work for the city of Petrograd, was completely at a standstill. Keeley reported that they were trying to build a couple of peat excavators.[5] The Lessner, renamed the Karl Marx, reopened with 100 skilled workers imported from Finland in late 1921 or early 1922.[6]

Lenmashstroi concluded a technical-assistance agreement with the Metropolitan Vickers Company of the United Kingdom in March 1927. For a period of five years the trust used the patents and manufacturing rights for Vickers turbines, paying to the company a royalty dependent on the number of turbines produced. Russian engineers were sent to the Vickers' plants in England for study, and a large crew of English engineers went to the trust's plants in the Soviet Union.[7] Vickers' assistance was concentrated in the old Petrograd Metal Works, renamed the Stalin. The assistance concerned turbine design and construction problems. The Stalin plant was the only producer of turbines until 1930; they were all produced with Vickers' assistance and

[2] This information is based on report by Royal Keeley in U.S. State Dept. Decimal File, 316–107–99/100. Keeley, an American, was in Russia from September 1919 to August 1921. He investigated, at the invitation of Lomonosov, industrial and economic conditions in various plants in Moscow and Petrograd. These visits received support from Lenin and Rykov. Keeley reported personally to Lenin on several occasions. He was imprisoned from May 1920 to August 1921 'because he knew too much about Russian conditions.' (U.S. State Dept., Division of Russian Affairs, memorandum to Secretary of State, October 18, 1921. 316–107–106/12.)

[3] U.S. State Dept. Decimal File, 316–131–642.

[4] Sorensen, *op. cit.*, p. 202.

[5] Keeley, *op. cit.*

[6] *Makhovik* (Petrograd), December 13, 1921.

[7] *Torgovo-Promyshlennaya Gazeta*, No. 60, March 15, 1927; and Allan Monkhouse, *Moscow 1911–1933* (Boston: Little Brown, 1934), pp. 185–6.

comprised the total Soviet output. Other plants in the trust were reestablished with German technical assistance.

MOSMASH AND GERMAN TECHNICAL ASSISTANCE

The tsarist-era machine-building plants in Moscow were grouped after the Revolution into Mosmash. Their names were changed and most were restarted with German technical assistance.

Table 10–2 PLANTS COMPRISING MOSMASH IN 1923

Prerevolutionary Name	*Soviet Name*
Bary Engineers	Parostroi
Bromley Brothers	Krasnyi Proletariat
Gratcheff	Krasnya Presnia
Singer Goujon	Serp i molot
Danhauer and Kaiser	Kotloapparat
Dobroff and Nabholz	Melnitchno-Tkatskoie Oborudovanie
Jaquot	Press
List-Butirsky	Boretz
List-Sofisky	Hydrophil
Kramer	Krasnyi Stampovstchik

Source: Annuaire, op. cit., p. 84 rear.

The Bromley Brothers Works in Moscow kept running throughout the Revolution under its English manager and was nationalized in 1918. This was one of the better-organized plants in the Soviet Union, but it ran into the same difficulties as others, and by 1921 its production was negligible.[8] It was renamed the Red Proletariat and brought into the trust. Moscow's oldest and largest semi-fabricated metal materials plant was the Singer Goujon. It produced structural shapes, steel sheet and plate, wire, rope, and similar products. The plant was nationalized in 1918 and a former English foreman made manager. In 1920 the plant was at a complete standstill; official records indicated an output of only 2 percent of 1913. After being renamed the Serp i molot and absorbed into the trust, the works made a good recovery with German technical assistance. By 1923 the plant was producing 80 percent (by weight) of the Mosmash output.[9] The trust was also interested in producing steam and diesel engines, turbines, and pumps, as well as fabricated metalwork.[10] A technical-assistance agreement was made in 1926 with Gasmotoren-Fabrik Deutz A-G, of Germany, which gave the trust the right to construct

[8] Keeley, *op. cit.*,

[9] *Ibid.*

[10] *Annuaire*, rear p. 84.

and assemble all types of Deutz motors (with and without compressors), stationary engines, and main and secondary engines for river and marine craft. All patents, designs, experimental data, and other information generated in the German plants passed from Deutz A-G to Mosmash. There was the usual exchange of engineers, Deutz engineers going to the plants of the trust and trust engineers going to Deutz plants in Germany for training. Royalties were paid on all production.[11] Further, there was probably an implied reciprocity clause of some type in the agreement. In mid-1927, the Soviets ordered two freight-passenger ships from the Janssen and Schnilinsky A-G shipyards of Hamburg and specified Deutz diesel engines.[12]

GOMZA AND THE WESTINGHOUSE BRAKE WORKS

Gomza was the largest of the machine-building trusts, and in 1924 consisted of eighteen units, including iron ore mines, smelting plants, and works producing machinery, tools, locomotives, wagons, and agricultural machinery. In 1925, the Westinghouse Air Brake Works was nationalized and added to this trust. Of the eighteen units, only fourteen were operating. Of the remaining units, two were in a state of 'technical preservation' and two in liquidation. The trust was notoriously inefficient, accumulating a loss of 3.7 million rubles in 1922–3, 7 million rubles in 1923–4 and over 4 million rubles in 1924–5 and in 1925–6.

The Westinghouse Air Brake plant in Moscow (moved by the company to Yaroslavl in the early 1920s) was not nationalized until after the Soviets had assured themselves of its facilities and were confident of having enough skilled engineers and workers available. It is noteworthy that any activities connected with transportation—and particularly railroads—were handled with great care by the Soviets.

There is little question that Westinghouse also played a cautious game in an attempt to evade the nationalization decree. The manager of the Yaroslavl plant, when interviewed in 1922 by officials of the U.S. State Department, reported that relations between management and labor were excellent, that the company did not import raw materials, that the Soviet government owed the company half a million rubles, and that he felt the time was ripe for a further investment by the parent company. He claimed that profits could be transferred out of the Soviet Union with only a 3-percent penalty, while the fee for imported funds was only 10 percent. Westinghouse did not bite.[13]

[11] *Torgovo-Promyshlennaya Gazeta*, No. 279, December 3, 1926.
[12] U.S. State Dept. Decimal File, 316–130–605.
[13] U.S. State Dept. Decimal File, 316–139–31.

During the Civil War and famine, the company supplied its Russian workers with flour and clothing. Consequently, the Party had trouble stirring up Westinghouse workers when the time came to demand nationalization. The end was foreshadowed in a *Pravda* article on January 18, 1924, under the title, 'With the Lackeys of American Capital.' The article complained about conditions in the Westinghouse plant. The company was accused of using the Taylor system to carry out twelve months' work in six months and bribing the factory committee by supplying food and clothing. The essence of the complaint was:

> . . . at the present time they are paying only 25 percent more than other factories. The cells have now opened the eyes of the workmen. At present the workers not only distrust but even hate the administration.

This was followed by a demand that the secretary of the cell should be present at collective bargaining meetings—presumably to 'protect' the interests of the workers.[14] The company was nationalized in 1925 and the works absorbed into Gomza.[15]

GOMZA AND THE GERMAN AND SWEDISH LOCOMOTIVE PROGRAM

In August 1920, Professor Lomonosov, formerly director of traffic on the tsarist railroads and in 1920 director of all railways in the Soviet Union, went to Germany and later to Sweden to negotiate for railway supplies, the Soviets' most urgent requirement.[16]

The locomotive stock at this time was about 16,000 of which only about 6,000 were able to operate at all. The position was so critical that workers were released from the Red Army transportation corps to help repair locomotives.[17] The Sormovo locomotive works was able to make capital repairs to thirty-six locomotives in the last half of 1920 but only to nine in the first half of 1921. Sormovo repaired 246 cars in the second half of 1920 but only 31 in the first half of 1921.[18] The Tver wagon construction works made 100 new freight trucks and repaired 603 in the last half of 1920, and then closed down. At this time more than 10,000 locomotives and many more wagons were awaiting or undergoing repair.[19] In August 1921, of a listed rolling stock of 437,152 cars, only 20,000 were in first-class condition, and fewer than 200,000 were able to run

[14] The complaint was phrased, 'The Americans have played a dirty game with us but they are called a cultured and liberal nation.' (*Trud*, No. 42, February 24, 1923.)

[15] *Pravda* (Moscow), No. 15, January 18, 1924.

[16] U.S. State Dept. Decimal File, 316–163–721.

[17] U.S. State Dept. Decimal File, 316–163–724.

[18] In 1890 the Sormovo Works was making complex rolling-mill equipment and was able to machine one-piece 20-ton forgings. See Foss Special Collection, Hoover Institution Library.

[19] U.S. State Dept. Decimal File, 316–163–849.

at all.[20] The equipment and locomotive problem was solved by purchasing European and American locomotives; sending defective locomotives to Latvia, Estonia, and Berlin for repair; and importing German technicians and railway materials for wagon repair.

In July 1920 the U.S.S.R. made an agreement with the Nyquist and Holm A/B locomotive construction company at Trollhatten in Southern Sweden. The agreement has been variously described. The Stockholm Consulate, in an interview with C. W. Beckmann, chief engineer at the plant, reported that Gunnar W. Andersson had purchased controlling interest for Kr 7 million. In addition, he had a contract from the Soviets for 1,000 locomotives. Andersson, who knew nothing about locomotives, became president and director general; Lomonosov assumed technical direction.[21]

The Berlin Embassy reported the Soviets had advanced a loan of $1.5 million to the company to extend the locomotive construction plant at Trollhatten.[22] The Soviets themselves stated the arrangement was no more than a credit. In view of the special 'arm's length' relationship with Andersson, the latter explanation is unlikely.[23] What is quite clear is that the Soviets financed locomotive construction in Sweden at a time *when they had five locomotive construction plants in 'technical preservation,' one with completely new equipment*,[24] and notwithstanding a precarious financial and foreign exchange position. Later the following month about 1,500 'high-grade' locomotives were purchased from Germany, delivery beginning early 1922.[25] These were of basic American decapod design adapted to Russian conditions.[26]

The imported Swedish and German locomotives were sent to the Putilovets in Petrograd for assembly under the supervision of Waldemar Sommermeyer, representing the German builders, and Karl Kainer, representing Nyquist and Holm. The status of locomotives in January 25, 1922 was as follows:

Locomotives	*On Order*	*Delivered*	*Assembled*
From Germany	1,350	220	
From Sweden	600	12	53
From United States	250	24*	
Total	2,200	256	53

Source: U.S. State Dept. Decimal File, 316-163-890.
* These were probably Baldwin Locomotive units. The Russian Ambassador in Washington reported on September 1920 that Baldwin Locomotive had sold 50 locomotives 'indirectly' to the Soviet Union with payment through a Spanish account (316-163-836).

[20] *Ekonomicheskaya Zhizn*, No. 210, September 21, 1921.
[21] U.S. State Dept. Decimal File, 316-163-731.
[22] U.S. Embassy in Berlin, Report 53, December 8, 1921. (316-130-1174.)
[23] See page 269.
[24] See page 269.
[25] U.S. State Dept. Decimal File, 316-163-739.
[26] *Trud*, No. 104, May 14, 1922.

Locomotives were assembled at Putilovets as a temporary measure, and some 2,000 extra workers were engaged under supervision of Swedish and German engineers. Between November 1921 and January 1922 about 53 locomotives were assembled and sent to Nikolaev and Northern Railways. During January, twelve were returned as defective due to 'systematic damage' by railway workers. As the locomotives were driven under the supervision of German instructors, 160 of whom had been sent from Germany, this was presumably sabotage.[27]

In addition to outright purchase of locomotives in Sweden, Germany, and the United States, the Soviet Union contracted for large-scale repairs in Estonia and Germany. The first Estonian contract was with locomotive-building plants in Reval for repair of 2,000 'sick' locomotives. Payment under this and similar contracts was in damaged locomotives; i.e., a percentage of the delivered units was retained by the Estonian firms as payment in kind.[28] The second Estonian contract, valued at over $2 million, was signed on December 21, 1921 with the Dvigatel plant (representing a group of Estonian and English builders), the Russo-Baltic works, the Peter shipyard, the Fr. Krull, and the Ilmarine, all in Reval. This contract covered an initial 200 freight units of the 0-8-0 type and extended later to 1,000. The repairs were classified into three categories, and a fixed price was paid for each class of repairs with additions for missing parts according to a fixed scale. Cash advances were made and 40 percent paid on delivery of the repaired locomotives at the Russian-Estonian frontier. Payment was in American dollars. All steel and parts, except copper fire-boxes, were the subject of a separate agreement between the Estonian companies and Krupp of Germany. The latter also arranged financing of the program with the Deutsche Bank. The British Vickers-Armstrong Company participated in the repair contract by leasing the Russo-Baltic works through a specially formed subsidiary, the Anglo-Baltic Shipbuilding and Engineering Company. The major portion of the order was divided between Anglo-Baltic, the Dvigatel, and the Peter shipyard. The plants were kept busy for about one-and-a-half to two years.[29]

The Soviet Union made numerous attempts to acquire American locomotives. On April 22, 1919, Martens, operating as the 'representative of the U.S.S.R. in the United States,' claimed 200 locomotives ordered by the Kerensky government as the property of the Soviet Union. His letter was left unanswered.[30] The next recorded attempt was in February 1920, when Mayor

[27] U.S. State Dept. Decimal File, 316–163–836.

[28] U.S. State Dept. Decimal File, 316–163–856.

[29] U.S. State Dept. Decimal File, 316–163–881 *et. seq.*

[30] U.S. State Dept. Decimal File, 316–163–453.

Friedenberg (of Riga), who had just returned from Moscow, announced that he had been commissioned to enter into negotiations for purchase of 600 American locomotives and 'large quantities' of machines, tools, and rails. Payment was proposed in gold and platinum.[31] Ten days later the Riga Consulate reported that Friedenberg was going to attempt to order directly from Baldwin Locomotive or American Locomotive for delivery to Latvia, and then turn the locomotives over to the U.S.S.R.[32] It was reported via Finland two months later that representatives of 'American firms' had accepted a Soviet order for 400 locomotives at Reval, Estonia.[33] Purchase of American locomotives was also attempted through Latvia.[34]

In the main, however, the bulk of the locomotives purchased were either Swedish or German and were classified 'Eg' (German-built) or 'Esh' (Swedish-built). The basic design was the Vladikavkaz Railroad 0-10-0, introduced in 1912 and built after 1926 at all five Russian locomotive construction works. The only difference was a larger superheater in front of the engine. More powerful variants were introduced in the 1930s, but this basic type was still being produced after World War II and is still the basic steam freight-hauler in use on Soviet railroads today. For passenger locomotives the Soviets inherited a mixed group of pre-revolutionary makes and selected the Vladikavkaz Railroad type S 2-6-2, known as the 'Sv', built originally for use on

Table 10-3 LOCOMOTIVE CONSTRUCTION BY GOMZA WORKS, 1921-3

Prerevolutionary Name	*Soviet Name*	*Position, 1921-3*
Sormovo	Krasnoye Sormovo	Closed, then opened with German technical assistance
Kolomna	Kolomna	Partly open, for wagon repair
Bryansk	Profintern	Closed 1922-3
Hartmann (Lugansk)	Lugansk	Closed 1922-3
Kharkov	Kharkov Locomotive	Closed 1922-3

Source: German Foreign Ministry Archives, T120-4249-L092272.

[31] U.S. State Dept. Decimal File, 316-163-678.

[32] U.S. State Dept. Decimal File, 316-163-680. The State Dept. reply (marked 'not sent') suggested that the Friedenberg matter be allowed to develop along these lines. It was drafted by Poole of Russian Affairs but killed by the Second Assistant Secretary.

[33] U.S. State Dept. Decimal File, 316-163-703. An intercepted radio message to Martens in the U.S. directed him to purchase 100 locomotives directly from Baldwin Locomotive.

[34] U.S. State Dept. Decimal File, 316-163-705.

the Warsaw-Vienna railroad. This locomotive was redesigned to carry a larger firebox and superheater and was put into production after 1925 with the designation 'Su'. Several hundred were built in this basic design.[35]

The decline in repairs continued throughout 1921 and 1922, and the position was stabilized only by this flow of new locomotives from abroad.

This decline continued; Russian locomotive shops were idle although in good mechanical condition. They had lost many skilled workers but had enough to turn out some new locomotives. The orders, however, were going abroad, not even the newly equipped Murom plant outside Moscow could get locomotive orders. Pressure built up to halt the export of 'sick' locomotives to Estonia for repairs and place orders in the idle Russian plants. In June 1922, Glavmetal refused to sanction a shipment of 200 'sick' locomotives to Estonia. The trade union organizations added to the pressure by accusing Lomonosov of selling out the proletariat to Estonian capitalists.[36] As a result of this pressure, deliveries under both the Estonian and German contracts slowed after 1922, and the idle Russian plants were restarted, with German assistance, by about 1924–5.

Table 10–4 CONSTRUCTION OF STEAM LOCOMOTIVES IN RUSSIA AND THE U.S.S.R., 1906 TO 1929

Year	*No. Built*	*Year*	*No. Built*	*Technical Assistance*
1906	1,270	1921–2	115*	
1913	609	1922–3	96*	
1914	762	1923–4	169*	
1915	883	1924–5	148*	
1916	616	1925–6	302	German post-Rapallo technical assistance
1917	410	1926–7	359	
1918	200	1927–8	479	
1919	74*	1928–9	575	Baldwin Locomotive technical agreement
1920	90*	1929–30	625	

Sources: 1. U.S. State Dept. Archives.
2. German Foreign Ministry Archives.
3. G. W. Nutter, *op. cit.*, p. 432.

* These figures, from Nutter and originating in Soviet sources, are doubtful. They are probably major or capital repairs counted as new locomotives; the Archival sources support this argument.

Productivity in the Gomza trust was about 20 percent of that of 1913. The State Railroad system—the major customer—calculated it was paying

[35] J. N. Westwood, *A History of Russian Railways* (London: George Allen & Unwin, 1964), pp. 86–93.

[36] U.S. State Dept. Decimal File, 316–163–913.

prices six times greater than prewar for Gomza products, and smaller articles made by the trust were being sold on the open market at half price in order to sell at all. Consequently, it is not surprizing that the trust was covering only 7 percent of *direct* costs (i.e., it was making no contribution to fixed costs). The statement was made that, ' . . . we cannot close down as this would throw 80,000 men out of employment and the railways would suffer.'[37] The problem, of course, was lack of orders. While German, Swedish, and American locomotives were being imported in quantity, Gomza was largely idle. On the other hand, there was ample evidence that the skills to manufacture locomotives were lacking. The engineers had fled, and those locomotives that were being repaired broke down after a few days back in service.[38]

THE BALDWIN LOCOMOTIVE TECHNICAL-ASSISTANCE AGREEMENT OF 1929[39]

The Baldwin Locomotive Works Company, with a group of fifteen manufacturers of input parts and supplies for locomotives, made a sales-cum-technical agreement with the Soviet Union on April 12, 1929. Baldwin agreed to sell its products and those of the allied companies to Amtorg on a revolving credit basis. A total of $5 million was made available ($2 million within eighteen months of date of signature). Separate technical-assistance agreements (not available from the State Department files) were also signed to assist Gomza in the development of locomotive production. The credit terms were:

20 percent payable 24 months from date of dock receipt
20 percent payable 36 months from date of dock receipt
20 percent payable 48 months from date of dock receipt
20 percent payable 60 months from date of dock receipt.[40]

These advances carried a 6-percent interest rate. Baldwin and the associated companies agreed to send their engineers into the Soviet Union for locomotive erection and engineering work, and, as the contract reads:

> . . . agrees to receive at its works and assist in placing at the works of such firms whose products will be supplied under this agreement, and will also assist in placing in shops and on railroads in the United States a reasonable number of workers, foremen and engineers sent from the U.S.S.R. for a period of time provided in each case separately, so as to enable these workers, foremen and engineers to get fully acquainted with American practice.[41]

[37] U.S. State Dept. Decimal File, 316–107–1044.
[38] U.S. State Dept. Decimal File, 316–163.
[39] A copy of the agreement is in the U.S. State Dept. Decimal File, 316–163–1301.
[40] Clause 9 of the agreement.
[41] Associated companies were American Steel Foundries, Athey Truss Wheel, Brill Car Company, Electric Controller and Manufacturing, Fairmont Railway Motors,

The agreement was signed by A. A. Zakoshansky for the Soviet Union and Charles M. Muchnic, Vice President for the Baldwin Locomotive Works Company.

GENERAL ELECTRIC DIESEL-ELECTRIC 'SURAM' LOCOMOTIVE

Russia had been a pioneer in diesel traction. Prerevolutionary shipbuilding yards and locomotive construction plants in Petrograd and Kharkov had undertaken a great deal of innovatory work in the direction of diesel-electric and diesel-mechanical propulsion. There were diesel electric ships in tsarist times built in Russian shipyards. The Tashkent railroad had been an early innovator in diesel traction and had actually built a gas turbine locomotive.[42] This promising start came to a complete halt in the 1920s. Efforts to continue diesel locomotive construction were halting and unsuccessful. They culminated in the import of the General-Electric-designed 'Suram' locomotive, named after the mountain pass in the Caucasus, in 1932.

In 1922 an experimental power plant was built, using the Tashkent railway turbine and a compressor system designed and built by Armstrong-Whitworth in the United Kingdom. The claims were great but nothing more was heard of it.[43] Two years later a locomotive design competition was announced for a 16-ton, 930-mile-radius locomotive with a tractive effort of 26,000 pounds at 9 m.p.h. The sole entrant was a design by Professor Gakkel, which was subsequently built at the Putilovets and Baltic plants under German supervision. The locomotive was powered by a Vickers 1,030 h.p. diesel engine reclaimed from a submarine, coupled with some Italian generators. This was the Lenin Memorial Locomotive, presently preserved in Moscow. Westwood says it was withdrawn from service in 1927 after running only 25,000 miles and spending much of its active life out of service. It spent many years as a mobile generator.[44]

Russian designs were not forthcoming; it was obvious that the designers had fled with the Revolution. Prototype locomotives were then ordered in Western countries. These used both diesel-electric and diesel-mechanical systems. The most successful under Russian conditions was a Krupp 1-E-1 diesel electric, and in 1927 a trial order was placed with Krupp for an improved

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Locomotive Terminal Improvement, Southwark Foundry and Machine, Standard Steel Car, Superheater Company, Sunbeam Electric, Westinghouse Air Brake (expropriated without compensation in 1925), Wilson Welder, G. D. Whitcomb, Locomotive Firebox, and Nathan Manufacturing.

[42] Westwood, *op. cit.*, p. 67.

[43] *Ibid.*

[44] *Ibid.*

version of this prototype with a Mann-type four-stroke six-cylinder engine which enabled the Soviets to make use of their technical-assistance agreement with the Mann company. Brown-Boveri traction engines of 140-kw hourly rating were also ordered. These prototypes were not built in the Soviet Union, however, until 1932, when production started at Kolomna. The design produced was identical to the German E-e 15. This decision ended an unsuccessful prototype development program which had been continued for some years at the Kolomensky works. It had produced some prototypes for secondary lines in the late 1920s, but Westwood indicates these had not been successful, owing to frequent burnouts.[45] Future locomotive construction was based on foreign design and particularly on the General Electric design for the 'Suram' model; indeed some elements of the current (1966) VL 23 design are the same as those in the original 'Suram' delivered about thirty-four years ago. Diesel-electric traction is an area where the Soviets have shown neither innovatory nor construction ability.[46]

Apart from purchasing prototypes, the Soviets induced Western companies to undertake the solution of specific mechanical problems. In the development of industrial locomotives using gasoline engines, the technical problems were solved by an American company hoping to sell such locomotives to the U.S.S.R. In 1926–7 the Koehring Company sold several four-cylinder industrial locomotives to the Soviet Union and in the following year received an inquiry about six-cylinder units. The company pointed out that ordinary Russian grade kerosene would not be sufficiently volatile, although the 'export' grade produced by the Standard Oil refinery at Batum would be suitable. With the assistance of the Department of Commerce, which canvassed American oil companies for Koehring, data was developed on the characteristics of Russian kerosenes, and engineers from 'one of Koehring subsidiary companies' developed an engine suitable for efficient operation on this grade of fuel.[47]

TECHNICAL ASSISTANCE TO GOMZA REFRIGERATION EQUIPMENT PLANTS

Gomza's efforts in refrigerator and cold-storage plant construction received technical assistance from German and United Kingdom firms from about 1926 until well into the 1930s. In late 1926 an agreement was signed between Gomza and A. Borsig G.m.b.H., of Berlin, for assistance in construction of refrigerators utilizing the Borsig system. The German firm prepared construc-

[45] *Ibid.*, pp. 67–9.
[46] *Ibid.*
[47] Records of the U.S. Bureau of Foreign and Domestic Commerce, File 312 (1927).

tion designs and working plans for the trust, utilizing its own patents and experience. There was an exchange of refrigeration engineers between Gomza and Borsig plants. Further such technical-assistance contracts were signed with Maschinenfabrik Augsburg-Nurnburg A-G and L. A. Reidinger A-G, also of Augsburg, for construction of cold-storage facilities.[48]

Dairy produce agreements with the Union Cold Storage Company, Ltd. (of the United Kingdom), allowed the company to establish cold-storage facilities in the U.S.S.R. to handle food products being exported under the trading agreement.[49]

GENERAL TECHNICAL ASSISTANCE FOR ORGAMETAL

The first *overall* technical guidance for the reconstruction of the heavy-machine industry came under a three-year agreement signed in later 1926 between Orgametal (the heavy industry syndicate) and the German company, Verein Deutscher Werkzeugmaschinen Fabriken Ausfuhr Gemeinschaft (known as Faudewag). This company set up a joint technical bureau in Berlin to design new plants and re-equip the tsarist heavy-machine industry. The company supplied engineers, technicians, and skilled workers; superintended construction and reconstruction; and supplied machinery, raw materials, working supplies, and design services.[50] The agreement was renewed in 1929, and Faudewag added more functions. It was still in force in the early 1930s.[51]

The Faudewag project, which supervised all Orgametal work, was followed by an extensive technical-assistance agreement with the Frank Chase Company, of the United States.[52] The most significant agreement was made at the end of the decade, in connection with the large-scale construction projected under the first Five-Year Plan. Almost all major projects under the Plan were designed by American companies.[53] Albert Kahn Company of Detroit had the basic task of supplying technical advice to the Building Committee of Vesenkha, in addition to contracts with Glavmashstroi for construction of new machine-building plants and with Traktorstroi in Stalingrad for construction of tractor

[48] Vneshtorgizdat, *op. cit.*, p. 227.

[49] See chap. 7.

[50] *Torgovo-Promyshlennaya Gazeta*, No. 279, December 3, 1926.

[51] Vneshtorgizdat, *op. cit.*, p. 228. This expanded Faudewag agreement supervised all Orgametal projects. The company office in Berlin replaced the Russian-operated and staffed Buiro Inostrannoi Nauki i Tekhniki (BINT), organized in Berlin in 1920 to collect foreign technical data. BINT employed 100 Russians in 1921 but the staff was reduced to 5 by Ipatieff, who considered the cost too great in light of the returns. (Ipatieff, *op. cit.*, p. 330.)

[52] U.S. State Dept. Decimal File, 316-131-642.

[53] This is covered in detail in Vol. II.

plants.[54] The Five-Year Plan as a concept is almost completely a myth of the propaganda mills. First, there were no hard and fast dates for beginning and ending specific projects in sequence. Each contract had its own time sequence and was not always well integrated with other construction projects. A set of dates was necessary, however, for the propaganda image of 'scientific socialism at work.' Second, the complete design work, supervision of construction, provision of equipment, and, in many cases, actual factory construction were done by Western companies under contract. They were kept to the all-important dates by heavy penalty-bonus clauses. The fact that some large plants were finished ahead of the planned date had nothing to do with 'socialist construction.' It was quite simply that the Western firms responded to the substantial bonuses payable for completion ahead of the contracted date. When the Soviets attempted to repeat the feat of Western private enterprise later in the 1930s, they were totally unsuccessful and became very secretive about new projects.[55]

SKF (SWEDEN) AND THE MANUFACTURE OF BALL BEARINGS[56]

Prior to the Great War in 1915, the Swedish company Aktiebolaget Svenska Kullagerfabriken (SKF), an internationally known manufacturer of ball bearings and transmissions, established an extensive and well equipped plant in Moscow. This plant was nationalized in 1918 but continued to work at full speed under its Swedish engineers through the Revolution. Sometime in 1920, negotiations started between SKF and the Soviets for a concession arrangement. Agreement was reported by the *Chicago Tribune* in October 1921, but not by the Soviets for another eighteen months. The details are fairly clear, but the exact date of signature remains unknown.

The SKF company was given the right to produce balls, bearings, and transmissions and to export up to 15 percent of these products. Complete supply to Soviet industry was anticipated. The company was guaranteed a 15-percent profit. In return, the company was allowed to purchase its own prewar property (two plants and the remaining stock of raw materials) for a payment of 200,000 gold rubles. The plants were then re-equipped by SKF,

[54] *Torgovo-promyshlennaya Gazeta*, May 16, 1929; and U.S. State Dept. Decimal File, 316-131-674.

[55] Vol. II uses data from the German Archives and suggests that the construction under the second and third Five-Year Plans, in which the Soviets relied much more on their own resources, was almost catastrophically below projected targets. At least part of this problem was caused by diversion of the finest of available skills and equipment into military production.

[56] Sources for this section are the *Chicago Tribune* (Paris edition), October 3, 1921; *Izvestia*, No. 63, March 22, 1923; and the U.S. Consulate in Stockholm, Report, April 4, 1923.

who supplied all patents and management, the Soviets supplied raw materials. Some 400 workers were employed, with Swedish engineer Wilhelm Adrian as manager. Three-quarters of the workers were Russian and the balance Swedish ' . . . paid in Swedish money and fed on imported Swedish food.' The intent, according to Adrian, was to raise the standard of Russian labor by mixing skilled Swedish workers with the Russians.

A completely new SKF plant was built under the agreement and produced, with the re-equipped tsarist-era plants, about 2–3 million rubles' worth of bearings per year, and the company paid a rental based on this annual volume at a progressive rate. Previous to the Revolution, only bearings had been produced in Russia; the steel balls were imported from Sweden. The Soviets required the steel balls to be manufactured in the U.S.S.R., and up to that time the company was required to keep on hand in its Moscow warehouses a stock of balls equal to three times the quantity of bearings.

The Soviets were represented by two members on the Board of Directors, although nominally and probably in practice the plant was run by a Swedish management. Provision for arbitration was made with a board comprising two members from each side and a president appointed by the Moscow High Technical School; i.e., the Soviets had a say in management and a majority in arbitration. All former SKF claims were cancelled by the concession. The agreement was viewed by the United States consul at Riga with some distaste:

> The Soviets having forced the owners to pay for the use of their own property over a long period of years, will probably hold the transaction out to the world as evidence that property once nationalized by them has actually been bought back by the original owners.[57]

The company was required to buy back its own plant and also required to amortize its new equipment over twenty-five years, a lengthy period when compared to a more normal requirement of five years. As the hidden intent of the Soviets was to nationalize once again after the new plant and techniques had been assimilated, the 'guaranteed 15-percent profit' was meaningless. The concession was expropriated long before the expiration of the amortization period. One has to examine Soviet attitudes to Western business to appreciate the overriding importance of good faith in enterprise societies. Company after company went into the U.S.S.R. with an agreement based on good faith, and all eventually learned the meaning of the 'dictatorship of the proletariat.' SKF had to buy back its own property for cash, make a second investment from its own capital stock, and amortize that for the purpose of estimating its 'guaranteed profit' on the basis of a twenty-five year stay. Finally, however, the whole investment was re-expropriated under conditions which effectively

[57] U.S. State Dept. Decimal File, 316–131–721.

precluded anything but a purely arbitrary Soviet settlement. One can understand why details of these investments are difficult to come by. The picture of the capitalist entrepreneur as a hardnosed calculating machine is shattered by the story of his dealings with the Soviets.

One by-product of the SKF agreement was technical assistance in the production of high-quality steel. Under the SKF concession, the Soviets were required to supply steel for the bearings. This posed a problem, as all high-grade steel had previously been imported and there were no facilities for production of this type of steel. The problem was solved in a characteristic manner: the Soviets asked for technical assistance and the SKF Company installed Swedish steel men in the Zlatoust steel plant in the Urals.

The transfer of Western ball-bearing technology was not completed by the time of the second expropriation of SKF. Two further agreements were made in 1930: one with Vereinigte Kugellager Fabriken A-G, of Berlin, and the other with S. A. Officine Villar Perosa (RIV), of Turin, Italy.[58]

STEAM BOILERS AND MECHANICAL STOKERS

Steam boilers are essential for industrial production operations where coal is a useful fuel. The relative decline of the economy under the Soviets may be well illustrated by the increasing age of steam boilers between 1914 and 1924.

Table 10–5 AGE OF STEAM BOILERS IN RUSSIAN PLANTS, 1914 AND 1924

Age	*1914*	*1924*
Under 10 years	35.5 percent	4.8 percent
Under 25 years	49.0 percent	53.0 percent
Under 35 years	11.5 percent	31.0 percent
Over 35 years	4.0 percent	11.2 percent
	100.0 percent	100.0 percent

Source: Troyanovsky, *op. cit.*, p. 383.

In 1914, 35 percent of boilers were less than ten years old but in 1924 less than 5 percent fell into this category. This suggests negligible replacement. Even more important, in 1914 only 15 percent of boilers were more than twenty-five years old; by 1924 the figure had increased to 42 percent. There were 138 boilers in Briansk and Dnieper factories in 1923; of these, 111 had been built before 1900.[59] Imports of boilers immediately after the Revolution

[58] Vneshtorgizdat, *op. cit.*, pp. 228–9. Barmine, *op. cit.*, p. 210, testifies to the low quality of Russian ball bearings in this period. See Vol. II for further information.

[59] *Izvestia*, No. 278, December 5, 1923.

sank to zero. Importation began again in 1921, rose to almost one-third of the prewar level, and then declined after 1924. Steam boiler accessories followed a similar pattern. The decline after 1924 was due to local production by a concession.

In 1922 a concession was granted to Richard Kablitz, a Latvian firm, which took back its old prewar Petrograd factory and started again to produce steam boilers, mechanical stokers, fuel economizers, and similar equipment. This was by far the largest such plant in the U.S.S.R. Production expanded rapidly, and by the end of the decade Kablitz had equipped over 400 Russian factories with boilers and stoking equipment.[60] In the last two years of the decade, Kablitz turnover was substantial: more than 900,000 rubles in 1925–6, 1.4 million in 1926–7 and more than 1.6 million in 1927–8.

In brief, the Kablitz concession, operating from 1922 to 1930, enabled the Soviets to eliminate importation of boilers almost completely since the firm organized production and trained Russian workers in boiler production. It made a very significant contribution to the re-equipment of Soviet industry. The success may be established by the decline of boiler imports in the face of increasing boiler age. By 1929, Kablitz had served its purpose. Taxation was increased to the point where production was no longer profitable, and the Soviets took over the Kablitz operation.[61]

PRECISION ENGINEERING TECHNOLOGY AND ITS ACQUISITION

Many skilled instrument-makers fled Russia during the Revolution, but in 1918 a group of these returned from the United States with a group of American deportees and formed the Russian-American Instrument Company in Moscow. They brought their own machinery from the United States, employed about 300 unskilled Russian workmen, and ran what was considered to be 'one of the best factories in Russia. Members of the Third International were taken to see it as an example of the finest conditions.' As the government was unable to supply food, the enterprise broke up.[62]

In 1921, the pre-Revolutionary plants producing instruments, watches, and precision equipment were grouped into *Techmekh* (the Precision Engineer-

[60] *Bank for Russian Trade Review*, II, No. 2 (February 1929), 10; and *Izvestia*, No. 223, October 2, 1923.

[61] U.S. Consulate in Riga, Report 5997, March 25, 1929 (316–110–1014). In the view of the Latvian Foreign Office, it was impossible to establish Latvian firms in the U.S.S.R., as the Soviets 'would force them out of business either through taxation, labor legislation, charges of economic espionage or some other method of persecution if the enterprise should become too prosperous or compete with a Soviet industry.'

[62] Keeley, *op. cit.* The trade unions also protested this plant.

ing Trust). These comprised the former Duber plant (renamed the Geophysika), the former Tryndin (renamed the Metron), and the Unified Watch Works, formed from smaller pre-Revolution plants.[63] The process of trustification did not appear to achieve very much, and the next few years saw a succession of concession agreements with foreign companies. These were of all three types and were allocated one to each branch of precision engineering. Calculating machines, typewriters, sewing machines, clocks and watches, razor blades, drawing instruments, and similar items were all subject to agreements. The Soviet Union took the opportunity to change over to the metric system. This problem was tackled by yet another concession, the Franco-Russian Association for the Study of the Metric System (SOVMETR) a French-Soviet mixed Type II company which undertook the changeover and the production of the necessary weights and measures. The difficulties of changeover varied by industry and were dependent to a great extent on conditions during the prerevolutionary period. In the electrical industry, there was no difficulty, as the industry had been developed on the basis of the metric system; but textiles, equipped extensively with British equipment, posed considerable difficulties which Gosmetr (State Office for Metric Weights and Measures) was unable to solve for some years.

The Singer Sewing Machine Company operated numerous plants, warehouses, and retail units in prerevolutionary Russia, including manufacturing units in Moscow, Leningrad, and Vladivostok. These plants, producing one quarter of a million household sewing machines, were valued by Singer at $75 million.[64] In addition, the wholesale and retail Singer network in tsarist Russia included 50 central agencies and warehouses and more than 3,000 individual outlets for the sale and servicing of sewing machines. The Singer sales force alone employed 27,500 in 1914.

Nationalization of the Moscow and Petrograd Singer plants in 1917 and the Vladivostok plant in 1923 was completely unsuccessful. The equipment was found to be much too complex to operate on the basis of shock tactics and revolutionary slogans. The factories were denationalized and returned to the Singer Sewing Machine Company in 1925.[65] This company, like many others, assumed incorrectly that this admission of inability implied that the Soviets did not wish to renationalize. No sewing machine output figures have been recorded for the period 1917 to 1926–7; technical problems probably

[63] *Annuaire*, p. 29; and Troyanovsky, *op. cit.*, p. 385.

[64] Based on claims filed with the U.S. State Dept. in 1922 (Decimal File, 316–109–1330). Including Russian government treasury bills and accounts in Russian banks, the Singer claim was over $100 million. (Foreign Claims Settlement Commission of the United States, Claim No. SOV-40,920.)

[65] Denationalization, and the reasons for it, are noted in the German Foreign Ministry Archives, T120–3033–H109454.

inhibited production.[66] In 1926–7, the first full year after denationalization and restoration of operations to the Singer Sewing Machine Company, the plants produced 200,000 machines, a figure which rose to 500,000 by the end of the decade.

In the early years of the New Economic Policy the Miemza concession was granted for the operation of a clock manufacturing plant in Moscow. After expropriation this became the Second State Clock Factory and was supplied with additional equipment from the Ansonia Clock Company in New York.[67]

The clock and watch industry production problems were overcome in a manner more suggestive of the massive 'turn-key' acquisitions of the 1950s. In June 1929 Techmekh negotiated a contract with two United States firms when Swiss firms refused to sell equipment necessary for watch plants. This contract called for establishment of two complete watch and clock factories. The first contract, with Dubert, was for a plant to produce 200,000 pocket and wrist watches a year to sell at retail prices between 20 and 40 rubles. The Soviets obtained five-year credit terms, and the plant was built in the early 1930s. This became the First State Watch Factory. The other plant was supplied by Ansonia for the production of one million alarm clocks and 500,000 large clocks for public squares, railroad stations, and public institutions. This plant was also supplied on five-year credit terms and was named the Second State Watch Factory. In both contracts, provision was made for the supply of manufactured and semi-manufactured parts until such time as the plants were able to develop their own input from internal Russian sources. About twenty-five specialists were sent from the United States to establish the plants and supervise production for the breaking-in period.[68]

Typewriters were not produced in the Soviet Union until after 1930. In 1929, the Moscow Soviet decided to build a typewriter factory and instructed Techmekh to negotiate with foreign firms for construction. An agreement was made with the Underwood Company for technical assistance to manufacture typewriters and calculating machines and for the intermediate-term sale of machine parts for assembly in Russian plants. During the first two years, the new factory only assembled machines. In the first year, 5,000 machines were planned for production, and in the second, 10,000. This figure was scheduled to rise to 218,000 annually after ten years. Typewriter

[66] The U.S. State Dept. has a report (origin unknown) to the IX Congress of Soviets noting that the figure for sewing-machine production was 318 in the first half of 1920 and 187 in the first half of 1921. Even this miserable contribution has the air of 'something is better than nothing' and is dubious.

[67] S. Weinberg, *An American Worker in a Moscow Factory* (Moscow: 1933), p. 18–19.

[68] *Torgovo-Promyshlennaya Gazeta*, No. 147, June 30, 1929; and *Ekonomicheskaya Zhizn*, No. 191, August 21, 1929.

ribbons and supplies were produced by the Alftan concession after about 1924.[69] Pencils and stationery items were made by the Hammer (American Industrial) concession. These companies were the only producers of these items in the Soviet Union.

In the case of precision equipment, we can trace the start of a process of acquisition which was to be developed more extensively from the late 1930s to the 1950s. This was the purchase of single items or prototypes which were examined, broken down, and then used as the basis for Soviet production. The Fordson (Putilovets) tractor was probably the first effort in this direction. Purchases of small lots of Western machines began about 1927. For example, in September of that year, a number of calculating machines were bought in the United States, but only one or two each of a large number of makes and models.[70] Burroughs, Monroe, Marchant, and Hollerith were represented in the purchase. In more difficult areas, such as marine instruments, technical-assistance agreements were made: in the case of marine instruments, with Sperry Gyroscope Company of the United States.[71]

CONCLUSIONS

The process by which the tsarist machine-building industry was restarted and modernized is quite obvious. A great number of the plants were physically intact after the Revolution; skilled labor and engineering personnel were missing. Both had been dispersed by the political upheaval.[72]

[69] *Ekonomicheskaya Zhizn*, No. 346, November 28, 1924.

[70] Amtorg, *op. cit.*, II, No. 18, September 15, 1927, 5.

[71] A. A. Santalov and Louis Segal (eds.), *Soviet Union Year Book, 1930* (London: George Allen & Unwin, n.d.), p. 359.

[72] The Foss Special Collection at the Hoover Institution illustrates the comparatively advanced technology of tsarist industry. Foss, graduate of the St. Petersburg School of Mines, was variously builder and manager of the Briansky Works, the Kolomna Locomotive Works, the Sormovo Works, and the Alexandrovsky plant between 1890 and 1917. The collection comprises eighteen large folders of high-quality photographs stressing the technical side of these plants.

The photographs emphasize particularly the size of these prerevolutionary enterprises; some shops at the Alexandrovsky and Sormovo were very large by contemporary world standards. General neatness and order, uncharacteristic of post-revolutionary plants, is very noticeable (see the 'General view of blast furnaces and coke ovens' in the Alexandrovsky folder). A high degree of Russian craftsmanship is demonstrated in photographs of the erection of the manual training school at the Kolomna Locomotive Plant, particularly in the stone and brick work. This craftsmanship is conspicuously missing in post-revolutionary buildings.

Complex machinery was made in these plants. The Briansky Works folder has photographs of intricate steel castings, stampings, bevel gears, helical screws, locomotive parts, small tools, and armaments, as well as complete locomotives and wagons. Kolomna Service Locomotive No. T1027 (dated 1897) is an impressive piece of equipment. Of particular interest (in the Sormovo Works folder) is a photograph of a large planer under construction (dated 1887) and an almost complete 3-high plate-rolling mill. The latter is complete with run-out tables, cast rolls, and screw-down mechanism. The rolls are about 84 or 96 inches wide and of great

Several of the more complex machine-building plants were allowed to continue unmolested (e.g., Westinghouse Air Brake and Citroen). The alternative was to see the plants at a complete standstill. The foreign owner viewed the situation with a measure of hope. In some cases (Singer and International Harvester) the plants were nationalized and then denationalized. This was also seen as a sign of a genuine return to capitalism. Others were restarted with German technical assistance forthcoming under the Rapallo economic protocols. At the end of the decade, after a decision had been made to orient to American technology, a series of agreements were made with American companies: Baldwin Locomotive, Frank Chase, Albert Kahn, Sperry Gyroscope, and Underwood, for example. In diesel and engine building, the decision was to continue with German (Deutz and Faudewag) technical assistance.

In sum, the restored tsarist machine-building industry was on the way to modernization at the end of the decade. Construction of new plants was on the drawing boards of top American and German companies.

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interest in the light of Soviet assertions that this equipment was not built in Russia until after 1930. In the Alexandrovsky folder there are photographs illustrating forging and machining a one-piece 20-ton steel ingot into a connecting rod for the cruiser *Bogatyr* (about 1890). Other features are the racks in Pickling Shop No. 1 at the Kolomna Works. These are the same model in use in Welsh tinplate mills in the early 1950s. The worker's dress is decidedly better than that of the post-revolutionary period.

The reader who is interested in pursuing this comparison further should compare the complete Foss collection with examples of the *same* plants in the Soviet period. One source for Soviet data is the booklets published by the Chief Concessions Committee describing plants offered as concessions to foreign entrepreneurs. For example, see I. N. Kostrow, *The Nadedjinsky and Taganrog Metallurgical Works* (Moscow: 1929). The plants were in a pitiful state, having been allowed to run down during twelve years of Bolshevik rule. There is a photograph of the open-hearth shop of the Nadedjinsky Works, which indicates that the shut-down plants only needed *work* to get them into operation. Nadedjinsky appears partially in operation, but one furnace is obviously 'cold,' with debris and trash heaped around the furnace doors.

CHAPTER ELEVEN

Electrical Equipment Manufacturing Industry and Goelro[1]

THE FORMATION OF TRUSTS

A RUSSIAN electrical equipment industry was established in the decade before the Revolution. In 1917 the industry was concentrated in Petrograd (about 75 percent) and Moscow, and employed some 60,000 workers. The Soviets nationalized the industry, which came through the Revolution with its equipment substantially intact.

From 1921 onward, the government invited a series of foreign experts and companies into the U.S.S.R. to make recommendations for modernization. The first known report by a Western engineer painted a chaotic picture. Some plants were closed; in those that remained open, employment was 5 to 10 percent of the prewar level (about 4,000 in 1920) and production even less. Many skilled Soviet workers had entered military service to get food and shelter; the more skilled foreign workers had returned home; and those domestic workers that remained were largely inefficient. Wages did not correspond to ability. Bench workers often earned more than skilled technicians. Communists possessing little or no technical ability served as technical directors, and 'white' skilled engineers were serving in minor posts. Stocks of raw materials ran out; no means existed for importation or domestic supply.

On the other hand, the industry was in relatively good shape technically; only a few plants required re-equipment.[2]

[1] This chapter is based on Soviet sources published inside and outside the U.S.S.R., on reports submitted to the U.S. State Dept. by representatives of American companies invited to examine the condition of the electrical industry, and on material on Allgemeine Elektrizitäts Gesellschaft (A.E.G.) from the German Foreign Ministry Archives.

[2] See the Report by B. W. Bary, electrical engineer, to the U.S. Consulate at Vibourg, October 1921. The covering letter describes the report as 'competent,' 'comprehensive,' and 'a measure of the true conditions.' (316–139–11.)

Confirmation of the excellent technical state of the industry comes from a surprising source—Charles P. Steinmetz, the inventive genius of General Electric Company, who was certainly not unsympathetic to the Bolshevik Revolution:

> It is interesting to note that Russia had a considerable electrical industry before the war, so that in 1913 more than half the electrical machinery used in Russia was built in Russia . . . (but) in 1920 the output of the electric factories in Russia was very low. It is stated however that their equipment including tools, etc., was perfectly intact and ready to resume large scale operation.[3]

The first step in reconstruction was to organize the industry into four trusts. The total industry contained thirty-two plants, of which twenty-six were in operating condition and six completely idle, or, as the Soviets expressed it, 'in a state of technical preservation': i.e., in working condition but not operating. The twenty-six were working very intermittently. The four trusts formed were: (1) the Electro-Technical Trust for the Central District (or GET), to manufacture high tension equipment, (2) a trust for manufacture of electrical high-tension equipment (Elmashstroi), (3) the low-tension equipment trust, for telephones and radio apparatus, and (4) the accumulator-manufacturing trust.

The formation of the trusts brought prerevolutionary managers back to positions of authority; although usually these were technical men, one at least had been a company director. Lew Zausmer, a former officer of the Russian General Electric Company, became one of the trio of directors controlling the Electro-Technical Trust.

Concurrently with this reorganization and the return of former managerial and technical personnel, invitations were sent to foreign electrical equipment manufacturers to participate in the development of the industry. On March 29, 1922, Maurice A. Oudin, President of the General Electric Company, informed the U.S. State Department that 'his company feels that the time is possibly approaching to begin conversations with Krassin relative to the resumption of business in Russia.' The State Department told Oudin that this was a question of 'business judgment.' Oudin then added that negotiations

[3] Charles P. Steinmetz, 'The Electrification of Russia,' p. 3 of typescript supplied to the writer by the Schenectady Historical Society, New York.

The reports of Western company representatives are of particular interest and agree with Steinmetz on this point. These engineering reports were to form the basis of managerial decisions to enter or not to enter into agreements with the U.S.S.R. As the reports were made by engineers, they are important for their estimates of the technical state of the electrical plants. These engineers had unrestricted access granted by the Soviet authorities and collected detailed data. The writer gives this data greater weight than that from any other source, including the intelligence reports found scattered throughout the U.S. State Dept. Archives. These engineers (Bary, Reinke, Keeley, Klemmer, and others) were skilled observers, knew the Russian language and also many of the engineers in the plants they visited.

were currently under way between General Electric and A.E.G. (German General Electric):

> . . . for resumption of the working agreement which they had before the War. He expects that the agreement to be made will include a provision for cooperation of Russia.[4]

Within four weeks an offer was made to International General Electric Company to participate in a joint mixed-capital company:

> We believe that the low rate of wages as well as the excellent conditions of the outfit (equipment) of the works will give you sufficient economic grounds for taking part in our business, either in the way of supplying us with certain materials, or by a partial finance in exchange for the products worked out by our factories.[5]

Table 11-1 AGREEMENTS BETWEEN FOREIGN COMPANIES AND THE ELECTRICAL EQUIPMENT TRUSTS, 1922–30

Trusts formed from prerevolutionary plants	*Affiliated foreign firm*	*Type of concession**
Electro-Technical Trust (GET)	International General Electric	III
	Allmanna Svenska Elektriska A/B (A.S.E.A.)	I and III
	Allgemeine Elektrizitäts A-G (German General Electric)	III
	Metropolitan-Vickers, Ltd.	III
	Radio Corporation of America	III
Elmashstroi	Allgemeine Elektrizitäts A-G	III
	Metropolitan-Vickers, Ltd.	III
	John J. Higgins (U.S.)	III
Low-Tension Trust	Ericsson (Sweden)	I
	Radio Corporation of America	III
	Compagnie Générale de TSF (France)	III
Accumulator Trust	Gaso-Accumulator A/B (AGA) (Sweden)	I and III
New Soviet undertakings		
Electroselstroi	Allmanna Svenska Elektriska A/B	II and III
Electroexploatsia	International General Electric Co.	II and III

Sources: 1. U.S. and German Archives.
2. *Annuaire, 1925–26.*
3. Troyanovsk, *op. cit.*
4. Klemmer Reports to Western Electric Co., 1926 (U.S. State Dept. Decimal File, 316–141–630) and 1927 (U.S. State Dept. Decimal File, 316–60–95).

* See chap. 1 for definition of concession types.

[4] U.S. State Dept. Decimal File, 661.1115/402. Memorandum from D. C. Poole to Secretary of State, March 29, 1922.

[5] U.S. State Dept. Decimal File, 316–139–58. Letter from the Electro-Technical Trust to the International General Electric Company, Schenectady, May 2, 1922.

Two points are notable: first, the statement that the equipment in the plants was in good working order, and second, the timing of the letter from the Electro-Technical Trust to General Electric. It arrived just four weeks after the State Department conversation.[6]

After 1922 a series of similar invitations was sent, and agreements were concluded between all four trusts, individual plants within each trust, and most major Western electrical equipment manufacturers, including International General Electric, A.E.G., A.S.E.A. (Sweden), Westinghouse (through its U.K. subsidiary, Metropolitan-Vickers), Ericsson of Sweden, Brown-Boveri (Switzerland), Western Electric, and Siemens, as well as numerous smaller companies.

These agreements were made at two organizational levels: the trust and the individual plant. At the trust level they provided technical assistance, patents, drawings, and exchange of personnel (Type III agreement). At the plant level the contracts provided for technical assistance and also, in some cases for plant operation as a pure Type I concession by the Western entrepreneur. Table 11–1 lists the four trusts formed by the Soviets from prerevolutionary factories together with the affiliated foreign partner, and the Soviet enterprises Electroselstroi and Electroexploatsia which were developed by the Soviets and did not incorporate prerevolutionary plants. They had affiliated foreign partners and operated in the form of 'mixed' companies, or Type II concessions with technical assistance features.[7] One Western company managed to evade nationalization after the Revolution. A.S.E.A. (Swedish General Electric) operated its Leningrad plant from the time of the Revolution throughout the 1920s and even managed to get its Yaroslavl plant, built in 1916, denationalized and converted into a Type I pure concession in 1924. There was also an independent factory, the Carbolite, operating outside the control of the trusts and coming directly under Glavelectro until it was abolished.[8]

The four trusts will now be considered in more detail.

THE ELECTRO-TECHNICAL TRUST (GET)

GET was responsible for manufacture of high-tension equipment and was formed by grouping together the major prerevolutionary dynamo and electric motor works located in Moscow and the Ukraine, including the

[6] It may be that Zausmer, the ex-officer of General Electric and a director of the Electro-Technical Trust, had some influence on this decision. He is quoted by a Berlin newspaper as follows: ' . . . the Russian electrical industry cannot develop without the support of the highly developed electrical industries of Germany and America.' (*Boerson Courier*, September 25, 1922.)

[7] *Annuaire, op. cit.* (rear page 24).

[8] The German Foreign Ministry Archives refer to a 'Carbo project'; otherwise nothing is known of this operation. (T120–4247.)

Kharkov works of the General Electric Company and its twelve assembly divisions in major industrial centers throughout the Soviet Union. All types of heavy electrical machinery, including generators, motors, transformers and turbines, were produced.

Table 11–2 PLANTS COMPRISING THE ELECTRO-TECHNICAL TRUST

Prerevolutionary Name	*Soviet Name*	*Production*
Russian General Electric	Dynamo A-G (Moscow and Petrograd)	Electric motors
Allgemeine Elektrizitäts A-G	Electrosila (Kharkov)	Electrical equipment
Allmanna Svenska Elektriska A/B	(A.S.E.A. concession)	A.C. electric motors

A.S.E.A. obtained its prerevolutionary plant as a Type I concession and in 1927 received another Type I concession to build and operate a plant at Yaroslavl for production of alternating current electric motors.[9] By 1928 the company was producing 500 motors a month at Yaroslavl, 'the output sold on partial credit terms mainly to state-owned enterprises.'[10] The construction involved an outlay on buildings and equipment of between 15 and 18 million rubles. The new plant had 28,000 square meters of floor space and 1,500 employees, and in 1929 produced at the rate of 30,000 electric motors per year. In weight this was 48,000 tons of equipment, valued at 14 million rubles. Production included alternating current motors ranging from 1/4 to 700 h.p. Equipment for the Yaroslavl factory came from the Swedish General Electric factory at Stockholm. A royalty was payable by the Soviets on all production during the life of the concession, agreed upon at thirty-five years but expropriated long before the final date.

The widest impact of G.E. technology came, however, from agreements made after the Swedish General Electric concessions. There had been negotiations between A.E.G. in 1922 and 1923 following the letter sent by GET to International General Electric. These negotiations were not immediately successful. Their failure probably placed G.E. at a competitive disadvantage; Siemens-Schukert Werke A-G, for example, had granted credits as early as 1922. Metropolitan-Vickers (the Westinghouse subsidiary) had been in the U.S.S.R. from about 1922 onwards. The G.E. company therefore continued negotiations through its German subsidiary.[11]

The first technical-assistance agreement was concluded between Uchanov, Chairman of the Electro-Technical Trust, and A.E.G. in October 1925. This

[9] Amtorg, *op. cit.*, III, 374.
[10] *Ibid.*, E. P. Lindgren, Director of A.S.E.A. (Swedish General Electric).
[11] U.S. State Dept. Decimal File, 316–139–41.

agreement included the manufacture of General Electric generators, electric motors, and transformers of high-voltage types. The trust was given the right to produce A.E.G. products and use 'all patents, protective certificates, inventions, construction and experiments belonging to A.E.G. in the field of high-voltage currents.'[12] General Electric was required to furnish data on request and to accept and train Russian engineers in German plants for a period of five years. The agreement was supplemented and continued by other agreements which continued the technical-assistance program until 1938. A royalty was payable on all production of high-voltage electrical products for which A.E.G. held manufacturing rights from the parent company in the United States.[13] As a *quid pro quo* for technical assistance, substantial quantities of equipment were purchased on credit terms for the plants comprising the trust.

Table 11–3 PRODUCTION OF HEAVY ELECTRICAL EQUIPMENT IN RUSSIA AND THE U.S.S.R., 1913 TO 1929–30

Year	*Power transformers (thousand kva)*	*Electric motors (A.C.) (thousand kw)*	*Turbo-generators (thousand kw)*
1913	96.3	N.A.	N.A.
1918 to 1922–3	None	N.A.	N.A.
1923–4	76.5	N.A.	N.A.
1924–5	196.0	104.4	10.3
1925–6	127.4	N.A.	16.3
1926–7	291.7	N.A.	51.8
1927–8	403.2	258.6	75.0
1928–9	791.1	321.7	136.5
1929–30	1525.0	632.6	186.0

Source: Nutter, *op. cit.*, p. 441.

Table 11–3 indicates production of transformers, electric motors, and turbo-generators from 1913 to 1929/30. There was no Soviet production of these items in the years before 1924. Their production coincided with the technical-assistance agreements and the operation of the A.S.E.A. Type I concession. The recovery and development of the Soviet electrical equipment industry in these fields was almost entirely dependent on General Electric technology transferred to the Soviet Union through A.E.G.

In addition to the agreements outlined in this chapter, there was a technical-assistance agreement between the United States firm of John J. Higgins and GET in 1929 and an important Radio Corporation of America agreement,

[12] U.S. Consulate in Hamburg, Reports No. 149, December 13, 1925 (316–108–1543); and No. 360, October 12, 1925 (316–130–552).

[13] *Ibid.* See also International General Electric section, p. 198.

which included General Electric and Westinghouse patents in the field of communications, concluded in 1929 and discussed at length in chapter 14.

Even while this technical transfusion was in progress, the Party propagandists were unable to restrain themselves from 'agitprop.' A challenge was issued 'from the workers' of the ex-A.E.G. plant in Kharkov to the A.E.G. plant in Berlin to engage in 'revolutionary emulation,' and a delegation of working men from Berlin was invited to the Kharkov plant 'all expenses paid.' The benefits of 'revolutionary emulation' to the General Electric Company were not spelled out.[14]

THE ELECTRICAL MACHINE TRUST (ELMASHSTROI)

This trust grouped high-tension equipment plants in Petrograd, including the Siemens A-G plant (renamed the Electrosila), with the Volta factories in the Urals. Elmashstroi negotiated an agreement with A.E.G. in late 1923 for technical assistance. A.E.G. was required to supply drawings, machines, and apparatus for the production of high-tension equipment, together with aid in construction of electrical manufacturing plants within the U.S.S.R. Russian engineers were sent to Germany for training and German engineers were sent to the trust offices and plants in Leningrad. The agreement ran initially for five years, and a percentage of all production was paid to A.E.G. as a royalty.[15]

The most important plant in the trust was the Electrosila, originally built in 1893. This trust had a chaotic history of technical assistance under the Soviets. In tsarist times the plant had produced steam turbines and generator equipment. In 1923 Electrosila adopted the designs forthcoming under the A.E.G. agreement. Then came four management changes in rapid succession,

Table 11–4 THE ELECTRICAL MACHINE TRUST (ELMASHSTROI)

Prerevolutionary Name	*Soviet Name*	*Production*
Siemens-Schukert A-G	Electrosila	Electrical machinery
Nordische Kabel Werke A-G	Sovkabel	Electric wire and cable
Koltschugin	Sovkabel	Electric wire and cable
Svetlana Gluklampenfabrik	Svetlana	Electric light bulbs
Druzniai Gorka*	—	Porcelain insulators
Kernilov*	Proletarii	Porcelain insulators
Petrograd Armaturfabrik A-G	—	Armatures

Source: U.S. State Dept. Archives.

* Transferred in 1923 from the Glass and Porcelain Trust, and later transferred back to the same trust. (U.S. State Dept. Decimal File, 316–111–957.)

[14] 'Challenge to the Proletarians of Berlin from the Workers of the Electro-Technical Factory of Kharkov,' *Trud*, No. 244, October 23, 1929.

[15] *Izvestia*, No. 7, January 9, 1924.

and by 1925–6, turbines were being built under a ten-year agreement with Metropolitan-Vickers. This was apparently not too successful, because one year later a further change occurred. As A. Monkhouse, the Metropolitan-Vickers chief engineer in the Soviet Union, puts it, 'a great American company contracted to render technical assistance to this and other factories and thus American designs were introduced.'[16]

The 'great American company' was International General Electric. Russian engineers were then sent to the United States for training, whereas previously they had gone to the United Kingdom. In 1931 the Metropolitan-Vickers company again obtained the technical-assistance contract, and this heralded yet another series of management changes.

In the tsarist era, electric light bulb production was concentrated at Svetlana Gluklampenfabrik in Petrograd. In 1913 the plant produced 2.85 million electric light bulbs, and in 1916 over 4.58 million (a good example, incidentally, to show the fallacy of using 1913 as a comparative base). Production in 1920 fell to about one-quarter million, but later recovered (with the use of imported wire), reaching a level between the 1913 and 1916 outputs (3.82 million in 1922–3).[17] In May 1923, *Ekonomicheskaya Zhizn* published an interview with the chief of Glavelectro, A. G. Holtzman, who had just returned from negotiating with Osram in Germany, Phillips in Holland, and General Electric in the United States for the introduction of the latest in Western techniques in the manufacture of electric light bulbs. A joint-stock company was proposed, in which the Soviets would provide the plant (the tsarist Svetlana plant) and the foreign partners would introduce modern equipment.

The objective was as follows:

> . . . Russia would develop within two years to the same extent as now exists in Western Europe and America. The Russian bulbs must not be worse nor more expensive than those produced by the aforementioned firms.[18]

In the following months, agreement was also reached with the International Electric Light Cartel. With the aid of Western technical experience, production was increased from 1,500 to 7,500 bulbs per day. At first, tungsten wire was purchased abroad, and later Russian tungsten wire was used. From an output just under four million in 1922–3, there was a significant increase to thirty-three million bulbs in 1929–30.[19]

[16] A. Monkhouse, *Moscow 1911–1933* (Boston: Little, Brown and Co., 1934), pp. 194–5.

[17] Nutter, *op. cit.*, p. 458.

[18] *Ekonomicheskaya Zhizn*, No. 96, May 3, 1923.

[19] Nutter, *loc. cit.* It is known that a Polish Type I concession, Yan Serkovsky, operated an electric lamp plant in Moscow. As the Svetlana was the only plant able to produce electric light bulbs the plant was possibly leased to this group. (U.S. State Dept. Decimal File, 861.602/211.)

THE LOW-TENSION TRUST

The Low-Tension Trust was comprised of the tsarist-era plants in Leningrad, Moscow, and Nizhni-Novgorod which had made telephone and telegraph apparatus. In 1923 this was probably the most efficiently operated Soviet trust. The trust president, Joukoff, was a party member but, unlike most of his confrères, who were long on talk and short on management ability, Joukoff had excellent management abilities, was entirely responsible for financial matters, and was directly supported by a team of 'white' technical experts who managed internal operations of the plants.

The 'white' technical directors were hold-overs (former engineers, not former directors) from the prerevolutionary electrical industry. They included Mochkovitch, formerly chief engineer of the Heisler Company (owned by Western Electric) and Kolotchevsky, formerly of the B.T.M. company. These technical directors functioned alongside 'red' directors. The latter were party members who nominally directed the plant but in practice left the 'white' technical men to operate independently in the technical sphere. The equipment in all the plants in the trust was intact and maintained in good order. Each plant operated as an independent profit-making unit.

The ex-Western Electric Heisler plant employed some 850 men: slightly less than its 1917 employment level of 1,100. In mid-1923, the plant was busy on an order for 900 train-dispatching sets for the Railway Administration, its only major customer.

Table 11-5 PLANTS COMPRISING THE LOW-TENSION TRUST

Tsarist name	*Number of workers*				*Production*
	1913[1]	*1916*[1]	*1923*[2]	*1926*[1]	
Ericsson (Red Dawn)	1275	2700	900	2800	Automatic telephone equipment and switchboards
Heisler A-G	845	900	850	1200	Telegraph equipment and loudspeakers
Siemens Halske A-G	750	2200	600	1300	Radios, R.R.-signaling meters
Electro-vacuum plant (new)	—	—	—	250	Radio and roentgen tubes
Marconi plant	—	—	—	250	Military radios
Telephone plant	—	1200	—	1000	Radio receiving equipment
Siemens	—	1200	—	700	Telephone sets

Sources: [1] Klemmer report to Western Electric Company, 1927 (U.S. State Dept. Decimal File, 316–141–630).
[2] Reinke report (U.S. State Dept. Decimal File, 316–108–672).

The Ericsson plant employed 900 (considerably fewer than the 3,500 employed just before the Revolution) and was making Ericsson-type telephones—the only producer of telephones in the U.S.S.R. It was operated as a

concession and was able to produce all types of telephone equipment except lamps (which were imported from Germany or Sweden), and cords and cables, (which were bought from the Cable Trust). Troubles were reported in 1923; Soviet raw materials were of poor quality, and some items, such as enameled wire and magnet steel, were either in short supply or unobtainable. Production, therefore, averaged only about 7,000 sets per year, although capacity was 12,000 telephone sets annually. Nutter[20] gives the telephone output as rising from 13,300 in 1923/4 to 117,000 in 1929/30. As Ericsson was still the sole producer, this was also the measure of Ericsson's ability to increase production during the decade.

The Siemens Halske works in Petrograd, previously a manufacturer of telephone equipment, employed some 600 and was preparing to change over to the manufacture of radio equipment under technical direction of Compagnie Générale de TSF (which Reinke erroneously calls French General Electric).[21] Since the Revolution, this plant had been at a standstill except for a little repair work.[22] Reinke, the Western Electric engineer who visited the plant, concluded that the chance of a mixed company or pure concession for Western Electric, the previous owner, was remote. Reinke concluded that the U.S.S.R. was 'encouraging only badly run factory trusts to get into mixed companies.' However, he did comment that the trust was anxious to associate itself with a large foreign firm. He explained this on the basis that although the plants were operating efficiently, they lacked the ability to progress.[23] This observation is confirmed by the subsequent agreement between the Low-Tension Trust and Compagnie Générale in June 1923 and Ericsson in 1924. Even a well-run trust required foreign technology to make technical progress. In the 1920s this could be explained on the basis of a negligible research and development investment. More recently the notable absence of Soviet innovation which can compete in the Western marketplace has had to be explained on quite different grounds.[24]

[20] *Ibid.*, p. 448.

[21] Based on the Reinke Report (mid-1923) (State Dept. Decimal File, 316–108–672). This was supplemented by two later reports in 1926 and 1927.

[22] Keeley Report (316–107–100).

[23] 'The present technical men are those formerly in control, and they are doing practically as good a job as in 1917. They can get on very comfortably without us. But what they lack is the ability to go ahead. The same difficulty existed in 1917 when the factories depended on the foreign mother companies to lead the way.' (Reinke, *op. cit.*)

[24] Klemmer lists electrical products not produced in the Soviet Union in 1927, four years after the Reinke Report. These were: generators above 5,000 kw, all types of high-tension equipment and transformers, fine insulated wires, special lamps (including all over 200w), high-tension insulators, carbon brushes and carbon materials (including telephone carbons), heating appliances, nickel steel accumulators, measuring instruments, automatic telephone equipment (including pneumatic tubes), condensers, all types of electrical consumer equipment (including vacuum

TECHNICAL ASSISTANCE TO THE LOW-TENSION TRUST

In June 1923 the Compagnie Générale de TSF of France signed a technical-assistance agreement with the Low-Tension Trust to re-equip its plants with modern machinery and processes, to supply technical assistance, and to build electrical substations in the Moscow area. A new electro-vacuum plant was established by the Compagnie Générale, using French methods of producing cathode ray tubes and radio tubes. The old Petrograd plant of Siemens was equipped to manufacture radio transmission equipment for radio stations. Other plants of the trust were similarly modernized, 'after which Russian radio technique (will be) on the same level as the French,' as Klemmer says in his report. The trust sent its engineers to France for training, and French engineers went to the trust plants to provide the engineering and operational assistance required. Equipment was supplied on five-year credit terms.[25] Patents were transferred from France and, unlike other contractors, the French were able to negotiate a payment (the amount unknown) for the technical-assistance features. The very extensive nature of the Compagnie Générale agreement is suggested by the transfer of over 38,000 drawings and 3,000 technical specifications in the first two years of the cooperation.[26]

The Compagnie Générale agreement was followed by another with Ericsson of Sweden, which took over its old plant in Petrograd for the manufacture of telephones. This was, in effect, a formality, as Ericsson engineers had been working in Petrograd almost continuously since the Revolution. Modern machinery, imported from Germany and Sweden, included automatic screw machines and automatic punching, milling, and tooth-cutting equipment from the United Kingdom and the United States. Inspection and test equipment was installed. This re-equipped plant started production in 1926, at first with Swedish raw materials and later with Soviet-produced raw materials. Ericsson had four engineers in the plant with complete authority to control and approve every step of the production of automatic telephone equipment. All drawings

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cleaners), electrical medical apparatus (including roentgen tubes), and special electrical apparatus. (Klemmer, *op. cit.*, p. 42.)

Some of these items were the subject of technical-assistance agreements apparently not known to Klemmer (for instance, medical apparatus, nickel accumulators, high-tension equipment, high-tension insulators, and transformers). Most came within the scope of technical-assistance agreements by 1930.

[25] The Soviets erected 43 internal radio stations between January 1923 and January 1927; all except the experimental models were with French technical assistance. Klemmer states the manufacturer in 22 cases; 16 were built by the Low-Tension Trust-Compagnie Générale operation, 4 were built by local laboratories on an experimental basis, and 2 radio stations were imported. Later, more powerful stations were built either in the U.S. by RCA or in the Soviet Union with RCA technical assistance after assurances by the State Dept. to RCA that they would not be used for propaganda (see chaps. 14 and 18). (316-141-712 *et seq.*)

[26] *Izvestia*, No. 15, January 18, 1924; and No. 35, February 12, 1924. See also *Soviet Union Yearbook 1927*, p. 169.

and technical information were supplied by Ericsson. Locally made Russian drawings and technical instructions had to receive approval of an Ericsson engineer before use. Between ten and twelve Russian engineers were trained in the Ericsson Stockholm plant for periods ranging from three to six months and then returned to Leningrad, ultimately to take over production control.[27] Credit for the arrangement was supplied by a consortium of Swedish banks.

The technical contribution of the foreign electrical companies enabled the trust to increase its output from two million rubles in 1922 to more than thirteen million rubles in the year 1924–5. According to Klemmer, this increase was mainly due to the work of Ericsson.

The 1927 Klemmer Report[28] indicated that 1926 output in the electrical equipment industry was 20 percent greater than the previous year, with Ericsson showing the most progress. Several new shops had been opened and about one-third of the plant had received new equipment. At this point about one-third of the employees of the Low-Tension Trust were working for the Ericsson Company.

There was a less significant agreement for the manufacture of long-distance receiving sets, including the transfer of patents, with the German company Telefunken Gesellschaft für Drahtlose Telegraphie.[29]

In 1926–7 all Low-Tension Trust products were copies of Western equipment. Klemmer noted that the trust microphones were an 'exact copy' of the Western Electric Model 373-W, the loudspeakers were the balanced armature accord type (Western Electric Model 4002) and the amplifiers and public address systems had been copied from Western Electric systems. The Russians had produced domestically designed radio valves, but according to Klemmer these would not work. In 1926 they were producing, and attempting to export to Latvia, the Western Electric Models 216-D, 102-D, 205-B, and 211-D.[30] Klemmer should have known; he was an engineer with Western Electric.

The trust teletype machines were allegedly designed by A. F. Shorin, but Klemmer points out that the design was no more than a Morcum printer combined with the Murrey keyboard. Further, although the Kaupush distributor (of which the trust manufactured about 20 in 1926–7) was claimed as a Soviet design, it was actually based on the Baudot repeater. Quite clearly these manufacturing efforts were part of a learning process, although the products manufactured were in many cases useless.

The electrical industry was the advanced sector of the economy, and the Low-Tension Trust just described was the most advanced trust within the

[27] Klemmer, *op. cit.*, p. 27.
[28] U.S. State Dept. Decimal File, 316–60–124.
[29] Vneshtorgizdat, *op. cit.*, p. 228.
[30] Klemmer, *op. cit.*, p. 28.

electrical industry. Other branches were using 40–50 percent imported materials and more extensive foreign technical assistance.[31]

THE ACCUMULATOR TRUST

The Accumulator Trust employed about 250 in 1923. Combined within it were the prerevolutionary accumulator, lighting, and illuminating fixture firms in Moscow and Petrograd. In 1912 the value of product for this sector was 2.4 million rubles; in 1922/3, the value was only 0.6 million rubles. In December 1924 an agreement was made by the trust with the Swedish company Gaso-Accumulator A/B (AGA) whereby the Moscow Lukes (or Lux) plant was leased under a concession agreement. The company was required to produce equipment valued at 210,000 rubles in the first year (one-third of the current Soviet output), rising to 470,000 rubles in 1926–7. AGA paid 75,000 rubles to the trust for the stock of raw materials and unfinished work in the plant. The company was required to re-equip the plant and after twenty-five years turn the plant over to the government. A royalty of 3 percent was paid on gross turnover.[32]

Insulating materials were the subject of an agreement between Centroprobizol and the Swedish Company Vakander in 1927. This was a Type III agreement which ran for five years and included supply of the complete equipment for a plant to produce all types of insulating materials. The agreement included construction, start-up assistance, training of engineers, and the supply of production and technical data. Russian engineers were allowed to make 'a thorough study of the Swedish production methods.'[33] This agreement was followed by a General Electric technical agreement with the Izolit insulation materials plant in 1930.[34]

The Soviets formed two trusts which did not include major prerevolutionary institutions and indeed had had no exact equivalent in tsarist times. One was Electroselstroi, a joint-stock company founded in June 1924 with the same objective as the United States Rural Electrification Authority: to expand the use of electricity in rural areas. Electroselstroi undertook construction of district electric generating stations of a standard type and sold electric motors, generators, and allied equipment to state farms and collectives. The Swedish General Electric Company was a shareholder (with a participation of 250,000 rubles purchased for cash) along with the People's Commissariat for Agriculture, Gosstrakh, Gosspirt, and Sakharotrust. The Swedish company

[31] Klemmer, *loc. cit.*

[32] U.S. State Dept. Decimal File, 316–139–554.

[33] Amtorg, *op. cit.*, II, 14.

[34] *Ibid.*

had the function of organizing and supplying equipment for sale by the trust and no doubt its share subscription was 'a fee' for this privilege.[35] The General Electric Company was also one of the 'main shareholders' in Electroexploatsia, the second of these trusts, specifically designed to promote the use of electrical systems, in accordance with Lenin's dictum that 'socialism is electrification.'[36]

THE INTERNATIONAL GENERAL ELECTRIC COMPANY CONTRACTS OF 1928 AND 1930

A contract of fundamental importance was signed in 1928 by the Soviet Union and the International General Electric Company. Under this contract the company supplied to the Soviet Union $26 million worth of electrical equipment on six-year credit terms. The Soviets claim that G.E. agreed to consider all prewar claims against the U.S.S.R. as settled.[37] Technical assistance was an integral part of the agreement. This began what General Electric has described as 'a continuous uninterrupted record of close technical collaboration and harmonious commercial association.'[38]

The 1928 agreement was followed by a long-term technical-assistance agreement signed in 1930, under which 'vast amounts' of technical, design, and manufacturing information flowed from General Electric in Schenectady to the Soviet Union. The Soviet Union established an office at Schenectady and G.E. a parallel office in Moscow.

There was the usual exchange of personnel, training of Soviet engineers in the U.S., and dispatch of American engineers to the U.S.S.R. to implement the agreement. The Electrozavod transformer plants, the Izolit insulation material plant, the Dynamo locomotive plants, the Electrosila plants, Electroapparat and Electric works in Leningrad, and the turbine plant in Kharkov received groups of G.E. engineers. In general, however, the great impact of *direct* General Electric technological assistance was not in the period 1917 to 1930. Development before 1930 was dependent on Metropolitan-Vickers and A.E.G. (i.e., *indirect* G.E. technical assistance). The General Electric era was after 1930.[39]

[35] U.S. State Dept. Decimal File, 316–139–56. *Annuaire, op. cit.*, rear p. 24.

[36] Troyanovsky, *op. cit.*, p. 791.

[37] *Izvestia*, No. 247, October 23, 1928.

[38] *Monogram*, November 1943.

[39] The 1928 General Electric contract was closely examined in Germany. The Rapallo Treaty contained a clause that compensation would be relinquished only for German claims against the U.S.S.R. so long as the Soviets did not make payments to any other power. The Soviets argued that G.E. was a private company, not a power, and that therefore the Rapallo clause did not apply. The Germans considered the G.E. agreement a violation of the Rapallo Treaty, as the company received a payment of

THE METROPOLITAN-VICKERS ELECTRICAL COMPANY—MASHINOSTROI TECHNICAL ASSISTANCE AGREEMENT

In addition to German assistance in the electrical industry, two other European manufacturers rendered substantial assistance and equipment. In 1927 the Brown-Boveri Company of Switzerland opened an office in Moscow to implement the installation and erection of equipment supplied under a number of contracts with the U.S.S.R. Little is known of the content of these agreements.[40]

Far more important was Metropolitan-Vickers, a United Kingdom subsidiary of Westinghouse. The company has operated in Russia since the turn of the century, installing several large electricity-generating plants and the electrification of the Moscow tramway system in 1906. Just before World War I, the company became associated with Russian General Electric (the Dynamo works) which then took over the Metropolitan-Vickers plants in Moscow.[41]

After the Bolshevik Revolution, Metropolitan-Vickers returned to Russia and by 1924 had several large contracts in progress. Each major technical advance made by the company in its U.K. plants was transferred to the Soviet Union. In the early 1920s significant advances were made in the operating speed of generators. A world record was set by a Metropolitan-Vickers generator of 38,500 Kva (3,000 rpm.) installed in a Soviet power station in 1926. Similarly, in the same period there was an increase in transmission voltages; Metropolitan-Vickers manufactured transformers for Soviet 110-kV and 115-kV systems were installed in 1923, some five years before the start of the British grid system utilizing similar transmission voltages. In 1922 the company developed outdoor switchgear for 132-kV systems. Several 1500-MVA 132-kV circuit breakers were installed in the U.S.S.R. within two years of initial development. These sales of the latest products of the Metropolitan-Vickers laboratories were followed in 1927 and 1931 by long-term technical-assistance agreements. The 1927 agreement was initially signed with Mashinostroi for six years at £30,000 ($150,000) per year and covered that turbine construction which formed the basis of the Soviet turbine industry.[42] The company maintained extensive erection and technical facilities in the Soviet

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$575,202 as compensation for its claims on the U.S.S.R. G.E. claims this was only a partial settlement. The Foreign Claims Settlement Commission (Decision No. SOV-3119) made an award of $1,157,407.26 plus interest to G.E. This dispute, of course, has not been settled. (340–6–517.)

[40] U.S. State Dept. Decimal File, 316–131–1010.

[41] Westinghouse left Russia in 1913 except for a bank account. This was expropriated, and Westinghouse has received $5,703.44 from a claim amounting to $49,400 plus interest. Letter from Westinghouse to writer, March 4, 1966.

[42] J. Dummerlow, *1899–1949* (Metropolitan-Vickers Electrical Company, 1949).

Union, an office at Electroimport, a company office at Leningrad and a 'compound' with several buildings at Perlovka, just outside Moscow.[43] Company engineers established the manufacture of turbines according to company plans on 'a large scale' under R. Cox, its chief mechanical engineer, in the U.S.S.R. Soviet engineers and foremen were sent to the United Kingdom for training. In 1931 another agreement with GET expanded the scope of the transfer of turbine technology. These agreements endured both the Arcos break of 1927 and the notoriety surrounding the arrest and expulsion of six Metropolitan-Vickers engineers in 1933 on grounds of economic espionage and sabotage.

Steam turbines had been made in the Petrograd Metal Plant (later renamed the Stalin) early in 1906. By 1914 there were seven plants in Russia manufacturing naval turbines and one manufacturing stationary steam turbines; after 1917 the Petrograd plant alone continued working, but only on repairs to existing turbines and the manufacture of spare parts. Neither this nor any other Soviet plant had experience with high-power hydraulic turbines.

To summarize, by the end of the decade the Soviet electrical industry had undergone a complete overhauling in methods of production, variety of goods produced, and quantity produced. This had been achieved in the face of disaster by restoring the prerevolutionary technical personnel, injecting foreign managerial and engineering personnel and foreign-developed technology into the most important of the prerevolutionary plants. Whereas in 1913 the industry value of output was 45 million rubles, in 1924–5, one year after the introduction of foreign technology, it was 75 million (1913) rubles, and by the end of the decade more than 200 million (1913) rubles. Imports of electrical equipment increased from 7,592 tons (valued at 14 million rubles) in 1925–6 to 26,465 tons (valued at 45 million rubles) in 1927–8. Eighty percent of these imports were electrical machinery and high-tension apparatus (i.e., capital goods).

The variety of goods also expanded under foreign guidance. Steam turbine generators of up to 10,000 kw, hydro-turbine generators of up to 8,750 kw, transformers of up to 38,000 volts, high-voltage armatures, oil switches, and mercury rectifiers were being produced by the Electro-Technical Trust and Elmashstroi by the end of the decade. Production of electric light bulbs was modernized and arrangements had been made with foreign firms to introduce the manufacture of mercury lamps, automatic car headlights, and pocket lights. The Low-Tension Trust was now producing radio transmitters and receivers, although large stations for international communications and

[43] *Correspondence Relating to the Arrest of Employees of the Metropolitan-Vickers Company at Moscow*, Command Paper 4286 (London: H.M.S.O., 1933) pp. 2–3.

propaganda were built by RCA in the United States.[44] Watt meters, X-ray apparatus, automatic telephones, and exchanges were being built in the U.S.S.R.

Research establishments, including the State Electrical Engineering Experimental Institute, were also established, complete with 'unique' equipment manufactured by the General Electric company.[45]

All trusts and plants within the trusts received foreign technical assistance. All technological progress resulted from a transfer from West to East. Further, rather than just restoring and modernizing the prerevolutionary plants, the foreign associates introduced the latest innovations from Western laboratories —sometimes before they had been utilized in the Western country of origin.

SOCIALISM IS ELECTRIFICATION; THE GOELRO PROGRAM

The most important customers for electrical machinery are power stations, utilizing hydro, peat, and coal fuel methods of energy conversion.

The original Goelro program outlined by Lenin demanded 100 power stations as the basis for a socialist economy. This was revised downwards in the Zinoviev speech of January 1921 to 27 stations, and followed by ample discussion but little concrete action.[46] Two years later only three projects were receiving any attention, and that was rather desultory. Studies inherited from the tsarist period included one which had been expanded into the Dniepr project, but a few scattered site borings comprised the total achievement. The general feeling was that Dniepr should be offered as a concession. Volkhov, Svir, and Nizhni-Novgorod were at various points of early construction, but three years after the announcement of Goelro, the program had hardly moved.

The Svir hydroelectric project, north of Leningrad, ran into almost innumerable difficulties, which stretched its construction period from 1920 well into the 1930s. The fifteen-month preliminary investigations of the project were handled by an American engineer, Emegess, employed by the

[44] It should be clearly noted that RCA pointed out the propaganda possibilities to the State Dept. The latter described these warnings as 'theoretical' (316–141–714 *et seq.*). See also chap. 18.

[45] *Monogram*, November 9, 1943; and *Bank for Russian Trade Review* (January 1929), pp. 8–9.

[46] Telegram Quarton, Vibourg to U.S. State Dept., April 11, 1921: 'Confidental. Although Soviet papers contain little on electrification accomplishments and only reiterate bombastic plans the truth is that slight progress has been made due to the lack of electrical goods, technical supplies and skilled labor. To date most energy has been devoted to collecting material and making paper plans. The colossal Svir electric station has not materialized, and is no further advanced than six months ago except that a small and inadequate quantity of building materials has been collected. . . .'

Cooper Company, also working on the Dniepr project.[47] Various other American (J. G. White Company) and Swedish (Karlsrads Mechaniska A/B and Vattenbyggnadsbyran A/B) construction companies were involved in various aspects of the Svir dam and site construction. The generators were supplied by Metropolitan-Vickers and the turbines by Werkstaden Kristinegamm A/B of Sweden. The project was finally completed in 1933 at an estimated cost of $500 per horsepower compared to an average cost of approximately $100 per horsepower in the United States.[48]

At Volkhov the construction process was also extremely slow. Graftio, the engineer in charge, used Swedish engineers to implement Swedish construction methods.[49] The 10,000 h.p. turbines from Sweden arrived at the end of 1923, and date of completion was set at 1926. By April 1927, despite extensive foreign assistance from A.S.E.A. and Metropolitan-Vickers, the Volkhov station was still not fulfilling expectations. It was described as 'irregular, capricious and unreliable.'[50] The problem was in the use of generators from two sources: four from A.S.E.A. and made in Stockholm, and four made at the Electrosila works in Leningrad with its mixed history of technical assistance. The Electrosila generators contained materials of different specification from those in the Swedish generators, and problems arose when the eight generators were operated simultaneously.[51]

The high-tension insulators (Hewlitt type) for the 130 kilometers of transmission lines to Leningrad were manufactured by the General Electric Company and the Thomas Company in the United States. The total cost of the project was estimated by Klemmer at 90 million rubles, of which 6 million was spent on imported equipment and technical assistance. In return for this substantial investment, the plant did not generate more than 20,000 kw in 1927[52] or about seven times the cost per kilowatt of capacity constructed at the Zages project.[53]

The world-famous 650,000 h.p. Dniepr project, supervised by Col. Cooper, builder of Muscle Shoals in the United States, used four 80,000 h.p. turbines manufactured by the Newport News Shipbuilding and Drydock Company, linked with vertical 77,500 kw. General Electric design generators. The total

[47] Emegess made a report to the U.S. State Dept. concerning the methods used by the Soviets to keep Col. Cooper in ignorance of the true conditions in Soviet Russia. (316–139–131.)

[48] Emegess Report. (316–139–128.)

[49] *Ibid.*

[50] *Ekonomicheskaya Zhizn*, No. 85, April 1927.

[51] *Ibid.*

[52] Klemmer, *op. cit.*, pp. 16–7.

[53] See table, p. 205.

value of $2.5 million was granted by G.E. on five-year credit terms. Cooper Company engineers were sent to Russia in the summer of 1926 to make a feasibility study for this project. They examined the prerevolutionary construction plans and the structural and geological problems of the site. In particular, they raised questions concerning labor supply, raw materials and transportation, all of which were considered inadequate for the size of the proposed project.[54]

The initial study was followed in October 1927 by the visit of Professor E. G. Alexandrov, Chairman of the Technical Council and Vice-President of Dnieprstroi, to the United States, where he visited construction machinery plants and raw material supply and water power projects. He especially noted operating principles and types of materials used. Alexandrov expressed the hope that the 'best methods' could be applied at Dnieprstroi. By this time some $1.5 million in equipment orders had been placed in the United States for Dniepr. This equipment included dump trucks, steam shovels, pneumatic drills, forges, and similar construction items. Credit terms obtained varied between one to one and a half years.[55]

A construction agreement was then made with both the Cooper Company and Siemens A-G of Germany to undertake supervision of the dam construction. Cooper reported on the project to the American section of the All Union Western Chamber of Commerce which was a Soviet institution with functions rather different from those of Western chambers of commerce. The dam was to be considerably larger than any existing dam in the world, exceeding in volume the Nile Dam by 18 percent and the Wilson (Hoover) Dam by 10 percent. The electric power station was designed to yield 2.5 billion kwh at a cost equivalent to this supply of electrical energy in the United States. As *Ekonomicheskaya Zhizn* phrased the goal, 'The United States is a country in which electrical energy is used wherever possible. The U.S.S.R. must also become such a country.'[56] The ultimate capacity was designed to be 650,000 h.p. The dam itself was 51 meters high and 720 meters across. The first five generating sets, each with Francis-type turbines and 77,500 kw. generators as well as the outdoor equipment (transformers, oil circuit breakers, switchboards, etc.) were manufactured and installed by General Electric. Equipment used in construction was imported from the United States and Germany. Two massive stonecrushers were specially made in Germany. Even the equipment for the dining halls, to seat 2,000 workers at one time, was imported. The only purely Soviet work traced was the longer of the two bridges which were built

[54] *Pravda* (Moscow), No. 171, July 28, 1926.
[55] *Ekonomicheskaya Zhizn*, No. 237, October 16, 1927.
[56] *Ekonomicheskaya Zhizn*, No. 215, September 15, 1928.

Table 11-6 TECHNICAL ASSISTANCE AND EQUIPMENT SUPPLY IN THE GOELRO PROGRAM, 1920–30

Project	*Consultants/Supervisors on Dam/Plant Construction*	*Equipment Supply Generators and Transformers*	*Turbines/Boilers*
Svir	J.G. White Engineering Co. J. Cooper Inc. Karlsrads Mechaniska A/B Vattenbyggnadsbyran A/B	Metropolitan-Vickers Electrosila (with General Electric assistance)	Werkstaden-Kristinegamm A/B
Volkhov	A.S.E.A.	4 A.S.E.A. 4 Electrosila	A.S.E.A. Metropolitan-Vickers
Nizhni-Novgorod	Thomson-Houston (U.K.)	Metropolitan-Vickers	*
Dniepr	H. Cooper Company Siemens A-G	5 General Electric 4 Electrosila (General Electric assistance)	9 Newport News
Shatura	Metropolitan-Vickers	Brown-Boveri Erste Brun. Maschinen Fabrik (Czechoslovakia)	Brown-Boveri
Shterovka	(under construction 1930)	Metropolitan-Vickers	Metropolitan-Vickers
Zages	**	Electrosila (General Electric assistance)	—
Ivanovo-Voznessensk (Ivgres)	Krupp	Metropolitan-Vickers	Metropolitan-Vickers
Moges		Metropolitan-Vickers, General Electric	Metropolitan-Vickers
Chelyabinsk		Metropolitan-Vickers, General Electric	Metropolitan-Vickers
Zuevka	(under construction 1930)	Metropolitan-Vickers	Metropolitan-Vickers
Zlatoust		Metropolitan-Vickers, Westinghouse, General Electric	Metropolitan-Vickers
Nigres (Gorki)		Metropolitan-Vickers, General Electric	Metropolitan-Vickers
Baku (Krassnya Zveska)		Metropolitan-Vickers	Metropolitan-Vickers
Belovo		Unknown	Metropolitan-Vickers
Orekhovo		Metropolitan-Vickers	Metropolitan-Vickers
Saratov		Unknown	Rateau(France)

Sources: 1. 'A Portfolio of Russian Progress,' *Monogram*, November 1943.
2. INRA, *op. cit.*
3. A. Monkhouse, *Moscow 1911–1933* (Boston: Little, Brown and Co. 1934).
4. J. Dummerlee, *op. cit.*
5. *Wrecking Activities at Power Stations in the Soviet Union* (Moscow: State Law Publishing House, 1933).
6. Klemmer Reports, U.S. State Dept., Archives.

* A German firm, name unknown.

** 'Foreign consultants,' INRA, *op. cit.*, p. 276.

over the Dniepr; this was of short-span construction and, according to Scheffer, 'entirely Russian work.'[57]

The Zemo-Avtchalin hydroelectric development (Zages) at Tiflis, in the Caucasus, was begun in 1922 and completed in 1927. The project engineer was Russian (Melik-Pashaev) and the supervising engineer Armenian (Chichinadze), but 'foreign consultants' were used in some stages.[58] The station developed a useful capacity of 40,000 kw, compared to 60,000 kw at Volkhov, and an annual output of 150 million kw hours, compared to 225 million kw hours at Volkhov.[59] Four turbo-generators were manufactured at the Stalin plant (formerly Petrograd Metal) with German assistance and by Electrosila with assistance from A.S.E.A. Cost of construction was 21 million rubles: well in excess of the original estimate of 6.9 million rubles but substantially cheaper than Volkhov both in terms of cost of construction per kw of capacity and per kw hour of electricity produced. (See table 11–7.)

Table 11–7 COMPARATIVE CONSTRUCTION COST AND ENERGY COST AT THE VOLKHOV AND ZAGES PROJECTS, 1927

	Volkhov	*Zages*
Comparative cost per kw of capacity	1,250 rubles*	500 rubles
Cost per kw hour	3.5 kopecks	1.3 kopecks

Source: Ekonomicheskaya Zhizn, No. 143, July 1927.

* Klemmer put the Volkhov capacity at 20,000 kw (useful) in 1927; on this assumption construction cost would be 3,750 rubles per kw capacity.

The textile complex at Ivanovo-Voznessensk, claimed as the largest in the world, had a peat-burning power station erected by Krupp.[60] The status of the other projects is listed in table 11–6.

A few large foreign companies undertook the greater part of the construction, installation, and equipment of these power stations. Metropolitan-Vickers obtained the lion's share of the work. A list of the most important orders received by the company in this period includes three turbo-alternator sets for Krasny Oktiabr (Leningrad), two of which were 45,000 kw units; all the switchgear and transformers for Shatura and Nizhni-Novgorod; large-capacity

[57] P. Scheffer, *op. cit.*, p. 99. Foreign assistance and equipment were so commonplace that any purely Russian project at this time was usually noted as being exceptional and therefore worthy of recording.

[58] *INRA*, p. 276.

[59] *Ekonomicheskaya Zhizn*, No. 143, July 1927. Another Soviet source suggests this station had a smaller capacity and was started before the Soviet occupation of the Caucasus and completed in 1925. (*Annuaire*, p. 255.)

[60] P. Scheffer, 'Aus dem Textilbezirk von Ivanovo-Voznessensk,' *Berliner Tageblatt*, June 22, 1929.

turbo-generators for Moges (Moscow), Baku, Chelyabinsk, and Ivanovo-Voznessensk; medium-capacity generators for Shterovka and the Third Cotton Trust; smaller-capacity turbo-generators for Irkutsk, Novo-Sibirsk, and others; and all the switchgear equipment for Volkhov, the oil-well electrification program for the Baku area, and the Moscow-Mytishe electric railway.[61] To give a comparative estimate of the importance of the Metropolitan-Vickers contribution, the turbo-generators supplied for the Krasny Oktiabr plant, in themselves only part of the generating equipment, equaled the total generator capacity already produced in the U.S.S.R. at the time (90,000 kw versus 92,600 kw); and Metropolitan-Vickers was only one of a number of foreign firms supplying similar equipment. Further the existing generator capacity of the U.S.S.R. was all being produced with foreign technical assistance.

In brief, all electric energy stations built in this period, whether coal, peat or hydroelectric, were based on Western technology. Station equipment was either supplied directly from abroad or, if of Soviet construction, was built in a plant with Type III technical assistance. The Svir, Shatora, Shterovka, and Ivanovo plants, for example, utilized generators built abroad and installed by Western engineers in the Soviet Union. Volkhov and Dniepr used generators made abroad and in the U.S.S.R. Similarly, turbines were either manufactured abroad or in Soviet plants with Type III technical-assistance agreements. A larger selection of foreign companies was utilized in this area of technology: Werkstaden-Kristinegamm and A.S.E.A. of Sweden, Newport News and General Electric of the United States, Krupp of Germany, Metropolitan-Vickers of the United Kingdom and Brown-Boveri Company of Switzerland.

THE PROCESS OF HYDROELECTRIC TECHNOLOGY ACQUISITION

In 1925 the Leningrad Metal Plant manufactured a 4,500 h.p. hydraulic turbine for the Zages project. This was the first turbine produced after the Bolshevik Revolution, and a copy of three turbines imported for the purpose from Germany.[62] In the following year the plant produced a second turbine: a 1,500 h.p. unit for the Leninaken hydro project in Armenia. These were produced with A.E.G. technical assistance. In 1927 an agreement was made to construct Metropolitan-Vickers turbines under license and with United Kingdom technical assistance; thus 'the manufacture of big Francis turbines (for the Dzoraget and Rion stations) was mastered in the course of 1927–30.'[63]

[61] *Bank for Russian Trade Review*, March 1929, p. 15.
[62] *INRA*, p. 276.
[63] *Ibid.*

In 1927 the Electrosila plant in Leningrad (formerly Siemens A-G) manufactured four vertical generators for the Zages project: the first ever produced in the Soviet Union. This was followed by an order for four generators for the Volkhov project. These to be coupled with four Swedish made A.S.E.A. generators. There was a further order for four generators for the Dniepr project, to be coupled with five General Electric generators. Electrosila had assistance agreements with A.S.E.A. and the International General Electric.

The acquisition process is now clear. There was a primary stage when generators and turbines were both imported and installed by foreign engineers. This was succeeded by the acquisition of foreign technical assistance and by the use of plants inherited from the tsarist era. A specific technology was established with imported equipment and technical designing, supervisory, and engineering skills. Orders for capital equipment to modernize the plants of the electrical trusts were dependent upon the granting of technical-assistance contracts. Normally the Western company was glad to donate the technical-assistance aspects to acquire the order for the major installation.

Substitution of domestically produced machinery for imported machinery then followed. In hydroelectric projects, several installations utilized both equipment manufactured abroad and equipment domestically produced with foreign assistance. The technical advantages were dubious, but the educational aspects were undeniable. Comparative data on operating performance was generated and found useful as a check on the efficiency of domestic production. The final stage was reached when only domestically produced equipment was used, with or without foreign assistance. In hydroelectric projects this did not occur in the 1920s.

Concurrent with the progress of import substitution, there was increasing technical sophistication. Manufacture shifted from the small and simple to the complex and large. The 'gigantomania' of the 1930s was an uncontrolled technical escalation of this nature. There is nothing in Marxist theory, in the absence of the discipline of the market place or a theory of production and diminishing returns, which dictates a cut-off point for either complexity or size. By definition, the largest and the most complex is always the most efficient, and only in the last few years has the assumption been challenged in Soviet technico-economic literature. By the same measure we would expect to see a degree of over-engineering in Soviet design. In the 1920s it was much too early to see the flowering of this phenomenon, but the politico-economic structure established in this period was destined to move Soviet industry along this road. Volumes II and III will pick up and trace the threads from this inauspicious starting point.

It is also interesting to note that many of the associations described here for the 1920s have continued uninterrupted to the present date. Karlsrads Mechaniska Werkstad A/B had a contract for the Svir project in 1923. In 1963 the same company completed a paper mill, and in 1964 a pulp mill. This long-term association is not at all uncommon. The tiansfer process is still underway.

CHAPTER TWELVE

The Chemical, Compressed Gas, and Dye Industries

NITROGEN FIXATION: BASIS OF A CHEMICAL INDUSTRY

THE immediate chemical industry problem in 1921 was synthesis of ammonia from the elements: i.e., nitrogen fixation. This would eliminate use of Chilean saltpeter and facilitate production of calcium cyanamide needed for the manufacture of ammonia and cyano compounds.[1]

In 1921 V. I. Ipatieff, Chairman of the Chemical Committee of Vesenkha, made an extended trip through Europe to investigate purchase of these processes for use in the U.S.S.R. He found the best available process was owned by I. G. Farben of Germany, who would not sell or grant a license to manufacture in the Soviet Union. The remaining alternative was to install plants for production of calcium cyanamide to produce fertilizer in peacetime and ammonia and nitric acid in wartime. Ipatieff investigated several processes, including those of Bayerische Stickstoff Werke in Germany, but was denied access to the best-known plant, the nitrogen fixation plant at Oslo, Norway.[2]

A Commission on Fixation of Nitrogen was then organized and all available foreign literature acquired. Research was started, not to develop a nitrogen fixation process, but to determine which of the foreign processes was the best. Domestic production of ammonia was recognized as the key problem, with special significance for military purposes, and this was taken up by both the War Technical Administration of Vesenkha and the Chemical Branch of Gosplan.

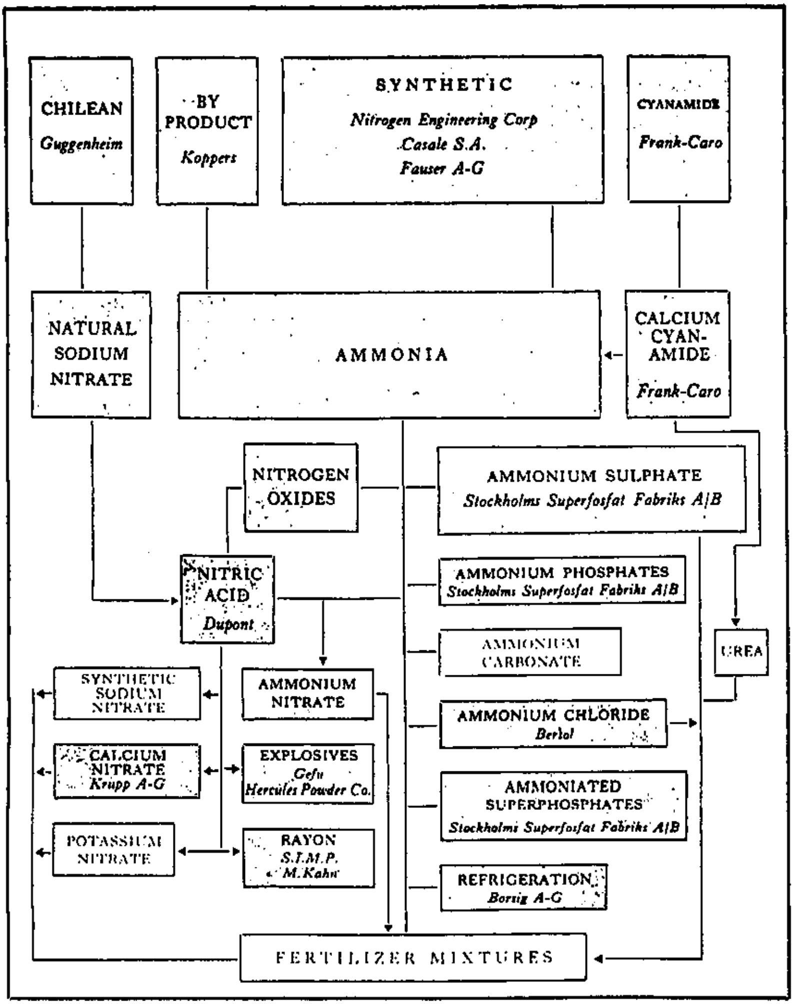
The manufacture of nitric acid, also dependent on ammonia technology, had also been ignored. This was a major gap in Soviet industry—particularly

[1] V. I. Ipatieff, *Life of a Chemist* (Stanford: Stanford University Press, 1946), pp. 327–8. Ipatieff fled Soviet Russia and left us a first-hand account of the chemical industry in tsarist and Soviet Russia. The Gumberg Papers at the State Historical Society in Madison, Wisconsin, also contain data on Chemstroi.

[2] *Ibid.*, p. 379.

Chart 12-1 THE TRANSFER OF NITROGEN INDUSTRY TECHNOLOGY TO THE U.S.S.R.

PROCESSES



 Technology transferred from the West between 1917 and 1930.

Source: Based on United States Tariff Commission, Report No. 114, Second Series. *Chemical Nitrogen* (Washington D.C. 1937). With data from text of chapter added.

in the military sector (nitric acid is an essential ingredient in explosives manufacture). The three available synthetic ammonia processes available were the Cloudt in France and the Casale and Fauser in Italy. Ipatieff selected the Casale process as the most suitable; it was not too expensive and a small plant (20,000 tons per year) could be readily installed. A Soviet commission was dispatched to Italy; the final arrangement was for a 16,000-ton-capacity plant built by the Italian company at Dzerdjinsky in 1927. Russian engineers were trained at Casale Ammonia S-A in Italy, and Italian engineers built and initially operated the Dzerdjinsky plant. Essentially the only differences from the I. G. Farben process, which had been refused, were in the type of catalyst and the operating pressures used.

For a solution to the calcium cyanamide problem, Ipatieff visited Bayerische Stickstoff Werke and Borsig A-G in Germany and the Superfosfat A/B in Sweden. The Swedish method, obtainable on more advantageous terms, was adopted, and several plants were ordered from Sweden. This was the basis of the Soviet superphosphate industry.[3]

SYNTHETIC PRODUCTION OF AMMONIA IN THE UNITED STATES[4]

The technical revolution brought about by synthetic ammonia was felt throughout the heavy chemical and allied industries, from agriculture to explosives. The opening of a single synthetic ammonia plant in Niagara Falls utilizing an atmospheric nitrogen process cut the price of ammonia by 50 percent in one week. Cheaper ammonia stimulated development of refrigeration, established effective competition against the Chilean saltpeter monopoly, replaced sodium nitrate in the chamber process for the manufacture of sulphuric acid, and introduced an entirely new method of nitric acid production.

Several synthetic ammonia processes were developed simultaneously in Europe and the United States. General Chemical, a subsidiary of Allied Chemical and Dye, spent between $4.5 and $5 million on research and development of the Haber process, followed by an investment of $125 million in the Hopewell plant, opened in 1928. The Mathieson plant, using the Nitrogen Engineering process, was built in 1921 and followed by another in Niagara Falls using the Casale process, built by Ammonia Corporation of New York. In 1924 Dupont acquired American rights to the Claude process and in 1927 acquired American rights to the Casale process and then proceeded to improve both processes. At the end of the decade the effectively competing

[3] *Ibid.*, p. 426–8.

[4] Based on W. Haynes, *American Chemical Industry* (New York: Van Nostrand, 1948), IV, 85.

processes in the United States were those of the Dupont Company (Claude-Casale) and the Nitrogen Engineering Corporation (Haber-Bosch). It was not until 1936, after the expenditure of more than $24 million on development of synthetic ammonia, that net operating results began to show a profit.

It was American technical ingenuity and originality in developing techniques for handling very great pressures and temperatures which enabled successful replacement of early methods of ammonia manufacture and introduction of a much cheaper method. Research was partly financed by the Army Ordnance Department, the Department of Agriculture, and a special Congressional appropriation of $185,000.[5] The value of the developed technology is suggested by the payment of $1.25 million for Japanese and Chinese rights to the Claude process. The reader may compare this figure to the $150,000 received from the Soviet Union for similar rights.[6]

MANUFACTURE OF NITRIC ACID AND THE DUPONT COMPANY

There was a small production of nitric acid in tsarist Russia. In 1920 eight small plants produced 360 tons per year. During the 1920s major technical advances were made in the West, and by the end of the decade three companies were offering nitrogen fixation processes for the manufacture of nitric acid.

The Soviets found themselves in an excellent bargaining position. Dupont, Nitrogen Engineering, and the Casale Company were competing suppliers with more or less equivalent processes. The Soviets used their monopsonistic power to drive prices down from opportunity costs (probably well in excess of $100 million when one considers the absence of input suppliers in the U.S.S.R.) to a mere $150,000—the price ultimately paid to the Dupont Company after a number of such plants had been erected. Only if the three Western owners of fixation processes had merged into a joint bargaining unit could the price extracted from the U.S.S.R. have approached Soviet opportunity costs. It appears that from the strictly technical viewpoint the Dupont process had a slight competitive product edge by virtue of the 120 lb.-per-square-inch pressure used, but this was insufficient to offset Soviet buying power.[7]

In early 1929, negotiations began between Chemstroi and Dupont concerning the sale of their ammonia oxidation process and nitric acid technology. Dupont had expended over $27 million developing the process.[8] This was in addition to the substantial investment made by the earlier French and Italian

[5] *Ibid.*, p. 90.

[6] See page 213.

[7] F. D. Miles, *Nitric Acid; Manufacture and Uses* (London: Oxford University Press, 1961), p. 34.

[8] *Dupont: The Autobiography of an American Enterprise* (Wilmington: Dupont, 1952), p. 95.

owners of the process. To attempt to recoup anything like this amount from the Soviets would have been naïve; there were other processes available and the alternative always existed that the Soviets could develop the process themselves. For Dupont, any return over marginal cost of supplying the process was advantageous. However, marginal costs were zero as, according to the agreement, the U.S.S.R. paid the expenses of both the Soviet and the Dupont engineers. Consequently the $150,000 fee to Dupont was a return on research and development investment and a 'windfall' gain to the Dupont Company.

In requesting advice from the State Department, the Dupont concern argued that the process was neither secret nor covered by patents, that the end use of nitric acid is the manufacture of fertilizer, although it is the basic fundamental raw material for dyes, celluloid, photographic materials, medicine and artificial silk.[9] Dupont argued that if they did not supply the process it could be bought elsewhere, and that several plants had already been erected in the U.S.S.R. by Casale and Nitrogen Engineering of New York. Further, the company argued that there was nothing exclusive about the Dupont process: 'Our superiority . . . is based entirely upon the economic advantages of our engineering design.'[10]

The copy of the agreement from the State Department files indicates that Chemstroi

> . . . (wishes) to use in Russia the Dupont process for the oxidation of ammonia and to place at its disposal sufficient data with respect to the design, construction and general information as to permit the satisfactory operation of such plants . . . the Company shall serve the Russian Corporation in an advisory capacity and furnish upon request services of engineers and chemists so as to accomplish the purpose of the contract.

The agreement further stipulated that Chemstroi might use the Dupont processes for the oxidation of ammonia to manufacture 50–65 percent nitric acid and that Dupont agrees

> . . . to place at the disposal of Chemstroi sufficient data, information and facts with respect to the design, construction and operation of such plants as will enable Chemstroi to design, construct and operate ammonia oxidation plants. . . .

[9] In 1927 more than two-thirds of U.S. nitric acid was being used for explosives. Dupont said the acid was 'too weak' for explosives manufacture. However, the State Dept. appears to have accepted this rather surprising statement.

[10] Letter from Dupont to U.S. State Dept. (316–139–572). The Dupont-Chemstroi agreement is in the U.S. State Dept. Decimal File, 316–139–570. This agreement is well worth reading from one viewpoint alone: the remarkable two-facedness of the Soviets. They can call themselves a 'Russian Corporation,' etc., to give the Western company the impression it is dealing with fellow businessmen, and then present the Dupont work as a 'feat of socialist construction.'

Dupont was therefore to act in an advisory capacity in the construction and initial operation of all such plants. The fee for the use of the process was $10 per metric ton of yearly rated capacity for the first plant and $10 per ton on subsequent plants, until the total fee was $50,000. In addition, a flat fee of $25,000 per plant was payable until the total fees paid amounted to $150,000. As has been pointed out, this was rational profit-maximizing action for Dupont, but hardly for the Western world.

Chemstroi was allowed to request reasonable services of Dupont engineers and chemists, their salaries and expenses to be paid by Chemstroi. In the case of the first plant Dupont provided construction engineers and chemical engineers to build and start up the plant and train sufficient local personnel to continue operations. In all, five such plants were built. Permission was granted by Dupont to enable Chemstroi to pass on the technical information to other state organizations (a similar request caused R.C.A. some amusement; their patents and processes were being sequestered either way).[11] In addition, Dupont agreed to accept Chemstroi engineers and technicians in their United States plants for training.

Table 12–1 SOVIET ACQUISITION OF BASIC CHEMICAL TECHNOLOGIES, 1925–30

Technology	*Western Process*	*Soviet Plant*
Nitrogen fixation	Nitrogen Engineering Corp (modified Haber-Bosch)	Berezniki (1929–1932)
	Nitrogen Engineering Corp (modified Haber-Bosch)	Bobriki (1929–1932)
	Casale Ammonia S-A. (Italy)	Dzerdjinski (1927)
	Fauser (Italy)	Gorlovka (1930)
Calcium cynamide	Stockholms Superfosfat Fabriks A/B (Sweden)	Karakliss
Nitric acid	Dupont Company	Five plants (one erected before 1930)
Sulphuric acid	Bersol (Russo-German Company)	Samara
	Hugo Petersen (Berlin)	N.A. Technical assistance
	Lurgie Gesellschaft fur Chemie und Hüttenwesen m.b.H.	N.A. Technical assistance

Sources: 1. V. I. Ipatieff, *op. cit.*
2. U.S. State Dept. Archives.
3. German Foreign Ministry Archives.

The first Dupont plant for nitric acid was built at Chernorechenski, near Gorky. The capacity of the combine was 115,000 tons of superphosphates a year and included plants for the manufacture of ammono-phosphates, calcium carbide, cynamide, and nitric and sulphuric acids. Alcan Hirsch, a New York

[11] See below, page 300, n. 18.

consultant, was chief engineer for Chemstroi and supervised construction of the combine by Western companies. Hirsch comments that the nitric acid plant was built according to the Dupont specifications and 'incorporates apparatus made of nickel-chromium steel and all the equipment is of American manufacture throughout.'[12]

As has been pointed out, 'turn-key' purchases were also made from Dupont's competitors, so that the Soviets ended up in a better position than any of their suppliers independently. They had the sum of Western technical experience within two to three years of perfection of that process. In other words, the Soviet Union was able to acquire a greater knowledge of the processes involved in nitrogen fixation, nitric acid production, and other areas by expending a microscopic amount of money. An agreement covering the production of ammonia from coke was made with Nitrogen Engineering of New York, and another contract with the same company covered construction of a $10 million synthetic ammonia plant. Yet another contract with NEC established a ten-year technical-assistance agreement for all NEC-Haber-Bosch technology.[13]

SOLIKAMSK POTASH DEPOSITS

Phosphatic fertilizers, either from bones or from phosphate rock, were not produced in any quantity in prerevolutionary Russia. Nutter gives a total of only 55,000 tons for 1913. Toward the end of the 1920s, production of both natural and rock phosphate fertilizer jumped substantially to a total of 484,000 tons.

The substantial increase in natural phosphate output in 1929–30 may well be associated with the kulak extermination program and massive slaughter of cattle. Natural phosphate is bone meal.

Increase in rock phosphate output stems partly from development of the Khibini apatite deposits on the Kola peninsula. These deposits of apatite-nepheline contain about 26–32 percent phosphoric acid. One of the major

[12] Alcan Hirsch, *Industrialized Russia* (New York: Chemical Catalog Company 1934), p. 83. This phrase has a much deeper implication than first reading might convey. Let the reader ask the question, which plants in the U.S.S.R. were able to produce stainless (i.e., nickel-chrome) steels in 1927? There was one, and that used the old hand-mill process and was unable to turn out the larger sheets of very different quality used in chemical engineering. In other words, if the apparatus had been denied, the Soviets would first have had to acquire a stainless steel production unit.

Alcan Hirsch was a most effective agent for the transfer of chemical engineering technology. He was quite sympathetic to the aims of the Bolshevik Revolution. After the extermination of the kulaks, the show trials, and the forced labor construction of industry (all of which he witnessed) he could still write in 1934: 'Soviet Russia has not as yet reached unprecedented eminence in the arts, science or industry although I believe that sociologically it is far ahead of the rest of the world.' (P. 273.)

[13] Vneshtorgizdat, *op. cit.*, p. 226; and Hirsch, *op. cit.*, p. 78.

technical difficulties in initial development was presence of nepheline, which had to be separated out. A concentrating and refining plant was built, with a capacity of 250,000 tons of apatite concentrates per year (more than the increase in output from 1928–9 to 1929–30). The presence of nepheline was overcome by a flotation process, utilized by the first such nepheline treatment plant in the world, designed and built by General Engineering Company of Denver and utilizing all United States equipment. The by-product nepheline was used in the manufacture of glass, ceramic wares, pottery, porcelain, and electrical insulators. In brief, the by-product became useful in many other industries, all with their own technical-assistance agreements with foreign firms.[14]

In 1924 there was a production crisis in the largest potash production operation, Kubtrestpotash, which badly missed its production targets although the 'mixed' trading company Wostwag had an agreement to take its complete output for export.[15] Two years later, prospectors found extensive deposits of potash (sylvanite and carnallite) in the Solikamsk district while drilling for oil.[16] It was decided by Vesenkha to favor development of Solikamsk over Kuban. The report of the prospecting expedition found its way from the Geological Committee of Vesenkha to the State Department in Washington, D.C.[17] The deposit was offered as a concession to Lyman Brown, previously American Relief Administrator in Russia. He operated on the fringes of concession-promotion of Soviet opportunities. By August 1927, Dillon, Read and Company was in process of raising $30 million to finance the development of Solikamsk and an associated chemical combine and oil pipe line. The fund-raising was killed by unilateral action on the part of the State Department; the Soviets then decided to start development with their own resources, utilizing Western skills under Type III assistance agreements.

A potash trust was formed and an agreement concluded with the German company, Deilmann Bergbau und Tiefbau Gesellschaft, of Dortmund, to design the mine and plant at Solikamsk.[18] The resultant Berezniki-Solikamsk complex included a salt refinery to produce 160,000 tons of stone salt annually,

[14] Amtorg, *op. cit.*, IV, No. 6, p. 110.

[15] *Ekonomicheskaya Zhizn*, No. 115, February 19, 1924.

[16] Much was made in the Soviet press about this oil-potash discovery (see *Torgovo-Promyshlennaya Gazeta*, No. 99, pp. 107–9 and 118, for 1929). This was, however, an extension of a field developed before 1917 (See A. A. Trofimuk, *Uralo-Povolzhe-novaya neftiania baza S.S.S.R.* (Moscow: Gostoptekhizdat, 1957), pp. 144–5.

[17] The 31-page Provisional Report includes the drill core logs. These suggest a very substantial deposit of potash salt (316–138–352). The Soviets must have needed Western technology badly in this area, to allow out the drill logs. At about the same time they sentenced the representatives of a Swedish company to eight years in jail just for making a market survey of dairy equipment requirements.

[18] Vneshtorgizdat, *op. cit.*, p. 22.

a plant to procure 1.2 million tons of potash, chemical plants to utilize the potash, a brick plant, and other industries. Two shafts were planned for the mine: one was sunk by the trust to a shaft depth of 35 meters, and the main shaft was sunk to 260 meters by the German company, Gefrierschachbau, using freezing methods of sinking. The nature of the overburden required use of methods beyond Soviet capabilities at the time.[19] The degree of technical uncertainty felt by the Soviets is probably indicated by the fact that one year after development was started the project was still being offered as a concession. The program finally involved some thirty German engineers. The first mine, with a capacity of 1.5 million tons of ore, and the first concentrator, with a capacity of 1.2 million tons, were completed in 1933.

MANUFACTURE OF SULPHURIC ACID

Sulphuric acid capacity was modernized with the help of German firms. Lurgie Gesellschaft für Chemie und Hüttenwersen m.b., of Frankfurt, provided assistance for construction of a sulphuric acid plant with a daily capacity of 80 tons of monohydrate. The company also provided equipment and started operations for the Soviets. General technical assistance for sulphuric acid production was provided under another agreement, with Hugo Petersen, of Berlin.[20]

Bersol (the Russo-German company) was primarily interested in development of poison gas facilities, but was also instrumental in establishing factories for production of potassium chloride, sulphuric acid, superphosphates, and other chemicals.[21]

Development of an acids capacity is an essential prerequisite to plastics production. While nitric and sulphuric acid production was under development, moves were being made to acquire a plastics base. *Ekonomicheskaya Zhizn* of November 30, 1926, reported that a concession agreement had been signed with Société Industrielle de Matières Plastiques (S.I.M.P.) for production of cinema and photographic film and articles made from celluloid. S.I.M.P. was granted a factory at Podmoskovnia, just outside Moscow. The French company repaired this facility and started production in 1927. This was followed by a joint American-German concession in early 1928, under which a plant was built to produce noninflammable film, artificial silk, and also paper, utilizing a patented process based on the use of corn stalks. The German participant was Deutsche-Russische Film Allianz A-G (Derufa), and the American was the Euroamerican Cellulose Products Corporation of New

[19] *Ekonomicheskaya Zhizn*, No. 86, April 11, 1928; and A. Hirsch, *op. cit.*, p. 64.
[20] Vneshtorgizdat, *op. cit.*, p. 228.
[21] Troyanovsky, *op. cit.*, p. 836.

York, represented by Montifiore Kahn (not the Albert Kahn firm with Vesenkha agreements).[22] The patents were held by the New York firm which 'thought it best' not to enter directly, but through German intermediaries. Investment amounted to $1.5 million, but little is known of the process itself.[23]

COKE OVEN BY-PRODUCTS

The Russian chemical industry was not insignificant in size before the Revolution. The production of coke oven by-products, an important source of chemicals, was well developed in tsarist times. Table 12–2 compares 1914 production of by-products with 1915 and 1926.

Table 12–2 COKE OVEN BY-PRODUCTS, 1914, 1915, AND 1926

	1914	*1915* (*Metric tons*)	*1926*
Tar	486,700	529,000	645
Ammonia water	197,300	209,800	0
Ammonium sulphate	169,000	117,230	0
Sal ammonia	64	196	0
Benzol	767	49,230	145
Oils	145,640	200,300	0
Goudron	201,700	248,300	0

Source: Quoted by J. Douillet, *Moscow Unmasked* (London: Pilot, 1930), pp. 47–8. Douillet had been Belgian Consul in Moscow and obtained the data from a Belgian engineer with personal working knowledge of the Russian coke by-product industry before and after the Revolution.

In 1914 production was substantial in both tar and ammonium sulphate. The war affected different branches of the industry differently. Tar output increased, while that of fertilizers decreased. The industry completely collapsed in the early 1920s and the Soviets were unable to restore production even by 1926. The only plant operating in the first few years of the decade was the Enakievo Coke Benzol Works, formerly owned by the Russo-Belgian Company. In 1921 John Reed, the noted American Communist, organized 300 unskilled American workers, to whom Lenin donated a coke benzene plant to operate:

> A year afterward the Chemical Administration sent a Commission of engineers to report on the coke-benzene plant. Atrocious conditions were uncovered, and the ovens were found to be badly damaged. The workers were soon returned to the United States. . . .[24]

[22] U.S. State Dept. Decimal File, 316–139–562.

[23] *Berliner Tageblatt*, April 28, 1928. It may be noted that the use of German intermediaries was a common practice among American firms at this time, no doubt to avoid adverse publicity in the United States.

[24] V. N. Ipatieff, *op. cit.*, p. 322.

Then for a period of some years no attempt was made to utilize coke byproducts, officially because Koksobenzol and Ukrchim questioned the right of the Central Coal Industry management to concern itself with these products. Nothing was done while the dispute was in progress.[25] The coke-benzol industry was finally grouped under Koksobenzol. Of the twenty-two byproducts plants incorporated into the trust, fifteen were fully equipped and had an annual aggregate capacity of 16,000 tons of benzol. Output in 1926 was a mere 145 metric tons. Before the Revolution, Russian coking had been dependent on foreign coke-oven technology. The Donbas ovens installed before World War I consisted only of Coppe and Piette systems.[26] Although about 800 ovens were available, output of coke was only 9,800 metric tons for 1920, compared to 4.3 million metric tons in 1913. By 1922 output recovered slightly to 110,000 and in 1923 to 130,000 metric tons. This enabled some attention to be placed on by-product recovery.[27] This recovery was brought about as coal supplies found their way once again to the ovens, but still only 4 percent of ovens were in production.[28]

THE RUSSIAN-AMERICAN COMPRESSED GAS COMPANY (RAGAZ)

Ragaz was a joint-stock company organized in January 1926 by the International Oxygen Company of New Jersey and the Soviet Metalosindikat for development of industrial gases in the U.S.S.R. Both parties held an equal share, and it was agreed that the concession would last until 1941. It was taken over by the Soviets in 1932.

Seven plants were established by Ragaz for manufacture of oxygen and acetylene for industrial uses. This included locations in Moscow (Rostokin), Sverdlovsk, Rostov on Don, and Baku. In addition, some seventeen welding plants, three acetylene gas generating plants, and two special schools for training welders were established at various points throughout the U.S.S.R.

The Moscow plant was opened in April 1927 and combined a special school with facilities for production of oxygen and acetylene. The second plant, which manufactured oxygen only, opened at Rostov in April 1928. The others followed. The Ragaz company also held the contract for the welding the Baku-Batoum and Grozny-Tuapse pipelines built between 1926 and 1929—the only pipelines built in the U.S.S.R. in this period.

[25] *Ibid.*, p. 288.

[26] Coppe ovens were at Petrovsky, Mariupol, Donetz-Urevsky, Taganrog, and Stalino. Piette ovens were at the Providence works. (316-131-949.)

[27] *Coal Age*, January 8, 1925, p. 47.

[28] Polish Foreign Ministry Report. (316-107-1262.)

In 1928 Ragaz produced 345,000 cubic meters of oxygen and 66,500 cubic meters of acetylene, and one year later 500,000 cubic meters of oxygen and 77,000 cubic meters of acetylene—the total Russian production. After the manufacture of industrial gases and the establishment of welding schools, the next problem was manufacture of welding equipment to replace imports. This was done under a technical-assistance agreement in 1929 with a German company, Messer A-G, of Frankfurt, specialists in the development of automatic welding equipment.[29] and later with technical assistance from General Electric for more advanced forms of welding equipment.[30]

BASIC AND INTERMEDIATE DYES

Imported dyes came exclusively from I. G. Farben, under an arrangement made in 1922 by a joint German-Russian commission containing I. G. Farben representatives. The latter agreed to maintain a warehouse in the U.S.S.R. and to import dyestuffs through Russgertorg (the mixed trading company). The commission also undertook to arrange for production of dyes through a jointly owned subsidiary—Igerussko. In return, the Soviets agreed to buy I. G. Farben products up to 70 percent of requirements of all coal tar dyes and medicines. The arrangement lasted until 1929. It was hardly profitable for the Soviets—only four intermediate dyes were manufactured by Igerussko, and the impression is gained that I. G. Farben was rather uncooperative. In return for a guarantee of gross sales, I. G. Farben was supposed to provide technical assistance also to the chemical and pharmaceutical industries. The agreement was not renewed. The Soviets complained they had not received any technical assistance, and the Farben company charged it had not received the agreed share of the Russian market.[31] There is a distinct possibility that I. G. Farben was shortchanged, as the Soviets made another dye agreement in 1924, a couple of years after the I. G. Farben agreement.

Before the Revolution, the German firm of Berger and Wirth A-G operated a large dye, ink, and paint manufacturing plant in Petrograd. This plant remained closed until 1924, although it was largely undamaged and nominally part of the Chemical Trust.[32] In February 1924, Berger and Wirth received a Type I concession agreement to reopen and modernize its old plant. The company was required to install new equipment. During the second year, a production level of 390 tons of dyestuffs was required, and in the third year 30,000 poods of printing inks, dyes, varnish, and paint. All technical advances

[29] Vneshtorgizdat, *op. cit.*, p. 228.
[30] *Monogram*, November 1943, p. 18.
[31] *Bank for Russian Trade Review*, II, No. 1 (January 1929); and U.S. State Dept. Decimal File, 316–136–1421.
[32] Report, April 13, 1923, U.S. State Dept. Decimal File, 316–108–362.

made by the company in Germany were required to be incorporated into the Russian plant. The agreement was to last for twenty-four years, at which time the plant was to revert to the Soviets in good condition. A royalty of 15,000 rubles per year plus 10 percent of sales was paid to the Soviets. Foreign workers were not allowed to exceed 20 percent of the labor force. In 1929 the company employed about 120 with an annual output of two million rubles in a new and completely mechanized plant.[33]

In 1924, when Berger and Wirth started work, the State Aniline Trust, which grouped together the prewar dye industry plants, was not in good shape. Of eight plants forming the trust, two (the Derbenevsky in Moscow and the Vladimirsky) were closed, two (the Butinsky and the Kinkshensky) were about to be closed, and four others (the Experimentaly, the Trigor, the Krasny Lutch, and the Central Laboratory) were on a heavily reduced schedule and working for the Military Trust. In 1923, just before the Berger and Wirth agreement, the trust sustained an overall loss of 876,451 rubles on a minute output. In 1913 the industry had produced 4,000 metric tons of synthetic dyes; in 1920–1 no output has been reported. There was then pressure on the Soviets to conclude a concession agreement in this sector. The opening of the Berger and Wirth plant and the implementation of the I. G. Farben technical agreement through Igerussko had an immediate impact on production.

Table 12–3 DYE PRODUCTION IN THE SOVIET UNION

Year	*Production (metric tons)*
1913	4,290
1920	170
1921	none
1922	none
1923/4	1,800
1924/5	n.a.
1925/6	8,290
1926/7	7,370
1927/8	10,250
1928/9	13,300
1929/30	16,790

Source: Nutter, *op. cit.*, p. 425.

By the end of the decade, the Soviets were able, with the help of I. G. Farben and Berger and Wirth, to claim legitimately a production of dyestuffs four times greater than prewar—wholly due to foreign efforts.

[33] U.S. State Dept. Decimal File, 316–139–549; and Haynes, *op. cit.*, p. 59.

Smaller concessions in this and allied fields were negotiated with the Leo Brand Company for production of cosmetics and with H. Brock for production of laboratory drying and desiccating equipment.

GLASS MANUFACTURING INDUSTRY

The earliest technical assistance in glass-making came under the Rapallo Treaty protocols involving a German group in the Kuban for production of Glauber's salts, and the processing of these sulphates for use in glass manufacture. Arsky said, ' . . . we must admit that we are quite incapable of doing this ourselves just now or even in the next ten-fifteen years,' and then realistically he added that, ' . . . the concessionaires will profit but it will bring wealth to us and we must pay for that.'[34]

The only completely modern glass-making plant built in the decade of the 1920s was the Bely Bychok plate glass works, built in 1927 and equipped with two ovens and twenty imported Fourcault-type furnaces and glass machines; the complete plant cost $3.6 million.[35] Later, in 1927, four American glass-machinery operators were hired and spent between one and two years in the U.S.S.R. They toured Soviet glass-making plants and introduced Russian workers to new American equipment as it was imported to replace the pre-revolutionary machinery.[36]

Simultaneously, a Ukrainian delegation arrived in the United States to study American glass factories. The delegation was sent by the Porcelain and Glass Trust of the Ukraine to study the application of American glass-making machines and methods to the Ukrainian industry. The delegation visited Pittsburgh, the Ohio River glass plants, Detroit, Buffalo, and Trenton, New Jersey. The delegation then announced that a large-scale plan of expansion had been worked out which involved purchase of 'considerable machinery abroad.'[37]

RESINOTREST

There was a rubber goods manufacturing industry in tsarist Russia. The important components were the Treugolnik (Triangle) plants in Moscow and Petrograd, combined by the Soviets into Resinotrest. Progress at these works and the tsarist Bogatyr, Caoutchouc, and Provodnik factories (also incorporated into Resinotrest as Rubber Manufacturing Plants Number 1, 2, and 3) went very slowly. The latter three plants employed about 10,000 in 1923,

[34] *Krasnya Gazeta*, September 3, 1921.
[35] Amtorg, *op. cit.*, II, No. 14, 5.
[36] *Ibid.*, No. 15, 5.
[37] Amtorg, *op. cit.*, II, No. 8, 2.

but were only partly in operation, producing rubber galoshes and tire canvas. The Petrograd Treugolnik plant employed about 10,000 and also produced galoshes. The essential problems were those of raw materials, skilled labor, and equipment.[38]

The Petrograd Treugolnik plant was selected for improvement and completely modernized in the mid-1920s. New activities were added, including asbestos spinning and manufacture of brake linings, yarns, packings and similar products. Its employment was boosted to 22,000 by 1928, and the company was placed under management supervision of two American consultants.[39]

The establishment of a rubber-reclaiming industry was initiated by a technical-assistance agreement between Resinotrest and the Akron Rubber Reclaiming Company in 1930.[40] The manufacture of rubber tires was initiated with the aid of the Seiberling Rubber Company, which completely outfitted a tire manufacturing plant at Yaroslavl and provided technical assistance in operations.[41]

CONCLUSIONS ON THE CHEMICAL INDUSTRY

During the decade the tsarist plants were restored and modernized and the Soviets added a new dye-manufacturing plant (built by Berger and Wirth under their concession agreement) and glass-manufacturing plant (from the United States), expanded a Treugolnik rubber plant (with American assistance), and obtained, through concession agreements, two foreign plastics operations.

The most significant items were the transfer of technology for the manufacture of synthetic ammonia, and nitric and sulphuric acids, and the creation of a compressed gas industry. The Dupont, Casale, and Nitrogen Engineering processes were transferred to the Soviet Union and formed the basis for development of chemical complexes under the so-called Five-Year Plan. These complexes were the Berezniki-Solikamsk, where the NEC synthetic ammonia plant was backed up by a Westvaco chlorine plant, and the Chernorechensky complex designed on the basis of the Dupont synthetic ammonia and nitric acid plants. A third complex was started at Bobriki (later Stalinogorsk) based on a second NEC synthetic ammonia plant.[42] Modernization of the basic chemical

[38] IS reported that Treugolnik 'refused' to join Resinotrest and had 'suffered accordingly' but gave no details. (316-108-408.)

[39] Ruykeyser, *op. cit.*, pp. 209-10. The engineering section was run by a German engineer, Hertwig. (316-108-415.)

[40] A. A. Santalov and L. Segal, *Soviet Union Year Book, 1930* (London: Allen and Unwin, 1930), p. 357.

[41] *Ibid.*, p. 359.

[42] Hirsch, *op. cit.*, pp. 73-85.

capacity, vital for industrialization, was essentially an achievement of foreign enterprise; once again, indigenous Soviet technology is notable for its absence. There is no trace in the engineering literature, Western or Soviet, or in archival material, of any Soviet contribution, unless the 35-meter Solikamsk shaft (which *may* have been a Soviet project) is counted as a technological contribution.

CHAPTER THIRTEEN

Clothing, Housing, and Food Concessions

THE FORMATION OF TRUSTS IN THE TEXTILE INDUSTRY

ALL large textile firms were nationalized by the decree of 1918 and management placed in the hands of a Chief Committee of the Textile Industry. The home textile industry, based on hand work but without hired labor, remained in private hands.

Available cotton spindles in 1920 totaled about seven million, but only a little more than ten percent of these were working. In the flax industry, only one quarter of 400,000 available spindles were working. Thus, although spindle capacity was about the same in 1920 as in 1912, output was very much less. This decline was the result of poor administration. Substitution of 'ignorant, sometimes unscrupulous Soviet officials' for the former owners, a labor and fuel shortage, and inability to provide food for the workers were the main causes. Rations were small and in irregular supply, and output was largely restricted by time wasted in foraging expeditions.[1]

In late 1921, the textile industry was organized in a number of trusts. These were the Tambov, comprising five factories producing coarse cloth; the Simbirsk, comprising six factories producing coarse cloth; the Moscow Trust, combining thirty-two plants in the Moscow industrial district and called also the Worsted and Finishing Trust; the Silk Knitting Trust, comprising fifteen factories; the Bogorodsk-Glukov Trust, with ten factories; the Orechovo, with ten factories; the Ivanovo-Voznessensk, with twenty-seven factories, and the Vladimir with ten cotton-spinning plants. Later the Petrograd district was organized as was the Linen Administration, comprising seven factories in the Vladimir-Kostroma provinces. Altogether, the Linen Trust comprised seventeen factories, including the large Kostroma plant.[2]

[1] *Wool and Textile World*, July 7, 1921.

[2] *Krasnya Gazeta*, August 2[illegible], 1921. These figures are somewhat different from those

Trustification was accompanied by the return of emigrants from the United States: usually deportees with ideological sympathies with the Revolution. In the summer of 1922, Petrograd *Pravda* reported that an 'American Department' had been organized in the Thirteenth State Clothing Factory by a group of deportees led by Comrade Summer and using methods described as the last word in efficiency, in an effort to create 'a genuinely American attitude to work.'[3] Another group of thirty-six American tailors joined the Moscow Tailoring Combine. It is interesting to note how a comparatively small group can affect a major organization:

> [they] have raised its work to such a level of efficiency that the Combine has become a model establishment . . . there are now six cutters to 150 machines, whereas formerly there were fifty cutters when hand machines were used.[4]

Demand for textiles was intensified by good harvests in the middle 1920s, but the cotton crop was insufficient to meet the demand, so that imports were necessary. In 1923–4, some 10 million poods of cotton was produced and another 8–9 million, valued at $75 million, was imported from the United States. The Chase National Bank advanced credits to the Textile Syndicate for the purchase of this cotton, payment being collected against documents in Moscow. In 1925, negotiations between Chase and Prombank extended beyond the finance of raw materials and mapped out a complete program for financing Soviet raw material exports to the U.S. and imports of U.S. cotton and machinery.

Imports were still insufficient to meet demand, and in March 1926 most cotton mills suspended work during Easter for an extended summer vacation. Wool factories closed for most of the summer discharging half of their workers and paying the rest at half rates.[5] The crisis recurred in 1927. Again numerous factories were closed. These supply problems were compounded by technical problems. In the Kostroma plant, some 45,000 spindles were crowded into a space designed for 20,000. These were of widely varying types, and about three quarters were from thirty-five to sixty years old. Few repairs had been undertaken since the Revolution, and spare parts were removed from machines already in operation. The steam engines providing power dated back to 1880.

given by M. Dobb. In particular, Dobb places only 7 plants in the Moscow Trust instead of 32, and quotes his source as Y. S. Rozenfeld, *Promishlennaia Politika S.S.S.R.* (1926). (Dobb, *op. cit.*, p. 134.) The propaganda image of a 'destroyed industrial structure' is hardly consistent with this comparatively large number of plants ready for trustification.

[3] *Pravda* (Petrograd), No. 175, August 6, 1922.

[4] 'Emigrants Returning from North America,' *Pravda* (Moscow), No. 246, October 31, 1922.

[5] *Izvestia*, No. 191, August 23, 1925.

As a result of this technical backwardness, substantial orders were placed abroad for textile machinery, particularly in the United Kingdom and Germany. In 1927–8, the U.S.S.R. purchased 11,471 tons of 'machines for spinning and twisting cotton, wool, flax, silk and bast fibres' from the United Kingdom alone. This may be compared with purchases of only 3,896 tons of cars, trucks, and fire engines from the same source. Textile machinery was the largest single category of exports from the U.K. to the Soviet Union in the years 1926 to 1928.[6]

THE RUSSIAN-AMERICAN INDUSTRIAL CORPORATION (RAIC) AND SIDNEY HILLMAN[7]

Several small groups of American emigrants arrived in the early 1920s. One, as already mentioned, joined the Moscow Tailoring Combine. Another, comprising 120 deportees with 200 sewing machines and other equipment, arrived a few months later. They took over an old sewing factory and established the Third International Clothing Works.[8]

In 1922 a much more ambitious project, of major significance in modernizing the textile and clothing industries, was begun. The project was initiated by Sidney Hillman and the Amalgamated Clothing Workers of America, whose official position was as follows:

> Russia has been pleading in vain with the rulers of the world for industrial credit. It is the duty of labor to give Russia the credit denied her by the ruling class. The Amalgamated has made the beginning with the clothing industry. Let us be big enough to perform our duty fully and quickly.[9]

In an *Izvestia* article, Hillman pointed out that the aim of the union was not solely to establish a clothing industry in the Soviet Union: 'our aims are much higher, we will begin with this industry and then grant credits to the other clothing trusts.'[10]

[6] A. A. Santalov and L. Segal, *Soviet Union Year Book, 1930* (London: Allen and Unwin, 1930), p. 331.

[7] Board of Amalgamated Clothing Workers of America, *Bibliography of the Amalgamated Clothing Workers of America* (New York, 1939). Section IV is a list of references to the Russian-American Industrial Corp.

[8] *Pravda*, No. 225, October 6, 1922.

[9] Amalgamated Clothing Workers of America, Sixth Bienniel Convention, *Report of the General Executive Board* (Philadelphia, May 1924), p. 90. Hillman was not typical of American unionists. Samuel Gompers thundered long and loud against Soviet treachery and brutality. He was wholly opposed to any form of economic or trade links with the Soviet Union. [See S. Gompers and W. E. Walling, *Out of Their Own Mouths: A Revelation and Indictment of Sovietism* (New York, 1921).] Most present-day American unionists follow in the Gompers tradition. (See the speeches of Meany, *et al.*) Comparison with the record of American businessmen (both then and now) is revealing: see chaps. 17 and 18.

[10] *Izvestia*, No. 252, November 10, 1921.

An agreement was drawn up between Vesenkha and a company formed by Hillman and Amalgamated Workers called American-Russian Industrial Workers Association (Artina) later changed to Russian-American Industrial Corporation (known as RAIC or RAIK). The full text of the agreement was given in the *Nation* and was intended to act as a model agreement for a series of such worker enterprises, which were conceived as the equivalent of the foreign commune in agriculture.[11] RAIC made three contracts with the Soviet Union. The first was a general contract (November 1921) authorizing the company to do business and to underwrite contracts made by the union treasury. The underwriting included a minimum dividend and repayment of principal if the corporation should be liquidated. The second agreement was with Vesenkha and similar to the first. The third and most important was with the All-Russian Clothing Syndicate and covered the first project: that of operating the prerevolutionary clothing and textile plants.

RAIC was capitalized at $1 million, and stock was sold to union members at $10 per share. The union appropriated $10,000 from the union treasury to defray initial organization expenses and also bought $50,000 worth of stock. RAIC was linked also to the all-Russian syndicate of the Sewing Industry, which was founded in 1923 with a capital of 900,000 rubles. Sixty percent of the syndicate was owned by various Soviet state institutions (Vesenkha held eighty shares; Moscow Sewing Industry, twenty shares; Petrograd Sewing Industry, 600 shares; Tartar Clothing Industry, twenty-five shares; Nijhny-Novgorod Sewing Trust, five shares; Experimental Factory twenty shares; and the Kharkow Sewing Trust, twelve shares). *The balance of 40 percent was owned by RAIC.* This was an arrangement similar to the General Electric ownership of shares in Electroexploatsia and Electroselstroi. The syndicate opened fifteen branches across Russia. This provided a channel for the transfer of capital, equipment, management techniques, and skilled labor from RAIC to the textile and clothing industries.[12]

In June 1922, six clothing factories in Petrograd and three in Moscow were turned over to the control of the joint board. It was then announced that the new capital would go mainly for new and improved equipment, and in August RAIC announced that the first shipment of spares for American machines currently in use in the U.S.S.R. had been made. By late 1923 RAIC was

[11] 'Contract with Soviets', *Nation*, CXIV (June 1922), p. 728. The *Nation* was a very useful vehicle for spreading news of the aims and work of these enterprises and communes and in denying rumors (true *or* false). For example, when Americans were trying to leave the Kuzbas Commune (American Industrial Corp.), the *Nation* vehemently denied any such pressure existed or that any exodus was under way.

[12] *Izvestia*, No. 207, September 14, 1923. It is likely, although no evidence can be presented, that the syndicate utilized the 3,000 outlets, 50 agencies, and 50 warehouses and manufacturing plants built by the Singer Sewing Machine Co. (Foreign Claims Settlement Commission of the United States, Claim No. SOV-40, 920.)

operating nine clothing plants in Moscow as well as plants in seven other Russian cities. This was independent of the arrangement to aid, technically and financially, the clothing syndicate.[13] By late 1923 RAIC was operating twenty-five clothing plants in Moscow alone and employed 15,000 workers.[14] The union also supplied skilled personnel to aid plants operating outside the syndicate, and provided specialized personnel for research and other operations. (For example, the Moscow experimental factory had a manager supplied by the union in the United States.)[15]

The capital and technical skills were supplied by the union, and the workers and raw materials were provided by the U.S.S.R. Both sides were equally represented on the board of control, and the enterprise run on a cooperative basis.

The books had opened for subscription in June 1922; by August more than $100,000 had been subscribed, and by September more than $300,000. It was announced on September 15, just three months after formation of the company, that a dividend of 8 percent would be paid. There were immediate protests in the current news media that this was a payment from capital and not earnings. Hillman denied this claim:

> So far as our information goes we expect the dividend to come out of the earnings of the Syndicate. Under our contract with the Soviet government, if these earnings are insufficient the Soviet makes the dividend good on our filing a claim. We have filed no claim, and reports that the Soviet has sent money here for this specific purpose are incorrect.[16]

In April 1924 the Amalgamated Clothing Workers of America opened two banks: the Amalgamated Bank of New York and the Amalgamated Trust and Savings Bank of Chicago. These banks called their 'most important function' the transmission of dollars to Russia. By 1927 some $20 million had been sent, in addition to $200,000 in food gifts and another $300,000 in cash gifts. The money was 'largely used for the purchase of machinery and raw materials for the clothing trusts of Russia.'[17] RAIC also interested itself in Syndchveiprom, the syndicate for the united confectionery trusts, but, apart from a financial investment, the degree of participation is not known.[18]

[13] *New York Times*, October 31, 1923, p. 17, col. 6.

[14] *Nation*, January 19, 1924, letter from S. H. Walker.

[15] *Nation*, November 7, 1923, p. 524.

[16] *New York Times*, September 2, 1923, Sec. II, p. 11, col. 1. Payment out of capital would, of course, be an offense against the 'blue sky' laws.

[17] *Nation*, May 25, 1927, pp. 569–70.

[18] *Annuaire*, p. 133.

THE TRILLING, NOVIK, AND ALTMAN CLOTHING CONCESSIONS

In September 1926, a Type I concession agreement was concluded with O. Trilling, of Poland—the former owner of the Spartak factory in Moscow. The concession produced woolen goods, including blankets, thread, and carpets. The plant had been part of the Mossukno and was in a very run-down condition, producing only 2 percent of the trust's output, although reportedly working at capacity. Trilling was required to re-equip the plant completely so that by the second year of operations it would produce not less than 200,000 meters of cloth, and by the end of the third year 300,000 meters. In addition, Trilling was required to produce 150,000 meters of blanket cloth a year. The necessary equipment was to cost not less than $80,000 and had to be imported.

Trilling was employing 230 workers by 1929 and had introduced

> considerable alterations and improvements in the factory, which was obsolete. . . . the whole plant was electrified and much new equipment introduced. The daily output of the spinning department was increased from 400 to 2,500 kilograms of wool yarn. In the weaving department twenty-seven new looms were installed and automatic drying machines were purchased for the washing department. . . . Additional equipment will be imported to produce Jacquard blankets, an article which is not manufactured at the present time in the Soviet Union.[19]

Upon expiration of the concession, the enterprise was to be turned over to the Soviets without compensation, free from debt, and in a technical condition not less favorable than that for the final two years of operations. In the meantime a yearly payment was to be made to the Soviet government. This was to be not less than 40,000 rubles per year and equal to 6 percent of the sales volume of the factory. The concessionaire was given the right to establish a share company either abroad or in the U.S.S.R., with a capital of not less than 400,000 rubles, and with all members to be approved by the Soviet government. The term of the concession was to be fifteen years, although the concession was actually expropriated long before this date.[20]

The second clothing concession was granted to Novik and Sons to operate the Baranov factory for manufacture of caps and hats. They were required to equip the plant and start operations within nine months of date of signature. Production was to be not less than 20,000 dozen caps and hats per year, in addition to 13,000 dozen felt snow shoes and 20,000 meters of felt cloth per year. Novik paid an annual rent of 32,000 rubles and from the end of the second year onward an additional annual royalty of 50,000 rubles per year. At the end of the agreed term of twelve years, the factory was to be turned over to the Soviet government in good condition and without charge.

[19] *Bank for Russian Trade Review*, II, No. 2 (February 1929), 10.
[20] *Ekonomicheskaya Zhizn*, No. 237, October 14, 1926.

A third concession was granted to the Austrian citizen, Altman, who took over the former Gorbachev plant to produce knitted goods. The concession was required, within fourteen months from date of signature, to produce annually 25,000 kilograms of cotton and 50,000 kilograms of woolen yarn, of which not less than 30 percent was to be used for the manufacture of stockings and gloves. Altman was required to import equipment for production of knitted goods. The equipment was to be valued at not less than 120,000 rubles, in addition to equipment for wool-spinning valued at not less than 60,000 rubles. A royalty of 8 percent was payable on knitted goods turnover and 5 percent on woolen goods turnover.

Turnover was required to be not less than 400,000 rubles in the first, 800,000 rubles in the second, and one million rubles in the third year. Annual rent was set at 8,000 rubles. The factory was to revert to the state at the end of eighteen years with complete equipment and in good working order.[21] The concession was later taken over by Tiefenbacher and expropriated before the eighteen years had expired.

There had been numerous small shoe-manufacturing concerns in tsarist Russia. Aktieselskabet United Shoe Machinery Company of Copenhagen (the Danish subsidiary of United Shoe Machinery Corporation of the United States) had leased shoe machinery to over sixty-two plants before 1914. This equipment was valued at five million rubles. In addition equipment was stored in Petrograd warehouses. These factories and their equipment were confiscated in 1918.[22] In the 1920s a concession was negotiated with the Union Shoe Company of Vienna for technical assistance and the use of imported Austrian equipment.[23]

TECHNICAL ASSISTANCE TO THE TEXTILE INDUSTRIES

In July 1929 an agreement was concluded with the U.S. firm, Lockwood, Green and Company, under which four American textile machine-building specialists were sent to the Soviet Union 'for technical aid in the reorganization of Soviet textile mills as well as drafting projects for new textile mills.' The agreement included 'material responsibility' by the American company for the rationalization proposals of its engineers and was coincident with an increase in the purchase of American textile machinery.[24] Another contract aimed at rationalizing the accounting system in Russian textile mills; this contract was made with the New York firm of management consultants, Eugin

[21] *Ibid.*

[22] Foreign Claims Settlement Commission of the United States, Claim No. SOV 4-353.

[23] U.S. State Dept. Decimal File 316-131-344.

[24] *Ekonomicheskaya Zhizn*, No. 153, July 7, 1929, and No. 159, July 14, 1929.

Szepisi.[25] The design of plants for specialized textile products intended for the export market was represented by the agreement with C. T. Steinert, of Frankfurt, for the design and construction of a plant for manufacture of kid leather.[26]

There is little question that these design contracts stemmed directly from 'uneconomic conditions' prevailing in the textile and allied industries. Textilstroi (trust for building textile plants) was organized in 1926 with the aim of reducing construction costs of textile plants. Investigation in 1928 showed that the trust had been undertaking construction without definite plans or sufficient materials and labor. This had resulted in heavy over-expenditures and slow construction. Administrative costs were out of line with results achieved; in 1927–8 over 500,000 rubles had been spent without producing any 'concrete results' whatsoever.[27]

FRENCH TECHNICAL ASSISTANCE TO THE SILK INDUSTRY

The silk trust (Shelkotrust) was formed in 1921. It consisted of thirty-eight prerevolutionary factories in the Moscow and Vladimir districts, including some plants with a large prewar output. The planned output for the first year of production was 1.9 million arshines (compared to 60 million for the same plants in 1913). This target was not achieved. The largest plant in Shelkotrust was the Moscow plant of the Société Anonyme Franco-Suedoise pour la Fabrication de Soie en Russie, built in 1889 and considerably enlarged in 1911. Before the Revolution the plant had employed over 2,000, but, even by 1930, with extensive foreign assistance, employment was still in the region of 350–400.[28]

In 1923 negotiations were begun with the former French owners concerning further investment. These resulted in several agreements after some four or five years of discussion. In February 1928 a contract was made between Iskustvennoie Volokno (a Soviet company), the French firm Soieries de Strasbourg S-A, and Professor E. Bronart for production of artificial silk by the viscose process. The agreement was for ten years and the French parties undertook to give technical assistance in the construction and operation of a new plant in Leningrad utilizing the patents and processes of the French firm.[29] By 1930 the firm had built two plants, one in Leningrad and another in Moscow. This was followed by an agreement to build a third plant at Mohilev

[25] Vneshtorgizdat, *op. cit.*, p. 227.
[26] *Ibid.*, p. 229.
[27] *Ekonomicheskaya Zhizn*, No. 223, September 25, 1928.
[28] J. Douillet, *op. cit.*, p. 48; and *Ekonomicheskaya Zhizn*, No. 277, December 9, 1921.
[29] *Ekonomicheskaya Zhizn*, No. 46, February 23, 1928; and Vneshtorgizdat, *op. cit.*, p. 230.

using equipment supplied by a German firm, Oskar Kohorn A-G, of Chemitz. The Kohorn company also had a direct technical-assistance contract with Shelkotrust for the supply of data and assistance in the manufacture of artificial silk by the viscose process. Combined output of the German-assisted plants was 20,000 kilograms per day of artificial silk, but nothing is known of the exact number and location of these plants.[30]

EUROPEAN BUTTON CONCESSIONS

Even the lowly button had a number of manufacturing concessions. Tiefenbacher Knopfabrik A-G, button manufacturers of Vienna, signed a concession agreement in July 1926 and was still manufacturing buttons under this agreement at the end of the decade. The company sent equipment from its Vienna plant to Moscow and took over the factory previously occupied by the Altman company.[31]

Skou-Keldsen also had a button concession at Poltava in the Ukraine and another in Leningrad. At one time the company applied for further works in Kiev and Odessa, but there is no record that the application was successful.[32] Two other manufacturers of buttons were Stock A-G and Block and Ginsberg, both German companies.

TECHNICAL ASSISTANCE TO THE FOOD INDUSTRY

Technical assistance in the food industries consisted of equipping plants in key processing industries and designing of plants for the Five-Year Plan.[33]

A concession agreement between Okman (an Estonian) and the Kharkov Provincial Council of People's Economy created a joint company to run beer and malt breweries in the Ukraine. This was a Type II concession, and both parties deposited 85,000 rubles capital. The company had three directors: Okman, and two others appointed by the Provincial Council, which received 60 percent of the profits.[34] H. Langmann and Sons, of the United Kingdom, had a concession for growing hops for the brewing industry.

[30] U.S. Embassy in Warsaw, Report No. 294, October 7, 1930.

[31] U.S. State Dept. Decimal File, 316–131–345 and 316–111–916.

[32] U.S. State Dept. Decimal File, 316–131–668.

[33] A number of concessions were rumored to be in this field but concrete evidence for them does not exist. For example, in 1922 the Bolshevik Southwestern Economic Conference opened negotiations with the Chicago meat-packing firm, Morris and Company, with a view to granting a concession to operate the slaughterhouses and meat-packing factories at Alavir. At the same time, the Conference bought 100 refrigerator cars in the United States. At about the same time, the American Association of Manufacturers was negotiating with the Ukraine Bank to equip sugar mills in the Ukraine; two of its members were in Kiev to conduct the negotiations. Both these are mentioned in IS Report at 316–139–522 but there is no confirmation elsewhere.

[34] U.S. State Dept. Decimal File 316–131–119.

Gaier, a French firm, equipped a plant in the Ukraine to produce oil from various seeds.[35] In 1930 a technical-assistance contract was concluded with Harburger Eisen und Bronzwerke A-G for design, construction, and supply of equipment for oil-crushing mills. A similar agreement was made in the same year with the Dutch firm, N.V. Maatschappij Tot Exploitatie von Veredelinsprocedes, for technical assistance in the saccharification of wood pulp to produce cattle fodder and glucose.[36]

Design of meat-packing plants was the subject of a contract between H. G. Henshien of Chicago and the food industry.[37] The German firm, Hect-Feifer, enlarged the Odessa meat-packing plants and arranged for the export of preserved meat to Germany.[38] The Mechanical Manufacturing Company, of the United States, provided technical assistance to the meat-packing industry.[39]

The design of condensed-milk plants was the subject of a contract with the McCormick Company, of Pittsburgh.[40] Another design-assistance contract was with Penick and Ford, Inc., of Cedar Rapids, Iowa, to plan factories for production of corn products.[41] General technical assistance to the food industry was the subject of an agreement with Webber and Wells, Inc., of Chicago.[42] The Romanoff Caviar Company had its nationalized plants returned, and, as the company had German and American owners, it must be concluded that the Soviets were interested in developing the foreign exchange potential of caviar.[43]

Three large bakeries were constructed by the McCormick Company. These were not only the largest in the Soviet Union but among the largest anywhere in the world, with a daily capacity of 200 metric tons, produced during three shifts. Operations were completely mechanized, so the workers numbered only seventy per shift. McCormick engineers designed the plants and supervised construction, installation, and initial operation of American equipment.[44] The output of bread in Moscow in 1927–8 was 175,000 tons and in Leningrad 278,000 tons. These were significant increases from 1925–6, when the Moscow output had been 74,000 tons and the Leningrad output 147,000 tons. Each of

[35] *Izvestia*, No. 7, January 9, 1924.
[36] Vneshtorgizdat, *op. cit.*, p. 228.
[37] American Russian Handbook, p. 99.
[38] Polish Foreign Office Report, October 7, 1929.
[39] A. A. Santalov and L. Segal, *Soviet Union Year Book, 1930*, (London: Allen and Unwin, 1930), p. 358.
[40] *Ibid.*
[41] *Ibid.*, p. 100.
[42] *Ibid.*, p. 101.
[43] Report 93130, April 12, 1930 (316–130–1293).
[44] *Bank for Russian Trade Review* II, No. 7 (July 1929), 16.

the new plants built by McCormick was able to produce 74,000 tons per year on two shifts. There is little doubt that the whole increment in bread output came from these mechanized American bakeries.[45]

Most of the sugar refineries in the Ukraine were put back into operation by German technical assistance forthcoming under the Rapallo Treaty. In 1929, however, there were, still ten refineries in a state of 'technical preservation,' and three new refineries were planned to replace these.[46]

Concessions were rare in the tobacco field. There was one in 1924 with A. Lopato and Sons, of Harbin, China, for the operation of the latter's prerevolutionary plant in Chita, Siberia. A fifteen-year lease was granted the company, which paid the Soviets 5 percent of gross output, and a tax equal to 3½ percent of the market price of tobacco.[47]

TECHNICAL ASSISTANCE IN HOUSING AND PLANT CONSTRUCTION

The American-Russian Constructor Company (ARK) made a private Type I concession agreement for house repair with the Moscow Soviet. Practically all the stock was held in the United States. Houses in need of repair were allotted to the company by the Moscow Soviet for terms of 8, 18, or 36 years, according to the amount of capital required to place them in habitable condition. The company was to furnish all materials and labor, repair the houses, and keep them in good repair for the stipulated period. During this term the company was to have renting privileges. Of the rent collected, 80 percent accrued to the company and 20 percent to the Moscow Soviet. Taxes were paid by the tenants. About 24 Americans (mostly of Russian origin) were employed by the company.[48] Little is known about the specific operations of ARK, but it probably expired in the early 1930s when the Soviet ran out of houses in need of repair. In 1923 the functions of the concession were extended to 'construction and repair work, organization, leasing and operating plants producing construction materials in the RSFSR and allied republics. . . .'[49]

In late 1923, following a decree of the Soviet of People's Commissars which removed a number of institutions and organizations from Moscow to relieve the housing shortage, an agreement was made with Geoffrey and Curting, Ltd. (United Kingdom), to undertake capital repairs on these buildings.

[45] Calculated from data in *Bank for Russian Trade Review* II, No. 7 (July 1929), 16.
[46] *Pravda* (Moscow), No. 98, April 28, 1929.
[47] U.S. Consulate at Harbin, China, Report No. 2824, September 20, 1924.
[48] U.S. Consulate at Riga, Report 212, December 23, 1922.
[49] *Ekonomicheskaya Zhizn*, No. 105, May 13, 1923.

A large company was formed for this work, but nothing has been reported about specific operations.[50]

By 1925 the housing situation had become desperate. Resultant fatigue was blamed for many industrial accidents. One article warned against placing too much reliance for construction on cooperatives and suggested that the greater part of the needed house building should be done by 'commercial organizations.'[51] This was followed by an agreement in March 1929 with the Longacre Construction Company, of the United States, to build according to the 'latest technical methods' some four million rubles' worth of workers' housing in Moscow.[52]

Another concession in housing, between Tsentrozhilsoyuz (the Central Union of Dwelling Cooperatives) and the German firm, P. Kossel A-G in 1926, provided for the establishment of a Type II joint-stock company to build houses, hotels, and apartments. Rusgerstroi had a share capital of six million rubles equally subscribed by each party. Kossel received 1.9 million rubles for patents turned over to the joint company. The Soviets received the same amount free. The concession was stipulated to last twenty-five years, but Kossel was ejected in 1928. In the meantime, the company established cement, glass, and woodworking plants.[53]

A series of articles in *Ekonomicheskaya Zhizn* suggests why concessions were attempted in the field of housing and why the plants of the Five-Year Plan were designed and built by foreign companies. Several meetings of the Soviet of Labor and Defense were devoted to the question of the extremely poor results of industrial and domestic building programs. There was no responsible supervising organ; each production unit had tried to become self-supporting. This resulted in poorly designed projects whose costs had usually been underestimated. There were gross technical inefficiency and poor technical training. The input industries—especially the glass, paper and chemical industries—were inefficient, and supplies of these products were irregular and of poor quality.[54]

SMALL HOUSEHOLD ITEMS

The Alftan pure concession granted in 1924 produced typewriter ribbons and carbon, waxed, colored, and parchment paper.[55] Elia Shulmann took over

[50] *Pravda* (Moscow), No. 224, October 4, 1923.

[51] *Torgovo-Promishlennaya Gazeta*, No. 268, November 24, 1925.

[52] *Izvestia*, No. 51, March 2, 1929.

[53] *Ekonomicheskaya Zhizn*, No. 180, August 8, 1926.

[54] *Ekonomicheskaya Zhizn*, various issues for April 1928, December 1928, and January to June 1929. Negotiations were reported in the Soviet press with the American companies Van Soon and McDonald for construction of large cement plants (*Izvestia*, No. 248, October 26, 1929).

[55] *Ekonomicheskaya Zhizn*, No. 346, November 28, 1924.

his prerevolutionary factory in Moscow for a concession to manufacture typewriter ribbons, carbon paper, indigo, copying paper, stencils, and inks. The factory employed 150 and was the largest in the U.S.S.R. making these articles. In 1926 Shulmann, a Latvian citizen, concluded another agreement for the manufacture of steel pens, penholders, drawing pins, paper clips, pencil sharpeners, and fountain pens.[56] A Finnish firm, Raabe, was granted a concession to operate the nail factory at Nerecht, in Kostroma Province.[57]

After the demise of the Harriman manganese concession, United States manufacturers were decidedly cool to further concessionary ventures. One, however, was concluded in the record time of three weeks between the Gillette Safety Razor Company and the U.S.S.R. Gillette was obligated to build a plant in the Soviet Union—the first time an American company decided to build on Soviet territory.[58]

THE HAMMER CONCESSIONS

The first Hammer concession was granted to Allied Chemical and Dye for operation of the Urals asbestos deposits, discussed in chapter 6. The best-known of the Hammer concessions was one granted in 1925 for production of pencils, pens, celluloid drawing instruments, and similar items. The cedar, graphite, and colors were imported. Machinery and skilled labor were brought from Germany. Four factories, located in Moscow, employed at their peak about 1,000 persons.[59] The pencil concession was, in effect, a monopoly, and, at the end of the first year's business, a turnover of $2.5 million, with net profits of $600,000, was reported. Some $450,000 of the profits was reported as having been exported. The second year's turnover was $3.5 million, on which profits were $550,000. A turnover tax of between 6 and 10 percent was payable, together with an income tax of 10 percent on gross income and a tax of 50 percent of all profits in excess of the first 20 percent of profits based on invested capital.[60] It was reported in 1927 that Dr. Hammer was seeking a $500,000 loan in New York for further expansion of the pencil factory. Obligations by Centrosoyuz were offered as security. Further security was offered in

[56] Troyanovsky, *op. cit.*, p. 861.

[57] *Pravda* (Moscow), No. 250, November 3, 1923.

[58] *New York Times*, December 10, 1929, p. 8, col. 4. Nothing more was reported; it is presumed the agreement was not implemented.

[59] U.S. State Dept. Decimal File, 316–136–1240. Hammer's monopoly resulted from product superiority rather than agreement. Alexander Barmine, *One Who Survived* (New York: G. P. Putnam, 1945), p. 157, says, 'The State Mospolygraph Trust undertook to make cheap pencils, but the quality was so bad they could not compete with Dr. Hammer's more expensive goods.' High import tariffs were placed on pencils to protect the State Pencil Trust (Karl Liebnecht factory). (*Ekonomicheskaya Zhizn*, August 11, 1923.)

[60] U.S. Embassy in Berlin, Report 4457, April 11, 1929.

the form of Russian government loan bonds.[61] This appears as a pre-Harriman attempt to break United States policy against long-term loans to the Soviet Union. The concession was turned over to the Soviets on December 20, 1929, in accordance with a clause in the contract which enabled the Soviets to buy out at any time at an agreed valuation.[62] There are unique features about the Hammer concessions. The pencil concession had a smooth and profitable history, quite unlike most other concession agreements. The purchase clause was invoked and accepted without the usual protest.

[61] *New York Times*, November 22, 1927, p. 40, col. 2.
[62] *New York Times*, December 22, 1929, p. 31, col. 2.

CHAPTER FOURTEEN

Transportation and the Transportation Equipment Industries[1]

RECONSTRUCTION OF THE RAILROADS

THE heart of Russian transport is the railroad. Development in tsarist times was limited by weak track, which in turn limited size of locomotives employed. The tsarist Ministry of Transport had a rather limited view of locomotive construction, and its was not until 1912 that the Vladikavkaz Railroad in the North Caucasus introduced a ten-coupled freight steam engine. This was the finest engine available in the 1920s and became the standard Soviet type. However, the comparative backwardness of the Russian railroad system was not due to lack of experimentation or innovative ability. Westwood points out the long Russian history in *steam* traction, from tsarist times to the Soviet research.[2]

Restoration of railroads and ports, both heavily damaged in the Civil War, were the essential prerequisites to economic development.[3] This reconstruction was begun in the immediate post-Rapallo period, with extensive German

[1] Locomotive construction is covered under Gomza (chap. 10).

[2] Westwood, *op. cit.*, p. 93.

[3] Just how badly the railroads were damaged is controversial. The American Relief Administration (in a telegram to the Dept. of Commerce, U.S. State Dept. Decimal File, 316–107–853) argued, 'Railroads functioning with old employees who apparently take pride in their accomplishment. Main yards on the whole clean. . . . We have traveled entirely on regularly scheduled trains and on time in every instance except once when two hours late due to wreck on main line . . . however barring ARA supplies no freight moving and passenger traffic limited foreign relief agents, government officials, repatriated refugees and occasional troop movements.' On the other hand, Hilger (then German Relief representative) states, 'The transport system was in complete ruins and what railroad travel still continued was disturbed by repeated attacks on moving trains.' (Hilger, *op. cit.*, p. 45.)

The most probable view is that little freight was moving, many bridges were out (especially in the Don), and main lines in the north were clear because of large numbers of workers rather than 'old employees.'

technical assistance, and completed between 1922 and 1924. German trade figures for exports to Russia in 1921–2 (table 14–1) suggest how much importance was attached to this phase of Russo-German cooperation.

Table 14-1 GERMAN EXPORTS TO THE U.S.S.R. AND PROPORTION OF RAILROAD MATERIALS (IN CURRENT PAPER MARKS)

1 Year	Month	2 Total Exports (in millions of marks)	3 Locomotives (in millions of marks)	4 Other RR Material (in millions of marks)	5 Proportion of RR Materials (percentage)
1921	June	18,166 million	—	3,422	18.8
	July	64,261	—	17,390	27.1
	August	130,248	—	88,944	68.3
	September	128,704	17,255	84,607	79.1
	October	54,771	—	21,417	39.1
	November	112,678	36,667	31,743	60.1
	December	136,255	—	8,628	6.3
1922	January	43,272*	42,554*	7,797*	—
	February	6,278	—	6,278	100.0

Source: U.S. State Dept. Archives, 340–650. Column 5 calculated.
* Figures as given in source.

UNITED STATES TECHNICAL ASSISTANCE TO THE RAILROADS

Two groups of American railroad engineers investigated conditions of railroads in European Russia in the middle and end of the decade. The first group, under H. G. Kelley, former President of the Grand Trunk Railroad, made an inspection of the Ekaterina Railroad and the Donetz Railroad on behalf of Percival Farquhar, who was negotiating a large concession to run both railroads and related iron and steel plants.[4] The second investigation was made in 1930 under the supervision of Ralph Budd, of the Baltimore and Ohio Railroad. The recommendations of the Budd Report were implemented by 150 engineers from the B&O after 1930.[5]

The impulse to grant major railroads as concessions resulted from their declining ability to handle traffic, although the honeyed phrases of the Kelley

[4] H. G. Kelley, *General Report on Ekaterina Railway, Donetz Railway* (New York, 1926). A copy is at U.S. State Dept. Decimal File 316–131–744, with supplement at 316–131–872.

[5] The B&O work will be covered in Vol. II. The Russian Railway Service Corps, an American organization, and the Inter-Allied Railway Commission in Siberia did major reconstruction work between 1918 and 1922. There is extensive material on this in the U.S. State Dept. Archives. The 1,100-mile Turkman-Siberia railroad was built under the direction of an American deportee, Shatof.

report slur over the operating and physical deficiences of the systems examined. Advance data supplied by Amtorg to Farquhar gives the daily average number of loaded cars handled by the Ekaterina Railroad. Traffic declined from 3,351 cars daily in October 1925 to 3,066 in February 1926, and on the Donetz system from 4,011 daily in October 1925 to 3,911 in February 1926.[6]

Both railroads had been built well before the Revolution. In the case of Ekaterina, the report indicates date of construction of the twenty-one divisions; fifteen sections were opened for traffic before 1900, and all divisions (except the Apostolovo via Snigirevka) were open for traffic before 1910. These were well-established railroads, built to provide transportation for the tsarist-developed iron and steel plants and coal mines of the Donetz. The Ekaterina comprised over 1,600 miles of first main track, and the Donetz, 1,459. Both railroads serviced coal fields, iron ore mines, manganese mines, iron and steel works, and the Ukrainian agricultural region. They constituted the most important combined system in the U.S.S.R.

They were built according to European standards with light equipment but had always been substantial net earners. The aim of the Kelley study was to determine the cost of modernization according to American standards. The first recommendations were that train weight should be increased from 1,100 net revenue tons to 3,500 net revenue tons and that suitable locomotives and capacity should be provided for the expansion. It was pointed out by Kelley that to move the anticipated 1927–8 traffic with existing equipment would require thirty-eight trains daily, while with the proposed greater train weight only twelve daily trains would be required, 'reducing the train density . . . and making room for the steadily increasing traffic of the railway in products of agriculture, manufacturing and miscellaneous commodities.' The equipment and physical resources required to support such a system were then given in detail.

The basic objective of the report was clearly to determine the requirements for expansion. Indeed, it is clear from the report that the roads were handling far less than their prewar volume. The total train mileage operated by the Ekaterina in 1913 was more than 15 million train miles, whereas in 1924–5 (latest year given) the mileage was a little over 4.5 million, or about one quarter of the 1913 volume.

In terms of car miles or locomotive miles, the proportion was about the same.[7] Total tonnage of all classes of freight carried in 1913 on the Ekaterina was 40 million, compared to 13.5 million in 1924–5. Figures for the Donetz system are not given. It may be presumed they were less, as the physical

[6] U.S. State Dept. Decimal File, 316–131–745/6.

[7] Kelley, *op. cit.*, p. 125. Again, use of 1913 as a base is misleading. Traffic increased substantially between 1913 and 1917.

operating conditions were not as good as those for the Ekaterina. The poor condition of the bridges on both lines may well have been a contributory factor to limited operations. The Ekaterina line had 1,774 bridges less than 70 feet in length and 81 bridges greater than 70 feet in length; 245 of the former and 37 of the latter had been destroyed or damaged by the Civil War and Intervention. Considering that railroad destruction was the focal point of military activity, the damage perhaps is not as great as one might have expected. Of the smaller activity, bridges, some 206 had been rebuilt and the balance of 39 put into temporary working order. Only 23 of the 81 major bridges had been rebuilt, leaving 14 operating under temporary operating conditions. These limitations were compounded by the poor condition of the roadbed and generally inadequate maintenance.

The appendix to the Kelley report includes an estimate of the amount of repair work required to restore the bridges on both systems. This estimate, when coupled with the equipment repair backlog, suggests that a massive job would have had to be accomplished before the railroads could be put into prewar operating condition.[8]

THE BEGINNING OF RAILROAD ELECTRIFICATION

Two Soviet railroads were electrified before 1930. This was recognized as an alternative which enabled increased capacity without new line construction. The first line to be electrified was a 13-mile suburban line in Baku in 1926. It was installed under German supervision. The overhead system and rolling stock were similar to that of the Berlin high-speed, multiple-unit, side-door trains. The rolling stock was made in the Soviet Union using German patterns and models and under German supervision.[9]

The second line to be electrified was the Moscow-Mytishchi line, an eleven-mile commuter line completed in 1929. This was also of German construction and utilized imported German equipment.[10]

Complete railroad electrification came under serious consideration about 1928–9, and several engineering delegations visited Western Europe, the United States, and Mexico to study various types of electrification systems. In 1929 the People's Commissariat of Transportation selected the Suram Pass section of the Trans-Caucasian railroad as a trial section for electrification.

[8] There are numerous omissions in the Kelley report which give rise to the thought that the report, as donated to the U.S. State Dept., had been considerably doctored or censored to disguise the true state of affairs. There is, for example, an inconsistency between the buoyant, flowery accolades to Russian maintenance skill and the statistical information given in support.

[9] Ruykeyser, *op. cit.*, p. 80.

[10] Westwood, *op. cit.*, p. 41.

This was a strategic section carrying oil to Batum for export, and the system decided upon there was to be used as basis for future electrification. General Electric was chosen to develop a suitable locomotive design and to provide the first eight main line units. There had been no construction of electric locomotives in the Soviet Union up to this time, so the G.E. prototype, the 'Suram', was transferred to the Dynamo works and construction of diesel electrics based upon it.[11] The system was a 3,000-volt direct-current one with 120 metric tons locomotive weight, using a 6-axle, articulated, 2-truck design. This was 'in accordance with the exhaustive studies and recommendations of General Electric.'[12] J. N. Westwood points out that current Soviet diesel-electrics stem directly from the initial G.E. design.[13]

DEVELOPMENT OF THE RUSSIAN AUTOMOBILE INDUSTRY

Russia took an early interest in the automobile; there were more than 500 automobile taxis in Moscow before 1910. Many of the vehicles were imported; nevertheless, tsarist Russia could claim the distinction of having produced automobiles without foreign technical assistance, while the Soviets, after spending a decade, finally gave up and handed the problem over to foreign companies.[14]

The Baltic Engineering Works in Moscow was producing 250–300 automobiles annually as early as 1912 and expanded its production during the war. Mechanically the Baltic was a good automobile although more expensive than its European and American competitors.[15] The Baltic plant was completely re-equipped with American machinery early in 1917, but this effort was not completed by the time of the Bolshevik Revolution. The Soviet administration put 1,000 men to work to complete the plant. This was achieved in 1920, but the plant was abandoned later the same year.[16] Next year the Baltic was placed under Red Army management and with German assistance turned its attention to heavy military vehicles. Production in late 1922 was about two

[11] *Monogram*, November 1943.

[12] *Ibid.*

[13] Westwood, *loc. cit.*

[14] The following Russian automobiles were produced before the Bolshevik Revolution: the Leutner (1911–1915), Marck (1906–1910), Russo-Baltic (1909–1913), Sevronsky (1901–1905 and 1911–1915), and the Tansky (1901–1905). [G. R. Doyle, *The World's Automobiles, 1880–1955* (London: Temple, 1957).] The Soviets have not (in 1966) produced a completely indigenous automobile design; see Vols. II and III.

[15] U.S. State Dept. Decimal File, 316–164–402.

[16] Keeley, *op. cit.* Compare this to the claim that there were no automobile-manufacturing plants in prerevolutionary Russia, as stated in *Ekonomicheskaya Zhizn*, No. 46, February 25 1925.

units per month.[17] A few years later attention was turned to buses, of which there were none in Russia. By a heroic effort *one* was manufactured, 'consisting of parts nearly all made in Soviet Russia, except the frame and axle.'[18] Later in 1928–9 the Italian Fiat truck was produced at the Baltic under an agreement with the Fiat company[19] and also a few British Mark IV tanks were copied from a prototype.[20]

The new AMO automobile factory was also completed in 1917 just before the Revolution. It was located in a modern building with the latest in American equipment and was designed to employ 6,000 workers. Between 1919 and 1921 the only output was repair work on a few White trucks. For this AMO employed about 1,200, under supervision of Adams, an American deportee.[21]

The Soviets have claimed there was no automobile manufacturing in Russia before 1930, although actually they had two large, well-equipped plants intact after the Revolution. As with the Westinghouse, Citroen, Singer, and other operations, Soviet skills were not available to operate the inheritance.

The Citroen plant offers an interesting example of the dilemma in which the Communist Party found itself. The plant was allowed to operate unnationalized for some years. In 1921 the firm formally applied for release from the nationalization decree, and the response was immediate enforcement of nationalization.[22] The highest levels of the Party had been well aware of the vacuum created by the Communist takeover of industry. They allowed larger plants to operate in 'capitalist hands' until solutions presented themselves. On the other hand the workers in these plants were forced to do more work under capitalist discipline and naturally pressured for nationalization. Where this pressure was taken up by the lower ranks, implementation of the nationalization decree was forced upon the Party.

The solution to the automobile-manufacturing problem was formulated slowly. The AMO plant continued miniscule production of trucks (much less than the planned 2,000 per year). The AMO truck was unsatisfactory in quality and very expensive to produce.[23] Until the 1930s, however, it was the only one in production. Beginning in 1929, production was reorganized and upgraded as the result of a technical-assistance agreement with the A. J. Brandt Company, of the United States.

[17] *Pravda*, No. 188, August 23, 1922. Probably armored cars.

[18] Heroic, as it was reported under the title, 'Our achievement—the first Soviet bus' almost as a military victory. Which parts, if any, were actually made within the USSR. is difficult to determine.

[19] U.S. State Dept. Decimal File, 316–131–417.

[20] See chap. 15.

[21] The Keeley report *op. cit.* states that the AMO output in 1921 could have been handled by any American garage with less than 20 men.

[22] Swedish Export Association, Report, 1922. (316–107–782/3.)

[23] *Ekonomicheskaya Zhizn*, No. 134, June 1, 1925.

The first tentative steps in the direction of a mass production automobile industry had been taken in 1925. A large-scale motor-vehicle driving contest was instituted to 'ascertain the types of automobiles, motor trucks, and motorcycles best suited to Russian conditions.'[24] The total stock of automobiles in the U.S.S.R. at this time was less than 16,000, of which only 10,000 were running,[25] so it is not surprising that endurance, mileage, and acceleration were tested, among other characteristics. Participants were 169 vehicles, one of each current make, including 82 passenger cars, 48 trucks, 21 special vehicles (fire engines, etc.) and 18 motorcycles. Among the entrants were all European and American models of note; if the manufacturer did not enter voluntarily (which was the case with most American producers), a vehicle was purchased by Amtorg and entered involuntarily.[26] AMO entered a truck, but this was assembled from imported parts not of Russian manufacture. The record does not show whether it completed any of the tests.[27]

The Contest Committee evaluated the results and published a report of its findings. *Ekonomicheskaya Zhizn* reported these and carried an interview with Z. T. Litvin-Sedoy, Chairman of the Committee.[28] He pointed out that both American and European manufacturing had undergone fundamental changes since the war, in both methods of construction and techniques. (He was referring to mass-production techniques, substitution of metal for wood in automobile coachwork, and the use of improved alloy steels.) It was pointed out that prewar reputations did not necessarily apply in 1925, except in the case of Mercedes, which maintained its 'excellent' reputation. The report was critical of American automobiles, but less critical of American trucks. It feared the latter could dominate the market because of their low cost, but the high fuel consumption, unknown composition of materials used, and the difficulty of acquiring spare parts were held to be serious objections. It is interesting to note, in the light of subsequent agreements, that the Ford entry failed and that, despite its low price, it was held to be very expensive in operation.[29]

Negotiations with the Ford Motor Company began in January 1926, and one immediate result was that International General Motors sent its Baltic representative, T. E. Eybye, to explore possibilities for General Motors business. Eybye was decidedly negative; he reported that he felt prospects

[24] *Ekonomicheskaya Zhizn*, No. 46, February 25, 1925.
[25] *Ibid.*
[26] U.S. Consulate in Riga, Report 3254, October 2, 1925.
[27] *Ekonomicheskaya Zhizn*, various issues for early 1925.
[28] *Ekonomicheskaya Zhizn*, No. 216, September 22, 1925.
[29] U.S. Consulate in Riga, Dispatch 3516, January 12, 1926 and Dispatch 3851, June 16, 1926.

were slight and that it was inopportune for G.M. to establish itself in the Soviet Union.[30]

The first version of the Five-Year Plan, drawn up in 1927, made provision for production of only 3,500 autos per year. This small output was vigorously assailed by V. V. Ossinsky, Director of the Central Statistical Administration, on the grounds that the U.S.S.R. was 'catastrophically backward' in automobile production, and that on both economic and military grounds there were insurmountable arguments for the establishment of a plant capable of producing 100,000 automobiles per year.[31]

In the fall of 1928, the 'activization of concessions' policy failed to produce foreign bidders to erect an automobile plant in the Soviet Union. Subsequently the Soviets incorporated their plans into the Five-Year Plan. In 1928 Ossinsky was sent to the United States to negotiate with Ford, General Motors, Durand, and Studebaker. Ford was the most promising as a supplier of automotive experience and equipment required. Negotiations moved along three separate lines: (1) American ownership and operation on a concession basis, (2) a mixed company, and (3) Soviet ownership and operation with technical assistance and financial help from the United States.

Ossinsky was followed to the United States by Meshlauk, of Vesenkha, who conducted final negotiations with both General Motors and Ford. A psychological ploy was added in the Soviet press when the Soviets suddenly announced their intention to build an automobile plant 'with their own resources' capable of producing 100,000 cars per year. Gipromez and Glavmashstroi were directed to produce plans and work out a manufacturing schedule 'within two weeks'—an absurd proposal.[32]

THE SOVIET AUTOMOBILE INDUSTRY AND HENRY FORD

On May 31, 1929, V. I. Meshlauk, a member of the Presidium of the Supreme Soviet, and Saul G. Bron, President of Amtorg, signed an agreement with the Ford Motor Company under which the Soviets contracted to purchase $30 million worth of automobiles and parts before 1933 and the Ford Motor Company agreed to furnish technical assistance until 1938 in the construction

[30] *Ibid.*

[31] V. V. Ossinsky, 'The American Automobile or the Russian Peasant Cart', *Pravda* (Moscow), Nos. 162, 163, and 194, of July 20, 21, and 22, 1927, states: 'If in a future war we use the Russian peasant cart against the American or European automobile, the result to say the least will be disproportionately heavy losses, the inevitable consequences of technical weakness. This is certainly not industrialized defense."

[32] 'Towards New Victories on the Industrialization Front,' *Torgovo i promyshlennaya Gazeta*, No. 53, March 5, 1929.

of an automobile-manufacturing plant at Nizhni-Novgorod. The plant, to be completed by 1933, was to produce the Model A (called by the Soviets Gaz-A), the Ford light truck (Gaz-AA), and the heavy truck (AMO-3). All Ford patents were placed at the disposal of Gipromez, and Ford engineers rendered technical assistance in the introduction of Ford manufacturing methods. Soviet engineers were given facilities to study Ford methods at the River Rouge plant in Detroit.

The Ford plan adopted included a schedule which potentially gave the Soviets their 100,000 automobiles per year:

		Proposed total output	*Percent imported*
1st year	1929–30	6,000	100 percent
2nd year	1930–31	24,000	100
3rd year	1931–32	48,000	50
4th year	1932–33	96,000–100,000	25

The first year's schedule covered manufacture of bodies, fenders, hoods, and all sheet metal work in the new Austin-designed plant at Nizhni-Novgorod, while assembly of complete vehicles was located at the temporary plant. The second year's schedule extended this program to cover the manufacture of fittings. The third year added engine production, by which time it was planned that the technical-assistance contract with the Brown Lipe Gear Company would have developed gear-cutting technology. The fourth year phased in rear and front axles made in the Soviet Union with the assistance of the Timken-Detroit Axle Company. This last year phased in domestic production of all instruments, batteries, and electrical equipment imported up to that time from Detroit.[33] Raw materials and semi-manufactured inputs were concurrently developed to phase into the above schedule. The plan included, for example, the manufacture of automobile-quality steels at Prioksky, Sormovo, and Vyhksunsk, and at the Novosormovo foundry. Glass was to be developed at Sormovo.

The development and learning process noted previously in this study is repeated. The first stage involved assembling automobiles manufactured abroad and imported as parts. For this purpose Ford converted an unused railroad shop at Lublin. This had the capacity to assemble 10,000–12,000 vehicles per year and was, of course, a training ground while the main plant was under construction. Production was transferred in stages to the new plant and imported parts gradually cut off. By 1934 all parts were being supplied internally, although many were of indifferent quality. In the late 1930s, Ford

[33] *Pravda*, No. 128, June 7, 1929; and Sorenson, *op. cit.*, chap. 15.

obtained one of the Nizhni-Novogorod Model A (Gaz A) automobiles which had been exported by the Soviets to Turkey. It was shipped to Detroit and there pulled to pieces; Sorenson comments 'it was a pretty poor reproduction of Model A.'[34] The Foid was still in production in the late 1930s and by 1938 production was 84,000 units per year.[35]

The automobile industry is, then, an excellent example of a planned step-by-step transfer of Western technology at minimal cost. Ford was happy to sell $30 million worth of parts and throw in invaluable technical assistance for nothing. Technical assistance in production of axles, tires, bearings, and other items required payment but, as the marginal cost to American companies was slight, the Soviets reaped a gigantic harvest of technölogical knowhow for almost no outlay.

Table 14-2 TECHNICAL ASSISTANCE CONTRACTS (TYPE III) IN THE SOVIET AUTOMOBILE CONSTRUCTION INDUSTRY TO 1930

Western company	*Soviet trust*	*Nature of technical assistance*
A. J. Brandt Company	Avtotrest	Reconstruction of AMO truck plant
Brown Lipe Gear Co.	Avtotrest	Geat-cutting technology
Ford Motor Co.	Avtotrest	Nizhni-Novgorod and Moscow plants
Hercules Motor Co.	Avtotrest	Truck engines for AMO plant
C. F. Seabrook Co.		Technical assistance on road building
Seiberling Rubber Co.	Resinotrest	Construction of tire plant
Timken-Detroit Axle Co.	Avtotrest	Axle and bearing technology
Austin & Co.	Glavmashstroi	Construction and design

Sources: Soviet Union Year Book, 1930, pp. 357–9.
U.S. State Dept. Archives.

As the Ford agreement was being signed in June 1929, another was being negotiated with Arthur J. Brandt for assistance in reorganizing the AMO truck plant. Preliminary technical work for the reorganization was undertaken in the Detroit office and works of Brandt, while American engineers were sent to the AMO works to investigate production conditions. Facilities were upgraded to produce 25,000 of the Ford 2½-ton truck (AMO-3), whereas previously only a few hundred a year had been produced.[36] In the following September, ten AMO engineers went to Detroit for training.[37]

One month after the signing of the Ford agreement, the Austin Company made a construction proposal to Glavmashstroi under which it guaranteed

[34] Sorenson, *loc. cit.*

[35] Report by Oberkommando der Wehrmacht, (OKW/Wi Rü Amt/Wi), March 1941. Miscellaneous German records, T 84–122.

[36] *Torgovo-Promyshlennaya Gazeta*, No. 127, June 6, 1929.

[37] *Ekonomicheskaya Zhizn*, No. 149, July 2, 1929.

to complete the Nizhni-Novgorod plant within fifteen months of conclusion of a definite contract. Austin had built the Ford and other automobile plants in the United States and had ample construction and engineering experience in this field.[38]

The contract was signed early in August; the Austin Company paid $250,000 for drafting the project and a special compensation for supervising construction and installation of equipment. Penalty clauses came into effect if costs were higher than estimated, and there was a bonus for completion at less than the estimated cost. Five engineers were delegated from Avtostroi to work with Austin in drafting the project. Austin was able to negotiate a 'cost plus' contract for supervisory operations, and compensation was calculated, as a percentage of the total cost of all building operations, including equipment, boiler room, foundry, and power station.[39]

Although these plants were built completely by Western enterprise and equipped and initially operated by Western firms, the myth has been perpetuated that these were designed, built, and run by the Soviets. Even large Western suppliers unwittingly reflect this belief. For example, the General Electric house organ, *The Monogram*, comments on the automobile-manufacturing units just described:

> When the Soviet Union built its mass production automobile and truck plants in Moscow and Gorki, where the *Ziz* and *Gaz* cars and trucks take shape on moving conveyors, General Electric, in addition to supplying hundreds of motors and controls for various high speed and special machine tools, also supplied especially designed electric apparatus to aid the mass production of vital parts. . . . For the mass production of drive shafts and rear axle housings for the *Gaz* cars and trucks General Electric designed and built special high speed arc welding machines to suit the exact requirements set down by the Soviet Engineering Commission.[40]

TELEGRAPH COMMUNICATIONS AND FOREIGN CONCESSIONS

In August 1921, a contract was signed with Det Store Nordiske Telgraselskab (the Great Northern Telegraph Association) of Denmark for the operation of telegraph lines between the Soviet Union and the Far East and all interconnections with foreign countries. A fee of 1 franc 20 centimes was payable to the Soviet Union for each word transmitted. The firm had to undertake repairs, keep the line in order, and install new apparatus capable of transmit-

[38] *Torgovo-Promyshlennaya Gazeta*, No. 169, July 26, 1929; and No. 253, November 1, 1929.

[39] *Ekonomicheskaya Zhizn*, No. 185, August 14, 1929.

[40] *Monogram*, November 1943.

ting 110 words per minute; the existing apparatus could transmit only 20 words per minute.[41]

Before the First World War the Indo-European Telegraph Company of London operated telephone and telegraph lines across central Europe, through Poland and Russia to Odessa, and through the Crimea to Persia, in addition to a cable line under the Black Sea from Odessa to Constantinople. Service was discontinued during the war. On April 12, 1922, the company signed a concession agreement with the Department of Posts and Telegraphs and again took over control of its lines through the Soviet Union. The lines appear to have been in a reasonably satisfactory condition, and workable for 200 miles northwest and 300 miles southeast of Odessa, into the Crimea. The underwater cable was also in good condition. Only a short section between Erevan and Tiflis required minor repairs.[42]

Three years later, in June 1926, a similar concession agreement was concluded between the Trans-Siberian Cables Company, a subsidiary of Great Northern, for the renewed operation of its overland cable to China. The company paid the Soviets one gold franc for each word transmitted along the line.[43]

The necessity for these concessions is rather obscure. The lines were operating when the concessions were granted. In 1913 the Indo-European cable to Persia carried one million words. This fell to 800,000 words in 1920 but was up to four million in 1923 and five million by 1926, when the concession was concluded.

It was reported in *Krasnya Gazeta* that the telegraph concessions would be of enormous advantage; without them Russia would be unable to connect to the European lines, and in any event the existant lines would be repaired and modernized. In addition to the word fee in gold the latest high-speed Western apparatus would be introduced. This would produce 'millions of francs in gold which will enable us to carry on trade with abroad.'[44] It appears in retrospect that existant traffic was straining the lines to capacity and that the concession was a device to get equipment modernization.

THE RADIO CORPORATION OF AMERICA TECHNICAL ASSISTANCE AGREEMENT

In March 1926, General Harbord, president of RCA, requested advice from the State Department concerning a Soviet request to have RCA build a modern high-power radio station in Moscow capable of communication with

[41] U.S. Consulate in Riga, Report 1199, September 3, 1921. (316–107–29.)

[42] Minutes of proceedings of the 55th Ordinary General Meeting of the Indo-European Telegraph Company, Ltd., April 26, 1922, pp. 4–5.

[43] U.S. Consulate in Riga Report 3820, June 5, 1926.

[44] U.S. Consulate in Riga, September 5, 1921.

the United States. RCA was concerned, 'as it would . . . undoubtedly afford an opportunity for their peculiar governmental doctrines to get additional circulation in this country,' and consequently: 'a station built by us, and perhaps subsidized by credit facilities, enabling Russia freely to communicate with the United States, might be a liability to us with the American public.'

In later verbal discussions with the State Department, General Harbord appears to have been hesitant concerning the Russian proposition, as it would mean 'placing in the hands of Soviet Russia uncensored and untrammeled direct means of communication between Soviet Russia and the United States over which they could send messages of any kind, including propaganda.'[45]

It was then reported that the radio station in question would cost an estimated $2.5 million and that the Soviets did not have a powerful enough station for communication with the United States. A memorandum in the Far Eastern Division files argues that the question of utilizing the station for propaganda purposes or directing subversive activities in the United States was more theoretical than practical.[46] On April 9, 1926, the State Department sent a letter to RCA indicating that the Department did not desire to express any opinion concerning the proposed transaction.

The matter then lapsed until 1927. Another letter, dated May 25, 1927, from General Harbord to the State Department, indicates that RCA anticipated further negotiations for a 'modern, high powered radio station capable of communication with the United States.' Harbord requested an indication as to whether the letter of April 9, 1926 still held good in the light of Soviet propaganda 'being promulgated from Soviet offices in London directed against the United States and other countries and that evidence

[45] Documents in this section are in the U.S. State Dept. Decimal File 316–141–714/78. The first part of Roll 141 contains material on Soviet propaganda and other communications with the Near and Far East. At this stage of the negotiations, the State Dept. view was that 'completion of the station in question would put into the hands of the Soviet regime a very powerful instrument which might be used to the detriment of the interest of the United States.' See Memorandum, Johnson, Far East Division, March 1, 1926 (316–141–714). This view was to change considerably over the next few years, for reasons which are not clear.

[46] There are however, hundreds upon hundreds of documents in the State Dept. files alone indicating this was very much a practical matter. The exact wording of part of the memorandum is, 'I am inclined to the opinion that the theoretical possibilities are not of such cogency as to justify our according to them a decisive influence in this matter.'

The draft of the State Dept. letter to Harbord is also interesting. The draft prepared by R. F. Kelley makes reference to the possibility that the station might be used for subversive activities in the United States, but this was scratched out and does not appear in the letter that went to RCA. The erased paragraph reads 'With regard to the possibility of the utilization of the wireless station by the Soviet regime to facilitate the direction of communist subversive activities in the United States, I am not prepared at this time to make any comments. I note from your letter that you realize both the possibility and undesirability of such utilization.' The final letter went out over the signature of Kellogg, Secretary of State.

thereof had been furnished to our government.' The State Department reply of June 1 indicated that their position remained the same.

RCA made an agreement with the State Electro-technical Trust on June 30, 1927. This covered the transfer of patents and technical information. In addition, RCA furnished the delegation with tenders and quotations on a considerable quantity of radio apparatus, including a high-powered radio installation for Moscow. These amounts quoted were to be paid 70 percent cash, with the balance due over a period of five years at 6 percent. RCA agreed '. . . to grant exclusive licenses to the Trust to manufacture, use and sell all patents, applications for patents and inventions owned or controlled by the Radio Corporation of America and/or the General Electric Company and Westinghouse, to the extent that it has, or will have, the right to grant licenses in and for the territory for the Trust as hereinabove provided for. . . .'[47]

It was agreed that meetings of RCA engineers and those of the Soviet trusts would be held not less than once a year, and alternately in their respective territory, in order to exchange necessary technical information.

In addition, RCA agreed 'to furnish to the Trust complete manufacturing information in respect to terminal apparatus for use in radio picture transmission, including facsimile transmission, but not including television.' Manufacturing information was supplied for terminal apparatus, including 'complete specifications, working drawings, description of process of manufacturing, detailed basic calculations for construction of apparatus and the privilege of sending the representatives of the Trust to factories, laboratories and working stations of the Radio Corporation and General Electric Company or parts owned and controlled by them.'[48]

The agreement was made contingent on Amtorg placing a firm order with RCA within four months of the date of ratification for a minimum sum of \$600,000.[49] In brief, in exchange for an order valued at \$600,000, RCA transferred the sum of the technical knowledge accumulated by the leading firm in the industry.

GERMAN AID FOR RECONSTRUCTION OF PETROGRAD HARBOR

This was the largest port in Russia. Its facilities were severely damaged in the Revolution—probably more so than any other sector of the economy. As late as December 1921, most of the port was still out of commission.

[47] *Ibid.*, Frame 749.

[48] *Ibid.*, Frame 760.

[49] There was also a traffic agreement covering the use of radio circuits between the U.S. and the U.S.S.R. and the supply of high-speed automatic and duplex com-

Of eight cranes, two were continually out of order, two intermittently out of order, and two unusable. The telephone system of the port could not be repaired, 'on account of lack of cable, wire, and commutators.'[60] The harbor itself, although it was the main base of the Red Navy, was not freed of mines until 1922. The harbor was not dredged from 1917 until 1923. German and British steamers calling at the port in 1921 were serviced by lighters when these were available. Although the port was a high-priority project for repair and a port telephone system was an essential part of that operation, *Krasnya Gazeta* admitted five years after the Revolution that nothing had been done.[61]

In 1922, tenders were received from German companies for repair of the port and the city facilities of Petrograd. Friedlam A-G handled the technical work of the restoration of harbor facilities, while the actual reconstruction was done by Julius Berger. Gas-works design was undertaken by Pintsch and construction also by Berger. Canals, general buildings, and cement works became the responsibility of Hecker, another German firm.[62] The city itself was the subject of another agreement 'to make the necessary repairs to all buildings that are now falling to pieces (and to) repair railways, the water and sewage systems, and other institutions belonging to the municipality.' German engineers and equipment were brought in as the navigation system opened in 1922. As payment, the Germans received the right to develop the clay industry, establish a brick plant and export lumber to Germany.[63]

By late 1922, Petrograd Harbor was being cleared of debris and put back into operation. Groups of the unemployed were used for this job, together with Latvian Communist Party members.[64] Repairs to the ice breakers went more slowly. The only unit fit for service was named the Lenin; the Svyatogor and the Ermak required extensive work.

RECONSTRUCTION OF THE RUSSIAN SHIPBUILDING INDUSTRY

The shipbuilding yards at Petrograd and Nikolaev had been heavily damaged in the Revolution. Nearly all such facilities were in a chaotic condition; this

mercial radio communications apparatus. The agreement, together with letters from the International General Electric Co. and Westinghouse Electric International releasing patent rights in favor of the Soviet trusts, may be found in the U.S. State Dept. Decimal File 316-141-757/771.

60 *Krasnya Gazeta*, December 29, 1921.

61 U.S. Consulate in Helsingfors, Report 2110, May 15, 1922. (316-107-765.)

62 U.S. Consulate in Helsingfors, Report 135, August 21, 1922. (340-5-547/9.)

63 U.S. Consulate in Helsingfors, Report 2230, April 29, 1922 (316-107-752); *New York Times*, April 28, 1922, p. 2, col. 7.

64 IS Report, September 21, 1922. (316-10-1018.)

sector suffered more than most. The Petrograd yards, previously known as Nevsky (renamed the Lenin), Putilov (renamed Northern Shipbuilding), the Baltic, the Izhorsky, and the Ochtinsky (renamed the Government Works for River Ships), were grouped into the Sudotrust. In 1924, a technical commission was appointed to consider ways and estimate the costs of clearing the Petrograd yards. The commission had a number of German members, and the Krupp engineer Ledeke did the actual job of estimating costs of repairs. This was a military matter under the Northwestern Military Industry Committee and part of the post-Rapallo military cooperation agreement. The preliminary inspection of the Izhorsky yards, the largest, indicated that only nine of the seventeen workshops were in operable condition; the others needed complete rebuilding. Of four shipbuilding stocks, only the third could be used for ship construction and then only if the associated workshops were also put back into operation. Ledeke also estimated the cost of installing a submarine department in the yards. The Krasny Putilovets plant was inspected to estimate cost of installing turbine construction facilities for class 1 destroyers.[55]

Reconstruction of the Russian merchant fleet was slow. In 1925 the hulls of 11 vessels were laid, in 1926 a further four and in 1928 another 17. By May 1929 only 15 had been completed and 30 were still under construction.[56] No oceangoing ships were completed before 1930, except three 6,000-ton-gross motor ships with engines made with German technical assistance. At the same time two larger tankers, of 11,500 tons gross, were under construction in French shipyards with imported Sulzer engines. Somewhat larger vessels, of 9,000 to 11,000 tons gross, were undertaken at Soviet yards, at first with imported Sulzer engines and then with engines made with foreign technical assistance.[57] Again, the simple was built, while the complicated was purchased. Interestingly enough, the graduated process is still going on. In the 1960s Soviet yards were making all Soviet naval craft and tankers up to about 35,000 tons. Larger tankers were made to Soviet order in Italy and Japan and other special ships in British and Danish yards. Naval craft have always been constructed in Soviet yards, with the use of imported shipbuilding equipment, except for the World War II acquisitions noted in Volume II.

FOREIGN AID IN SHIPPING OPERATIONS

The first of a series of shipping agreements was made in January 1922 between the German Orient Line, the Soviet Volunteer Fleet, and Narkomvneshtorg (People's Commissariat of Foreign Trade). Under this agreement, the

[55] U.S. Consulate at Hamburg, Report No. 417, December 12, 1925.

[56] *Izvestia*, May 12, 1929.

[57] Details from *Motor Ship Reference Book* (London, Temple Press) years 1925 to 1930.

tonnage of the Orient line was handed over to the Soviet Volunteer Fleet on preferential rate terms (20 percent lower that market rates). This enabled the fleet to establish a service between Hamburg and Odessa, Novorossisk, and Constantinople.[58]

Russtransit was a German-Russian joint-stock mixed company also organized in 1922, between the Commissariat of Foreign Trade, Ways, and Communications, and a group of five German firms, including the Orient Bank, Wenkhouse of Hamburg, and the Hamburg-Amerika line. The company established shipping routes between Germany and the Near East via the Baltic, the Marinsky canal system, the River Volga, and the Caspian Sea. This reduced the shipping time between Hamburg and Enzeli on the Caspian from a period of 4–6 months to only 3–4 weeks. Russtransit purchased several 10,000-ton vessels to operate on the river, canal, and lake routes.[59] In 1923 the turnover was 1.2 million rubles, on which the profit was 200,000 rubles.[60] The Hamburg-Amerika line put up 50 percent of the capital and received 50 percent of the profits.[61]

There were also some smaller shipping concessions. The Bergen Steamship Company was organized by the Soviets and the Russian-Norwegian Navigation Company in 1923 to provide shipping services for Arcos.[62] Another agreement was made with a German company, August Bolton, in 1924, and in April 1926 negotiations were concluded for a shipping concession on the River Volga to be operated by an Anglo-Dutch group headed by the Cunard line.[63] This was a mixed company, with the share capital split 50:50, to operate all passenger and freight services on the Volga. All boats, docks, workshops, and stores were transferred to the new company. Cunard was required to invest cash equal to the value of the boats and plant turned over to the company. The latter formed the Soviet contribution. The management was exclusively in the hands of Cunard, which had the right to hire and dismiss personnel. The Soviet government was not entitled by the terms of the agreement to interfere in the internal operations of the company.[64]

Shipping tonnage was almost completely destroyed by the Revolution, and even in 1930 only 4 percent of Soviet trade was being handled in Soviet flag vessels. The mercantile fleet was gradually built up by purchases abroad and not in the 1920s by domestic production of ships.

[58] IS Report, January 19, 1922. (316–108–0006.)
[59] *Ekonomicheskaya Zhizn*, No. 116, May 27, 1923.
[60] *Ekonomicheskaya Zhizn*, No. 151, April 3, 1924.
[61] Hilger, *op. cit.*, p. 178. Hamburg-Amerika Line also owned 50 percent of Derutra (German-Russian Transport Company), another mixed Type II operation.
[62] *Ekonomicheskaya Zhizn*, No. 57, March 15, 1923.
[63] *Pravda*, No. 175, August 3, 1924.
[64] U.S. Consulate in Bremen, Report April 1, 1926. (316–108–1668.)

THE BEGINNINGS OF THE RUSSIAN AIR LINES

The first Russian air line was the Moscow-Konigsberg (Germany) route, started in August 1922 and, according to *Biednota*, 'created according to the plan of Red Pilot Grant and exploited exclusively by the RSFSR.'[65] In fact the line was installed and operated by the mixed company, Deruluft (German-Russian Aviation Company), and used German and Dutch (Fokker III) aircraft. Deruluft was formed specifically to conduct a regular air service for passengers, mail, and freight between Germany and Moscow. It had a stormy life and, as Hilger points out, the line survived only 'because of mutual necessity.'[66]

Dobrolet, an all-Russian company, was started one year later with German technical assistance. This company used Junkers aircraft, made in the U.S.S.R., throughout the 1920s. The third airline was Ukr-Vozdukh-Put, a private company formed in the 1920s and operated on Ukrainian routes up to 1929. The company used Dornier Comet II and III aircraft.[67]

Table 14-3 RUSSIAN SCHEDULED AIRLINES IN 1925

Route	*Operating company*	*Equipment*
Moscow-Konigsberg	Deruluft*	Fokker III
Moscow-Kharkov	Ukr-Vozdukh-Put**	Dornier Comet III
Kharkov-Rostow	Ukr-Vozdukh-Put**	Dornier Comet III
Kharkov-Odessa	Ukr-Vozdukh-Put**	Dornier Comet III
Kharkov-Kiev	Ukr-Vozdukh-Put**	Dornier Comet II
Kagan-Tazbaz	Dobrolet***	Junkers
Kagan-Dushambe	Dobrolet***	Junkers
Baku-Enzeli (Persia)	Junkers****	Junkers
Baku-Leningrad	Junkers****	Junkers

Source: U.S. State Dept. Decimal File, 316–164–244, 372.
Notes: *Type II concession.
**Private company, expropriated in 1929.
***All-Russian company.
****German company.

In addition to the three regular airlines, the Junkers company operated some routes with its own equipment under a leasing arrangement. By the middle of the decade, the air fleet consisted of just under 100 passenger planes (Junkers, Dorniers, and Fokkers) together with another 50–80 light planes.[68] The first Soviet-built planes, copies of the British De Havilland observation

[65] *Biednota*, August 26, 1922.
[66] Hilger, *op. cit.*, p. 178
[67] U.S. State Dept. Decimal File, 316–164–205.
[68] U.S. State Dept. Decimal File, 316–164–225.

plane, were produced in 1925 and at once used on a Moscow-Peking propaganda air expedition. The expedition was billed as using all-Russian-built planes, whereas in fact it used modified Junkers and De Havilland copies with imported engines.[69]

[69] U.S. State Dept. Decimal File, 316-164-391.

CHAPTER FIFTEEN

German-Russian Military Cooperation and Technology

THE Versailles Treaty forbade Germany, equipped with some of the most extensive and advanced munitions plants in Europe, the manufacture of any armaments. Soviet Russia was isolated and under attack from within and without. Her armaments plants operated only intermittently, and she had a pressing desire to expand military production for internal control and world revolution. The obvious came to pass. The German-Russian military cooperation of the 1920s and 1930s has been documented elsewhere.[1] One aspect of this transfer has, however, been missed. The military transfer was part of a much wider economic cooperation and included the reconstruction of Russian industry as well as purely military construction. It is the industrial aspects of the military cooperation which are of interest to this study.

In April 1921, Menshevik Victor Kopp reported to Trotsky concerning his trip to Germany. Kopp had visited the armaments plants of Krupp, Blohm und Voss, and Albatross Werke and found them ready to supply both equipment and technical assistance for the manufacture of war materials. Post-Rapallo negotiations widened this visit into full-blown cooperation on the economic aspects of military production.[2] Purely military production was placed under the control of Gesellschaft zur Förderung Gewerblicher Unternehmungen (or GEFU) with a capital of 75 million reichmarks.[3] This

[1] The most detailed study is in C. F. Melville, *The Russian Face of Germany* (London: Wishart Co., 1932). A more recent book by J. W. Wheeler-Bennett, *The Nemesis of Power* (New York; St. Martin's Press, 1964), is a useful supplement. Gustav Hilger and Alfred G. Meyer, *The Incompatible Allies* (New York; Macmillan, 1953), is less than forthright. Hilger was German economic attaché in Moscow throughout this period but reduces the cooperation to 'scholars and journalists with axes to grind.' (Fn., p. 189.)

[2] Trotsky Archives, Harvard University, Document T-666*.

[3] Hilger, *op. cit.*, GEFU functions after 1925 were taken over by WIKO (Wirtschaftskontor).

production included reopening the Junkers aircraft plant at Fili, developing poison gas plants, establishing factories for production of artillery and shells, tanks, and submarines. Further, the Soviets themselves placed heavy emphasis on military production and grouped many of the best-equipped tsarist works as a part of RVS, including the Putilovets, Koppel, Lessner, Phoenix, Atlas, and Pneumatic plants.[4]

TSARIST AND JUNKERS AIRCRAFT TECHNOLOGY

Aircraft development and construction had made vigorous progress in tsarist Russia under such designers as Igor Sikorsky and V. Slessarev, but the industry collapsed completely after the Bolshevik Revolution. There was no indigenous Soviet aircraft technology in the 1920s and the ill-fated 'Maxim Gorki,' designed in 1934, was the first indication of a revival in a truly remarkable prerevolutionary activity.[5]

Igor Sikorsky (since the Revolution a resident in the United States) had been the nucleus of a promising aircraft technology. In 1913 he designed and built two planes of *four-engine design*. The first was the Russki Vityazyi, a five-ton aircraft with room for seven passengers, built in St Petersburg; the second Sikorsky design was the 'Ilya Mourometz', with four 100-h.p. engines, a payload capacity of 1,500 kilograms, and a maximum speed of 55 m.p.h. Lack of more powerful engines was the impetus behind the four-engine design; a similar restriction made the 'Maxim Gorki' an eight-engine (750 h.p. each) plane rather than the originally planned six-engine (1,000 h.p.) plane.

The four-engine Ilya Mourometz was built in Russia as a bomber, and about 75 went into service in World War I. Wing span was 102 feet: only 21 inches less than the Boeing B-17 of World War II. Engines were a restricting factor, and 11 different makes were used including the Russian-built Baltic. Production of these planes was in fact limited by engine production.[6]

This interest in aviation was adopted by the Soviets. After World War I the German aircraft manufacturers Junkers, Dornier, and Rohrbach were forced, under the 'London ultimatum' to move their plants and personnel abroad. Junkers-Werke went to the U.S.S.R. and, under the April 1922

[4] U.S. State Dept. Decimal File, 316–107–391.

[5] Interest in aviation developed early in Russia. Curtiss made a trip in 1912 and estimated over 100 aircraft in use by the Imperial Russian Army at a Sevastopol base. When the United States entered the war in 1917, its combined Army and Navy air forces consisted of little more than 100 planes. ['Aviation in South Russia, 1912'. (316–164–170).]

[6] *Ibid.*, and H. Hooftman, *Russian Aircraft* (Fallbrook: Aero, 1965), pp. 142–3.

military agreement reopened the prerevolutionary aircraft plant at Fili in mid-1923. Machinery was obtained from the evacuated section of the Russo-Baltic works in Riga and installed at Fili by Junkers engineers. In the tsarist era, the plant had made RB-150 h.p. motors for the Ilya Mourometz. Under Junkers management the plant built Mercedes-Benz motors under license and the all-metal Junkers-design aircraft.[7]

Thus the famous all-metal Junkers aircraft was under construction in the Soviet Union some ten years before Lockheed and Douglas brought out their first all-metal designs in 1933. The Soviets can legitimately claim that the first all-metal plane was produced in the U.S.S.R.

Even before Junkers had moved, the Soviets were buying aircraft engines, Deutz Type UMX and complete aircraft abroad. Some 280 Fokker D-7 fighter aircraft were ordered and delivered from Holland.[8] In July 1924, the Junkers Company opened up a second aircraft plant in Tver Province under a 49-year concession arrangement, with the right to export airplanes. All the test pilots and engineers were Junkers personnel from Germany.[9]

By 1924 the Soviets began to make their own wooden aircraft, one year before the first Russian bus was produced. At first they purchased Fokker drawings, the De Havilland prototype, and imported engines. They then used engines domestically manufactured with German (Deutz A-G) technical assistance. Machine tools for the aircraft plants were supplied by Nielsen and Winther in Denmark.[10] Spruce for building the wings and fuselage was imported from the state of Washington—which in itself created a small stir in Washington, D.C.[11] The most successful of these early afforts was the copy of the De Havilland Tiger Moth, still in use in 1966 and variously called the R-1, U-2, and today the PO-2. Up to 1948, when production ceased, several thousand had been produced in about 20 versions. It was first used as a military observation plane, then as a night bomber in World War II, and is presently used as an ambulance plane and crop duster. Production of simple planes such the Tiger Moth R-1 before automobiles is not illogical. Construction of such a plane is a very simple matter involving wood and canvas, and is much less complex than automobile production. Utilizing first imported engines and then engines made with German technical assistance, the Soviets trained their cadres of aircraft engineers and technicians.

[7] IS Report, August 17, 1923. (316-108-641/2.)
[8] U.S. State Dept. Decimal File, 316-164-193.
[9] U.S. State Dept. Decimal File, 316-164-215.
[10] U.S. State Dept. Decimal File, 316-164-208.
[11] Telegram from Governor Hart of Washington to the President, January 24, 1923. (336-129-332.)

German technical assistance, supplemented by assistance from other countries, was quite extensive. Barmine recounts how, because of the large-scale purchases of aircraft equipment and components in Europe, the aircraft manufacturers signed technical-aid contracts, trained Russian engineers and sent their specialists and designers to the U.S.S.R. to build and equip aircraft plants. Barmine singles out the French aircraft industry to 'share with the American the credit of helping the U.S.S.R. to build its air power.'[12] Technical assistance in the manufacture of aircraft parachutes, and particularly the packing techniques, was provided by Irving Air Chute Co., Inc., of the United States.[13]

Numerous efforts, some successful, were made to obtain American aircraft engines and, especially, large quantities of the war surplus Liberties available in the domestic United States market at $1,000 each. The latest Curtiss engines were also secured.

In the early 1920s, the Hall Scott Motor Company sold a large lot of aeronautical equipment to the Vimalert Company of New Jersey; this found its way to the Soviet Union.[14] In late 1925 some thirty cases of aircraft engines were shipped by Amtorg to Autoimport in Moscow. These were assumed by the State Department to be Liberty engines, not automobile engines, as they were purchased by Zautinsky, the aviation purchasing agent for the Soviet Union and shipped from Little Rock, Arkansas, where the large quantities of surplus Liberty engines were stored and sold.[15] This shipment was followed by another thirty-three Liberty engines on May 6, 1926 via the Hamburg-Amerika Line to Leningrad. These had been purchased by Zautinsky in a very roundabout manner. They were originally sold to the Leoning Aircraft Company, resold to Ayers Airco, then to a dealer named Epstein and another dealer named Kelly.[16]

Table 15–1 SOVIET PURCHASES OF AMERICAN AIRCRAFT ENGINES, 1926–9

Date	*Number shipped*	*Type and make*
Nov 8, 1925	30	Liberty 400 h.p.
May 6, 1926	33	Liberty 400 h.p.
Dec 27, 1929	10	Curtis Conqueror

Source: U.S. State Dept. Decimal File, 316–164–267, 164–289, 164–317.

[12] Barmine, *op. cit.*, p. 179.
[13] A. A. Santalov and L. Segal, *Soviet Union Year Book, 1930* (London: Allen and Unwin, 1930), p. 358.
[14] U.S. State Dept. Decimal File, 316–164–250.
[15] *Ibid.*
[16] U.S. State Dept. Decimal File, 316–164–250.

These comparatively small purchases were followed by very intensive efforts to obtain a larger quantity of the Liberty motors, if possible at the low price of $1,000. However, it was reported that the Soviets were willing to pay up to $10,000 per motor and give a bonus to anyone able to acquire a substantial quantity at an export price of $2,000.[17] One effort to buy a batch of 200 was made by the Payne Export and Import Company of New York in August 1927. The State Department indicated it did not look with favor upon the transaction. Payne later tried to buy through the Vimalert Company. At the same time Fox and Company attempted to purchase 700 on behalf of the Soviets. The Chase National Bank of New York, in an aside from its banking business, was actively trying to arrange export of Liberty motors at $2,000 each to the U.S.S.R.[18] A few weeks later one Max Rabinoff, a dancing instructor in New York, tried to buy 488 Liberty motors, allegedly for use by Deruluft (the German-Russian mixed company) on its flights to the Soviet Union. However, Rabinoff wanted the motors shipped to the U.S.S.R. to 'avoid customs duties.'[19] None of these orders was filled; it would appear that the Department of Justice was one step ahead each time. However, in 1929 the Curtiss Company filled an order for ten Curtiss Conquerers with spare parts—a much more advanced engine than the Liberty.[20] Just two years previously, in June 1927, the State Department had indicated that it did not look with favor on the sale of 100 Curtiss type D-12 engines to the U.S.S.R.[21] This was a situation parallel to the shipment of a high-powered radio station to the Soviet Union.

General von Seeckt, Chief of the German General Staff, had attempted to make contact with the Soviets before the Treaty of Versailles, but Hilger places the first cooperation at 1921, originating with a Junkers request for assistance from the German government in the establishment of an aircraft plant in Russia. Special Group R of the German War Ministry was established for military collaboration and gave the necessary political guarantees and financial assistance to Junkers. A branch office of Group R was established in Moscow and known as Zentrale Moskau; it operated under 'Neumann', a pseudonym for Major Oskar Ritter von Niedermayer.[22] The latter was head of Zentrale Moskau until 1932 and passed a stream of military information back to Germany, as he was far less restricted than the official military attaché

[17] Department of Justice letter to Military Intelligence (U.S. State Dept. Decimal File, 316–164–271).

[18] U.S. State Dept. Decimal File, 316–164–256.

[19] U.S. State Dept. Decimal File, 316–164–283.

[20] U.S. State Dept. Decimal File, 316–164–317.

[21] U.S. State Dept. Decimal File, 316–164–250.

[22] Hilger, *op. cit.*, p. 194. The German Foreign Office used a supersecret classification 'Z' for all documents in contravention to the Versailles Treaty.

at the German Embassy. The latter, according to Hilger 'had no opportunity to talk to the constant stream of German Army personnel passing through . . . on their way to or from different places within the Soviet Union.'[23] Hilger, as economic attaché, may have been in a similar position of isolation, because he contributed very little to our knowledge of the extensive economic transfers of the 1920s.[24]

THE RED AIR FORCE, 1929

Total personnel in the Red Air Force in 1929 numbered approximately 30,000. Purely military aircraft numbered 1,200, of which 160 were with the Red Navy. Table 15–2 summarizes Red Air Force and Navy equipment, and its origin.

Table 15–2 RED AIR FORCE EQUIPMENT AND WESTERN ORIGIN, 1929

Type of plane	*Origin*
Observation	Soviet-made R-1, copy of British De Havilland.
Attack	Fokker D-XI and D-XIII, imported French Nieuports.
Bombers	Farman-Goliath (80) and a few Rohrbachs, imported.
Navy (Black Sea)	Fokkers D-XI (Holland). Ballilo (Italy). Dornio-Wal (Italy).
Navy (Baltic fleet)	Junkers J-20 (from Sweden). Fokkers D-XI (Holland).
Aircraft engines	
R-1 observation	M-5, made with German assistance. Some imports from Bayerische Motor Werke.
Attack	450 h.p. Hispano-Suiza and German makes.

Source: U.S. Military Intelligence Report, *Combat Estimate: Russia.*

Table 15–2 can be summarized briefly. The only complete aircraft built in the U.S.S.R. was the R-1 light observation plane. All other aircraft and engines were imported—from every country manufacturing aircraft. In other words, the Soviets were able to compare, test, select for purchase, and at some point manufacture the best features from planes manufactured in all Western countries.

RUSSIAN-GERMAN TRAINING CENTERS

The main German air base in the Soviet Union was at Lipetsk. It was initially funded in 1924 by an appropriation from the German war budget and

[23] Hilger, *op. cit.*, p. 179.

[24] The United States received excellent information from its Riga Consulate.

further funded by an appropriation from the Ruhrfond (Relief Fund for Ruhr Workers). This fund was administered by Group R. Lipetsk was used as a base for final pilot training, and the testing and development of new planes by both the Germans and the Russians. Nearly everything was shipped from Germany, either by Derutra or Russgertorg by a circuitous rail route. Only very basic materials such as wood and stone were supplied by the Soviet Union. At the end of 1924, there were about 60 German pilots and another 75–100 technical personnel stationed at Lipetsk. This group was known as the Fourth Squadron of the Red Air Force.[25]

Clause two of the German-Russian Military agreement required dispatch of German naval instructors to Russia to train the Red Navy. In mid-1923 an intercepted telegram from Moscow to Berlin ordered the 'military attaché' in the Soviet Berlin Trade Delegation to arrange for the transfer of 1,200 German naval instructors.[26]

BERSOL POISON GAS PRODUCTION

A considerable amount of work was done on poison gases under the tsar. Liquid chlorine, the major poison gas used in World War I, was made in eight different plants. The difficult technical problems involved in handling chlorine gas—especially liquefaction—were solved by Russian chemists, 'since the methods and techniques used in Western Europe were unknown to us.'[27] Production was so successful that a chlorine over-supply developed, and by summer 1917 there was a tank reserve of 100,000 poods. Phosgene was produced at five plants under the supervision of Professor E. I. Spitalsky. Apart from use as a poison, gas was useful in synthesis of organic pigments and drugs. The work was done under the supervision of the Commission on Poison Gases, which also established an experimental factory under the directorship of I. Klimov, who continued as director after the Revolution.

Ipatieff was for a while chairman of the Russo-German commission which negotiated production of explosives and poison gases in the U.S.S.R. by German companies. A mixed commission of three Russians and two Germans carried out the agreement. The tsarist poison gas factory at Samara had been only partly built by the time of the Revolution, and Ipatieff was sent to

[25] G. Freund, *Unholy Alliance* (New York: Harcourt, Brace & Co., 1957), p. 205 *et seq.*

[26] U.S. State Dept. Decimal File, 340-5-670 (intercepted telegram, June 1923).

[27] V. I. Ipatieff, *op. cit.*, pp. 212–235. It is noteworthy that tsarist Russia had little help from the Allies in the development of gases or gas masks. The Kumant-Zelinsky gas mask was a purely Russian development, and although it had defects it was more effective than the French mask and equally as effective as the German and British. The tsarist Chemical Committee supplied some 15 million of this type of mask. (Ipatieff, *op. cit.*, p. 225.)

evaluate the plant for purposes of the German agreement and to determine its use in the production of both chlorine and phosgene. Ipatieff received instructions not to underestimate the plant's value, since the greater the original value, the more the Germans would have to invest in the agreement. Although Ipatieff felt the plant valueless, he assessed it at six million rubles. The German valuation quite naturally was considerably less. The contract was awarded by the German government to Stolzenberg, owner of a Hamburg gas factory making phosgene, chlorine, and ammonium chloride. The Samara plant was renamed the Trotsky and rebuilt by German engineers. Other institutions and schools were formed to handle other aspects of poison gas production and use.[28]

Soviet interest in gases was intense. A special military agent was maintained within the Berlin Trade Delegation solely for the purpose of collecting foreign information on poison gas and allied materials. Ipatieff recounts how a Dutch engineer offered to bring the Soviets a new substance effective against all smoke and poison gas vapors. Reports were sent back on German attempts at Essen to manufacture a gasproof fabric.[29]

Not much appears to have been achieved. The Trotsky plant was a failure. In 1927, Voroshilov commented that 'our entire chemical industry for military purposes has yet to be built up. . . .' However, he placed great emphasis on chemical warfare and aviation as the weapons of the future and wanted to equip 'every laborer and every toiler' with a gas mask.[30]

PRODUCTION OF SHELLS, ARTILLERY, AND SUBMARINES FOR THE RED ARMY AND NAVY

The third major task of GEFU was supervision of factories at Tula, Leningrad, and Schlesselburg for production of artillery shells at the rate of 300,000 per year.[31] In 1927 it was reported that seventeen plants for the construction of artillery were being built by Krupp in central Asia.[32] The existence of such a large number of shell and artillery plants is credible in the light of the Soviet recoil to the German *Barbarossa* attack of 1941. The Russian counterattack in the winter was made before Western aid flowed in quantity and was made by utilizing large massed fronts of artillery and tanks of a single model.

[28] *Ibid.*, p. 385.

[29] *Ibid.*, pp. 459–60.

[30] *Izvestia*, No. 97, April 30, 1927.

[31] A booklet entitled *Sowjetgrenaden*, based on interviews with workers at the shell plants, was issued by the Social Democratic Party in 1927.

[32] U.S. Embassy in Stockholm, Report 66, August 12, 1927. (316–60–1003.)

Submarine construction is less well documented. It is known that Krupp estimated construction of submarine pens at Leningrad.[33] Bailey holds that U-boats were built at both the Leningrad and Nikolaevsk yards by German companies.[34]

EQUIPMENT OF THE SOVIET ARMED FORCES IN 1929

In 1929 the Soviet army comprised 1.2 million men. It was largely equipped with prewar or foreign weapons. The standard rifle issue was the 1891 Russian .30 supplemented by Browning automatic pistols and a mixture of Russian, French, German, and British hand and rifle grenades.[35] The one-pound guns used in infantry regiments were MacLean or German makes. Heavy machine guns were either Maxim or Colt. Light machine guns were either Browning, Chaucgat, or Lewis. Artillery was comprised of the 1902 Russian 76 mm, the 4.5-inch English howitzer, and 1909 model Russian 4.8 howitzer. The basic anti-aircraft equipment was the 1916 Russian 76 mm and the Vickers 40 mm.[36] Tanks were the Renault, built with technical assistance at Fili, and a Russian-built copy of the British Mark IV. A few Fiat tanks had been purchased from Italy.

Military strength in 1929 was, then, based entirely on foreign weapons and military production technology. Further development, at least at any acceptable rate, was possible only with Western assistance. Without it, self-generating economic development would have been prohibitively slow. Russia was without an automobile industry, without a useful aviation industry, without modern iron, steel, and metalworking facilities, and much else with which to forge a military structure. But, as the Military Intelligence estimate pointed out, 'if her economic and military recovery continue at the present rate in a few years she will be a formidable enemy.'[37]

[33] See chap. 14.

[34] G. Bailey, *The Conspirators* (New York: Harper, 1960).

[35] The Russian 1891 3-line model rifle was the subject of Clause 1 of the 1922 German-Russian military agreement.

[36] Military Intelligence Division U.S. War Dept., *Combat Estimate: Russia* (1929).

[37] U.S. State Dept. Decimal File, 316-110-347.

CHAPTER SIXTEEN

Soviet Trading Companies and the Acquisition of Foreign Markets

ACQUISITION of Western technology and skills required, of course, a source of finance. Some large-scale inter-government loans were made; of these, the 1925 German loan of 100 million marks and the 1926 loan of 300 million marks were the largest. Unpublicized private business loans and credit were much more common and more important. Export of gold was not at first considered a generator of foreign exchange. After 1925, coincident with the Lena Goldfields agreement, the export of gold became a valued means of acquiring foreign technology. Further, the extensive collections of confiscated platinum, silver, rare metals, tsarist crown jewels, plateware, and ikons gathered up by the Bolsheviks were sorted and catalogued by yet another Western expert, H. J. Larsons, Deputy Chief of Currency Administration, and then exported.[1]

The primary source of foreign exchange during the 1920s was export of raw materials—especially petroleum products, furs, minerals, and foodstuffs. Export of food to regain prewar markets was implemented even while American relief was importing supplies into Russia for the famine areas. In one case, the Soviets were loading a boat with Ukrainian wheat for export to Germany, while alongside was a boat from the United States unloading American wheat for the famine areas to the north of the Ukraine. The chicken industry was nationalized at an early date and eggs assembled for export to Europe by Russot and other mixed Type II concessions.

These markets were entered by using mixed joint-stock companies which specialized in trading. The Soviets normally held a 50 percent interest and the foreign partner the other 50 percent. Germany, Austria, and the United States each had two of these general trading companies in the early 1920s.

[1] H. J. Larsons, *An Expert in the Service of the Soviets* (London: Benn, 1929).

Turkey, Poland, Italy, and Persia had one company each. The foreign firm advanced credits to the Soviet organizations, found the buyers and arranged transportation and storage. In some cases the foreign partner undertook assembly within the Soviet Union. In addition to these general trading companies, there was a more numerous group of specialized trading companies with agreements covering trade in specific commodities. In both cases the Soviets profited by the skilled knowledge and trading skills of the Western partner until such time as they were able to organize their own institutions for foreign trade.

By far the more important of the United States general trading companies was Allied American, with its Berlin subsidiary, Alamerico. Simon Sutta was a much smaller and short-lived arrangement.

ALLIED AMERICAN CORPORATION (ALAMERICO)

The Hammer family held three concessions in the Soviet Union. One covered the Alapievsky asbestos deposits; the second, granted in July 1923, was a general trading concession,[2] and the third was the pencil and stationery concession. The Hammers had been trading with the U.S.S.R. under a Soviet trading license, since 1918; the concession gave them the right to establish an office in Moscow and represent a number of large American companies. Previous to the grant of the concession, Hammer had been described as the 'Soviet trade representative in the United States.'[3]

The Hammer trading concession represented thirty-eight large American companies. These had an aggregate capitalization in excess of one billion dollars, and included Ingersoll-Rand, American Tool Works, Heald Machine, Ford Motor Company, U.S. Rubber, U.S. Machinery, and other companies of similar stature.[4]

Hammer also made contracts in the United States for the sale of Soviet raw materials. The right was granted to conduct operations independently of the government trade monopoly: quite a remarkable situation, given the vehemence with which the Soviets normally defended their monopoly on trading rights. The only limitation on Hammer operations was that imports into the Soviet Union could not exceed exports. It appears that the Hammer concession was represented within the U.S.S.R. by Soviet organizations. For example, in the Northwestern oblast, the concession was represented by the Northwestern Trade Association, 'which institution will carry out all the transactions of the Company.'[5] The concession was financed by the U.S.S.R.

[2] *Ekonomicheskaya Zhizn*, No. 51, March 3, 1926 (advertisement).
[3] *New York Times*, November 6, 1921, p. 23, col. 3.
[4] *New York Times*, July 9, 1923, p. 3, col. 3.
[5] *Pravda* (Petrograd), No. 189, August 24, 1923.

and 50 percent of the profits accrued to the Soviet Union. It was rare at that time for the Soviets to finance operations originating outside the Soviet Union and operated by foreigners; the only other example was the Swedish locomotive firm of Nyquist and Holm, which received significant financial aid in its program of locomotive production for the U.S.S.R. However, as has been pointed out, Andersson, the director of the plant, had a special relationship with the Soviet Union.

The Board of Directors of Alamerico contained a Russian member, G. L. Rappaport, a member of the People's Commissariat of Foreign Trade.[6] A rather curious letter appeared in the *New York Times* shortly after the agreement, maintaining that the concession was neither a concession nor a mixed company but 'a temporary commercial agreement.'[7] As events turned out, Alamerico was precisely that: a temporary commercial agreement. The motivation for the letter and the source of the information can only be guessed. One might infer that it was inspired by Vneshtorg to avoid a conflict with Glavkontsesskom.

Alamerico filled the gap for the Soviets between the demise of the Soviet Bureau in New York and the establishment of Amtorg; as Amtorg found its feet, Alamerico faded into the background, and in 1926 the agreement was not renewed. In a six-month period in 1925–6, Alamerico exported $221,000, only twice the amount of the purchases of Lena Goldfields concession in the United States in the same period.[8] Clearly the Soviets were never hampered by lack of United States recognition insofar as having a trade organization in the United States; they were able to operate through individual American companies in a way denied the United States in the Soviet Union.

A formal trade agreement of a specialized nature was the mixed Type II joint-stock company which operated under the name of the Russian-American Engineering and Trading Company (RAITCO), formed in mid-1923 by Allis-Chalmers Manufacturing Company, the Bucyrus Company, and the Sullivan Machinery Company in the United States and the People's Commissariat for Foreign Trade (Vneshtorg) in the Soviet Union.[9]

Clause II of the agreement described the objectives of the concession as to import into the Soviet Union from the United States articles required for 'equipment and supply of agriculture and all kinds of industrial construction work,' and to introduce 'American working methods' and 'projects.' Clause III described the ways by which these objectives might be achieved: by representation of American firms—in particular, industrial, construction,

[6] *Ibid.*
[7] *New York Times*, July 18, 1923, p. 14, col. 6.
[8] *Amerikanskaia torgovlia i promyshlennost'* (Amtorg Trading Company, 1926).
[9] The agreement is in the U.S. State Dept. Decimal File, 316–131–70/84.

engineering, and financial firms—by organization of a staff of experts, and by the import of articles required for the equipment of Russian industry. The company was to submit proposals and initiate discussions with the necessary Soviet institutions, and for this purpose might establish offices, warehouses, and branches within the Soviet Union. The capital stock was divided equally, and each party was represented by an equal number of directors.

The first 10 percent of profits went into a reserve fund to sustain possible losses. The balance (not to exceed 40 percent of the capital stock) was to be divided equally among the parties. Of the excess, 75 percent was to go to the Soviet government and 25 percent to the group of firms. Altogether there were 24 clauses detailing precisely the methods and conduct of the business.

From the viewpoint of the Western firms this was a logical move to protect their markets in the Soviet Union, given the continued operation of the International Harvester plant in Moscow. Indeed, the Soviets may well have had such a reaction in mind.[10]

UNITED KINGDOM TRADING COMPANIES

Arcos (the All Russian Cooperative Society, Ltd.) was formed in London on July 11, 1920 with a nominal capital of £15,000, allegedly to act as the representative of Russian cooperatives in the U.K., to carry on business as an export-import merchant, and to provide all services, in the broadest sense, necessitated by these functions. Of the stock, 65 percent was personally held by Leonid Krassin, the Soviet trade representative. This agreement was followed by another all-Soviet undertaking, the First All Russian Import and Export Company, Ltd., also a trading company. Then followed a series of trading companies in joint ownership with British and other foreign shareholders.

There was considerable criticism in the British press concerning the validity of Arcos calling itself a cooperative society when 485,996 of the 500,000 shares issued were held by Krassin and his deputy, Klisko. It was argued that Arcos was in effect the Russian Trade Delegation in the United Kingdom and had no connection with the Russian cooperatives. The position was confused by the appearance of a second company also claiming to represent the Russian cooperatives. Subsequent events proved the criticisms correct. Arcos became the focal point of Soviet trade (and subversion) in the U.K. but the subterfuge was used to gain entry, in the same way that Amtorg on entry into the United States denied that it had connections with Soviet trade organizations and argued that it was solely a business organization.

[10] International Harvester's plant was expropriated for the first time in 1924, *after* the signing of the agreement with Allis-Chalmers, Bucyrus, and Sullivan.

In 1921 capital in Arcos was raised to £100,000, and Arcos began to sell Russian goods as well as to buy British manufactured goods. In 1922 capital was increased to £500,000 and in 1923 to 10 million gold rubles. The London office then employed some 500 people, about one-third of them Russians. Branches were scattered throughout the U.K. and Europe, as well as Russia. The guise of a cooperative representative was dropped when it appeared that deportation proceedings would not be continued—one of the dangers avoided by entering under the shield of a mixed company including foreign partners. By 1925 the company described itself as follows: 'The commercial organization of Arcos, Ltd. is of such a manifold and flexible character that it is able to carry out the most diverse transactions for the importing and exporting bodies of the Soviet Union.'[11]

Four years after its rather tentative entry into the United Kingdom, Arcos was handling 86 percent of all Soviet purchases in the U.K. 'made by all the companies, economic bodies and trading organizations carrying on Anglo-Soviet trade.'[12] Only 13.7 percent of the exports from the Soviet Union were being handled by Arcos. Its successful establishment was followed by a host of mixed and Soviet-owned companies in the U.K., predominantly for the sale of Russian raw materials. When these mixed companies, with foreign partners, were no longer needed, they were dropped.

THE RUSSO-BRITISH GRAIN EXPORT COMPANY

Exports of Russian grain began again in 1922 and gained new impetus in 1923. Russia had been the world's largest exporter of grain in tsarist times, and the Soviets naturally wanted to regain 'their' share of the market. One of the first agreements in the grain trade was completed in October 1923 between Centrosoyuz, Arcos, and Khlebexport on the one hand and a group of English companies on the other (the Cooperative Wholesale Society; Shipton, Anderson, Laurence and Company; and Furness Withy). As a result, the Russo-British Grain Export Company was formed. The English and the Soviets were represented equally on the board. The company had the support of British banks who provided from the outset a line of credit amounting to £1 million sterling at any one time to cover Russian grain at seaboard, in port, or afloat.

The willingness of leading banks and commerical institutions to finance trade operations in the U.S.S.R. on ordinary commercial terms, even when the question of expropriation was still far from negotiation, contributed greatly to the success of these early efforts; without such financial aid they

[11] *Commercial Year Book of the Soviet Union, 1925*, p. 250.
[12] *Ibid.*

would never have been realized. The proceeds of these grain sales were used to purchase manufactured goods in the U.K.[13]

Another Type II mixed company was formed in December 1923 between the Commissariat of Foreign Trade and Dava-Britopol (the Danzig-Warsaw British-Polish Company) called Ruspoltorg. This company had the prime objective of exporting timber, bristles, horsehair, and medical herbs. To assemble, store, and prepare these materials for export, it invested in the Soviet Union. The capital of Ruspoltorg was one million rubles invested equally by the founders, but it also had a line of credit amounting to four million rubles from a group of Polish financiers, and some additional United Kingdom backing.

Table 17-1 SPECIALIZED TRADING CONCESSIONS (TYPE II)

Lumber	*Petroleum Products*	*Transport*	*Dairy Products*
Russangloles (U.K.)	Persaneft (Persia)	Russtransit (Germany)	Eggexport (Germany)
Russhollangloles (U.K.-Holland)		Russcapa (Canada)	Union Cold Storage (U.K.)
Russnorvegloles (U.K.-Norway)	Deruneft (Germany)	Deruluft (Germany)	Siberian Co. (Sibiko) (Denmark)
Mologa-Waldindustrie (Germany)		Derutra (Germany)	G. H. Truss (U.K.)
Dvinoles Export, Ltd. (U.K.)		Ocean Travel Bureau (U.S.A.)	
Repola Wood, Ltd. (Finland)			
Deruwa (Germany)			

Cotton and Silk	*Foodstuffs*	*Animal Products*	*Miscellaneous*
Persholk (Persia)	Russot (45 percent International)	Kossayger	Persshold
Perskhlopok (Persia)	Russperssakhar (Persia)	A. Roesch (Germany)	Russian-Asiatic Stock Co.
Kazuli (Greek)		Iva (Germany)	Shark
Turksholk (Turkey)		Wostwag (Germany)	Sovmong
		Koshsuryo	Derumetall

The company paid all Soviet taxes, imposts, and duties, and an additional 10 percent of annual profits to the Soviet government. Exports amounted to about $1 million per year.[14]

GERMAN TRADING COMPANIES AND THE U.S.S.R.

In late 1921, Centrosoyuz concluded an agreement with a German trading company, Nord-Ost, for exchange of Russian raw materials for German

[13] *Manchester Guardian*, October 18, 1923.

[14] *Ekonomicheskaya Zhizn*, No. 366, December 20, 1924.

manufactured goods. The company opened a line of credit of 500 million marks, and goods were valued at prices prevailing on the Hamburg Exchange at the time of the offer.[15] In the following year, the Ukrainian Centrosoyuz signed an agreement with the Dutch firm of Amexima of Amsterdam, under which all exports of the Ukrainian Centrosoyuz to Holland were handled through Amexima, which had the exclusive right to supply the former with imported goods.[16]

By far the largest of the German trading companies was Russgertorg (Russische-Deutsche Handels A-G) a Type II concession, owned jointly by the Soviets and the Otto Wolff interests, which represented a number of large German firms, including Phoenix, Rheinische-Stahlwerke, Rheinmetal, and Zippen and Bissener. It was signed in October 1922 and at a later date included some United States firms who were unwilling to deal directly with the Soviet Union. The company was jointly capitalized at 175 million marks. It functioned as an import-export company. The Soviets determined the nature of the imports (mainly equipment for Soviet plants), and exports had to be coordinated with Vneshtorg. Russgertorg also handled shipments made under the military agreement with the Soviet Union.

Otto Wolff provided working capital of £750,000 plus a revolving credit of £500,000 and a further credit equal to the income from half of the orders placed with the company by the Soviets. The board of directors was selected equally from each side. The company established itself very quickly—Hilger suggests too quickly for its own good. In the second year of operation it was handling one-fifth of all Soviet imports—essentially machinery and industrial equipment. In the first eight months of 1925, its business doubled to over 20 million rubles, of which three-quarters was financed by the seller and did not require the company's working capital.[17]

Although there are reports that Rusgertorg made a comeback, it probably did not survive beyond 1925. It was 'extremely profitable' for both parties while it lasted. It was, however, too successful from the Soviet viewpoint, and within a short time it so dominated Soviet domestic and foreign trade that 'the Government regarded its continued existence as a threat to its interests and to its own governmental trade organizations.'[18] The company did receive

[15] *Pravda* (Petrograd), January 26, 1922.

[16] U.S. Consulate in Helsingfors, Report 2110, May 15, 1922. (316–107–763.)

[17] U.S. State Dept. Decimal File, 316–131–89/102. See also Troyanovsky, *op. cit.*, pp. 895–7.

[18] 'The case of Russgertorg was a typical example of the way in which the Soviet Government made use of its foreign partners as long as it derived benefits from such contracts, and dropped them as soon as the conditions under which the contracts were concluded had changed.' (Hilger, *op. cit.*, pp. 172–3.)

a house-building concession in late 1928 but reportedly could not raise sufficient capital for operations.[19]

Derutra (Deutsche-Russische Lager und Transport m.b.H) had a virtual monopoly of Soviet-German land transportation, but not ocean freight, between 1923 and 1926. It was a joint-stock Type II concession owned jointly by the Hamburg-Amerika line and Vneshtorg. The concession had great difficulties from the beginning, and Hilger suggests this was partly because of the clumsy Soviet economic system and partly because of Soviet distrust. An official reason for its dissolution was never given but the 'obvious reason was that the Hamburg-Amerika Line . . . had a closer view of Soviet economic conditions than Moscow desired.'[20]

Whereas Russgertorg was mainly involved with manufactured imports and Derutra with transportation, the Type II concession Wostwag was organized in 1923 for exporting raw materials—mainly furs, casings, bristles, caviar, horsehair, potash, and oil. It established a network of workshops in the U.S.S.R. for the 'working up' of bristles. Its functions were much more circumscribed than those of Russgertorg, and it was limited to a precise list of imports and exports. Furthermore, the trade in any one item in any one year could not amount to less than 1.2 million gold rubles. Profit was divided equally with Vneshtorg, and Soviet representatives sat on the board of directors.[21]

Whereas most trading concessions were of the mixed Type II variety, Rueben and Bielefeld was a pure concession in which the Soviets held neither management nor legal rights. It was concluded in 1923 to enable the firm to buy fish products within the Soviet Union and export these products. The U.S.S.R. collected 50 percent of the profits as a fee in lieu of taxes.[22] Another Type II concession was Derumetall (Deutsche-Russische Metallverwertungs G.m.b.H.), which joined the Berlin firm of N. Levy with Metallotorg to export scrap metal. This must have been a sizable business, in the early years Derumetall employed some 66 ships in removing scrap from the Soviet Union to Germany.[23] In addition there were several minor concessions, such as Rusot, operating in the oilseed and oil cake field.[24]

RUSSO-AUSTRIAN TRADING COMPANY (RUSAVSTORG)

The Russische-Oesterreichische Handels und Industrie A-G was a mixed Type II concession linking Vneshtorg to a group of large Austrian firms. The

[19] U.S. Consulate in Riga, Report 5789, December 28, 1928.
[20] Hilger, *op. cit.*, pp. 177–8.
[21] *Izvestia*, No. 126, June 9, 1923; and *Ekonomicheskaya Zhizn*, No. 102, May 10, 1923.
[22] *Izvestia*, No. 108, May 17, 1923.
[23] U.S. State Dept. Decimal File, 340–5–566.
[24] *Ekonomicheskaya Zhizn*, No. 105, February 7, 1924.

capital stock was owned jointly by the Soviet government and the firms, but the Austrians actually purchased 75 percent of the stock and donated 25 percent to the Soviet government; the other 25 percent of the Soviet share was paid out of accumulated profits and not subscribed at time of formation. In addition, the Austrian firms granted a credit of $1.6 million to the mixed company and a $1 million credit directly to the Soviet government. The profits were divided: 10 percent went to the Soviet government, and the balance (up to 40 percent of the capital stock) was divided equally between the Soviet government and the Austrian firms. Of the profits in excess of 40 percent, 60 percent went to the Soviets and 40 percent to the Austrians. The Soviets had the deciding vote and in effect controlled the company.[25]

The second Austrian trading concession was Ratao (Russische-Oesterreichische Handels A-G) a mixed joint-stock company one-half of whose capital was held by two Austrian firms and the balance by the Soviet Union.

COMPAGNIA INDUSTRIALE COMMERCIO ESTERO (CICE)

This was a jointly owned Type II trading concession handling all import and export between Italy and the U.S.S.R. The company had its head office in Milan and a branch office in Moscow and other cities throughout Europe. It was capitalized at fourteen million lire and provided exclusive representation for major Italian metalworking, leather, textile, and chemical companies, including the Fiat company, which had extensive sales and technical-assistance agreements in both automobiles and aircraft.

The transport and handling of commodities and equipment from Italy to the U.S.S.R. was handled by Società Mista Italo-Russa di Commercio e Transporti, with agents and correspondents scattered throughout Europe and Russia.

By 1924 the Soviets found they had exhausted the possibilities of the mixed Type II trading concession. Originally formed to attract capital and get into direct contact with foreign suppliers and customers, the mixed companies achieved both aims. The Soviets did not hide their reasons for dropping the foreign partners. An article in *Ekonomicheskaya Zhizn* points out they were no longer necessary: capital had been acquired and more could now be obtained by direct contact with the foreign suppliers; there was now no problem in getting in touch with foreign businessmen. It was proposed that trading companies should now become 'producing and trading companies' and that this would 'appeal to those who are really specialists in a given branch of the export industry and not merely middlemen and traders.' The example

[25] *Izvestia*, No. 148, July 5, 1923.

of the German firm, Seyfurt, egg assemblers and producers in the Soviet Union under concession, was given.[26]

What had the trading concessions achieved?

First, they had gained entry for the Soviet Union into foreign markets; this was vital for the sale of Russian raw materials to generate foreign exchange for imports of the technical means for economic development. This could not have been achieved without foreign help. Once entry had been gained then the sequence of orders could be maintained without too much skill.

Second, the use of trading companies with foreign partners effectively maintained the trade monopoly in Soviet hands. In the early years the Soviets did not appreciate the value of a trading monopoly, but once the value became obvious they defended it with vehemence. The mixed joint-stock companies, in which final control remained with the Soviets, in effect extended the trading monopoly into areas where the foreign firms might join together to establish a joint selling and buying company as a bargaining unit in the path of Vneshtorg. The trading concession performed the supremely valuable function of maintaining the trade monopoly for the Soviets until such time as they could establish their own overseas branches.

CREDIT FROM WESTERN FIRMS

It is generally believed that the Soviets received no credit during the early phases of their development. This view has been propagated by the Soviets themselves. Even well-informed writers have maintained this point.[27] There were, it is true, few government-to-government credits of any size. There were two sizable German loans and a few smaller direct loans from Austria and Czechoslovakia. However, irrespective of non-recognition, numerous firms, both American and foreign, were willing either to advance credit to the Soviet Union or to aid in the acquisition of funds through intermediaries. By the end of the decade the Soviets were no longer complaining about lack of credit; there was more than enough. They were, however, complaining about payment of interest and the fact these firms did not treat the U.S.S.R. as a 'first-class customer.' In brief, Soviet development was in no way restricted by lack of finance capital, although the proof of existence of this financing has had to be pieced together from numerous sources.[28]

[26] *Ekonomicheskaya Zhizn*, No. 127, March 4, 1924.

[27] For example, see F. D. Holzman, 'Financing Soviet Economic Development,' in M. Abramovitz (ed.), *Capital Formation and Economic Growth* (Princeton: Princeton University Press, 1955), p. 55.

[28] See Note A to chap. 7 for agricultural equipment credits.

Given the risks involved, the amount of financing forthcoming was surprisingly large. The files of the United States War Trade Board indicate that American import-export companies advanced credit for Soviet purchases on the heels of the Revolution. One firm, Foreign Products Company, bought $670,000 of clothing and condensed milk in March 1920, before trade restriction with Bolshevik Russia were lifted, on the basis of an order and a small deposit. The company then applied for export permits. This application was rejected, but the company replied 'We insist upon passing of the above mentioned applications.' Some products were getting through the blockade through foreign firms operating under various names. One such was Niels Juul of Christiania (Oslo), Norway, which, according to the War Trade Board, 'used a number of cover names and in every way had a bad standing.'[29]

Beginning in about 1921–2, credits began to flow from manufacturing companies of some size and standing. Avery and Moline, and Sullivan Machinery in the United States, the Clayton Company in England, Pamp in Sweden, the Russian-European Company in Germany, and others in Finland and Austria were advancing credit in 1922–3. From a position of 'no credit' the United States moved to one of long-term loans and security issues within a period of eight years, in a graduated erosion of executive interpretation and under constant pressure from the Soviets and American financial and manufacturing houses. The two major breaches of 'no-longterm loans' policy were the American Locomotive Sales case of 1927 and the Harriman bond issue case in 1928. By the end of the decade, more than 200 American firms were advancing credit for up to three years at quite reasonable interest rates.[30]

Chase National Bank and the Equitable Trust Company were leaders in the Soviet credit business. For some years this was handled on the basis of platinum credits, as the State Department requested return of gold shipped from the Soviet Union. In time this position also changed.[31] Some financial houses, notably Blair and Company, had a decidedly bad reputation within the State Department.[32]

Credits to the Soviet Union were supposedly against State Department policy in the mid 1920's. The German Foreign Ministry Archives has reports however of an International Harvester credit of $2.5 million for 18 months

[29] United States Export Control regulations were not always treated seriously. One shipper, on being informed by Customs that a load of coal to Murmansk required a permit, said, 'Hang the license, I will ship to Norway and then re-ship to Murmansk.' Customs reported this was not uncommon. (Memorandum, Dickson to Merle-Smith, October 29, 1920, U.S. War Trade Board files.)

[30] Bron, *op. cit.*, p. 57.

[31] U.S. State Dept. Decimal File, 316–136–471.

[32] Memorandum, Division of Russian Affairs (316–137–404).

Table 17-2 CREDITS ADVANCED TO THE SOVIET UNION BY WESTERN FIRMS

		CREDIT GRANTED		
Country	*Year*	*Thousands of Rubles*	*Percent of Purchases*	*Average term in months*
Germany				
1st 3 quarters	1925/6	19,176	72.6	6.7
1st 3 quarters	1924/5	16,748	56.0	5.8
Italy				
1st 3 quarters	1925/6	11,987	99.7	7.7
1st 3 quarters	1924/5	651	55.6	6.2
England				
1st 3 quarters	1925/6	6,452	71.7	6.5
1st 3 quarters	1924/5	9,832	60.8	4.8
United States				
1st 3 quarters	1925/6	3,283	43.2	9.1
1st 3 quarters	1924/5	8,419	72.5	5.2
France				
1st 3 quarters	1925/6	3,598	91.9	15.7
1st 3 quarters	1924/5	519	31.9	4.4
Sweden				
1st 3 quarters	1925/6	3,233	92.1	12.1
1st 3 quarters	1924/5	1,963	87.0	9.6
Czechoslovakia				
1st 3 quarters	1925/6	3,329	99.9	7.7
1st 3 quarters	1924/5	1,091	14.0	6.4

Source: U.S. State Dept. Decimal File 661.1115/466½

in 1925; this was overshadowed by the $30 million revolving credit advanced by Chase National in 1926.[33] It has already been mentioned that American banks involved themselves in making purchases on behalf of the Soviet Union. Chase tried to buy Liberty engines.[34] The Equitable Trust Company financed a group of Bolivian tin producers to supply the tin requirements of the Soviet Union.[35]

Credits from Germany up to 1925 were limited by Germany's own economic position, by the necessity to pay reparations, by some doubt as to Soviet intent or ability to repay loans and to some extent by the necessity to avoid offending the Allies by making advances to the U.S.S.R. The first credits were on a barter basis. German reconstruction and operation of the Ukraine sugar refineries was paid for in sugar. A similar arrangement was made with grain in 1923.[36] This was followed by the October 12, 1925 short-term loan of 100

[33] German Foreign Ministry Archives, Roll 3033, Frame H109454.

[34] See chap. 15.

[35] U.S. Consulate in La Paz, Bolivia, Report, December 26, 1929.

[36] Hilger, *op. cit.*, pp. 184–6.

million marks at 8.5 percent. The loan was hailed by Solnikov, the Finance Minister, as the first breach in the financial blockade of the Soviet Union. It was handled jointly by the Deutsche Bank and Reichs Kredit Gesellschaft A-G and repayable in bills on New York.[37] In 1926 came the 300 million mark credit by German business firms, guaranteed by the German government to the extent of 35 percent in case of default. The German *lander* accepted another 25 percent guarantee. The loan was restricted to the purchase of equipment for specific industries.[38]

The International Union of Cooperatives was more skeptical. A joint meeting with Centrosoyuz in Moscow in 1922 did not impress the European delegates. It was suggested that the Moscow Co-operative Bank become a member of the International Co-operative Bank, but when it was indicated that the Moscow Bank would have to take up shares in proportion to its claimed membership, it was suggested that the international cooperative movement should meet Russia halfway because of her difficult economic position. The foreign delegates were not impressed and put off the question of credits to the international conference to be held at a later date in Milan. The point never came up for further discussion.[39] One surprising conclusion from this study has been that organizations which are often thought to be somewhat socialist in character, such as cooperative and trade unions, have consistently refused to have anything to do with the Soviet Union in the matter of credits, aid, trade, or technical assistance. The few exceptions, such as Haywood and the Amalgamated Clothing Workers, make the overall coolness of these movements very obvious. On the other hand, the industrial and financial elements in all Western countries have, in the final analysis, provided more assistance for the growth of the Soviet Union than any other group.

[37] This provision is intriguing. The Soviets were heavy buyers of American cotton at this time. One wonders where the U.S. dollars were being obtained. The Chase credit may have some connection with repayment of the German loan.

[38] Hilger, *op. cit.*, pp. 184–6.

[39] IS Report, April 1, 1922. (316–107–748.)

PART TWO

The Significance of Foreign Concessions and Technological Transfers

CHAPTER SEVENTEEN

The Foreign Firm and the 'Arm's Length Hypothesis'

THE compilation of data which forms Part I of this study yielded several supplementary hypotheses in addition to support for the basic hypothesis that Soviet economic development for 1917–1930 was essentially dependent on Western technological aid.

The most significant supplementary hypothesis is termed the 'arm's-length hypothesis.' In some concessions and agreements, the Western partner had noneconomic links to the Bolshevik cause; this particularly applies to early concessions. In other words, from the Soviet viewpoint the invitation to foreign capital was hedged, and initially limited to the more 'reliable' foreign capitalists. One such arrangement sprang directly from the New York-based Soviet Bureau of Martens before his deportation; but although the bureau had been financed by numerous American businessmen, only a few of these could be called ideological sympathizers.

The hypothesis is that some concession holders were in effect in arm's-length relationship with the Soviet government, and their contribution to the revolutionary cause was to lead the way and instill confidence in the Soviet government in the hope that other businessmen would follow.

Quite clearly all agricultural communes, the American Industrial Colony (AIK) in the Kuzbas, the Russian-American Steel Works, the Russian-American Instrument Company, the Third International Clothing Factory, and the Haywood concession (the Russian-American Industrial Corporation) were inspired by ideological fervor. The operators were either Communist Party members expelled from or emigrating from the United States and other Western countries or, as in the case of Haywood, sympathizers. That they were sadly disillusioned does not alter the fact that the initial desire was to support the Revolution; they clearly fall within the scope of the hypothesis. Others require further explanation.

CHARLES HADDELL SMITH OF THE INTER-ALLIED RAILWAY COMMISSION IN SIBERIA[1]

According to the State Department, Charles H. Smith, formerly United States representative on the Siberian Railway Commission and member of the Soviet Peasant International, was 'more or less' an agent of the Soviet government.[2] The name threads throughout the history of U.S.S.R.-United States trade relations in the 1920s.

There is evidence that Smith used delaying tactics[3] while he was American member of the Inter-Allied Railway Commission of Siberia. On April 25, 1919 the State Department sent a telegram, 'Urgent for Smith . . . please advise what materials Committee proposes to purchase in the United States.'[4] At the same time, Stevens, the Chairman of the Technical Committee of the Commission, was urgently requesting railroad materials: track motors, air brakes and high-speed tool steel.[5]

On May 2, Smith replied as follows to the urgent State Department telegram: 'Technical Board has not had time to study railway needs carefully.' Smith appended a list of items based on 'past information' and adds, 'Do not think rails and track fastenings are needed just now. . . .'[6]

By June 18, no orders had been placed, although Stevens was still requesting material urgently. By August 25, Smith had apparently been removed from the sphere of ordering supplies and now it was found that 200,000 tons of rails with 3A fastenings were needed.

The impression from the flow of telegrams from the Consul's office in Vladivostock to the State Department is that Stevens, President of the Technical Committee, was competent, active, and anxious to start work, and was requesting necessary supplies. These were delayed by inaction, and misinformation.[7]

After leaving the Railway Commission, Smith was active in the Far East, generating support and winning influence for the Soviet Union, and trying

[1] The U.S. State Dept. Archives refer to Charles Haddell, Charles H., Charles W., and Charles S. Smith, sometimes preceded by 'Colonel.' According to file notations they are one and the same. (See 316–130, 316–131, 316–136, and 316–176.)

[2] U.S. State Dept. Decimal File, 316–131–1/2. Covering letter from Consul states, 'Mr. Smith is more or less an agent of the Soviet Government, and it is to his interest to publish propaganda of this sort.'

[3] 'Delaying tactics' as a weapon were formulated by Representative Walter Judd. The Harry Dexter White case and the takeover of China by the Communists is another example. See A. Kubek, foreword to *Morgenthau Diary (China)*, Vol. I, U.S. Senate Committee on the Judiciary, February 5, 1965.

[4] U.S. State Dept. Decimal File, 316–163–442.

[5] U.S. State Dept. Decimal File, 316–163–452, 316–162–454, and 316–162–456.

[6] U.S. State Dept. Decimal File, 316–163–460.

[7] U.S. State Dept. Decimal File, 316–163–440/677.

to introduce foreign capital into the Far Eastern Republic. He was connected with the Far East Exploration Syndicate (also known as the Far Eastern Prospecting Syndicate) and various proposed lumber and mining concessions. Soviet reporting explained that Smith was 'a capitalist not under the control of the United States Government'[8] and a 'breakaway.'[9]

Part of Smith's activity involved propaganda in favor of the Soviets. Smith pleaded, for example, with Senators Borah and Johnson, on their visit to the Far East, to press for recognition of the U.S.S.R. and for the return of the Chinese Eastern Railway to Russian hands:

> As always the Chinese Eastern Railway is a key to the solution. The sooner the Russians would get it back, the better would it be for all nations except Japan. . . . We who represent America here used to say that this is a Russian railway and it must remain in Russian hands.[10]

Letters and memoranda in the U.S. State Department files testify to his consistent pro-Soviet activities. Part of this activity was in concert with another suspected Soviet agent, Lively, who represented the United States Department of Agriculture in the Far East and China.[11]

Smith turns up later in the decade as vice-president of the American-Russian Chamber of Commerce (which had such well-known members as International Harvester, General Electric, Westinghouse, American Car and Foundry, and Guaranty Trust) and Moscow representative of the Chamber.[12]

THE HAMMER FAMILY AND SOVIET OPERATIONS

Dr. Julius Hammer (born in Russia in 1874, died in the United States in 1948) was a member of the steering committee which founded the Communist Party of the United States at the First National Left-Wing Conference of the Socialist Party, held in New York City in June 1919. The Hammers were then trading under license with the U.S.S.R. They continued to trade until 1923 when they operated, jointly with the Soviets, the Allied American Corporation (Amerikanskoi Ob'edinennoi Kompanii), sharing both capital and profits on a 50:50 basis.

The secretary of Allied American Corporation was Armand Hammer;[13] who also managed the Alapievsky asbestos concession,[14] while Dr. Julius

[8] *Ekonomicheskaya Zhizn*, No. 24, October 28, 1923.

[9] *Far Eastern Times*, November 22, 1923.

[10] U.S. State Dept. Decimal File, 316–131–1/2.

[11] U.S. State Dept. Decimal File, 316–130–1259, 316–176–409 and 316–176–838.

[12] See page 289.

[13] Armand Hammer, *Quest of the Romanoff Treasure* (New York; Payson 1936). Armand Hammer is currently President and Chairman of the Board of Occidental Petroleum Corp., Los Angeles.

[14] See chap. 6.

Hammer, his father, was serving a term in Sing Sing for criminal abortion. Later in the 1920s Armand Hammer operated the American Industrial Concession, for pencil factories in Moscow.[15]

Upon grant of the Alapievsky asbestos concession, the *New York Times* reported F.B.I. investigations had ascertained that Dr. Hammer 'had for many years been prominently identified with the Socialist movement in this country and became a Lenin-Trotsky propagandist.' Dr. Hammer had then become associated with the Soviet Bureau in New York and acquired affluence. When he was sentenced to Sing Sing it appears that Martens 'and other representatives of the Soviet Government in this country had taken an active part in the effort to prevent the physician from being sent to Sing Sing.'[16]

Smith and Hammer therefore appear to fall within the 'arm's-length hypothesis.' There may be others. In 1920–1 the Robert Dollar company handled $7 million of the total $15 million worth of United States exports to the U.S.S.R. The company's Moscow representative was Jonas Lied, who had, according to the State Department, an 'interesting dossier' in the Department of Justice (i.e., the F.B.I.) and intelligence in the State Department.[17] Like other Western traders with the Soviet Union, Dollar was reluctant to say very much except to blast the 'radical element in the country (which) should not be allowed to block trade.'[18]

One of the partners in Bryner and Company, operators of the Tetiukhe metals concession in the Far East, 'was suspected of espionage for the Soviets.'[19] J. Finger and Professor Johnson of the Joint Distribution Committee (Agro-Joint) gave glowing reports of the 'new Russia.'[20]

Although the German ex-Chancellor Wirth, operator of the Mologa concession, has been described by some writers as a 'Communist sympathizer,' there is no evidence, and Hilger is probably correct in denying the charge.[21]

In brief, there is supporting evidence for the 'arm's-length hypothesis.'[22]

[15] See chap. 13.

[16] *New York Times*, November 4, 1921, p. 1, col. 2; November 6, 1921, p. 23, col. 3; November 7, 1921, p. 10, col. 2; and November 24, 1921, p. 12, col. 4.

[17] U.S. State Dept. Decimal File, 316–109–1375.

[18] *Memoirs of Robert Dollar* (San Francisco, 1925), III, p. 34. Out of a three-volume *Memoirs*, Dollar devotes only one and a half rather general pages to his Russian trade activities.

[19] U.S. State Dept. Decimal File, 316–136–1254.

[20] U.S. State Dept. Decimal File, 316–108–652.

[21] Hilger, *op. cit.*

[22] According to documents at U.S. State Dept. Decimal File, 316–139–28/9, there were also 'leaks' from the State Dept. to Moscow. Coleman suggested his reports be kept under close control and limited distribution, as the contents were finding their way to his opposite number in Riga and he feared for the security of American couriers.

Companies such as Westinghouse and International Harvester, who operated their prewar plants for some years, do not fall within the 'arm's-length hypothesis.' Westinghouse, International Harvester, Singer, and other American companies are still awaiting settlement for expropriation of their plants. Swedish General Electric, the Swedish Separator Company (manufacturers of dairy equipment) and SKF all domiciled in Sweden, had concessions, but there is no evidence that they fall within the scope of the hypothesis. In fact the unfavorable treatment of these companies when compared to those firms that do fall within the scope of the hypothesis confirms rather than denies the hypothesis.

Swedish General Electric, Swedish Separator, and SKF made considerable profits from their concessions but were blocked from transferring these profits out of the U.S.S.R.[23] Although profit figures for concessions are hard to find, it appears that Hammer and Eitingon-Schild were the only concessionaires to make substantial profits and export them. Amtorg reports that the 22 principal concessions made 6.5 million rubles profit in 1926–7 and 12 million in 1927–8, but nowhere indicates how much of this profit was transferred out of the U.S.S.R.[24]

As Paul Scheffer put the case, 'Concessions in Russia are a sort of sport for rich people who can afford to pay dearly for their experience. . . .'[25]

AMERICAN ORGANIZATIONS FOR PROMOTION OF TRADE WITH THE U.S.S.R.

American organizations with the objective of promoting Soviet-American trade were formed on the heels of the Revolution, unlike those of Britain and France, where organizations to gain recompense for expropriated capital were stronger and more vocal than those designed to promote trade.

Prerevolutionary foreign investment had been heavily concentrated under French (33 percent) and British (23 percent) control. About 20 percent was German, but only 5 percent came from the United States. Consequently there was comparatively less ex-shareholder pressure in the United States against trading with the Soviet regime.[26]

The American pressure organizations were linked directly and indirectly to the U.S.S.R. and numerous American firms.

The American Commercial Association to Promote Trade with Russia was founded in 1919 by a group of American manufacturers, including the

[23] U.S. State Dept. Decimal File, 316–131–661.

[24] Amtorg, *op. cit.*, IV, 179. SKF alone made 2.8 million rubles in 1928 and reported that exports of these proceeds were being blocked.

[25] *Berliner Tageblatt*, January 11, 1929.

[26] U.S. State Dept. Decimal File, 316–107–1323.

LeHigh Machine Company, Bebroff Foreign Trading Company, New Hide Manufacturing Company, Fairbanks Company, Morris Company of Chicago, and perhaps 100 other firms and some well-known representatives of the financial world. The first tasks of the association were to get the licensing requirements enforced by the War Trade Board removed and to press for removal of restrictions on financial transactions with the U.S.S.R. The association, according to claims of its president, Emerson P. Jennings, succeeded in both objectives. Other objectives included a writ of mandamus to release ships held in United States ports with goods for the U.S.S.R.[27]

Probably the most important of its actions (although certainly not its most highly publicized) was the financing of Ludwig C. A. K. Martens's Soviet Bureau in New York. Jennings states that this was the work of a group of American businessmen anxious to trade with Russia, rather than a plot financed by 'Soviet gold,' as ran the current hue and cry.[28]

Not only did the association finance the Soviet Bureau but it also maintained communications. The chairman of the Resolutions Committee was Martens's attorney.[29] Congressman James P. Mulvihill, who represented the New Hide Company in the association, was in contact with Heller, of the Commercial Department of the Soviet Bureau.[30] In brief, the association, comprised of American businessmen, was also intimately connected with the operation of the Soviet Bureau.

The attachment was the result of political naïveté rather than ideological obeisance to the cause of the Revolution. In the fall of 1921, Emerson P. Jennings spent a few months in the U.S.S.R. to drum up trade for members of the association. As soon as he reached Reval, Estonia, on his way back to the United States, he commenced one of the bluntest condemnations of the Soviet Union on record. While in Reval, Jennings wrote a six-page bitter denunciation of the U.S.S.R., complaining of the complete and utter unworthiness and untrustworthiness of the Bolsheviks. 'Pikers,' 'fakers,' and 'babies,' are some of the epithets used. Nevertheless, he concludes by making a plea

[27] American Commercial Association to Promote Trade with Russia, *Bulletin*, February 1920.

[28] Emerson Jennings, *Report to the Association* (American Commercial Association to Promote Trade with Russia, 1921). The Soviet Bureau had both trade and propaganda functions. For example, see A. A. Heller, *The Industrial Revival in Soviet Russia* (New York: T. Seltzer, 1922). Heller was commercial attaché to Martens and the Soviet Bureau, and liaison with the U.S.S.R. He was arrested and deported in May 1921 to Riga, Latvia, for these activities and became the Vesenkha representative in the United States. The book was an attempt to disguise the pitiful state of Russian industry at that time. [Memorandum, Poole to the Secretary of State (316-129-633).]

[29] American Commercial Association, *Bulletin*, February 1920.

[30] L. I. Strakhovsky, *American Opinion about Russia 1917–1920* (Toronto: University of Toronto Press 1961), p. 85, fn. 9.

for the United States government to advance credits to the Soviet Union for the benefit of American manufacturers.[31]

THE AMERICAN-RUSSIAN CHAMBER OF COMMERCE[32]

The American-Russian Chamber of Commerce was comprised of a group of major United States manufacturers and financial institutions interested in trading with Russia, and was a factor in the pressure for recognition of the Soviet Union and resumption of full trade with credits. In a letter to the Secretary of State (February 27, 1922), the chamber pressed for a policy statement 'announcing under what conditions you would be glad to cooperate with all nations in relation to the economic development of Russia,' and utilizing the alternative of German political domination as a pressure point.[33]

The president of the chamber was Reeve Schley, a vice president of the Chase National Bank, which was in the forefront of financing United States trade with the U.S.S.R. and reluctant to follow State Department policy.[34]

In 1926 the chamber decided, in view of its failure to persuade the State Department to send a commission or a representative to Russia, to send its own representative to 'open an office in Moscow and generally obtain information which will be of assistance to its members.'[35] The representative was Charles Haddell Smith, previously described by the State Department as being in the employ of the Soviets and a member of the Soviet Peasant International.

In 1928 'Colonel' Smith was appointed vice-president of the Chamber and toured the United States speaking in favor of increased trade with the U.S.S.R. This brought forth protests from organizations and individuals who viewed trade with the Soviet Union in a rather different light. Matthew Woll, for example, vice-president of the American Federation of Labor and president of the National Civic Federation, sent an open letter to the American-Russian Chamber of Commerce complaining of its activities and particularly called upon it to use its influence to stop Soviet propaganda and subversive activities

[31] *Report to the Association*, Emerson Jennings, August 31, 1921.

[32] The board of directors of the chamber represented many companies associated with Russian development: Deere & Co., Worthington Pump, Russian Singer, Mercantile Trust, International Fur Exchange, International Harvester, Lucey Manufacturing, American Locomotive, International General Electric, Guaranty Trust, Westinghouse Air Brake Co., and American Car and Foundry. (316–107–451.) The chamber was founded in 1916 to 'foster trade, encourage and generally promote the economic, commercial and industrial relations between the United States of America and Russia.' A Moscow office was established in 1927. By 1931 its publications were reflecting many of the propaganda shibboleths of Soviet regime.

[33] Letter from American-Russian Chamber of Commerce to U.S. State Dept., February 27, 1922. (U.S. State Dept. Decimal File, 316–107–451.)

[34] U.S. State Dept. Decimal File, 316–109–1424.

[35] U.S. State Dept. Decimal File, 316–107–451.

in the United States. Perhaps unfortunately, Matthew Woll suggested that the presence of Smith in Moscow as representative of the Chamber 'furnished additional grounds for the belief that the Bolsheviks would heed any requests or demands made by your body.'[36] If such a request had been made by the Chamber (it was not), its handling by Smith would have been a most interesting episode.

AMERICAN BANKS AND SOVIET SECURITIES

A number of American banks were partners in a Soviet attempt to float a bond issue on the American market. The Chase National at first refused to break off the relationship, using its past banking services for the U.S.S.R. as the reason.

On January 19, 1928, the State Bank of the U.S.S.R. placed an advertisement in the *New York Times* to the effect that the bank had guaranteed the principal and interest of a 9-percent Soviet railway loan and that coupons might be presented for payment at the Chase National Bank, the Amalgamated Bank of Chicago, and the Bank of Italy in San Francisco. The advertisement also contained the address of the State Bank in Moscow where 'further information' could be obtained.

Two weeks before the advertisement, a $30 million railway bond issue had been authorized in Moscow. The certificates permitted payment of interest and principal to the holder *in dollars*, thus in effect converting the bond issue to a dollar loan—flatly prohibited by the State Department. The issue was to be sold by mail in the United States, and it was estimated that at the time of the advertisement about $100,000 of such bonds had been sold, mostly to one of the fur concession holders; in other words bona fide sales were insignificant. The coupon advertisement was justifiably interpreted as an offer for sale of Soviet bonds, and this interpretation was made plain to the associated banking houses in letters from the State Department.[37]

Among other things, Chase National was called an 'international fence'[38] acting to compromise American foreign policy. It was said that they were 'a disgrace to America. . . . They will go to any lengths for a few dollars profit.'[39]

[36] U.S. State Dept. Decimal File, 316–110–268.

[37] The documents are in U.S. State Dept. Decimal File, 316–110–250. Letters from corporations and other interested parties in the files suggest that the State Dept. was by no means alone in its interpretation of the action of the State Bank and Chase National. See the three-page telegram at 316–110–259/61, from New York Life Insurance Co.

[38] By the National Civic Federation (representatives from business, labor unions and the public). (U.S. State Dept. Decimal File, 316–110–266.)

[39] By the Allied Patriotic Societies (U.S. State Dept. Decimal File, 316–110–284). The letters from private citizens were even more specific.

The Bank of Italy announced immediately that it would have nothing further to do with the loan and specifically that it would not honor the bond coupons. Other banks (the Chicago Amalgamated and Chase) were more reluctant. The Chase made a step-by-step withdrawal. One reply (February 5) stated that it wanted to conform to government policy but would continue to pay the coupons. The second step of the retreat came after the State Department bluntly pointed out that the payment of coupons would facilitate Soviet financing and was against government policy. The third letter from Chase indicated they had advised the U.S.S.R. State Bank 'that until further advice of any change in policy by the Department of State we must decline to make payment of any such coupons.'[40]

There is no doubt that stepped up purchases of American equipment and technical assistance motivated this attempt with the aid of American banking companies to break United States policy. The contracts with Dupont, Ford, Kahn, McCormick, and many others were being signed, and dollars were required for payments. The denial of the railway bond issue was followed by a substantial increase in Soviet gold deposits in the United States.[41]

The amount of pressure placed by American firms individually and through their associations on cabinet officials is very difficult to gauge. Samuel Gompers, President of the AFL, thought it was sufficient in 1923 to make a strong attack on Mr. Hearst, former Secretary Fall of the Interior Department (of Teapot Dome notoriety), the Sinclair and Barnsdall organizations, Senator King, and Senator Ladd, together with 'international bankers, oil magnates and concession hunters' all of whom he accused of placing pressure on the cabinet for trade with Russia.[42]

When the desk level in the Division of East European Affairs suggested that it would be 'unwise to *initiate*' an investigation of Harriman's negotiations with unofficial representatives of the Soviet Union, one can only infer that pressures above the desk level were at work.[43] It was widely felt that General Electric brought political pressure to bear in 1928 for permission concerning its credit agreement with the U.S.S.R. for supply of electrical equipment.[44] The American Locomotive case was decided at the presidential level, and the files certainly suggest interest by parties outside the executive branch.

American big business was almost unbelievably naïve politically concerning the Soviet Union. Standard Oil of New Jersey, for example, negotiated oil

[40] Letter from Chase National to U.S. State Dept. (Decimal File, 316–110–341.)

[41] With the collapse of the bond scheme, a shipment of $6 million in gold was made from the U.S.S.R. to the Chase National and the Equitable Trust Company. (U.S. State Dept. Decimal File, 316–110–337.)

[42] *New York Times*, November 23, 1923.

[43] See chap. 6.

[44] U.S. State Dept. Decimal File, 316–131.

development simultaneously with the Soviets and the White Russians.[45] Many major American firms, including Standard Oil of New York, Bethlehem Steel, Armour and Company, and the Pennsylvania Railroad, were represented by Ivy Lee, a well-known public relations agent. For much of the 1920s, Standard of New York was battling with Royal-Dutch Shell over Soviet oil; in 1926–7 Standard of New York decided to build a kerosene refinery for the Soviets at Batum and lease it back to supply Standard Near and Far East markets. Ivy Lee had the job of selling the switch to the American public, and after a quick trip wrote of the U.S.S.R. as follows:

> I had heard that the Russian Government, the Communist Party and the Communist International are all combined in a conspiracy against mankind, particularly *capitalist* mankind. I was anxious to find out, by first hand examination, just what is the nature of that conspiracy and how it is functioning.[46]

Quite predictably, 180 pages later, Lee concludes that the communist problem is merely psychological. By this time he is talking about 'Russians' (not Communists) and concludes 'they are all right.' He suggests the United States should not engage in propaganda; makes a plea for peaceful coexistence; and suggests the United States would find it sound policy to recognize the U.S.S.R. and advance credits.[47]

Walter Duranty felt, probably with accuracy, that the Rockefeller oil interests were playing both ends of the game. Standard Oil of New Jersey wanted compensation for its expropriated petroleum holdings, while Standard Oil of New York was buying oil in Russia and had therefore leased back the Standard-built kerosene refinery in 1927 at Batum. Duranty quotes *Izvestia:*

> While the Standard Oil of New Jersey is talking about moral reasons for refusing to do business with the Soviet Union, Ivy Lee who handles the Rockefeller propaganda recently visited the Soviet Union and carried on an unobtrusive press campaign for the improvement of trade relations between the United States and the U.S.S.R.[48]

EUROPEAN TRADE WITH THE SOVIET UNION

Promotion of trade with the U.S.S.R. became the objective of Parliamentary delegations in a number of countries. In the United Kingdom, members of

[45] U.S. State Dept. Decimal File, 316–137–83/126, 131–343/5.

[46] Ivy Lee, *U.S.S.R.: A World Enigma* (London: Benn, 1927), p. 9.

[47] *Ibid.* William White acted as interpreter for Ivy Lee in his interviews with Rykov, Sokolnikov, Karahan, Radek, Hinchuk and Piatakov. 'Mr. White stated that the interviews which he attended were extremely inane in character but that because of his Standard Oil connections Mr. Lee seemed to stand A-1 with the Soviet authorities.' [U.S. Embassy in Berlin, Report 5099, November 26, 1929 (U.S. State Dept. Decimal File, 316–110–1391).]

[48] *New York Times*, July 25, 1927, p. 33, cols. 1, 2 (quoting *Izvestia* of July 24, 1927).

Parliament sympathetic to the 'new Russia' made the usual trips and published glowing reports on their return suggesting that the Soviets had demonstrated their 'fair-minded treatment of concessionaires,' and that this removed the need for 'excessive caution' on the part of foreigners as the 'new Russia' could be relied upon to give a 'square deal to foreign capital.'[49]

On the other hand, associations devoted to émigré and prerevolutionary owner interests in France were almost equally injudicious in other respects. Émigré businessmen resident in Paris had several vocal associations, including the Association Financière, Industrielle et Commerciale Russe, which issued memoranda and booklets concerning the economic position of Soviet Russia. For these groups nothing could possibly be right nor could any development possibly take place without the return of former owners.[50]

In Germany, attempts to trade with the U.S.S.R. began in 1919, and in late 1920 German firms interested in resuming trade with the Soviet Union formed a Research Association for the Resumption of All Trade with the East (Studiengesellschaft für die Aufnahme des gesamten Handels mit dem Osten).[51] After the Treaty of Rapallo, which contained economic and commercial protocols, relations with the U.S.S.R. developed very rapidly. An all-German section of the All-Union Chamber of Commerce of the U.S.S.R. was formed, and this became the focal point for industrialists and German Embassy officials in discussion concerning the reconstruction of both Germany and the U.S.S.R. —until, as Hilger points out, the Embassy was blocked off by the Soviets from either assisting or communicating with German companies working in the U.S.S.R. The Soviets also utilized the meetings of the German section to move German industrialists along 'more desirable' lines, to reassure them that imports of German machinery would not lead to dumping, and to complain that the Americans 'do not guard manufacturing secrets so jealously.'[52] However, the U.S.S.R. found continued resistance by some German companies, especially I. G. Farben, to the transfer of technology.

On the other hand, Dr. Otto Deutsch, managing director of A.E.G. (Allgemeine Elektrizitäts Gesellschaft), was most interested in resumption of trade with the U.S.S.R. and became a member of the German commission established to further this objective. His basic arguments were that the U.S.S.R. was a vast market which could not be ignored and that, as the

[49] Anglo-Russian Parliamentary Committee, *Possibilities of British-Russian Trade* (London, 1926), p. 67. The booklet argued that the Lena and Harriman concessions 'illustrate sufficiently clearly our . . . contention.' They were both expropriated within the next few years.

[50] *La Situation Economique et Juridique de la Russie Sovietique* (Paris: Association Financière, Industrielle et Commerciale Russe, 1924).

[51] Hilger, *op. cit.*, p. 29.

[52] *Ekonomicheskaya Zhizn*, No. 225, September 29, 1929.

U.S.S.R. could not pay cash, concessions and credits would be necessary.[53] [54] In 1928 during the 'Shakta Affair' when A.E.G. engineers were arrested and charged with sabotage, the initial A.E.G. reaction was to pull all their engineers out of the U.S.S.R. After a few days contemplation of the number of outstanding contracts and the losses involved, the German General Electric (A.E.G.) company decided to continue working.[55]

CONCLUSIONS

In brief, the 'arm's-length hypothesis' that some firms had noneconomic links to the Soviet Union, applies to early concessions, and these were of great importance; they were 'pour encourager les autres.'

The pressure in the United States for trade with the U.S.S.R. began while the Revolution was still in progress and was fostered by several active organizations.

Later in the decade, industry pressure was placed on the executive branch of the government to facilitate credit in trade with the U.S.S.R. and modify the State Department position of denying credits to the U.S.S.R. The latter policy was gradually eroded under pressures originating above and outside the 'desk level' of the Department.

On the other hand, German trade with the U.S.S.R. was placed on a formal basis by the government in 1921–2, and the Soviets had no need to use intermediaries to break down an unfavorable economic policy.

[53] *Mittelungen der Handelskammern*, February 1922.

[54] 'European industrial progress cannot be restored without the active participation of the 160,000,000 purchasers in Russia. I do not defend the Russian regime as we know it, but to wait until it is transformed into something more pleasing is an idle fancy. Despite what it is today, the situation in Russia does not prevent the operation of commerce on condition that one takes reasonable precautions.' (Otto Deutsch, *New York Times*, November 13, 1927, p. 4, col. 3.)

[55] 'The directors of the AEG in the first flush of indignation had initially declared that they would immediately withdraw all their engineers who were in Russia mounting machinery, regardless of existing contracts. A few days later, however, they seem to have regretted their impetuosity; they withdrew their initial declaration, obviously afraid of the losses that would occur because of the non-fulfillment of contractual agreements.' (Hilger, *op. cit.*, p. 221.)

CHAPTER EIGHTEEN

Organized and Disorganized Governments: The State Department and the Acquisition of Technology

WESTERN GOVERNMENT ASSESSMENT OF SOVIET INTENTIONS

ALTHOUGH the transfer of technology involved all those Western countries with any degree of industrialization, it essentially included Germany in the 1920s, and then the United States, as German credits ran out and the U.S. State Department increasingly relaxed its stand against credits to the U.S.S.R. Another factor was the gradual acceptance of American techniques in preference to European. It was the mass production technique of Ford rather than the more conservative production horizon of European producers that at first mystified and ultimately attracted the Soviets.

At the beginning of the decade, Western governments were in substantial unity concerning the aims of the Soviet Union. Certainly the State Department in 1923 had accurate ideas of Soviet intent in so far as trade and credit were concerned. A very clear statement formed part of a 'confidential' report, no doubt for circulation to friendly governments, by New Scotland Yard in London. The relevant part of the report reads:

> Concessions are offered, and foreign capital is sought with the object of restoring the collapsed industries of Russia in the interest of the Communist State. It is calculated that in some years foreign industry and enterprise will have revived these industries which then, more firmly established and efficient than ever before, will revert to the State, which will then be able, fortified by experience and the method of foreign participants to resume the Marxist experiment. Nor need one believe that any conditions subscribed to by the Soviet Government will be faithfully observed. The capitalist and the private owner have no inherent rights. Faith need not be kept with them. Cozened into the open by their capitalist greed they will be overwhelmed when the great advance is resumed.[1]

The State Department did not hesitate to subscribe to this analysis. A memorandum from Evan E. Young, Chief of the Division of Eastern European Affairs, to the Secretary of State comments:

> I have read the report with care and attention, and while it contains no new information, it is to me of especial interest and importance in that the report agrees, in all respects and in every particular with our information and our position.[2]

However, there does not appear to have been unanimity on the question of Soviet trade, concessions, or technical assistance within the United States Administration. Arguments for resumption of trade began while the Bolshevik Revolution was still in progress. It was suggested by Mr. Edwin F. Gay at a meeting of the War Trade Board, December 1918, that the policy of economic isolation of the areas under Bolshevik control was not the best means of bringing about a stable government:

> . . . if the people in the Bolshevik sections of Russia were given the opportunity to enjoy improved economic conditions, they would themselves bring about the establishment of a moderate and stable order.[3]

EROSION OF UNITED STATES POLICY ON SOVIET TRADE CREDITS

The basic policy of the State Department in the 1920s was that the United States government would neither support nor intervene in individual or business relations in trade with the Soviet Union. In other words, it was a policy of noninterposition or 'hands off.' The individual or firm was entirely on its own, and could expect no diplomatic or consular help in the event of trouble with the Soviet government.

Toward the end of 1920, there were world-wide rumors concerning a gigantic billion-dollar concession alleged to have been obtained by a man named Washington B. Vanderlip for the development of Siberia and Kamchatka. There is some possibility that Vanderlip represented himself to Lenin as another Vanderlip, banker and friend of Senator (later President) Harding. The syndicate behind Vanderlip contained a number of substantial Southern California citizens: Harry Chandler (of the Los Angeles *Times*), E. L. Doheny,

[1] *Present Position and Policy of Soviet Russia*, U.S. State Dept. Decimal File, 316–108–699.

[2] U.S. State Dept. Decimal File, 316–108–697. There are numerous indications of the State Dept. views in the files; this example was chosen because of its succinctness, clarity, and agreement with the view of a major European government.

[3] *Minutes of the War Trade Board*, V, 43–4, December 5, 1918. After Mr. Gay's argument, the Board adopted a motion recommending to the Dept. of State that a policy of economic isolation and blockade ' . . . is one calculated to prolong the control of the Bolshevik authorities . . .' (p. 7). This is the earliest statement of the 'bridge-building' argument.

the Union Oil Company, Merchants National Bank, Braun and Company, and other California firms and institutions. Vanderlip's negotiations, while General Wrangel was still fighting in the South, were not well received by the United States or the British governments. In the end, although the affair took up 100 or so documents, now in the Archives, nothing was achieved, and the concession faded into thin air.[4]

It can be argued, with substantial evidence from State Department files, that the pressures in the 1920s for expanded trade with the U.S.S.R. came from business firms and promoters such as Vanderlip and Farquhar, as well as from within the State Department itself.

The American Locomotive case of 1927 was one of the turning points in erosion of United States policy. The American Locomotive Sales Corporation inquired in October 1927 concerning sales of railroad material to the U.S.S.R. on long-term (more than five years), credit. The company argument was that it was extremely desirable 'to obtain foreign orders in view of the Depression'; that bankers and manufacturers had found that the Soviets lived up to their short-term commitments, and that German sales were being financed anyway by American banks. Then could sales of United States equipment be financed on a long-term basis by American banks, preferably by the sales of securities to the American public?[5]

In the next month, two memoranda were written by R. F. Kelley, Chief of the Division of Eastern European Affairs. These indicate that the State Department had not previously objected to short-term credits incidental to current commercial transactions, but also that only one such transaction had ever been presented to the Department for approval.[6] The Department had previously objected to bank credits and loans designed to finance the sale of German manufactures to Russia. The memorandum then quotes the denial to W. Averell Harriman in 1926 concerning a scheme to float a loan of 25 to to 35 million dollars on the American market, the proceeds of which were to be used to extend credit to German industrialists in order to sell goods to the Soviet Union. It also mentions the New York Trust Company and the Farquhar denials.[7]

[4] U. S. State Dept. Decimal File, 316–132–148. The State Dept. files connect Vanderlip with Martens and the Soviet Bureau in New York.

[5] Letter from American Locomotive Sales Corp. to U.S. State Dept. October 17, 1927 (316–124–0026).

[6] Kelley Memorandum, October 28, 1927 (316–124–0031). This was in 1925 when the Chase National Bank had informed the State Dept. it was arranging a cotton credit. The State Dept. did not object, as the arrangement was 'considered as incidental to ordinary current commercial intercourse.'

[7] U.S. State Dept. Decimal File, 316–124–0031.

The memorandum makes the following very pertinent commentary:

> . . . if the object of the Department's policy with regard to Russian financing is to exercise pressure on the Soviet regime to the end that this regime may eventually come to realize the necessity of abandoning its interference in the domestic affairs of the United States and of recognizing the international obligations devolving upon it with respect to the indebtedness of Russia to the United States and its citizens, and with respect to the property of American citizens in Russia,—if such is the Department's aim the logic of the situation would seem to demand that the Department view with disfavor all financial arrangements, whether in the form of bond issues or long term bank credits and whether designed to facilitate American exports to Russia or to serve other purposes which would result in making financial resources available to the Soviet Government.[8]

In brief, the Kelley argument was that *any* financial arrangement was going to be of assistance.

The decision, made at the Presidential level after consultation with Mellon and Hoover, was to allow American Locomotive to extend long-term credit to the Soviet Union for the purchase of railroad equipment.[9]

The Soviets kept pressing foreign firms. They finally succeeded in breaching the long-term loan situation in 1928–9 by holding Harriman and Company and the State Department 'over a barrel.' Harriman had been forced out of his manganese concession[10] and the Soviets offered compensation in the form of long-term bonds. Harriman accepted bonds at an interest rate of 6 percent. This was gleefully hailed by the Soviets as the first American loan to the U.S.S.R.[11]

When the Harriman bonds were received by the Chase National Bank in New York there was no mention on the face of the certificates of the fact that they were for any specific purpose. Vice-President Schley informed the State Department as follows:

> I do not look upon the transaction in any way as an attempt to float any securities in this country, but as an obligation given in payment of a single business transaction, and I trust that the Department will view it in the same light.[12]

[8] U.S. State Dept. Decimal File, 316–124–0032.

[9] Marginal notation on letter to American Locomotive, U.S. State Dept. Decimal File, 316–124–0027. It might be added that in August 1927 a rumored Dillon Reed loan of $30 million to develop the Solikamsk potash deposits and other projects had been quashed by the U.S. State Dept., acting apparently on its own initiative.

[10] Harriman says he left by agreement (see page 91). This explanation is not at all consistent with the contemporaneous newspaper or archival material. He was forced out by interference, by high costs, and generally by what Walter Duranty called an 'utterly inept' agreement.

[11] 'This is actually the first American loan received by the Soviet Government.' (Amtorg, *op. cit.*, IV, No. 16–17, 298.)

[12] U.S. State Dept. Decimal File, 316–138–296/7.

The subsequent State Department memorandum noted that the bonds received by Chase National totalled $4.45 million, whereas the Harriman investment had only been $3.45 million. The memorandum comments:

> It would appear therefore that Harriman and Company has advanced to the Soviet Government a sum of approximately $1,000,000. . . .[13]

The memorandum goes on to suggest that this was probably a *quid pro quo* for compensation for expropriation and that:

> No useful purpose would be served by placing difficulties in the way of Harriman and Company from recovering the money invested in the concession. . . .

The memorandum then argues that the additional $1 million was not really a loan but part of the original concession. The Riga Consul (Coleman) was less vague and called the whole Harriman transaction a 'loan.' This statement, however, was given the classification (in the department) of 'confidential.'[14]

It is amply clear, in retrospect, that the Harriman 6-percent 20-year bonds were a long-term loan and effectively breached the last remnants of United States credit policy vis-à-vis the Soviet Union.[15]

THE STATE DEPARTMENT AND PATENT PROTECTION

A Soviet decree of September 12, 1924 gave patent rights, under certain conditions, to inventors for a period of fifteen years. Article 2 of the original decree stated that no invention would be considered novel if, prior to the date of application, it had either in the U.S.S.R. or abroad been 'described fully or with substantial particulars so openly as to be capable of being reproduced by experts.' This was subsequently amended to read 'described fully . . . *or applied*.' (Italics are added.) In brief, if the invention had been described or *used abroad* then protection would not be given under Soviet law.[16]

Irrespective of written law, which gave scant enough protection to foreign inventions, Bolshevik practice gave no protection whatsoever. Law and the judiciary in Leninist political theory exist only to further the ends of the state. Consequently, true patent protection, in the sense that we understand it in

[13] U.S. State Dept. Decimal File, 316–138–299.

[14] U.S. State Dept. Decimal File, 316–138–289.

[15] It will be remembered that previously the U.S. State Dept. had been unwilling to '*initiate*' an investigation into Harriman's conduct of negotiations with unofficial representatives of the Soviet Union in the United States. It is sensed, but without conclusive evidence, that the State Dept. could not become involved in a stand on principle at this point. If the documents in the United States and German Archives are viewed in toto, they give the distinct impression that political pressures well above the desk level of the department were at work.

[16] A. A. Santalov and L. Segal, *Soviet Union Yearbook, 1926*. (London: Allen and Unwin, 1926), p. 477.

the West, could in no way be construed to exist, *whatever* the written content of the decree. This was in fact the initial interpretation and conclusion of the State Department.

The Columbia Graphophone Manufacturing Company was informed by the State Department in 1921 'that the Bolsheveki had nationalized all private and industrial property in Russia and that it could therefore be inferred that any individual rights—such as patent and trademark protection—could not be secured during their regime.'[17] This was confirmed in 1922 upon a second inquiry by Columbia. This interpretation is confirmed by history as there is considerable evidence, even without the Archives, that the Soviets were indeed sequestering patents and anything else of a technical nature in the 1920s—as they do even in the present day.[18] That this confiscatory policy was widely known is suggested by the numerous letters of inquiry in the State Department decimal file.[19]

In any event, caution was indicated by a quite separate chain of happenings. In 1919 the United States had deported, as an undesirable alien, Ludwig K. Martens, organizer of the Soviet Bureau in New York and hardly a friend of the United States, although Martens had been assisted in the organization and financing of the Soviet Bureau by a number of American companies. On November 12, 1924, Martens was appointed by the Soviet of Labor and Defense as Chairman of the Committee on Inventions.[20]

In 1925 or thereabouts, there was a definite change in the administration of American policy in relation to patents. Rather than the early doctrine of noninterposition, a doctrine of positive encouragement of Soviet trade was substituted, but partially clothed in the words of noninterposition. Where caution was indicated, active and positive suggestions were made in response to inquiries for advice on patent and other matters. This change cannot be traced to any specific Congressional action, and, there is no evidence to suggest pressure from above the 'desk level' of the State Department. It predates by a year or so the changes in credit and loan policies discussed above.

[17] U.S. State Dept. Decimal File, 316–108–679/680.

[18] See the report of H. L. Roosevelt of RCA on negotiations with the U.S.S.R. for a long-range radio transmitter: 'The Soviets desired . . . strangely enough, the right to use Radio Corporation patents for manufacturing purposes. The latter request had somewhat amused Mr. Roosevelt as he found the Soviets brazenly copying many foreign products.' [U.S. Consulate in Stockholm, Report 248, April 10, 1928 (U.S. State Dept. Decimal File, 316–108–791).] In October 1924, the Norton Company complained that the Ilytch works in Petrograd was marketing a grinding wheel under the name of NORTON. (316–108–815.)

[19] For examples see U.S. State Dept. Decimal File, 316–108. Also, see *Ford Delegation Report (1926)*.

[20] *Izvestia*, No. 273, November 29, 1924. That patents were not protected, even for Russians, is confirmed by V. N. Ipatieff, *op. cit.*, p. 287, who noted that his patent for 'Ipatite,' a gas-absorbent material, was immediately turned over to the Revolutionary War Council.

An internal indicator of the change is treatment of an official Soviet notice on patents issued in June 1925. The United States Commissioner of Patents and the United States Department of Commerce questioned the State Department as to whether the notice on patents received by them should be published in the Official Gazette at all 'in view of the fact that this circular is published by or in the interest of the Soviet Government.' The State reply to the memorandum was simply to enclose a draft of the phraseology to be employed in publishing the notice without directly answering, either way, the substance of the questions.[21]

In advising American firms, after about 1926, on the patent position in the U.S.S.R., a policy of active encouragement was followed. In September 1927 the State Department received a letter from Gleason, McLanahan, Merritt, and Ingraham, attorneys at law, which indicated that a client had an 'invention of international importance' which he wanted to protect. Further, they said that 'we fear that if the process should become public in Russia and no protection can be secured, much of the value of our invention may be lost.' To be consistent with previous replies and the policy of noninterposition, the State Department reply should have indicated that it could not intervene, that there were neither diplomatic nor trade relations between the two countries and therefore that no protection could be given to a United States citizen.

The actual State Department reply gives the address of the Leningrad patent office (Ulitza Herzena, 24, Leningrad) and then adds:

> In as much as there are no official representatives of the Soviet regime in the United States, documents required for the registration of patents in Russia should be certified in the United States by the diplomatic officers of a nation with which the Soviet regime has diplomatic relations. Among such countries are Germany, France, Italy and Poland. . . .[22]

Instructions then follow on the procedures to be followed with the Soviet authorities after the necessary signatures have been obtained. There is nothing in the reply that would suggest for all practical purposes a patent could not be protected, as we know it in the West, under Soviet law and practice.

The Automatic Damper Company sent a scribbled, almost illegible, half-page note requesting general information on Soviet patent laws, obviously with the intent of patenting one of its devices.

The Automatic Damper Company must have been pleasantly surprised with the detailed two-page reply which indicated precisely how to go about patenting a device and gave two addresses in the U.S.S.R. One of these was

[21] U.S. State Dept. Decimal File, 316-108-683/6.

[22] U.S. State Dept. Decimal File, 316-108-691/3. Also see Lacey and Lacey inquiry, October 6, 1927 (316-129-687/8).

the Inventions Bureau (TsBRIZ), under the control of Martens Committee.[23] One wonders if the State Department realized that all stoking appliances, including dampers, were being produced by the Richard Kablitz concession and that this was an area where purely Russian technology was nonexistent. Work in this field was dependent on Western equipment. For example, the report of Professor L. K. Ramzin at the meeting of the 1930 World Power Conference in Tokyo covers his experiments utilizing Moscow brown coals, which have a moisture content of 32 percent. Ramzin reported that predrying had been a failure but that these coals could be completely burnt with the aid of hot-air draught as follows: 'The fuel was ground in a high speed Atritor mill of Messrs Alfred Herbert and the aerated dust was blown into two long flame burners located in the upper arch of the furnaces, the flames then being diverted downwards and forming a U. The bottom of the furnace was fitted with a Babcock and Wilcox water screen. . . .'[24]

In short, a policy was instituted of suggesting how to overcome absence of diplomatic relations and ensuring that patentable techniques would, in fact, be transferred to the U.S.S.R. without protection. If the reader is dubious, then indication of the treatment afforded another type of patent inquiry—those from individuals in trouble and requesting help—will complete the picture.

On November 21, 1928, Rector, Hibben, Davis, and Macauley, attorneys in Chicago, requested advice on behalf of the Burroughs Adding Machine Company, which

> has been requested to furnish . . . all sorts of publications describing the products of the Burroughs firm . . . we hesitate to advise the Burroughs Company to furnish the information without a little more accurate advice as to what is really going to be done with the information after it is obtained.[25]

The firm had been told by the Soviets that the information would be used in considering applications for patents, but obviously both Burroughs and Rector were skeptical. The State Department reply was that it had no information, and no means of ascertaining the purpose for which such publications might be desired and 'cannot advise you in the matter.'[26]

An appeal for help from B. Singer, a specialist in trademark and patent law who represented clients with patents registered in the U.S.S.R., was rejected. A number of patent applications had been filed through a Soviet citizen, Blau, who had been arrested by the GPU and whose office had been closed.

[23] U.S. State Dept. Decimal File, 316–108–694/6.
[24] *Engineering*, CXXX (February 7, 1930), 184.
[25] U.S. State Dept. Decimal File, 316–108–690.
[26] *Ibid.*

Singer requested the good offices of the State Department to facilitate the transfer the Blau's office records to a new associate, one Feldman. The reply curtly indicated regret but inability to help Singer in any way 'as this Government has not recognized the regime now functioning in Russia.'[27]

Thus, the State Department was willing to aid the transfer of patent information, or tacitly encouraged Soviet acquisition of information (Burroughs), but not willing to warn of possible confiscation, which was known to the department, nor outline the Soviet record or philosophy. Formal statements of noninterposition in trade relations were followed by advice or suggestions running counter to the implementation of a doctrine of noninterposition.[28]

The promotion of Soviet technical data acquisition by the State Department is particularly curious in the light of the fact that knowledge of expropriation was widely known in industrial and commercial circles, and one presumes that State Department had access to the same knowledge.

For example, the 1926 *Ford Delegation Report* makes the following pertinent comment. After pointing out that the Soviet Union has a patent law, the report adds:

> This law does not seem in any way to hinder the reproduction in Russia of foreign patented products. In the automotive line the Fordson tractor is reproduced in Leningrad under the name of the 'Red Putilov' Tractor. The Italian Fiat 1½ ton truck is reproduced in Moscow under the name AMO and the Bosch spark plug is reproduced in Leningrad by the Avtopromtorg organization.[29]

The U.S. Consul in Riga, among other U.S. representatives abroad, pointed this out on a number of occasions. It is a reasonable presumption that the State Department was encouraging transfer of technical information knowing that the result would be expropriation without compensation or permission. The reasons behind such a policy are beyond the confines of this study.

[27] U.S. State Dept. Decimal File, 316–108–763.

[28] This raises the question of the extent to which the State Dept. is able or required to go in order to protect United States citizens. In another context, State Dept. letters suggest it was not aware of any dangers for engineers or firms entering the U.S.S.R., but usually added that it could not provide protection in the absence of diplomatic relations. The State Dept. was aware in May 1928 that Rykov had ordered three German engineers involved in the Shakhta affair to be shot. This had been stricken from the official record of the Rykov speech. Yet the engineers may have been sentenced to death because Rykov was compromised by the Shakhta affair in the eyes of Stalin. It appears to the writer that United States firms are entitled to knowledge of the likelihood of this type of arbitrary action. The Baaghorn and Mott cases are more recent examples.

[29] *Ford Delegation Report (1926)*, p. 38.

THE MONOPSONISTIC POWER OF THE SOVIET TRADE ORGANIZATION

Foreign trade was a state monopoly under Vneshtorg from the beginning, and superb use was made of this monopoly in trade relations with the West, especially in playing one company, or country, off against another.

Little thought was given to this process of 'divide and conquer'; the Soviets stumbled onto it in their pragmatic search for foreign assistance.

There is an interesting report, of uncertain origin (probably written in the German Foreign Ministry in 1928), which provides a clear discussion of this problem and the pressures and counterpressures that a united front of Western firms and countries would encounter.[30] In essence the report proposed concerted action by Western powers in relation to trade with the Soviet Union. The writer expresses surprise that a decade of trade with the monopoly trade organization of the Soviet Union had elapsed before discussion of 'organized counteraction.'[31] Brief examination of the factors making for diversified rather than a unified approach leads the writer to the conclusion that the

> Soviet government in a masterly fashion took advantage of these conflicts of interest between the powers, for a consolidation of the monopoly of foreign trade. . . .

The author argued that little good could come of carefully worded articles and treaties with the U.S.S.R. Monopoly of foreign trade was one of the 'commanding heights' of the Soviet economy; and attempt to create an international 'united front' had been met with claims of an 'anti-Soviet front.' In 1928 only the German and French chemical industries were able to agree with the Soviets on prices and joint deliveries. Finally, the author suggested that such international cooperation would have to take the initial form of uniform credit and delivery conditions.

Hilger suggests that neither the Germans nor the Soviets were aware in 1921–2 of the potential power of a trade monopoly, and that the opportunity of meeting the Soviet trade monopoly with a central German business organization was missed 'because of the tenacity with which the predominantly Socialist Government of Germany stuck to the principles of free enterprise.' Later Germany formed the Russian Committee of the German Economy (Russland Ausschuss der Deutschen Wirtschaft) to provide advice and orientation on German-U.S.S.R. business. Hilger comments that, once the Soviets

[30] U.S. Consulate in Riga, Report 5156, March 26, 1928 (316–109–579).

[31] The author of the report would be even more surprised to learn that in 1966, almost fifty years after the Bolshevik Revolution, there was still no unified counteraction, although NATO, SEATO, and CENTO are the military and political equivalents of such counteraction.

realized the importance of the trade monopoly, they were suspicious of any attempt to impede its value and began to block embassy aides from aiding German firms in negotiations, especially with the Main Concessions Committee.[32]

The Soviet Union, supposedly the opponent of monopoly, has in fact been the greatest recipient of monopsonistic profits in the history of industrialized society. Neither has it been slow or backward in recognizing and protecting the value of this monopoly.

THE BOLSHEVIK ATTITUDE TOWARD THE FOREIGN FIRM

Bolshevik unity was split by Lenin's concession policy. The rank and file Bolshevik questioned the wisdom of, and the necessity for, the return of the capitalist—after all, had not the Revolution just ejected him? The Party had difficulty in convincing its ranks that foreign capitalists were a necessary evil. In particular, the OGPU, charged with the purity of the Revolution, was dubious concerning foreign elements. Whenever it had the chance, as in the Shakhta affair, the OGPU exercised punitive measures with great zeal. The pleas to the Party faithful to accept foreign capitalists and engineers give the clue that Communist intent was to absorb capital, skills, and technology, and then, 'when the lemon was sucked dry,' to discard it. There are numerous speeches and articles in contemporary Soviet literature which suggest both the captive nature of the concession and, on the other hand, the necessity for the concession in the reconstruction and development of a socialist society.[33]

The Urquhardt negotiations in 1922, although a failure, are interesting in this regard. Urquhardt was president of Russo-Asiatic Consolidated, Ltd., which had held very large concessions in tsarist Russia. Negotiations with Urquhardt for operation of his former properties, then lying idle, would have led the way for other entrepreneurs. Although Urquhardt was well aware of Bolshevik strategy, he made a concession agreement with Krassin in 1921; the latter then went to Moscow for ratification by Lenin and Trotsky. Before this could be obtained, word leaked out and the hue and cry within the Party forced Lenin to scuttle the agreement, using British activities in the Middle East as a pretext.

[32] Hilger, *op. cit.*, pp. 166–67. This may have colored Hilger's interpretation of the value of concessions. If the embassy was denied data, they could have assumed a minute impact of the concession.

[33] See Volume II. Not all the clumsiness was on the part of Western businessmen. In a conversation between Mr. Arlt of the Königsberg Chamber of Commerce and a 'high Soviet official' the latter, in reply to a question concerning the safety of German investments in Russia, said, 'Until Germany goes through a successful World Revolution they will be safe. If Germany goes Bolshevist, however, it will make little difference to German industrialists whether their possessions are expropriated in their own country or in Russia.' (316–133–140.)

Some early Bolsheviks were clearly aware of the necessity for foreign help. Krassin had formerly been managing director of Siemens Schukert in Petrograd. He then became a revolutionary, and in 1920–1, as Soviet Trade Representative in London, he argued that

> Russia . . . cannot without assistance organize her trade. She cannot bring together her resources in a productive manner and she must rely upon capital, the experience and initiative of foreign capitalists. . . .[34]

An article by Arsky in *Krasnya Gazeta* in 1921 in effect clarifies this policy: 'The question of concessions has been under discussion for the last half year but so far it has mostly been in the air . . . nothing has been done.'[35] The writer then describes the proposed Northern Telegraph concession, argues its advantages as a generator of foreign exchange, and the alternative of not being able to use the line at all. 'As a result of this treaty,' he writes, 'we shall get a repaired telegraph line and hundreds of millions of francs in gold to carry on trade with abroad.'

Arsky then discusses a Kuban sulphates concession in the same glowing terms: 'Of course the concessionaires will profit hugely but let them do so for it will bring wealth to us and we must pay for that.' Finally, considering a Baku forest concession, Arsky argues that, although the concessionaire will profit, 'as Lenin foretold we shall have to pay a high price to foreigners for their help, science and energy in enterprise.' He then adds that in any event there are not enough skilled Soviet workmen, nor could the Soviets feed them, nor will they be able to in the near future—'*We must seize the moment.*' The Soviets, he says, are well able to take care of their own interests, certainly in the matter of concessions: 'They will demand from those who get them the maximum of profit for the country and its re-establishment.'

The Party line had to be sold to the rank and file, and it would appear that the closer the explanation got to the factory and farm level the less circumscribed was the description of the fate awaiting the foreign specialist. For example, Ipatieff quotes a collective farm chairman, Kopylov, in a speech at Tikhonova Pustyn in Kaluga Province:

> Of course we need bourgeois specialists for a short time. As soon as Party members learn what these specialists know we'll get rid of the specialists fast enough. Right now we must treat and feed them far better than ourselves; but their time will come, just as it did for the rest of the bourgeoisie.[36]

[34] *New York Times*, June 12, 1921, p. 2, col. 3.

[35] *Krasnya Gazeta*, September 3, 1921. Arsky was, at least, able to look after his own interests; by 1924 he had acquired 30,000 shares in Moskust, a joint-stock company in Moscow.

[36] Ipatieff, *op. cit.*, p. 486.

The opposition to foreigners at the plant level became overt on numerous occasions, but it is not always clear whether this was due to ideological dislike, counter-revolutionary activity or just plain antipathy for those who came along to improve plant discipline. It is reasonably likely that the majority of Party members were kept in line by Party discipline, whatever they thought. It is more likely that the opposition came from non-Party bureaucrats and perhaps counter-revolutionary segments, except where discord was created on direct orders of the Party, as part of a campaign to eject a specific concessionaire. It is entirely conceivable, on the other hand, that the OGPU overtly attempted to scuttle the introduction of foreign elements in the name of protecting the Revolution. Douillet, Belgian consul in Russia, relates how the OGPU arrested and jailed an Austrian aircraft worker at the Junkers plant and a diesel specialist in Shelkotrust. They were retained without charges and then expelled.[37]

The Americans at the Kuzbas project (the American Industrial Corporation) had clearly ideological opposition. The newcomers were classified as either Communists or sympathizers and neither was particularly popular among Kuzbas coal miners. McDonald, an engineer with a technical-assistance agreement with Uralmed, met opposition from Soviet engineers, whom he accused of 'seriously interfering with the progress of important work.'[38] This is rather similar to the opposition met by Ruykeyser at Uralasbest—fear that technical inadequacy might meet dismissal, or worse.

By the end of the decade opposition had become serious, especially at the Dniepr generating plant, the largest in the world, being built by American and German engineers. There was a rather natural conflict between the two foreign groups, but there was also an 'unfriendly attitude' on the part of the local workers serious enough to warrant the attention of V. V. Kuibyshev in a speech to the Supreme Soviet:

> But, have these foreign and alien hands not been brought by the proletarian state, and is the transplantation of foreign technique not necessary in order to enable socialist technique . . . first to overtake and then excel European capitalist technique? Without resorting to foreign assistance on a still greater scale, this is impossible. The application of foreign technique is one of the keys to hasten the tempo of our development. . . . Such

[37] Douillet, *op. cit.*, pp. 74, 76.

[38] *Pravda* (Moscow), No. 239, October 16, 1929. Similar cases were reported in a special supplement on foreign specialists in *Ekonomicheskaya Zhizn*, No. 243, October 20, 1929; for example, German engineer Scheibil at the Karl Liebknect works of Ugostal was 'abused and persecuted.' Another engineer (Mashik) at the Tomsky plant of Ugostal was subjected to an 'inquisition' and put to work in a shop (316–130–927/8). Two German engineers at the Komintern pottery works under reconstruction were isolated because one of them (the technical director) gave 'strong orders' to the workers (*Ekonomicheskaya Zhizn*, No. 245, October 23, 1929).

> assistance is absolutely necessary in the ferrous and non-ferrous coal and chemical industries.[39]

Kuibyshev then went on to add that in the non-ferrous, ferrous, and pottery industries there were cases of hostility to foreign workers.

Hilger, economic attaché at the German Embassy in Moscow, confirms that resistance to concessions and foreign aid came from the lower levels of the Communist Party, the bureaucracy, and the OGPU.[40] He also suggests that the Soviet leaders intended duplicity in the long run and that 'it was never more than a retreat,' although he quite correctly points out that it is difficult to distinguish cause from effect. In retrospect, it seems that the Soviets were never honest in their concessions operations. Hilger avoids, or perhaps momentarily forgets, the numerous references in Lenin's speeches in which concessions were held to be temporary and destined for expropriation when their purposes had been achieved.

BOLSHEVIK LEADERS AND THE JOINT-STOCK COMPANIES

Some of the Bolshevik leaders found this a suitable time to improve their personal fortunes and a number had holdings in private enterprises and mixed companies.

Moskust, one of the most important stock companies, controlled a cloth mill and paper, shoe, tarpaulin, glass, and leather factories. Trotsky owned 80,000 chervontsi shares, while Arsky held 30,000, Šklyansky 45,000, and Muralov, the Commander of the Moscow Military District, an unknown number. It was believed other leaders participated through relatives.

Zinoviev was interested in Arcos and the Leningrad Tobacco Trust and owned 45 percent of the Volkhovstroi stock company. Chicherin held an interest in the mixed company Turksholk (Turkish silk), and Dzerzhinsky was chairman and held 75,000 chervontsi shares in the Coal Mines Exploitation Joint-Stock Company.[41]

Krasnatchokov, former Chicago lawyer and President of the Far East Republic (later absorbed into the Soviet Union), rose to become a member of Vesenkha and President of Prombank. While in the latter position he made a

> . . . rather liberal contract with a Russo-American concern, with which he was personally connected, and from which his wife drew monthly assignments payable in the United States.[42]

[39] Speech at Sixth Plenary Session of the Supreme Soviet, October 1929.

[40] Hilger, *op. cit.*, pp. 170–1.

[41] U.S. State Dept. enclosure to U.S. Consulate in Riga, Report 2394, September 24, 1924 (316–129–1229). Ipatieff comments acidly on the behavior of Party functionaries attached to the Berlin Trade Delegation and Purchasing Commission. (*Op. cit.*, pp. 408–9.)

[42] Scheffer, *op. cit.*, p. 129.

Although these cases may prove shocking to the ideological purist who considers the Marxist to be above personal gain, they are insignificant, considering the opportunities available in a complete dictatorship, and are certainly less than the personal empires built up by Stalin and his henchmen in more recent times.

CHAPTER NINETEEN

The Necessity for Foreign Technology and the Process of Acquisition

THE IMPACT OF REVOLUTION ON THE INDUSTRIAL STRUCTURE

It has been assumed almost axiomatically that World War I, the revolutions, the Intervention, and the Civil War created the catastrophic collapse of the industrial and agricultural sectors in 1922.[1]

The basic cause for the collapse was the economic illiteracy of an ideology which had neglected to think out its economic counterpart and drove a viable growing economy into a shambles. The campaign to inflate the ruble to zero value, the demobilization of industry, the policy of 'free' transport, utilities, and other services, the massive decline in labor productivity, coupled with doubled and tripled wages, were contra-developmental in effect.

In the first year of the war, the Russian economy had changeover problems which persisted until industry was on a war production basis; then growth, as measured in terms of output and employment, resumed. The industrialization mobilization campaign of 1916 created significant growth. New industrial centers were created at Nizhni-Novgorod, Rybinsk, and Samara, in addition to the expansion of existing centers in Moscow, Petrograd, and earlierindustrial areas. One result was an increase in the demand for raw materials, and the

[1] The following is a typical statement: 'Russian industry, agriculture and transportation declined greatly during the war, and by 1917 were in a condition approaching collapse. The civil war served to accelerate economic disruption, with the result that by 1920–1 industry was practically at a standstill while agriculture was fast approaching the condition which, coupled with a severe drought, precipitated the famine of 1921–22.' [American-Russian Chamber of Commerce, *Economic Handbook of the Soviet Union* (New York, 1931), p. 7.]

This myth has been compounded by using 1913 as a comparative statistical base. In fact, some industries had a 1916 output twice that of 1913. Some chemical products (such as benzene, toluene, and zylene) not produced at all in 1913 were produced in quantity between 1914 and 1917. (Ipatieff, *op. cit.*, p. 210.)

excess of imports over exports in 1916 was due to this upsurge in activity. *Between January 1, 1916 and January 1, 1917, industrial employment increased by 8.9 percent.*[2]

The greatest increase was in metallurgy and food products. Agricultural implement works were turned over to munitions production: 'there was hardly a repair shop of any size connected with the textile, confectionery, macaroni or other industry which was not assigned to the manufacture of grenades, mines, field kitchens, or other war materials.'[3] In a few industries output declined due to enemy action: most sugar refineries were in occupied territory, cement production declined because of a shortage of hoop iron for barrels, and there was a shortage of spare parts. But on balance, in the year before the revolutions, Russia had resumed her economic growth, new industries were being created, and industrial employment was greater than ever.

The first revolution was a shock to this expanding structure. The Ministry of Trade and Commerce undertook a survey which covered five months between the Kerensky Revolution and the Bolshevik Revolution. Between March and July, 568 industrial enterprises were closed down and 104,000 employees lost their employment. Almost one-third of the enterprises closed were engaged in manufacture of food products, with textiles and metalworking next in importance. The most important single reason for failure was lack of fuel. Less than 10 percent closed for lack of orders, a condition which could well have come about as a secondary result of lack of fuel and supplies elsewhere. Excessive demands of workmen and financial difficulties comprised a very small proportion of failures, considering that this was a period of revolutionary unrest. Most firms closed were small and unable to plan against these factors. In spite of this decline in industrial activity, concentrated in smaller enterprises, all the larger and important plants were operating at the time of the Revolution; nor is there a reported case in the two major industrial centers of Moscow and Petrograd of a large plant looted, burned or destroyed by the Revolution itself.[4]

The largest single blow to the structure of industry was a decree issued by the Soviet Commissariats of Labor and War on December 21, 1917, calling a halt to all military production and dictating a return to peacetime activities

[2] *Report of the Ministry of Trade and Commerce*, August 1917 (316–111–1015).

[3] U.S. Military Intelligence Report, *Russian Industries*, October 1918 (316–129–25).

[4] There are reports in the U.S. State Dept. Archives which mention 'looting' of plants, but this always refers to removing specific items of value (especially brass or copper) and not to physical destruction of the plant or its equipment. Overt destruction was limited to institutional symbols of the tzars. For examples, see the Sokoloff collection of photographs at the Hoover Institution, Stanford University. In 1920 Petrograd was deserted but intact. For instance, in photograph No. 24, taken on the Neva, large plant buildings and smoke stacks are still standing, but idle.

within *one month*. Industry at this time was working at full capacity on war material and had no alternate plans for consumer products. This simple order had a major adverse effect. One month was, of course, an insufficient time to change course completely. Not one factory was able to start peacetime production by January 21, 1918, and most were forced to close. The only exceptions were those plants where workers insisted on fulfilling military contracts as an alternative to closure. The resultant chaos compounded an earlier problem. The Bolshevik Revolution had caused most foreign and numerous Russian skilled workers to flee abroad along with the managers and engineers. The 'instant demobilization' decree hastened the exit of skills, but workers now went to the villages.[5] In brief, this single decree robbed the industrial structure of that skill and technical component which had not already left. This structure, which, despite supply difficulties, had been operating reasonably well, and in 1916 was giving definite signs of renewed growth, was now placed on the road to collapse.

The period of War Communism was entered with neither technical nor administrative apparatus, under a government of Soviets which had neither plans nor solutions for the chaos. Feeble attempts at planning civilian production were made by some worker's committees; this led to duplication of effort, and, in any event, neither financial nor technical problems were overcome. The Soviets then tried centralization, but lack of knowledge and information led to conflicts among makeshift managements. Concurrently came a major decline in productivity as the discipline of a market system collapsed. Inflation led to payment in kind rather than in depreciated paper money. Lack of goods was instrumental in creating self-supply organizations in factories, until the principal task of the factory became feeding and clothing its own workers. Resultant losses were made up by state subsidy, thus furthering the inflation.

The decline in production of one of the largest Moscow machine shops, which was producing iron and steel castings and forgings, was reported to the State Department. In January 1917, just before the Revolution, the index of production was at a base of 100. The difficulties of the inter-revolutionary period are reflected by a decline in the index to 76. By the following January, just after the 'instant demobilization decree' the index had fallen to 45. By August 1918, reflecting attempts at stabilization, the index had fallen only to 37. Data from other sources supports this chain of events. On the Northern Railways there was 0.67 a laborer per verst of line in 1913 and 5.8 laborers in 1919; on the Moscow-Kursk line there were 6.48 laborers per verst in 1913 and 18.9 in 1919. Railroad work was a preferred occupation as it gave access to food supplies in the villages.

[5] Rykov, in a speech before the Third Congress of the People's Council in January 1920, indicated that 90 percent of skilled workers left the factories at this time.

The labor supply position in the large plants confirms that skilled workers left in droves while the plants themselves were intact. In 1920 about 30 factories in Petrograd were attempting to work for the Red Navy. The major problem was lack of skills. The Baltic plant employed 3,500 and required another 5,800. The Franco-Russian factory had no workers and was looking for 1,500. The famous Putilovets had only 350 workers and wanted another 1,100. The Petrograd Metal Works employed 150 and was looking for another 1,000. In the 30 or so works listed, a total of 11,000 people were employed and a total of 22,000 additional workers were required. This counters the myth that the plants lacked equipment. The plants lacked skilled labor and management, both of which had been dispersed by the Bolshevik Revolution.[6]

In brief, as we already know, there was a complete collapse under War Communism. This collapse had little to do with the Civil War. It was created at the very beginning of the period of War Communism by dispersion of skills, absurd decrees, and the removal of disciplinary market forces.

THE TROUGH OF THE INDUSTRIAL DECLINE

In many sectors, production declined to almost zero by 1922. Cast iron reached less than 1 percent, cotton yarn 1.5 percent, rubber galoshes about .33 percent, and gold about .5 percent of 1913 production. Food products, especially if processed, fell to less than 5 percent. Per capita production of sugar was less than 1.5 pounds per year, and vegetable oils about .33 pound per year.[7] The accepted explanations for these abysmal declines were the war, revolutions, the Civil War, and the blockade. Actually production increased during the war, and the revolutions did little physical damage to production facilities. General Wrangel still occupied the Crimea, but this was a small part of the vast Russian geography. The allied blockade had been raised in 1921 and foreign products began to flow in larger quantities. The decline continued after these 'reasons' had ceased to exist. The real cause must be sought elsewhere than in political and military factors; the decline was essentially caused by economic factors.

THE NEW ECONOMIC POLICY (NEP)

NEP was introduced to offset the economic problems caused by Bolshevik economic policy. Nonpayment for work removed incentives. Nationalization, when there was no managerial talent available, was suicidal. NEP was a temporary move to utilize the knowledge and experience of the capitalist class

[6] U.S. State Dept. Decimal File, 316-111-1157.

[7] See Report by Vesenkha to IX Congress of Soviets.

to revive the economy, 'This is not an attempt to restore the capitalist class but to adapt it to our constructive work.'[8] The major impact of NEP was in the spheres of trading and small manufacturing, although it has also been seen as an accommodation to the reluctant peasant. Implementation turned nationalized enterprises back to private operations. This was somewhat more widespread than Dobb has suggested.[9] *Pravda* (January 18, 1922) gives a summary by region of the number of enterprises remaining under government supply and finance after the initial NEP reorganization.

Table 19–1 REGIONAL DISTRIBUTION OF ENTERPRISES UNDER GOVERNMENT AND PRIVATE CONTROL AFTER NEP REORGANIZATION, 1922

Region	PRIVATE			STATE		
	Number of Factories	*Number of Workmen*	*Average Workers per Plant*	*Number of Factories*	*Number of Workmen*	*Average Workers per Plant*
Moscow	477	118,457	248	110	78,375	710
Vladimir	118	7,262	61	74	13,487	182
Ivanov	45	7,887	175	10	1,746	174
Tver	59	1,173	20	47	5,199	111
Valuga	54	3,929	73	n.a.	517	n.a.
Riazan	23	2,242	97	16	3,436	215
Total	776*	140,950	182	257	102,760	400

Source: Adapted from *Pravda*, January 18, 1922, p. 2.
* 775 in original text in *Pravda*.

A decree in *Krasnya Gazeta* for August 13, 1921 signed by Lenin divided all industrial enterprises into two groups: the first included those large enterprises to be supplied with raw materials and operated by the state, and the second group included factories leased to private individuals and foreign concessions. All other plants were closed and the workers transferred to operating factories. It will be noted that those enterprises retained under state control were almost always the largest, irrespective of regional distribution. The clash between the data in table 19–1 and in Dobb turns on a point of definition. Dobb argues that few were turned back to private *ownership* but that numbers were turned over to groups of workers including artels. The

[8] *Krasnya Gazeta* (Petrograd), December 20, 1921.
[9] '. . . there was a certain amount of denationalization. . . . The extent of this . . . should not be exaggerated; and its economic significance was nothing like as great as foreign commentators at the time were inclined to suppose.' (Dobb, *op. cit.*, p. 142.) Dobb then adds that private enterprise covered only 12.5 percent of workers in the 1923 census, but he does not mention the limits of the 1923 census, which only covered part of the industrial structure.

enterprises listed in table 19–1 are those in which supply of inputs and finance is from private sources. It implies nothing about ownership, an academic question since 1917; the important point is the mechanism for overcoming deficient working capital and input supplies. It was to private mechanisms that the Soviet government turned. Any statement concerning ownership under a Soviet regime is illusionary.

Bogdanov, President of the Supreme Economic Council, stated emphatically on December 20, 1921, that large scale industries could only be re-established by foreign investment and technology (i.e. by private mechanisms):

> The investment of foreign capital is absolutely unavoidable as the equipment of whole branches of our industry depends upon foreign countries in so far as they were never created and supported in Russia by our own resources. It will be necessary to support these branches of industry in the future for a certain time by means of foreign capital and the introduction of foreign technical equipment.[10]

This capital and technology, added Bogdanov, were to be admitted in a controlled manner, 'only . . . where it is absolutely necessary, i.e., exploitation of new mines.' NEP had succeeded, he said, in moving industry from 'almost a standstill' in June 1921 to 'very, very slight' progress; but then he added a warning against optimism and suggested the road would be a long one, although the turn had been made. The policy of decentralization—i.e., the improvement in supply conditions by private trade and small plant leasing —was the factor behind the reversal in fortunes. NEP had a limited objective—to arrest the decline. In this it had been successful. The next step was reconstruction—restarting the numerous large and intact tsarist plants.

CONCENTRATION, TRUSTIFICATION, AND CONTRACTION

After several alternate solutions had been tried, it was decided to shrink the economic system by abandoning those plants making losses, grouping the remaining plants into trusts, and turning smaller or inoperable units back to domestic or foreign private enterprise.

The trust was designed with the introduction of foreign technical assistance in mind. The declared intent was to make the trust the vehicle for the transfer of foreign capital and technology demanded by Bogdanov. Examination of those trust agreements that are available confirms this objective. As reported in *Krasnya Gazeta*,[11] the twin aims of all trusts were, to obtain capital and assistance from abroad, and to retain chief controlling interest in the hands of the Soviets. One presumes the order of ranking was not accidental. The original

[10] U.S. State Dept. Decimal File, 316–107–661.

[11] January 26, 1922.

intent was to encourage foreign participation only in those trusts with dormant plants which were backward technically or which required large injections of capital. In practice most of the trusts looked to the West for assistance.

In the electrical and petroleum industries, technological progress was impossible without Western assistance, and so even comparatively well-run trusts looked westward. Trustification moved along fairly rapidly in late 1921 and 1922 but did little to improve the economic situation. Industrial production continued to slide downhill at an alarming rate and reached a nadir in the summer of 1922. The adopted countermeasure was the 'contraction of industry' policy. In order to reduce government subsidies, it was proposed by Vesenkha to select and close down nonessential industries.[12] A curious rationalization of this policy, made by Jacub, was that a socialist economy has alternate booms and slumps: 'each autumn and winter industry expands, while each spring it undergoes a crisis and contracts.' This statement was made in mid-summer and ignored the almost continual decline, winter and summer, which had been underway since the Bolshevik Revolution. Jacub viewed a condition of permanent crisis and suggested that a temporary contraction was not enough:

> There are only two ways to go—either pronounce our industry incurable . . . and close it down entirely, or else adopt measures, not for its contraction, but to keep it operating at capacity.[13]

In other words, technical and managerial rationality had to be injected into the shambles that the Bolsheviks had created from a buoyant, viable economy.

The end was reached in August 1922. There is a report in the State Department files concerning a meeting at Vesenkha. Bogdanov made the opening address and again stated in the bluntest language the condition of industry organization: it had 'reached its limit.' The situation was 'appalling and desperate.' The only hope, concluded Bogdanov, was the receipt of foreign capital and a good harvest coupled with complete denationalization.[14]

THE TREATY OF RAPALLO (APRIL 16, 1922)

After the collapse of the Genoa Conference, the Soviets and the Germans signed the Treaty of Rapallo, under which they reciprocally renounced all war claims and war losses. Germany also agreed to renounce compensation for nationalized property in the U.S.S.R., 'provided that the Soviet Government

[12] This policy is described in the four issues of *Ekonomicheskaya Zhizn*, Nos. 122–5, for June 2, 4, 7, and 8, 1922. Engineer Jacub read the report before a joint meeting of Gosplan and Vesenkha. Judged from the amount of space devoted to it, the report seems to have had top-level backing, but a lowly engineer was selected to present the total admission of failure.

[13] *Ekonomicheskaya Zhizn*, No. 125, June 8, 1922.

[14] IS Report (316–107–727).

does not satisfy similar claims of other States.' Diplomatic and consular relations were resumed, the most favored nation principles applied mutually, and the basis was established for resumption of trade and economic relations.

Rapallo laid the groundwork for economic recovery. American and European relief stemmed the famine. The military agreement of 1922 was the basis for development of the Red Army, Navy and Air Force, and gave the Soviets the benefit of German military technology. The long-denied economic protocols were the basis for German economic and technical assistance and gave the Soviets sufficient breathing space to consolidate the Revolution and turn to other members of the Western world for capital and technical assistance. It was a successful three-pronged policy and brought the U.S.S.R. back from the brink of complete collapse.

The State Department files contain a remarkable summary of the Communist viewpoint of Rapallo from a top-level source:

> . . . we are still the gainers from the Rapallo Treaty. Apart from the fact that our industry will be restored with the aid of German experts, our political activity and importance through the medium of Germany will increase very rapidly. . . . German specialists therefore are being welcomed into all branches of our State life and have already penetrated into the most important branches of industry. General Bauer's Commission now in Moscow is acquainting itself with all sides of our military life and advising the General Staff, although its official mission is merely to improve our aviation.[15]

With Rapallo and its important military and economic protocols came the International Barnsdall agreement which effectively halted the decline of Baku and modernized production techniques to make this area the most important earner of foreign exchange. By late 1922 the Soviets felt sufficiently strong to recommence exports of grain and renationalize privately operated organizations. The turning point of Soviet fortunes was mid-1922 and was dependent on the Rapallo protocols.

RECONSTRUCTION AND THE SECOND BOLSHEVIK REVOLUTION

Reconstruction as used in this era does not mean physical reconstruction but the revival of dormant enterprises. The revival of trade and distribution, together with the limited contribution of NEP, enabled a return to the Bolshevik road. The growth of small retail and manufacturing enterprises

[15] U.S. State Dept. Decimal File, 340-7-10. The document originated with IS and was marked 'CONFIDENTIAL For Secretary and Under Secretary.' See Appendix A for reliability of IS. The above extract comprises about one-third the total report, so that, on the basis of space, the impact of German assistance should be considered as a prime objective of the Soviets.

was choked off in 1924 as reconstruction by German technicians placed the Soviets into a stronger overall economic position. Over 300,000 private enterprises were closed within a few months.[16] An article in *Ekonomicheskaya Zhizn* entitled 'Results of the struggle against private capital' summarizes these major changes. Such a revolution would not have been dared unless Vesenkha felt confident about the possibilities of economic revival. In textiles, 44 percent were produced by private means in the first quarter of 1923–4 and only 14 percent in the last quarter. In flax, the percentage declined from 11 to 6 percent, and in woolens from 7 to 2 percent. The sugar trust had early German help and reported 27 percent in the first quarter and only 5 percent in the last. The salt syndicate, also with German aid, reported a decline from 40 percent to 10 percent. Both the sugar and salt trusts benefited from American machinery, for example, the Fulton Iron Works made extensive shipments of sugar machinery in 1922–3.[17]

The early Soviet economy was full of paradoxes, not the least of which was the source of the strength enabling the Second Bolshevik Revolution. Destitute in 1922, they were back on their feet in 1924. As individual trusts gained strength, private Russian elements were eliminated and replaced once again by the Soviet state. The foreign elements, however, were still needed. Their turn was to come at the end of the decade.

THE PROCESS OF ACQUIRING FOREIGN TECHNOLOGY

The Bolsheviks were revolutionaries *par excellence*. But revolutionary dogma contained no hints on the operation of a socialist economy. On this subject Marx, Engels, and Lenin were silent.

In spite of this silence, there was a clear recognition of the place of technology. The machine was the Marxian engine of progress. Given ignorance of the functions of the entrepreneur, it is not surprising that 'industrialization' and its superficial symbols, the tractor, the automobile, and machines in general, were seen as the high road to plenty. The assessment was superficial. It was assumed that the machine would work as well in a socialist environment as in a capitalist environment. The concepts of scarcity, rationality, and choice in relation to technology and innovation did not penetrate Leninist thinking. The end result was technological naïveté, and this was compounded by an overriding concern with things political.

Exhortations, slogans, shock methods, and ideological purity were seen as the solution to all problems, including machine and production problems. The collapse after the Revolution was a blow to the ideologues and was

[16] Scheffer, *op. cit.*, p. 174.

[17] U.S. State Dept. Decimal File, 661. 1115/484. See *New York Times*, November 16, 1921, p. 13, col. 2, for German assistance to the salt industry.

explained away on the basis of exogenous conditions and enemies of the Revolution rather than a deficiency in the political ideology applied to economic fact. It was not Lenin who saw the solution; it was Krassin, ex-director of Siemens-Schukert A-G in Petrograd—capitalist turned revolutionary. Lenin had the pragmatic wisdom to adopt the Krassinist solution.

Introduction of NEP, concessions, and foreign skills and technology did not completely inhibit experimentation with a 'socialist technology.' Attempts were made to develop an indigenous technology to reduce reliance on the West. No attempt in the 1920s was successful, unless one counts the 2 percent of drilling by the turbine method (an indigenous development). If we place to one side the technical incompetence of the trust personnel, the root cause for failure was the superficial political view of technology and the denial of the necessity for choice among innovations. Choice became a political decision. The attempt to manufacture the GNOM, a small Soviet-developed tractor was a complete failure. Machinery was purchased in Germany and installed in the old Balakov factory. No tractors were ever produced. There were two fully equipped automobile plants (the AMO and the Russo-Baltic); neither produced an indigenously designed automobile. The comic opera production of the Putilovets tractor (a copy of the Fordson) prompted Sorensen to suggest blowing the plant out of its misery. The 700 'tractors' produced held together only a few weeks. The German and American engineers who tried to re-design and re-start the Kertsch steel works complained of political interference in decision-making. And so on. In the face of these failures, complete reliance was placed upon Western help, a solution rationalized as the necessary prelude to 'socialist construction.' The reliance became so great that the Five-Year Plan did not get off the ground until after contracts had been placed with Western companies and stiff penalty clauses inserted for failure to meet construction deadlines.

THE GERMAN 'SECRET' ENGINEERING DEPARTMENTS

The protocols to the 1921 trade agreement and the Rapallo Treaty with Germany were the foundation for the transfer of massive German technical aid. Inconclusive references to this transfer can be found throughout the State Department and German archives; nothing of substance has appeared in Western news media or books on Soviet development. This transfer has been as deeply buried as it was extensive.

It has been extraordinarily difficult to quantify the transfer. The data is exceedingly fragmented—much more so than that for any other aspect of this study.[18] A number of lists of German firms marked 'Streng vertrauchlich,'

[18] Material on German engineers in the U.S.S.R. is scattered throughout Microcopy T-120, Serials L2?3, L308, and L391 to L395.

for the attention of Minister Wallroth, were found in the German archives. Two of the lists were dated the 14th and the 19th of August 1922: a significant fact, as this was exactly the point at which Bogdanov proclaimed 'the end.' Material in the State Department files backs up the belief that when 'the end' was reached, massive German assistance moved in to restart the closed plants. In some cases the lists make reference to specific projects, such as Carbo II and some Agrar projects which have not turned up elsewhere and which cannot be identified.

The 2,000 or so German engineers and technicians who moved into Soviet industry after Rapallo were replaced by a greater number of American engineers after 1927–8. These were employed by almost all trusts, including Giprotsvetmet, Selmashtroi, Steklostroi, Giproneft, Gipromez, Resinotrest, Tsentroboom, RKI, AKO, Zernotrest.[19] The most noticeable feature, apart from their numbers, was the fact that they were spread across the face of the Soviet economy (see table 20–3). They were employed by all design and construction bureaus. The only gap was in the furniture industry. Large numbers of American specialists were concentrated in 'key' activities. For example, in 1929 there were 66 foreign engineers in the three trusts Tokmekh (instruments), Mosstroi (Moscow Building Trust), and Khimtrust (the Chemical Trust).[20] The range of employment went from water irrigation projects to candy manufacture. Nor were the Soviets reticent in admitting their acquisitive dragnet (although in more recent times they appear to have gone to great lengths to reduce dependence on Western skills):

> In matters of technical assistance we follow neither an English, nor a German nor an American orientation. Our orientation is a Soviet orientation. In every country we are ready and willing to learn in those areas in which that country is most advanced. When we had the problem of modernizing the petroleum, automobile and tractor industries we turned to the United States, as America is the leading country in these industries. When it came to the chemical industry we asked for German help and it is no fault of ours if we were forced to go elsewhere for part of our technical assistance. . . .[21]

Planning and administrative posts were handed over to foreigners. H. J. Larsons was Deputy Chief of Currency Administration; Alcan Hirsch was Chief Engineer at different times for Chemstroi, Chemtrust, Giprokhim and Giproazot, as well as Chief Consultant to the heavy chemical industry;

[19] See Bron, *op. cit.*, pp. 145–6, for a more complete listing.

[20] *Torgovo-Promyshlennaya Gazeta*, No. 166, July 23, 1929.

[21] *Ekonomicheskaya Zhizn*, No. 225, September 29, 1929. Compare this Soviet statement, which is clear enough, to the numerous statements in Western literature which argue that the Soviets developed without any foreign assistance. (See Holzman, *op. cit.*, L. Fischer, *op. cit.*, and M. Dobb, *op. cit.*)

Littlepage was chief engineer, later Deputy Director of Soyuszoloto. Downs was Technical Director of the Altai Polymetal Trust and so on. Even the sacred post of planning director at Gosplan was at one time reportedly held by a Swede.[22] That these individuals were needed is reflected in Party speeches and articles. Rykov, speaking before the First Moscow Oblast Soviet Congress in October 1929, related that the U.S.S.R. had had considerable success with foreign technology and the use of foreign techniques and that this had overcome technical backwardness and the shortage of engineering cadres. He indicated the practice was to be extended, and mentioned cases in which Soviet institutions had been working 'a great length of time' on projects when foreign consultants had checked and found the plans and construction deficient, which had necessitated starting again.[23] Ruykeyser's experience at Uralasbest confirms this possibility. One problem was that the proportion of technical personnel to factory workers in the more advanced countries of the West was about 10–15 percent, while in the Soviet Union it was not more than 2 percent. Of this 2 percent, only half had more than an elementary education. Of the plant directors in 770 works, 3.5 percent had no school education whatsoever, 71.6 had an elementary education, and the rest a high school education.[24] Given this shortage, it is not surprising that large numbers of Russians were sent abroad for training. All technical-assistance agreements and most equipment-purchase agreements contained clauses enabling the Soviets to have groups of their personnel trained abroad. This training was normally a few months, and no case has been uncovered where it ran longer than one year. In 1925–6 about 320 Soviet engineers were sent abroad; this rose to more than 400 in 1927–8 and to more than 500 in 1928–9. These were individual training visits in addition to the much greater number of technical delegates who went abroad for exploratory purposes.

Although there were ways of ensuring that these engineers returned to the U.S.S.R., it was more difficult, but not impossible, to retain Western engineers against their will. There are however some cases of the latter.[25]

The concession itself was a method of technological transfer. All such agreements required the transfer of the latest in Western technology, and some of the trading agreements (such as RAITCO) appear to have been much more

[22] U.S. State Dept. Decimal File, 336–129–99.

[23] U.S. Consulate at Riga, Report 6496, October 22, 1929.

[24] U.S. Consulate in Vienna, Report 2158, April 9, 1929 (316–110–1079.)

[25] For example, see Fred E. Beal, *Proletarian Journey* (New York: Hillman Curk, 1937). Beal met H. N. Swayne (an American) in Fergana, Uzbekistan. 'He was supervising the building of a gin mill for the Uzbekistan Soviet. He had two co-workers in this enterprise, an Englishman and a German. All of them were kept in the district against their will. How? The Russians couldn't find their passports. . . .' (P. 254.) Beal was a Communist Party member.

vehicles for the transfer of Western technology than means for the Western partner to 'trade' with the U.S.S.R. When the transfer was completed, the concessionaire was expropriated, as Leninist dogma dictated. There were few cases of compensation and these (Mologa and Harriman) were for tactical reasons involving the possibility of acquiring other fields of Western skills. After 1925, news of concessions was heavily restricted and in 1927 made an act of espionage.

Foreign companies did little to enlighten the Western public, and indeed there are reports that the companies themselves put effective clamps on news concerning concessions.

After 1927 the Type III technical-assistance agreement was widely used. Where assistance had previously been tied to the purchase of equipment on a 'turnkey' basis, it was now the subject of separate agreements. At the same time, the emphasis moved away from Germany and toward the United States, although the Soviets still had great interest in acquiring the fruits of German scientific endeavors. From January 8 to 15, 1929, a German 'Technical Week' was held in Moscow, and a series of lectures was presented by German professors and experts who came (all expenses paid) for the occasion. The lectures included several by technical directors of German firms such as Telefunken Radio, A.E.G., and Frederich Krupp, and directors of technical institutes such as the Mulheim Coal Mining Institute and the Chemical Research Institute. The theme was the transfer of German work to the Soviet Union in the 'search for peace.'[26]

The Smolensk archives contain an example of the efficiency of the internal distribution of Western technology within the U.S.S.R. The State Institute for Foreign Technical-Economic Information published a monthly entitled *Fruitgrowing Economy* (presumably one of a series of such journals). This was a mimeographed circular which detailed in a summary manner the current results of Western research. It abstracted such obscure journals as the *Agricultural Gazette of New South Wales*, which would be difficult to locate in even a well-stocked Western library. Matching dates of the original articles with date of publication shows that the time difference was only a matter of months.[27]

PROBLEMS IN THE ACQUISITION OF FOREIGN TECHNOLOGY

The transfer was by no means smooth and efficient. *Ekonomicheskaya Zhizn* made a survey of the inefficiencies resulting from use of foreign technology.[28]

[26] U.S. Consulate at Riga, Report 5869, February 2, 1929. (340–6–499.)
[27] Smolensk Archives, Microcopy T 87, Roll 31, File WKP 264.
[28] *Ekonomicheskaya Zhizn*, No. 57, March 7, 1928; No. 72, March 25, 1928; and No. 83, April 7, 1928.

Enormous wastage of funds was found. This was partly due to lack of foresight, partly to inexperience and lack of coordination, and also to lack of funds at strategic moments.[29] Many British and German firms may have supplied inferior equipment, although this may be a Soviet rationalization of inability to cope with more advanced technical systems. However, it is difficult to see what protection was available if foreign manufacturers for one reason or another wished to foist second-rate and inferior equipment onto the Soviets. In the absence of an indigenous technology, they could compare performance only to their own antiquated plants or to other foreign purchases. There were no impartial arbiters built into the economic system.[30] It is also difficult to see how they could adapt a technology developed for another and presumably different set of relative factor scarcity patterns.

There were many cases of machinery being bought before the plant had been erected, so that complete factories were left standing, often with inadequate protection, until plants were erected. There were cases of plant and equipment not suiting each other. Given the very precise civil engineering tolerances required in modern construction, this is not too surprising. A paper factory in Leningrad had a building ready but only part of the equipment, 'and even this [could not] be assembled before the arrival of special foreign technical personnel who [were] having difficulties in obtaining visas.' Lack of coordination between foreign suppliers of equipment for the same plant was quoted as a major delay. A textile mill with a capacity for 127,000 spindles had only received 15,360. Equipment for a power station in the Don was lying on the ground, as the project had been abandoned. There were no funds available to install equipment at the Marti plant in Nikolaev; two plants of Ugostal (Petrovsk and Lenin)—the railroad workshops at Dniepropetrovsk and the Ukrainian Silicate Trust—had the same problem. The Komintern locomotive plant at Kharkov changed its plans and would not use equipment imported for its use. Other equipment valued at almost 400,000 rubles at the same plant was idle because there was no electrical power for installation. Transportation, communications, and similar problems were delaying and confusing, and diverted quantities of imported materials.

This problem of unused foreign equipment appears to have been widespread. *Izvestia* (March 31, 1928), in an article entitled 'Problems with imported equipment,' reported that Khimugol had imported 1.3 million rubles worth

[29] Barmine and Kravchenko both made this point.

[30] For example, in 1931 the Soviets bought one-third of the output of Ruston-Bucyrus (U.K.), a manufacturer of mechanical shovels. 'The Soviet purchases . . . not only helped to improve our earnings record, but also enabled Ruston-Bucyrus to clear out most of its stocks of obsolete Ruston and Hornsby models.' *Designed for Digging*, p. 260.

of equipment which could not be used for at least two years. Similar delays were reported for the Kharkov locomotive works, the Krivoi Rog power station, and a bolt-making works. Curiously enough, on the same day *Pravda* ran an article entitled 'Methods of transferring foreign techniques,' which described the channels to be used: first, sending Soviet engineers abroad; second, importing foreign engineers; and third, utilizing technical-assistance contracts. The actual ranking order of use appears to have been the reverse. This article laid the blame for mistakes on the procurement organs of the government and especially their failure to use up-to-date catalogs. There were cases of machinery imports in which the design was of 1890 vintage.

Restoration and modernization of the electrical equipment industry was almost entirely dependent on imported machinery, and in 1930 this represented 90 percent of all boilers, turbines, and generators installed. It was the resultant wide diversity of models which resulted 'in complicating the design, erection and construction of generating installations to a large extent.'[31] The balance of 10 percent was produced within the U.S.S.R. with foreign technical assistance and further compounded the diversity problem. Further problems arose because the Soviets insisted on non-standard features in turbine development; these turbines were produced at the U.K. works of Metropolitan-Vickers, and, if the Soviets are to be believed, some 25 of these turbines were giving trouble by about 1930–1.[32]

The uninhibited copying of Western products may not always have been the outright gift it superficially appears. Sorensen, of the Ford Motor Company, comments on this:

> What the Russians had done was to dismantle one of our tractors . . . and their own people made drawings of all the disassembled parts. I visited a department where the rear axle and the final drive were being assembled . . . a lot of trouble with the worm drive . . . it was apparent that, while the Russians had stolen the Fordson tractor they did not have any of our specifications for the material that entered into the various parts. And you can't find that out merely by pulling the machine apart and studying the pieces.[33]

Sorensen probably understates the problems. Even if a qualitative analysis was made, for example, on the axle steel, and a specification produced, the grade still had to be manufactured. The heat-treatment problems alone would be a major headache. Many Soviet products reported as of poor quality are probably no more than imperfect copies of Western products. Production of quality required concomitance of design, development, and production.

[31] *Electric Power Development in the U.S.S.R.* (Moscow: INRA, 1936), p. 101.

[32] *Correspondence Relating to the Arrest of Employees of the Metropolitan Vickers Company at Moscow*, Command Paper 4286. (London: H.M.S.O., 1933), p. 9.

[33] C. E. Sorensen, *op. cit.*, p. 202.

THE SHAKHTA AFFAIR

In 1928 the Soviets staged the first of their show trials involving foreign engineers. The Shakhta affair concerned five German engineers of A.E.G. working in the Shakhtinsky coal mines in the Don region.[34] The official charge was discovery of 'a counter-revolutionary plot to destroy and disorganize the coal industry.'[35] The engineers were accused of having links with former mine owners and the Polish counter-espionage service. It was said they had started fires, created explosions, wrecked coal-cutting machines, broken-down shafts, and generally created mayhem in the mines. In sum, they were accused of sabotaging 'socialist construction.' The burden of the accusation was placed on the foreign engineers as individuals and not on the foreign companies. Rykov carefully avoided accusing the firms of improper behavior.[36] The timing of the arrests, just as a German-Soviet treaty was to be negotiated and when the Soviets clearly needed German help, mystified most observers. U.S. State Department archives contain a number of foreign government reports, and their concensus is that the real reason for the arrests was the dominant place achieved by the Germans in Russian industry. They had become too powerful and threatened the hold of the Party. The move was against the 'united front' of specialists, old-time Russian engineers, trade unions, many of the workers, and some of the 'red' plant directors.[37]

The specialists controlled operation of many of the most important plants. They had supported and been supported by the old-time Russian engineers, not only because of similarity of political thinking but also by common background training and experience. The trade unions supported the foreign specialists as a means of getting production; many workmen viewed the foreign engineers with respect and the new 'red' engineers with derision. Many 'red' directors were interested primarily in output, recognized that the foreign specialists could get output, and placed day to day operations in their hands.[38]

Remaining Trotskyites used the question of specialists to 'prove' the Stalinist clique bourgeois; the latter then had common cause with the OGPU to attack this threat to Stalinist power. Terrorism via mass arrests was used to

[34] About 35 German engineers were jailed at this time on various charges, but only five as a result of Shakhta; and two of these were immediately released. The number in prison is an interesting indicator of the large number of German engineers in the U.S.S.R.

[35] *Izvestia*, No. 60, March 10, 1928.

[36] *Izvestia*, No. 61, March 11, 1928.

[37] U.S. State Dept. Decimal File, 316.6221/13 (Polish Foreign Ministry, Report); 361.6221/25 (German Foreign Ministry, Report); and 316–6221/28 (Greek Chargé d'Affaires in Moscow, Report).

[38] *Sevodnia* (Riga), March 21, 1928 [article by 'KC' (Moscow)].

frighten the foreign elements and their Russian allies. Choice of Shakhta was not accidental. Here the conflict between the 'red' and the foreign engineers was acute. Lambert, formerly a Belgian consul in Moscow, argued that the choice of the Ukraine was part of a reaction to Ukrainian nationalism which had sent many Muscovites back to Moscow and promoted native Ukrainians.[39] The Polish Foreign Office pointed out that it was noticeable that the many Belgian, Austrian, English, and American engineers were not molested. The Ministry argued this was one major aspect of an attack on *German* engineers. Further they were to be seized as scapegoats for the general inefficiency.[40]

[39] U.S. State Dept. Decimal File, 316.6221/32.

[40] U.S. State Dept. Decimal File, 361.6221/13, Report 1671, April 10, 1928. In view of the advice given to American firms in 1928 that it was 'safe' to enter the U.S.S.R., the following facts should be noted: (1) There was no shred of evidence of sabotage against the Germans. None was produced at the trials and none has ever been produced since 1928. They were 'acquitted' by the 'court.' (2) They were imprisoned in conditions described by the German Embassy representative Legationssekretaet, Dr. Schliep, as 'incredibly horrible,' while one of the unfortunate Germans was suffering from pneumonia (U.S. State Dept. Decimal File, 361.6621/13, Report 3403, April 13, 1928).

This once again raises the question whether the U.S. State Dept is justified in giving advice to United States firms and individuals which is contrary to the interests of these parties in the light of evidence with Departmental files. One presumes the function of the State Dept. is to protect American citizens, and yet today (1966), after the Baaghorn and Mott cases (among others), the State Dept. is still encouraging travel by tourists in the U.S.S.R.

CHAPTER TWENTY

The Western Contribution to Soviet Production and Productivity, 1917-30

THE CONTRIBUTION OF THE EARLY CONCESSIONS

THE original intent of the concession was to acquire both foreign finance and technology; both were deemed equally necessary. As it turned out, only technology was acquired, but this was facilitated by sufficient private credits to enable the transfer to take place in a reasonably satisfactory manner. It is misleading to argue that economic development depends only on finance capital; the latter is only a vehicle for the transfer of technology. It is also misleading to argue that, because there were no government-to-government financial transfers, the Soviet Union developed without Western assistance. The major factor in development is technical progress. The key question to be asked in the case of Soviet development is, from what did its technology derive? From internal resources, or from external transfers?

Examination of the role of the early concessions suggests that they played an important part in reversing the industrial decline and establishing the base for development. International Barnsdall introduced modern American methods of rotary drilling and deep-well pumping with results described in chapter 2. The lumber industry was wholly dependent on the transfusion introduced by the operating sections of the mixed companies Russangloles, Hollandoles, and Norvegloles. All transportation was dependent on early German concessions (Russtransit, Derutra, etc.). The locomotive repair program was undertaken abroad. Most modernization work in textiles and clothing originated with the Sidney Hillman concession. Foreign markets were developed by Type II mixed company concessions. These early concessionary arrangements (not numerous, but located in strategic sectors of the economy), when coupled with the post-Rapallo assistance from Germany, helped the Soviets to turn the corner.

There was an interval in 1921–2 when contemporary sources were reporting industrial revivals in some sectors and shutdowns in others. These parallel but opposite movements are related precisely to foreign assistance and the concessions. McKeevsky was reporting its mines were closing down while the Kuzbas coal mines were responding favorably to the work of the American Industrial Corporation. In 1923 shafts in the Don were reduced from 202 to 176, while AIK doubled Kuzbas output. While Embaneft and Grozneft were declining, Azneft was picking up new life with International Barnsdall.

In sum, the upswing may be linked precisely to the introduction of the first concessions and German technical assistance. No case of an upswing was uncovered which was not so linked.

SECTORAL IMPACT OF CONCESSIONS ON THE EARLY SOVIET ECONOMY

The proposition that every industrial sector of the early economy had foreign technical assistance, specifically in the form of pure Type I, mixed Type II, or technical-assistance Type III contracts, has been examined in detail. The proposition is much too important to be dismissed with the verbal generalizations typical of much discussion of Soviet development. The next pages contain an empirical demonstration of the validity of the argument that every corner of the economy was penetrated by Western technology between 1917 and 1930.

The structure of the inherited tsarist economy was sufficiently broad that it can be spanned with the Standard Industrial Classification.[1] This economy contained in embryonic form representatives of most modern industries. The SIC is an identification code for the modern American structure, but the components of today's structure can be traced clearly to the first two decades of this century. All sections of the modern SIC were represented by at least one plant in tsarist Russia, and this was the structure inherited by the Soviets. The structure included aircraft and automobile manufacturing. The advantages of using the SIC code are that we may be sure that every sector in the economy presents itself for examination, that we are sure of discussing the whole economy, and that we do not dismiss some sectors because they happen to be inconvenient for the hypothesis. It has been, for example, inconvenient for the Soviets to admit there were aircraft and automobile technologies (of an indigenous nature) in tsarist Russia.

[1] *The Standard Industrial Classification (SIC)* (Washington, D.C.: Bureau of the Budget, 1957). Manufacturing is divided into 43 sectors, numbered 0 to 49. (Numbers 03 to 06, 18, and 43 are not used by the Bureau.) Sector 50 has been added by the writer to include trading.

Tables 20–1 and 20–2 classify concessions by country of origin and relate these to major groups in the SIC. Table 20–1 covers Type I (pure) and Type II (mixed) concessions while table 20–2 covers Type III or technical-assistance agreements. Where a concession has been identified and described in the text for a specific sector, its name has been inserted into the relevant portion of the matrix. In some sectors more than one concession existed but the extent of duplication is not indicated and can be determined from the text. A later set of tables examines the depth of technological impact within each sector. It should be added that the identification of concessions is still incomplete; it is estimated that less than 70 percent have been described and listed in this study. The remaining 30 percent will not come to light until the Soviets decide to release their archival data.

After compilation, the tables were scanned to determine the concession type and country making the greatest contribution to the Soviet industrial

Table 20-1 SECTORAL IMPACT OF FOREIGN CONCESSIONS (TYPES I AND II)

Standard Industrial Classification (Major Group)	*Industry*	*Source of Concessions Skill and Capital*		
		United States	*Germany*	*Others*
01*	Commercial farms	Ware	Druag	Cannon (U.K.)
02	Noncommercial farms	Communes	Communes	Communes
07	Agricultural services	Hudson's Bay (Canada)	Druag	Vinge (Norway)
08	Forestry	—	Mologa	Russangloles (U.K.)
09	Fisheries	—	Hochseefischerein	Romanoff Caviar
10	Metal mining	Harriman	Rawack & Grunfeld	Tetiukhe (U.K.)
11	Anthracite	RAITCO	—	Lena Goldfields (U.K.)
12	Bituminous coal	AIK	—	Grumant (U.K.)
13	Crude oil	Int'l Barnsdall	—	Gouria (U.K.)
14	Quarries	Int'l Mica	Krupp	Lena Goldfields (U.K.)
15	Building, general	ARK	Kossel A-G	Geoffrey & Curting (U.K.)
16	Building (not housing)	Ragaz	Krupp	—
17	Special trades	ARK	Russgertorg	Kablitz (Latvia)
19	Ordnance	—	GEFU	—
20	Food	Morris	Seyfurt	Union Cold Storage (U.K.)
21	Tobacco mfr	—	—	Lopato (China)
22	Textile mills	RAIC	—	Altman (Austria)
23	Apparel	RAIC	Stock	Trilling (Poland)
24	Wood products	—	Mologa	Dava-Britopol (U.K.)

Table 20-1 Continued

Standard Industrial Classification (Major Group)	*Industry*	*Source of Concessions Skill and Capital* United States	Germany	Others
25	Furniture	—	—	—
26	Paper products	—	—	Raby Khiki (Japan)
27	Printing	—	Berger & Wirth	—
28	Chemicals	—	Bersol	—
29	Petroleum refining	Standard of New York	—**	—
30	Plastics	Kahn	—	S.I.M.P. (France)
31	Leather products	Eitingon-Schild	Wostwag	—
32	Stone, glass	AIK	Krupp	AGA (Sweden)
33	Primary metals	Russian-American Steel	Bergman	Lena Goldfields (U.K.)
34	Fabricated metal	—	Derumetall	Raabe (Finland)
35	Machinery (not electrical)	Westinghouse Brake Works	Leitz	SKF (Sweden)
36	Electrical equipment	International General Elect.	—	Swedish General Electric (Sweden)
37	Transportation equipment	International Harvester Co.	Junkers	Fiat (Italy)
38	Scientific instruments	Russian-American Instrument	—	Sovmetr (France)
39	Misc. mfg.	Alamerico	Block & Ginsberg	Schulmann (Latvia)
40	Railroads	—	Mologa	Lena Goldfields (U.K.)
41	Local transit	—	—	Cunard Line (U.K.)
42	Motor freight	—	—	—
44	Water transport.	—	Hamburg-Amerika Line	Norway-Russian Navigation (U.K.)
45	Air transport.	—	Deruluft	—
46	Pipelines	—	—	—
47	Transportation services	Russcapa	Derutra	Irtrans (Italy)
48	Communications	RCA	—	Great Northern Telegraph(Denmark)
49	Utility services	—	Hecker A-G	—
50	Trading	Alamerico	Russgertorg	Rusavstorg (Austria)

* All sectors in the SIC have been listed. Some numbers were not used in the original classification. This accounts for number gaps above.

** File 312 of the Bureau of Foreign and Domestic Commerce indicates the Germans obtained 'operating privileges' in the Maikop oil fields under the Rapallo Treaty protocols. No other data is known nor have other German Type I or II concessions been unearthed for this activity.

structure (i.e., which type is represented in most sectors). The type with the largest number of representations was United States Type III technical-assistance agreements, of which there were 36. This is consistent with our argument that United States technology was the preferred technology. Out of a total 43 sectors[2] that could have received concessions and the transfer of Western skills and technology we identified 36, or 84 percent. As the early economy consisted of only a few plants of prerevolutionary origin in each sector, the transfer could be rapidly spread within the sector. The agreements were made with either the trust overseeing the plants or with the best equipped and largest member of the trust group. Consequently, identification of even one technical-assistance agreement with a member of a narrowly defined industry with only a few plants implied that the transfer could be rapidly spread. Bogdanov indicated that the trusts were created with the prime purpose of transferring foreign technology; in practice they were well suited for this purpose.

It is interesting to note the contiguity of trusts and the SIC classification groupings; it is almost as if Lenin had the SIC Manual in front of him when he drew up the contours of the trusts. Crude oil (SIC 13) plus petroleum

Table 20–2 SECTORAL IMPACT OF FOREIGN TECHNICAL ASSISTANCE AGREEMENTS (TYPE III)

Standard Industrial Classification (Major Group)	*Industry Name*	*Source of Technical Assistance*		
		United States	*Germany*	*Others*
01	Commercial farms	None outside Type I and II concessions		
02	Noncommercial farms	Campbell	Druzag	Truss (U.K.)
07	Agricultural services	Sullivan Machinery	Wostwag	Langmann (U.K.)
08	Forestry	—	—	Harry Ferguson, Ltd.
09	Fisheries	—	—	—
10	Metal mines	Oglebay, Norton	Rawack & Grunfeld	—
11	Anthracite	Stuart, James and Cooke	Steinback & Taube	—
12	Bituminous coal	Allen & Garcia	Knapp A-G	—
13	Crude oil	Int'l Barnsdall	Machinenbrau	Mitsubishi (Japan)
14	Quarries	General Engin. Co.	Deilmann Bergbau	—
15	Building-general	Longacre	Humboldt	—

[2] Table 20–2 consists of 43 sectors, as commercial farms were not relevant for the U.S.S.R., but table 20–1 includes 44 sectors, as there were concessions operating commercial farms. In any event, it makes little difference to the basic argument.

Table 20–2 Continued

Standard Industrial Classification (Major Group)	*Industry Name*	*Source of Technical Assistance*		
		United States	*Germany*	*Others*
16	Building (not housing)	Koppers	Koppers	Karlsrads Mechaniska
17	Special trades	Austin	Gefrierscha chbau	—
19	Ordnance	—	Krupp	Fokker (Holland)
20	Food	McCormick	Harberger	Maatschappij (Holland)
21	Tobacco mfr	—	—	—
22	Textile mills	Lockwood, Green	Kohorn	Soieries de Strasbourg (France)
23	Apparel	RAIC	—	—
24	Wood products	—	—	—
25	Furniture	—	—	—
26	Paper products	Hardy, Ferguson	—	—
27	Printing	Fulton Iron	—	—
28	Chemicals	Dupont	I. G. Farben	Casale (Italy)
29	Refining	Graver	Wilke & Pinsche	Vickers (U.K.)
30	Plastics	Seiberling	—	—
31	Leather products	—	Steinert	—
32	Stone, glass	Thomas Co.	—	Vakander (Sweden)
33	Primary metals	Freyn	Demag	SKF (Sweden)
34	Fabricated metal	McDonald	Faudewag	RIV (Italy)
35	Machinery (not electrical)	Mechanical Mfg.	Deutz	Separator (Sweden)
36	Electrical equip.	GE	A.E.G.	Metropolitan-Vickers (U.K.)
37	Transportation equipment	Koehring	Hohern zollern	Armstrong-Whitworth (U.K.)
38	Scientific instruments	Sperry Gyroscope	A.E.G.	Compagnie Générale de TSF (France)
39	Misc. mfg.	Underwood	Messer	—
40	Railroads	Baltimore & Ohio	Siemens Bau	Brown-Boveri (Switzerland)
41	Local transit	Seabrook	Siemens Bau	—
42	Motor freight	Ford Motor	—	—
44	Water Transport	Moissieff	Friedlam	—
45	Air Transport	Irving Chute	Junkers	—
46	Pipelines	J. I. Allen Co.	Mann	Crossley (U.K.)
47	Transportation services	Davis, Bishop	Derutra	—
48	Communications	RCA	Telefunken	Ericsson (Sweden)
49	Utility services	J. G. White	Siemens Schukert	Werksaden Kristine-gamm (Sweden)
50	Trading	Heller	Derumetall	Johnson, Mathey (U.K.)

refining (SIC 29) equals the Neftsyndikat, comprising Azneft, Grozneft and Embaneft. Anthracite mining (SIC 11) plus bituminous coal mining (SIC 12) equal the coal trusts (Donugol, etc.). Ordnance (SIC 19) equals the military trust. Scientific Instruments (SIC 38) equals Tokmekh; SIC 30 equals Resinotrest; SIC 33 equals Ugostal; and so on. There are two possible explanations. First, when the trusts were being designed with the objective of technological acquisition as their prime purpose, they may have been grouped in order to facilitate the transfer. Second, there is an internal logic to the structure of modern industrialization, and the early Soviet economy had the same structure as the early American economy, although the similarity has not persisted. In other words the grouping may have been obvious on grounds of logic.

Examination of the 36 (out of a possible 43) sectors covered by United States technical agreements and the 7 sectors not covered by such agreements suggests that, in fact, coverage was greater than 84 percent and was virtually complete. In other words the Soviets transferred United States technology to every sector.

Of the seven listed as not receiving technical assistance, several received *informal* aid as a by-product of purchases of large installations. Purchases of sawmill equipment included equipment installation. Fisheries received indirect aid from Pacific Coast manufacturers in the construction of large crab and salmon canneries. Even SIC 19 (ordnance) received indirect aid through the purchase of Curtiss engines. This problem is overcome in table 20–7, which examines the degree of impact and includes two types: direct and indirect technical impact.

The second largest group of concessions is the 'other country' Types I and II category (table 20–1). These comprise pure and mixed concessions with countries other than the U.S. and Germany. Out of 44 possible 'other country' sectors, these concessions were identified in 33 sectors, or 75 percent. They were concentrated in raw materials development. The category contains Lena Goldfields, Ltd., Tetyukhe, Kablitz, Trilling, the Japanese Sakhalin concessions, SIMP, ASEA, SKF, Union Cold Storage, Altman, Raabe, and so on. Pure 'other country' concessions were comparatively rare in the industrial and transportation fields. When they were granted, they were limited in scope, occupied prerevolutionary plants in decrepit condition, and were granted a technological area in which the limited company was an acknowledged world leader such as AGA, SKF, and the Cunard Line.

There were no 'other country' pure concessions in the fields of ordnance, chemicals, petroleum refineries, and, generally, transportation. These were strategic sectors requiring the transfer of German or United States technology.

The third largest group is German technical-assistance contracts. There were 32 sectors with identifiable agreements of this type, or 74 percent. This group contains many of the largest and best-known German companies: Demag, Koppers, Humboldt, Krupp, A.E.G., Siemens, Junkers, and so on.

The fourth largest group comprised German pure and mixed concessions representing work in 29 sectors, or 66 percent. This group also contained well-known German firms; Leitz, Krupp, Hamburg-Amerika Line, etc.

The fifth group comprised United States pure and mixed concessions and is represented in 27 sectors, or 61 percent. This included also some well-known names: Harriman, International Oxygen, International Harvester, and Standard Oil of New York.

The last and smallest group comprised the 22 'other country' technical-assistance agreements, represented in 51 percent of the economy. This small group confirms the argument that the desirable technology was from Germany and the United States. When it was transferred from one of the 'other countries' it was always in a highly specialized and narrowly defined area, such as ball bearings, synthetic nitrogen, radio apparatus, telephone equipment, dairy apparatus, and artificial silk technology. In sum, the Soviets went to countries other than the United States and Germany when there was a decided superiority in the technology in question.

Table 20–3 SUMMARY STATEMENT OF SECTORAL IMPACT OF TYPES I AND II CONCESSIONS

	Types I and II Concessions Associated With:		
	United States	*Germany*	*Other countries*
Sectors with Type I & II concessions	27 (61 percent)	29 (66 percent)	33 (75 percent)
Sectors without Type I & II concessions*	17 (39 percent)	15 (34 percent)	11 (25 percent)
Total sectors**	44 (100 percent)	44 (100 percent)	44 (100 percent)

* This is a conservative statement, as less than 70 percent of operating concessions have been unearthed.

** Summary regardless of geographic association:
95.0 percent of all sectors had concessions (42 sectors)
5.0 percent of all sectors did not have concessions (2 sectors)

There is another way of looking at tables 20–1 and 20–2 and the summaries contained in tables 20–3 and 20–4. How many sectors of the early Soviet economy received concession agreements? Of the 44 sectors of the economy open for Types I and II concessions, 42 sectors, or 95 percent, actually received them. Of the 43 sectors open for Type III technical-assistance agreements, some 40 sectors or 93 percent received them.

Table 20–4 SUMMARY STATEMENT OF SECTORAL IMPACT OF TYPE III TECHNICAL ASSISTANCE AGREEMENTS

	Technical Assistance Agreements Associated with:		
	United States	*Germany*	*Other countries*
Sectors with t/a agreements	36 (84 percent)	32 (74 percent)	22 (51 percent)
Sectors without t/a agreements	7 (16 percent)	11 (26 percent)	21 (49 percent)
Total sectors	43 (100 percent)	43 (100 percent)	43 (100 percent)

Note: Summary regardless of geographic association:
93 percent of all sectors had technical assistance agreements (40 sectors).
7 percent of all sectors did not have technical assistance agreements (3 sectors).

Source: Table 20–2.

Finally, if we assume that the technical transfers take place irrespective of legal ownership or operational status (i.e., that we do not distinguish between concession types), *then only one sector out of the 44* (furniture and fixtures) did not receive a concession and thus had no opportunities for technological transfer. Of the total sectors 98 percent took advantage of foreign technology, and this was supplemented by indirect transfers.

Table 20–5 SUMMARY STATEMENT OF THE SECTORAL IMPACT OF ALL CONCESSIONS, IRRESPECTIVE OF TYPE

	Concessions Associated with:		
	United States	*Germany*	*Other countries*
Sectors with concessions	38 (86 percent)	38 (86 percent)	39 (89 percent)
Sectors without concessions	6 (14 percent)	6 (14 percent)	5 (11 percent)
Total sectors	44 (100 percent)	44 (100 percent)	44 (100 percent)

Note: Summary regardless of geographic association:
98 percent of all sectors had some form of concession (43 sectors).
2 percent of all sectors had no form of concession (1 sector).

Source: Tables 20–1 and 20–2.

SECTORS WITHOUT IDENTIFIABLE CONCESSIONS

To this point discussion has been concerned with sectors possessing identifiable concessions. The results imply an infusion of Western skills and technology. As Krassin foresaw, 'Each concession (would) . . . infuse a spark of vitality into the country's industrial life and would be in itself a training ground for Russian technical specialists and workmen.'[3] Use of the SIC code ensured that all sectors came up for consideration in an impartial

[3] Krassin, *op. cit.*, p. 184.

manner and that any possible biases on the part of the researcher would be eliminated. Possible criticism of the use of the SIC is far outweighed by the impartiality obtained.

Examination of sectors without concessions indicates the thoroughness with which the Soviets undertook this program. It is difficult to see how the canard of 'no large number of concessions' arose and spread to the point of becoming part of State Department advice to a well known scholar.[4] It is interesting to note that the handful of books written in 1928–9 on the impact of concessions universally reduced its importance, and nothing has been written since that time.

Of 44 sectors, only one had no identifiable concession. This is SIC 25 (furniture and fixtures): hardly surprising, as furniture making is a small scale industry with a static technology. Further only two sectors (apart from furniture) had fewer than two concessions: tobacco manufacturing and motor freight transportation, each of which had one concession. Given the extensive makhorka industry, the former exception is not surprising. The lack of motor buses until 1924 and absence of roads makes the latter exception understandable. There was no Soviet automobile industry until the Ford-Fiat agreements of 1928–9. All other sectors had concession agreements with two or more countries. Reliance was not placed on one source of technology. The net was spread wide enough to capture all the benefits of Western technology wherever they originated.

THE DEGREE OF TECHNOLOGICAL IMPACT WITHIN SPECIFIC SECTORS

It now remains to estimate the degree of impact within each sector. Table 20–6 estimates the direct and the indirect impact of Western technology upon each of the sectors discussed in Part I.

Table 20–6 DIRECT AND INDIRECT IMPACT OF WESTERN TECHNOLOGY BY SECTOR AND SUBSECTOR

Industry	*Estimated Direct Impact*	*Estimated Indirect Impact*
Oil industry (chap. 2)		
Exploration technology	Complete	Not applicable
Drilling technology	Complete	Not applicable
Pumping technology	Complete	Not applicable
Oil-field electrification	Complete	Not applicable
Pipeline construction	Complete	Not applicable
Refinery construction	Complete	Not applicable
Market acquisition	Complete	Not applicable

[4] See page 10.

Table 20–6 Continued

Industry	*Estimated Direct Impact*	*Estimated Indirect Impact*
Coal and anthracite mining (chap. 3)		
Coal fields: Donetz	Heavy	Significant
Kuzbas	Complete	Not applicable
Moscow	Heavy to complete	Not applicable
Far East	Complete	Not applicable
Sakhalin	Complete	Not applicable
Shaft development	Complete	Not applicable
Mine mechanization	Complete	Not applicable
Ferrous metallurgy (chap. 4)		
Iron-ore mining	Heavy	Limited
Blast-furnace repairs	Limited to significant	None
Blast-furnace new design	Complete	Not applicable
Steel-plant construction	Complete	Not applicable
Rolling-mill construction	Complete	Not applicable
Nonferrous Metallurgy (chap. 5)		
Zinc mining	Significant	Limited
Zinc smelting	Complete	Not applicable
Lead mining	Significant	Limited
Lead smelting	Complete	Not applicable
Copper mining	Significant	Limited
Copper smelting	Complete	Not applicable
Silver mining	Complete	Not applicable
Silver smelting	Complete	Not applicable
Manganese production	Complete	Not applicable
Manganese markets	Complete	Not applicable
Miscellaneous mining and smelting (chap. 6)		
Gold mining	Complete	Not applicable
Platinum mining	None	Heavy
Platinum markets	Heavy to complete	None
Bauxite exploration	Heavy	None
Pilot aluminum smelting	Complete	Not applicable
Mica mining	Complete	Not applicable
Asbestos mining	Heavy to complete	Not applicable
Asbestos mill technology	Complete	Not applicable
Asbestos shingles manufacture	Complete	Not applicable
Agricultural technology (chap. 7)		
Wheat farming	None	Significant
Seed growing	Limited	Limited
Cotton growing	Limited	Limited
Merino flocks	Complete	Not applicable
Dairy industry	Significant	Limited
Egg and butter markets	Complete	Not applicable
Tractors	Complete	Not applicable
Other agricultural equipment	Limited	Limited

Table 20–6 Continued

Industry	*Estimated Direct Impact*	*Estimated Indirect Impact*
Other food industries (chap. 8)		
Fishing	Limited	None
Fur collection	Limited	None
Fur sales	Heavy	None
Fish canneries	Heavy	Limited
Lumber industry (chap. 9)		
Forestry production	Heavy	None to limited
Lumber markets	Complete	Not applicable
Pulp and paper mills	Not applicable	Complete
Machine construction (chap. 10)		
Locomotive construction	Heavy	Not applicable
Machine building	Heavy to complete	Not applicable
Ball bearings	Complete	Not applicable
Steam boilers	Heavy	Not applicable
Precision engineering	Complete	Not applicable
Electrical equipment industry (chap. 11)		
High-tension equipment	Complete	Not applicable
Electrical motive equipment	Complete	Not applicable
Low-tension equipment	Complete	Not applicable
Accumulators	Complete	Not applicable
Turbines and generators	Complete	Not applicable
Hydroelectric technology	Heavy	Limited
Chemicals, compressed gases and dyes (chap. 12)		
Synthetic ammonia	Complete	Not applicable
Nitric acid	Complete	Not applicable
Superphosphates	Complete	Not applicable
Sulphuric acid	Complete	Not applicable
Coke oven by-products	Complete	Not applicable
Oxygen and hydrogen	Complete	Not applicable
Basic and intermediate dyes	Complete	Not applicable
Glass technology	Complete	Not applicable
Rubber technology	Heavy	Limited
Clothing, housing, and food (chap. 13)		
Textiles	Heavy	Limited
Clothing manufacture	Limited	Limited
Artificial silk	Complete	Not applicable
Buttons	Limited	None
Food processing	Significant	Limited
Construction industry	None to limited	Limited
Misc. small items	None to limited	Limited

Table 20-6 Continued

Industry	*Estimated Direct Impact*	*Estimated Indirect Impact*
Transportation and transportation equipment industries (chap. 14)		
Railroad operations	None to limited	Heavy
Railroad electrification	Complete	Not applicable
Telegraphic communications	Heavy	None
Radio communications	Complete	Not applicable
Automobile construction	Complete	Not applicable
Truck construction	Complete	Not applicable
Shipping	Heavy	Limited
Shipbuilding	Heavy	None
Port construction	Significant	None
Freight transportation	Limited	None
Military technology (chap. 15)		
Airplane construction	Complete	Not applicable
Pilot training	Complete	Not applicable
Poison gas production	Heavy	None
Artillery and shells	Complete	Not applicable
Armored cars and tanks	Complete	Not applicable
Trading companies (chap. 16)		
United States markets		
United Kingdom markets	All trading companies had heavy assistance in the early years of the decade.	
German markets		
Austrian markets		
Italian markets		

Note: This table summarizes the evidence presented in Part I concerning the degree of impact of Western technology on the Soviet economy. The 'direct impact' treated in column 2 refers to identifiable technical associations between Western firms and Soviet institutions. This involves not only Soviet adoption of Western processes *in toto* but also the employment of foreign engineers in the U.S.S.R. for production or training of Soviet engineers.

The 'indirect impact' treated in the last column refers to the acquisition of Western equipment not, however, operated by a foreign company. Such instances are comparatively rare in this period, but they become more common in the periods to be covered by later volumes. The characteristic distinguishing the two types of influence is the supply of supplementary services; training, installation, break-in operations and servicing. The degrees of impact are defined as follows:

Complete	80 percent of all new capacity
Heavy	60 to 80 percent of all new capacity
Significant	40 to 60 percent of all new capacity
Limited	20 to 40 percent of all new capacity
None	0 to 20 percent of all new capacity

Thus, in a sector such as oil-field rotary drilling, there was a complete and direct impact. The adopted technology was almost completely Western, and the equipment was installed and initially operated by a Western company.

THE CONTRIBUTION OF IMPORTED TECHNOLOGY TO SOVIET PRODUCTION

In 1921 production was zero or rapidly approaching zero. Large segments of the industrial structure were in a state of 'technical preservation.' The first

task was to get these plants started; the second was to repair plants damaged or in disrepair; and the third was to modernize. Although each industry solved its problems in a slightly different manner, the importation of foreign skills was common to all of them.

The description in the preceding pages indicates that foreign technology had both an extensive coverage within the economy and a significant impact within each sector. No other factors were capable of bringing about the same end result. If internal skills or internal capital accumulation had existed then perhaps the answer would not be as obvious. As the facts stand, the conclusion is quite clear. The rapid growth of the 1920s was dependent on foreign operative and technical skills. Electrical energy grew more rapidly than any other sector; from a base of 100 in 1913 the index grew to 412 in 1929. There is no reason to doubt the basic accuracy of these figures. The assistance given Soviet trusts, together with the equipment known to have been imported, could have accomplished this increase, even allowing for the previously mentioned problems and inefficiencies in the transfer. By the end of the decade, Lenin's dictum that socialism equals electrification was well on the way to implementation. This was heralded as a triumph of socialist construction, but unless one defines the latter as Western enterprise operating in a socialist economy, it should be hailed as a triumph of Western private enterprise working under enormously difficult technical and political conditions. Western engineers were aghast, as their writings show, at the interference from political 'straw bosses' whose contribution to construction was purely verbal, generating great heat in a show of ideological fervor. The remarkable growth of production in the 1920s is in those sectors which received the greatest Western aid; coal, oil, pig iron, and rolled steel. Those sectors without a great deal of aid barely improved their position during the course of the decade.

The Western contribution to Soviet production between 1917 and 1930 was total. *No important process has been isolated which was not a West-to-East transfer*. The Soviets quite rationally made no attempt whatsoever to develop completely new processes; even experimentation was limited and soon abandoned. They concentrated on acquiring new Western processes, training cadres of politically reliable engineers and establishing numerous basic and applied research institutes. The question was not *whether* to transfer Western technology but *which* process to transfer. Decisions were made on the basis of Western factor resource patterns and these may, or may not, have been applicable to the U.S.S.R. There are a few signs that the Soviets were aware of this problem and induced Western companies to undertake the necessary research and development work.

CHAPTER TWENTY-ONE

The Significance of Foreign Technology and Concessions for Soviet Exports

THE COMPOSITION OF SOVIET EXPORTS

THE Bolsheviks were realists. There was little hope that largescale Western government credits would be forthcoming. World revolution was being actively promoted, and great things were expected daily from the German proletariat, for instance. It could not be assumed that even the most naïve of Western Governments or the most grasping of capitalists was going to subsidize its own downfall on credit terms. The alternatives were concessions, gold, or exports.

The concessions policy was closely related to the drive for exports. A decree signed by Lenin in August 1921 established an Extraordinary Export Commission to assemble, process, and store raw materials for export. The Commission had the right 'to impose fines and inflict punishment on persons guilty of delays.'[1]

Table 21-1 CAPITAL GOODS AS PERCENTAGE OF U.S.S.R. TRADE, 1920 TO 1930

	Capital Goods		*Raw Materials, Foodstuffs*	
	% *Imports*	% *Exports*	% *Imports*	% *Exports*
1920	39.7	—	60.3	100.0
1921–2	45.6	—	54.4	100.0
1922–3	76.2	—	23.8	100.0
1923–4	82.7	0.1	16.3	99.9
1924–5	68.5	0.3	30.8	99.7
1925–6	82.6	0.1	16.2	99.9
1926–7	89.5	0.1	9.3	99.9
1927–8	86.4	0.1	12.5	99.9
1928–9	88.4	0.3	10.2	99.8
1929–30	88.1	0.2	9.8	99.8

Source: Alexander Baykov, *Soviet Foreign Trade* (New Jersey: Princeton, 1946).

[1] *Ekonomicheskaya Zhizn*, August 26, 1921.

After this decree, a number of concessions were concluded under which foreign companies entered the Soviet Union to handle the assembly and export of animal products (eggs, butter, casings, fish and similar products). In 1920, imports were primarily food and raw materials; by 1923 imports were primarily capital goods. The first function of the concession was to help solve the supply crisis and then develop materials for export. After 1923, exports were between 99.7 and 100 percent raw materials and foodstuffs.

Table 21–1 suggests the significantly high proportion of Soviet imports which consisted of capital goods. This is consistent with our hypothesis of complete technological dependence on the West. The counterpart was a very high proportion of raw material and foodstuffs exports. The U.S.S.R. was exchanging consumer goods and raw materials for capital goods. This is not just the mere exchange of resources; the gains from trade were far more effectively captured by the Soviets as a result of their monopsonistic trading organizations facing atomistic Western sellers. Further, even with equality of bilateral bargaining, the Western investment in research and development could not be recouped in sales to the U.S.S.R. Only if the Soviet Union were to export freely its own technological advances would the balance be approximately even.

Very early trading efforts by the Soviets suggests that they did not then appreciate the advantages of a monopoly trading organization, but after about 1923, any attempt by Western sellers to form a buying group was met by vehement opposition and any concession (such as Russgertorg) which appeared to be gaining bilateral bargaining strength was quickly disbanded or had its wing clipped. Certainly the monopoly profits earned by the U.S.S.R. in the fifty years following the Bolshevik revolution far exceed that of the 19th century American trusts and 'robber barons' dealt with by the Sherman Act of 1890.

In sum, trade was used as a development mechanism. Manganese, oil, lumber, gold and butter developed by concessions operating inside the Soviet Union were sold on the Western markets by other concessions in which the Soviets held a controlling interest. The foreign exchange generated was used for purchase of capital equipment for the expansion and modernization of the industrial structure.

THE SIGNIFICANCE OF PURE AND MIXED CONCESSIONS IN RAW MATERIAL DEVELOPMENT

The concession may be related directly to the development of exports. Table 21–2 takes the twelve leading exports and lists the related importance of the concession as it has been detailed in Part I of this study.

Table 21–2 LEADING SOVIET EXPORTS AND SIGNIFICANCE OF CONCESSIONS

Rank Order	*Exports (1927–8)*	*Value of Exports thousand rubles*	*Percent of Total Exports*	*Significance of Concessions*[1] *Type I*	*Type II*	*Type III*
1.	Oil	124,090	19.1	X	X	X
2.	Furs	119,207	18.3	X	X	—
3.	Lumber	118,540	18.2	X	X	X
4.	Clothing	103,163	15.9	x	x	x
5.	Eggs	40,462	6.2	—	X	X
6.	Butter	39,120	6.0	x	X	x
7.	Sugar	33,803	5.2	X	X	X
8.	Flax	25,893	4.0	x	—	—
9.	Manganese	13,781	2.1	X	X	X
10.	Wheat	11,210	1.7	x	—	x
11.	Casings	10,659	1.6	—	X	—
12.	Fish	10,367	1.6	x	X	x
		650,295[2]	99.9 percent			

Notes: [1] X = major significance
x = minor significance
[2] Percent of all exports: 80.9 percent

These items include just under 81 percent of all Soviet exports. Oil, furs, and lumber contributed just less than 20 percent each (together 55.6 percent) of this total; each activity was completely dominated by foreign assistance supplied through concessionary arrangements.

CHAPTER TWENTY-TWO

Conclusions

THE industrial structure of the Soviet Union between 1917 and 1930 was the reorganized tsarist structure. This consisted of several hundred medium-to-large manufacturing enterprises located in urban centers, notably Petrograd and Moscow. This manufacturing complex was supplemented by numerous self-contained mining enterprises in the Donbas and the Urals which were centers of incipient industrialization. Some of these plants were large by any standards. The International Harvester plant at Omsk for example was the largest in the company's world-wide network. The first major conclusion is that the tsarist industrial structure was not at all negligible. To say that 'Russia prior to 1917 was not unlike a country such as India on the one hand or large areas of southeastern Europe on the other,'[1] is rank absurdity. Airplanes and automobiles *of indigenous Russian design* were produced in quantity before the Bolshevik revolution. Although industrialization was restricted to a few population centers, it utilized modern, efficient plants operating on scales comparable to those elsewhere in the world. Further, there were obvious signs of indigenous Russian technology in chemicals, aircraft, automobiles, turbines, and railroad equipment.

The second major conclusion was that this structure was substantially intact after the Bolshevik Revolution. Intervention did not affect the main *manufacturing* areas. There was damage to the railroad system, particularly in the Donbas and Siberia, and the Port of Petrograd was heavily damaged and mined. Petrograd industry, however, was basically in operable condition. Industrial damage was concentrated in the Ukrainian sugar industry and in the Ural and Donetz Basin mines.

What, then, created the economic debacle of 1921–2?

It was not brought about by absence of operable production facilities. While plants were in a state of 'technical preservation,' work discipline collapsed,

[1] M. Dobb, *op. cit.*, p. 11.

and skilled workers, engineers, and managers fled into the villages or abroad. The distribution system was abandoned as unnecessary in a socialist economy. Productivity consequently sank to abysmally low levels, and the 'supply crisis' followed on the heels of the rejected distribution system. Systematic destruction of a viable economy was aided by the inflation of the ruble to zero value (on the basis that money was not needed in socialism), the 'instant demobilization of industry' decree, 'free' public services, and the replacement of skilled managers with unskilled proletarians. By August 1922 the Soviet economy was at the point of collapse. This is not deduction. Lenin, Bogdanov, Arsky, Krassin and others have made the point clearly. The end had come. As Krassin phrased the problem, 'Anyone can help pull down a house; there are but few who can re-build. In Russia there happened to be far fewer than anywhere else.'[2]

The economic decline which directly followed the Revolution is unparalled in the history of industrialized society; however, the Soviets not only survived, but in 1924 were able to institute the Second Bolshevik Revolution and return to the path of State control of industry. The factors behind the miraculous recovery are detailed in the text.

In mid-1922 Soviet industry was at a standstill. Soviet inability, for lack of skilled engineers and workers, to restart the tsarist plants is well illustrated by the Russo-Baltic plant at Taganrog, moved during the war from Reval. Four massive buildings were visited (and photographed) by the 1926 Ford Delegation. The plant had furnaces, hammers, hydraulic presses, and a power station, as well as approximately 2,000 machine tools. These had been idle since 1917, although coated with oil to keep the tools in some sort of preservation. The photographs indicate the gigantic size of the plant, idle for at least nine years. It was operable although perhaps technologically out of date compared to the rapidly developing industries in the West. The urgent needs were two-fold: to restart the silent plants and modernize the equipment. The trust was the organizational vehicle adopted for these objectives. As Bogdanov pointed out, the primary aim of the trust was the transfer of foreign skills and technology to fulfill both these urgent requirements.

Trustification and technical transfer were achieved step by step. First, a selection from among important industries was made. Choice was on an ideological basis. Railroads, mining, and machinery sectors were selected on the basis of political, not economic, choice; they were only coincidentally key sectors in the economy. In the process of selection, several key economic activities, such as gear-cutting (Citroen plant) and air-brake manufacture (Westinghouse Air Brake Company) were left in foreign hands. The pragmatic

[2] Krassin, *op. cit.*

Communists understood their own inability to run these rather complex enterprises. After selection, the remaining operable units were isolated from the inoperable, and the latter were left outside the trust structure. The inoperable units were offered to foreign firms as concessions (the Berger and Wirth dye plant, the Bergman ferrous metallurgy plant, the Kablitz boiler-making operation, the AIK textile plants, the Lena and Kemerovo mines, etc.). In sum, the isolation procedure eleminated two categories of economic activity from the trusts: first, complex operations requiring lengthy foreign assistance, and second, those units requiring substantial modernization. These were leased directly to foreign operators as pure concessions.

The remaining or operable units were then grouped into trusts. Most were either dormant or working on an intermittent basis; given technical and managerial skills, they were operable. The names were 'proletarianized' and attempts were made to restart. In some plants 'white' engineers took over from unskilled 'red' directors—notably in the electrical and machinery sectors. But in all cases operation without the discipline of the market system led to hopeless inefficiency. The answer to a massive loss was a massive subsidy. These got out of hand by 1923 and were countered by the 'contraction of industry' policy.

Contraction (i.e., elimination of the most heavily subsidized plants) was concurrent with the injection of foreign assistance. Although this began as early as 1919–1920, it received a strong assist from the German Trade Agreement of 1921 and the Rapallo economic, military, and trade protocols. Extensive documentation in the German Foreign Ministry Archives attests to the thoroughness and completeness of German economic and technical help after 1922.[3] Such assistance was at first almost completely German, in fact. The Shakhta affair reflects the influence of Germany in the U.S.S.R. The Soviets were concerned about the massive infiltration and influence of German specialists in Soviet industry. They had penetrated most large industrial and mining enterprises, and in many cases had formed understandings with the prerevolutionary engineers. Whatever the judicial failings of the Shakhta 'trials,' the OGPU was probably correct in recognizing a threat to the Revolution. As late as 1928, Soviet industry was run by a partnership of German and prerevolutionary engineers independent of nominal Party control.

The tendency at the end of the decade was to turn increasingly toward American technical leadership. Of the agreements in force in mid-1929, 27 were with German companies, 15 were with United States firms and the remain-

[3] The writer examined rather cursorily more than 25,000 documents, including a small group of Russian documents relating to this cooperation and the work of the various committees and sub-committees formed to channel the assistance. Committees IV and V were mainly concerned with the economic and technical aspects.

ing ones were primarily with British and French firms. In the last six months of 1929, the number of technical agreements with U.S. firms jumped to more than 40.[4] It is this change which forms a logical break in the examination of Soviet technology and industrial development. The usual break point—1928 (the beginning of the first Five-Year Plan)—is meaningful only in propaganda terms; the Plan was implemented *after* a sequence of construction and technical-assistance contracts with Western companies had been let.

The Freyn-Gipromez technical agreement for design and construction of giant metallurgical plants is economically and technically the most important.[5] Despite the German work, the metallurgical industry was on a 1913 technical level. It had not incorporated current advances in rolling techniques such as the American wide strip mill or the powerful, heavy blooming mills developed in the mid-1920's. The A. J. Brandt-Avtotrest agreement for reorganization and reconstruction of the prerevolutionary car plant (the AMO) was overshadowed by the 1930 Ford Motor Company agreement to build a completely new integrated plant for the mass production of the Model A, the 2.5-ton Ford truck, and buses using Ford patents, specifications, and manufacturing methods. The plant was erected by Albert Kahn, the builder of River Rouge and so enabled the Soviets to duplicate the immense advances of American automobile engineering within a few years of inception in the United States. Two agreements with Orgametal by other American companies completed assistance in the heavy engineering field. The electrical industry had the services of International General Electric (in two agreements), the Cooper Engineering Company and RCA for the construction of long-range powerful radio stations. The Stuart, James and Cooke, Inc., contracts with various coal and mining trusts were supplemented by specialized assistance contracts, such as the Oglebay, Norton Company aid agreement for the iron ore mines and the Southwestern Engineering agreement in the non-ferrous industries. The chemical industry turned to Dupont and Nitrogen Engineering for synthetic nitrogen, ammonia, and nitric acid technology; to Westvaco for chlorine; and to H. Gibbs to supplement I.G. Farben aid in the Aniline Dye Trust. This was supplemented by more specialized agreements from other countries: ball bearings from Sweden and Italy; plastics, artificial silk, and aircraft from France; and turbines and electrical industry technology from the United Kingdom.

[4] Bron, *Soviet Economic Development and American Business*.

[5] The U.S. State Dept. Decimal File contains a rather curious exchange of letters between Freyn Engineering and the State Dept. Obviously there had been a major communication of ideas and attitudes between both parties. Both sides, however, refrained from placing the understanding on paper; or at least an understanding has not been traced within the Archives. Those documents in the files suggest that Freyn was powerfully influenced by the State Dept. viewpoint. (See U.S. State Dept. Decimal File, 661.1116/62.)

The penetration of this technology was complete. ***At least 95 percent of the industrial structure*** received this assistance. To demonstrate this, all sectors of the economy have been examined impartially.

We may conclude therefore, that the basic Soviet development strategy was to learn from that country considered to have the most advanced processes within a given field of technology and to leave no industrial sector without the benefits of this transfer process. In 1929–30, some 40 million rubles were spent for technical-assistance agreements alone. When it is considered that the marginal costs to the Western supplier were very small, that this ensured extremely low purchase prices for technology (in the light of opportunity costs), and that much of the transfer was done informally at no cost as a part of equipment-supply agreements, then the magnitude of the benefits becomes very clear. The greater part of this sum was spent in the U.S.; 'In America,' it was said, 'they do not guard manufacturing secrets so jealously.'[7]

The success of this strategy was not lessened by the fact that political interests always dominated economic requirements. When individual concessions threatened the hold of the Party even remotely, the reaction was sharp and ruthless. The Shakhta affair was an example of Leninist terror used to bring a 'united front' into line, whatever might be the economic consequences. The move from German to American technology was partially dictated by the probability the American engineers were less likely to get tangled in the meshes of counter-revolution, which had its origin in Europe rather than the United States. Import of equipment always reflected the domination of the political. One of the first imports from the U.S., after the lifting of the blockade, was 1,300 printing presses from the Fulton Iron Works. Production of long-range radio stations went ahead rapidly with the help of RCA and International General Electric, at the time when the State Department files had ample evidence of subversion (see, for example, Microcopy 316, Roll 141 for Soviet activities in the Dutch East Indies in 1928, the cracking of the Bolshevik code and instructions to Soviet agents at precisely that time at which permission was given to RCA and IGE to export radio stations to Soviet Russia). One at least understands why RCA checked and then double-checked with the State Department on permission to export high-powered radio stations.

The dominance of the political aspects over the economic did not restrain development; the Soviets correctly foretold the inaction of major Western

[6] To place U.S. technical aid to the U.S.S.R. in perspective, the reader is referred to *Current Technical Service Contracts* (U.S. Dept. of State, 1966). Brazil is the largest country in this listing. Pages 62–6 list AID technical-assistance projects in Brazil. Comparison of these with U.S. aid agreements in the U.S.S.R. in 1928–9 will convey the enormous size and scope of the latter. There is nothing comparable to the Ford Motor Co. agreement, for example.

[7] *Ekonomicheskaya Zhizn*, No. 225, September 29, 1929, p. 3.

governments during the transfer of technology. The Soviets were determined and based their moves on accurate information. Western governments failed to cooperate one with another and made policy determinations inconsistent with material on file.

The concessions policy itself had two aspects. On one hand the Soviets described to the Western businessman the profitable opportunities awaiting entrepreneurs in the U.S.S.R. These were presented in hopeful little booklets, backed up by trade journals and trade delegations. On the other hand, the Soviets had only limited interest in the concession hence their eventual expropriation of the Western entrepreneur naïve enough to invest in the Soviet economy. There was no danger to the Revolution, said Lenin: 'They are a foreign thing in our system . . . but whoever wants to learn must pay.' The West was needed to build up socialism, did it matter if the Soviets gave away a few tens of millions in resources? As Lenin said, 'afterward we shall get it back with interest.'[8] The closer the explanation got to the rank and file, the more explicit were the Communists in describing the fate awaiting the Western businessman. It was unlikely that W. Averell Harriman was reading *Komsomolskaya Pravda*, and on this the Soviets guessed correctly. It is less credible that the State Department did not investigate the ample data at its disposal—data backed by very accurate field reports—to determine the fate of investors in the U.S.S.R.

As the lesson penetrated Western business circles, the pure and mixed concessions were replaced by the technical-assistance agreement, under which the assistance was either bought outright or was included as part of a large equipment order. After the 1928 Gillette Razor Blade concession, no further pure concessions were concluded. Mixed companies persisted for a few years. The technical agreement remains and is currently in use.

[8] *Komsomolskaya Pravda*, October 9, 1928.

APPENDIX A

A Guide to Sources of Material

ALMOST all of the material used in this study, including the microfilmed copies of State Department and other records, has been deposited with the Hoover Institution on War, Revolution and Peace, at Stanford University.

THE STATE DEPARTMENT DECIMAL FILE

The National Archives has published much of the State Department Decimal File for 1910–30 on microfilm. Microcopy 316 is the main source for this study, particularly Rolls 107 to 143. Wherever possible, references are given to the National Archives microfilm copy, not to the original Decimal File copy.

The first three figures of such a reference consist of the Microcopy number (usually 316); the second group of figures refers to the roll number in the microcopy, and the last group refers to the frame number.

Thus, 'U.S. State Dept. Decimal File, 316–131–228' means that the source is the Decimal File and the reference may be found in National Archives Microcopy 316, Roll 131, Frame 228.

Some Decimal File records have not been microfilmed; these are referred to by the original Decimal File number (i.e., 361.6221/1). They may be specially ordered on microfilm, or the original documents may be examined at the National Archives.

For readers in Washington, D.C., wishing to see the original document (not the microfilmed copy), the National Archives has finding aids which make it possible to trace the Decimal File number from the Microcopy-Roll numbers given in the text.

Documents of the Bureau of Foreign and Domestic Commerce are referred to by file number only. No roll and frame identification exists.

For German Foreign Ministry records references are to National Archives Serial, Roll and Frame numbers. Thus, 'German Foreign Ministry, T120–3032–H108752' refers to Microcopy T120, Roll 3032, Frame H108752.

RELIABILITY OF DATA ORIGINATING INSIDE THE U.S.S.R.

Archival material from United States and German sources was assessed according to the reliability given by the respective foreign offices. During the 1920s the United States had excellent sources of information inside the Soviet Union. Two agents (IS and IS/2) provided much political and economic material. IS was especially prolific and passed over many hundreds of documents. These were assessed by the State Department as reliable, and a number were marked for the attention of the Secretary and Assistant Secretary. The writer checked a selection of IS material against later events and found it to be very precise. No case was found where IS was wrong in an important fact.

APPENDIX B

List of Operating Concessions, 1920 to 1930

TYPE I (PURE) CONCESSIONS

Name	*Country of Origin*
Aktiebolaget Svenska Kullagerfabriken (SKF)	Sweden
Aktiengesellschaft für Bauaufurungen	Germany
Alftan Concession	Lithuania
Allezundsky Union	Germany
Allgemeine-Warren Treuhand A-G	Austria
Allied American Corp. (See Hammer, Julius)	
Allmanna Svenska Elektriska A/B (ASEA)	Sweden
Altebauag	Germany
Altman	Austria
Aluminum Company of America (ALCOA)	United States
American Asbestos Co.	United States
American Industrial Colony	United States
American Industrial Concession	United States
American Model Industrial Corp.	United States
American-Russian Constructor Co. (ARK)	United States
Anglo-Russian Grumant Co., Ltd.	United Kingdom
Aschberg Concession (Russian Bank of Commerce)	Germany
Ayan Corp. Ltd.	United Kingdom
Beloukha Corp.	United States
Berger and Wirth A-G	Germany
Bergman A-G	Germany
Block and Ginsberg	Germany
Boereznsky	Lithuania
Bolton, August	Germany
Brand, Leo	Germany

Name	*Country of Origin*
Brock A-G	Germany
Bryner & Co., Ltd.	United Kingdom
Cannon Co. Ltd.	United Kingdom
Caucasian-American Trading and Mining Co.	United States
Chatkeiama Gomei Kaisha	Japan
Chatma Co.	Greece
Christensen Concession	Norway
Control Co.	Unknown
Czestochova Concession	Poland
Deutsch-Russische Agrar Aktiengesellschaft	Germany
Deutsch-Russische Film Allianz A-G (Derufa)	Germany
Deutsch-Russische Saatbau Aktiengesellschaft	Germany
Dyer Concession	United States
Ericsson A/B	Sweden
Estonian-American Oil Co.	United States
Euroamerican Cellulose Products Corp.	United States
Far Eastern Prospecting Co., Inc. (Far Eastern Syndicate)	United States
Farquhar, Percival	United States
Gaso-Accumulator A/B	Sweden
German Fishing Union (Hochseefischerein)	Germany
Gesellschaft für Wirtschaftliche Beziehungen mit den Osten (Eastern Relations Society)	Germany
Gesellschaft zur Förderung gewerblicher Unternehmungen (Gefu)	Germany
Gillette Co.	United States
Gouria Petroleum Co., Ltd.	United Kingdom
Great Northern Telegraph Co. (Det Store Nordiske Telgraselskab)	Denmark
Hagakeyama Gomeikaisha	Japan
Hammer, Julius (see American Industrial Concession, etc.)	United States
Hammerschmidt, D. A.	United States
Harriman, W. A. Manganese Concession	United States
Haywood Concession	United States
Heller, L., and Son, Inc.	United States
Hillman Clothing Concession	United States

Name	*Country of Origin*
Hokushinkai	Japan
Holland-Ukraine Syndicate	Holland
Holter and Borgen	Norway
Holz Industrie Aktiengesellschaft Mologa	Germany
Hudsons Bay Co., Ltd.	Canada
Iasima Chatchiro	Japan
Igerussko (I. G. Farben)	Germany
ILVA Alti Forni e Acciaierie d'Italia s.p.a.	Italy
Indo-European Telegraph Co., Ltd.	United Kingdom
International Barnsdall Corp.	United States
International Harvester Co.	United States
International Mica Co., Inc.	United States
Italian Kuban Concession	Italy
Junkers-Werke	Germany
Kablitz, Richard (Gesellschaft für Okonomie der Dampferzeugungskosten)	Latvia
Kahn, Montefiore	United States, Germany
Kita Karafu Tau	Japan
Marchand et Cie.	France
Netherlands Spitsbergen Co.	Holland
Nichiro-Giogio Kabusiki-Kaisha	Japan
Otopitel (Refrigeration)	Unknown
Polar Star Concession	Unknown
Priamur Mines, Ltd.	United Kingdom
Prikumskaya (See Russian-American Agricultural Corp.)	United States
Raabe A/B	Finland
Resch Concession	Germany
Rheinbaden	Germany
Rorio Rengion Kumai	Japan
Rorio Rengio Rumian	Japan
Ruben and Bielefeld A-G	Germany
Russian-American Agricultural Corp. (Prikumskaya)	United States
Russian-American Engineering and Trading Co. (Raito)	United States
Russian-American Industrial Corp. (Raico)	United States
Russian-American Mining and Engineering Corp.	United States
Russian-American Steel Works	United States
Russian Mining Corporation	United Kingdom

Name	*Country of Origin*
Separator A/B	Sweden
Serkovsky, Yan	Poland
Shirak Oil (see Società Minere)	
Shova Kiuka Kabushiki Kaisia	Japan
Shulmann, Elia	Latvia
Siemens-Schukert	Germany
Sinclair Exploration Co.	United States
Singer Sewing Machine	United States
Skou-Keldsen	Germany
Società Minere Italo-Belge di Georgia	Italy, Belgium
Société Industrielle de Matières Plastiques (SIMP)	France
Spies Petroleum Company, Ltd.	United Kingdom
Stock A-G	Germany
Storens, F.	Norway
Tetuikhe Mining Corp., Ltd.	United Kingdom
Tiefenbacher Knopfabrik A-G	Austria
Trans-Siberian Cables Co.	Denmark
Trilling, O.	Poland
Tschemo A-G	Germany
Tsukahara	Japan
Union Minière du Sud de la Russie	France
United German-American Corp.	United States
Vega	Norway
Vinge and Co.	Norway
Vint Concession	United States
Ware, Harold (see Russian-American Agricultural Corp.)	United States
Westinghouse Air Brake	United States
Windt	
Wirtschaftliche Verband der Deutschen Hochseefischerein	Germany
Yasimo Hachiro	Japan
Yasimo Tanaka	Japan
Yotara Tanaka	Japan
Zatbaugesellschaft	Germany
Zellugal	Germany
Zhest-Western	Austria

TYPE II (MIXED COMPANY) CONCESSIONS

Name	*Country of Origin*
Alamerico (Berlin)	United States
Allied American Corp.	United States
American Foreign Trade Corp.	United States
American Industrial Corp.	United States
Amexima	Holland
Arbor Co.	Estonia
Baltische Russische Transport und Lager A-G (Baltrustra)	Germany
Bersol A-G	Germany
Brenner Bros.	United States
Compagnia Industriale Commercio Estero (CICE)	Italy
Cunard Line	United Kingdom
Dava-Britopol (Ruspoltorg)	Poland, United Kingdom
Deruluft	Germany
Deruneft	Germany
Derutra (Deutsch-Russische Transport u. Lager Gesellschaft)	Germany
Deruwa (German-Russian Merchandise Exchange)	Germany
Deutsch-Russische Metallverwertungs Gesellschaft m.b.H. (Derumetall)	Germany
Duverger Concession	France
Dvinoles Export, Ltd	United Kingdom
Eggexport	Germany
Eitengon-Schild	United States
Exportles	United Kingdom
French Steamship Lines	France
German Orient Line	Germany
German-Russian Krupp Manushka Co.	Germany
Hamburg-Amerika Line	Germany
Holland-Amerika Line	United States
International Oxygen Corp. (see Ragaz)	United States
Internationale Warenaustauschgesellschaft (IVA)	Germany
IRTRANS (Società Mista Italo-Russa di Commercio e Transporti)	Italy

Name	*Country of Origin*
Kazuli Co.	Greece
Kossayger	International
Kossel, P., A-G	Germany
Kossuryo	International
Krupp'sche Landconcession Manytsch G.m.b.H.	Germany
Narova Co.	Estonia
Nord-Ost	Germany
Norway-Russian Navigation Co., Ltd.	Norway, United Kingdom
Ocean Travel Bureau	United States
Persaneft (Persian-Azerbaidjian Naphta Co.)	Persia
Perskhlopok	Persia
Persshold	Persia
Perssholk	Persia
Raby Khiki Kansha	Japan
Ragaz (Russian-American Compressed Gas Co.)	United States
RAIF Iron Co. for aid to Volga Colonists	Germany
Ratao (Russische-Oesterreichische Handels A-G)	Austria
Rawack and Grunfeld A-G	Germany
Repola Wood, Ltd.	United Kingdom, Finland
Royal Dutch Shell	United Kingdom, Holland
Ruben and Bielefeld	Germany
Rugerstroi (see Kossel, P., A-G)	
Russangloles, Ltd.	United Kingdom
Russavstorg (Russisch-Oesterreichische Handels und Industrie A-G)	Austria
Russgertorg (Russische-Deutsch Handels A-G)	Germany
Russhollandoles, Ltd.	United Kingdom, Holland
Russian-Asiatic Stock Co.	International
Russian Bristles Co.	United Kingdom
Russian-Canadian Navigation Co. (Russcapa)	Canada
Russian Land Concession Manytsch, Ltd.	United Kingdom
Russian Wood Agency, Ltd.	United Kingdom
Russnorvegloles, Ltd.	Norway, United Kingdom

Name	*Country of Origin*
Russo-British Grain Export Co. (Russobrit)	United Kingdom
Russo-Latvian Co.	Latvia
Russ-Norwegian Navigation Company, Ltd.	United Kingdom, Norway
Russot	International
Russotgorn	Turkey
Russo-Turkish Export-Import Co. (Russo-Turk)	Turkey
Russperssakhar	Persia
Russpoltorg	Poland
Russtransit (Russo-German Trading and Transit Co.)	Germany
Sale and Company, Ltd.	United Kingdom
Seyfurt A-G	Germany
Sibiko (Danish-Siberian Co.)	Denmark
Società Mista Italo-Russa di Commercio e Transporti (IRTRANS)	Italy
Société Russo-Anglaise des Matières Premières (Raso)	United Kingdom
Sorgagen A-G	Germany
Sovmetr	France
Sovmong	Mongolia
Standard Oil of New York	United States
Stern	United Kingdom
Suomen Nahkatehtaitten Osakeyhtio	Finland
Sutta, Simon	United States
Sveaexport	Sweden, Finland
Truss, G. H. and Co., Ltd.	United Kingdom
Turksholk	Turkey
Ukrainian Brewing Co. (Okman)	Estonia
Union Cold Storage, Ltd.	United Kingdom
United States Lines	United States
Vlessing	Holland
Warren, G. and Co., Inc.	United States
West-Oestliche Warenaustausgesellschaft (Wostwag)	Germany
White Sea Timber Trust, Ltd.	United Kingdom
White Star Line, Ltd.	United Kingdom

TYPE III (TECHNICAL-ASSISTANCE AGREEMENT) CONCESSIONS

Name	*Country of Origin*
Allen, J. I., and Co.	United States
Allen and Garcia, Inc.	United States
Allgemeine Elektrizitets A-G	Germany
Allis-Chalmers Manufacturing Co. (see RAITCO)	United States
Akron Rubber Reclaiming Co.	United States
Aufbau Trade and Industrial Co.	Germany
Austin Co.	United States
Badger, E. B., and Co.	United States
Baldwin Locomotive Works	United States
Birmingham Small Arms Co.	United Kingdom
Borsig, A. G.m.b.H.	Germany
Brandt, Arthur J., Inc.	United States
Brown Lipe Gear Co., Inc.	United States
Burrell-Mase Co., Inc.	United States
Compagnie de Produits Chimiques et Electrométallurgiques S.A.	France
Campbell, Thomas	United States
Casale Ammonia S.A.	Italy
Caterpillar Tractor Co.	United States
Chase, Frank, Inc.	United States
Cheretti i Tonfani	Italy
Compagnie Générale de TSF	France
Cooper, Hugh L., and Co., Inc.	United States
Davis, Arthur P., Lyman Bishop, and Associates	United States
Deilmann Bergbau u. Tiefbau Ges.	Germany
Demag A-G	Germany
Deutz Motorenfabrik A-G	Germany
Deutsch Tiefbohr A-G (Deutag)	Germany
Du Pont de Nemours and Co.	United States
Electric Autolite Co.	United States
Electrokemisk	Norway
Ferguson, Harry S., Ltd.	United Kingdom
Ford Motor Co.	United States
Foster-Wheeler Corp.	United States

Name	*Country of Origin*
Fröhlich und Knüpfel Maschinenfabrik	Germany
Freyn Engineering Co., Inc.	United States
Gasmotoren-Fabrik Deutz A-G	Germany
Gebrüder Sulzer A-G	Germany
General Engineering Co.	United States
Geoffrey and Curting, Ltd.	United Kingdom
Harry D. Gibbs	United States
Goodman Manufacturing Co., Inc.	United States
Graver Corp.	United States
Harburger Eisen und Bronzewerke A-G	Germany
Hect-Feifer A-G	Germany
Henshien and Co., Inc.	United States
Hercules Motor Co., Inc.	United States
Hilaturas Casablancas S.A.	Spain
Higgins, John J., Co.	United States
Humboldt-Deutz Motoren A-G	Germany
International General Electric Co.	United States
Irving Air Chute Co., Inc.	United States
Albert Kahn, Inc.	United States
Karlstad Mechaniska Verkstaden A/B	Sweden
Kohorn, Oscar A-G	Germany
Koppers Construction Co.	United States
Frederick Krupp A-G	Germany
Lockwood, Green and Co.	United States
Longacre Engineering and Construction Co.	United States
Lurgie Gesellschaft für Chemie und Hüttenwerke m.b.H.	Germany
Maschinenfabrik Augsburg-Nürnberg A-G (MAN)	Germany
Maschinenbau A-G	Germany
Maschinenbau-Anstalt-Humboldt	Germany
Maatschappij Tot Exploitatie von Veredlinsprocedes	Holland
McCormick Co.	United States
McDonald Engineering Co.	United States
McKee, Arthur T., and Co., Inc.	United States
Mechanical Manufacturing Co., Inc.	United States
Messer A-G	Germany
Metropolitan-Vickers Electrical Co., Ltd.	United Kingdom
Multibestos Co.	United States

Name	*Country of Origin*
Neumeyr A-G	Germany
Newport News Shipbuilding and Drydock Co.	United States
Nitrogen Engineering Corp.	United States
Officine Villar Perosa (RIV)	Italy
Oglebay, Norton & Co., Inc.	United States
Penick and Ford, Inc.	United States
Pierce, Charles and Co.	United States
Pflanzennamme G.m.b.H.	Germany
Radio Corp. of America (RCA)	United States
Radiore Co., Inc.	United States
Reidinger, A-G	Germany
Roberts and Schaefer, Inc.	United States
Scintilla A-G	Switzerland
C. F. Seabrook Co., Inc.	United States
Seiberling Rubber Co.	United States
C. V. Smith and Co., Ltd.	Canada
Frank Smith Co., Inc.	United States
Société de Prospection Electrique Procédés Schlumberger	France
Société du Duralumin S.A.	France
Société Française Anonyme Lumière S.A.	France
Soieries de Strasbourg S.A.	France
Southwestern Engineering Corp.	United States
Sperry Gyroscope Co.	United States
Standard Oil Co. of New York	United States
Stein A-G	Germany
Steinert, C. T.	Germany
Stuart, James and Cooke, Inc.	United States
Sullivan Co. (see RAITCO)	United States
Szepesi, Eugene, Consulting Management Engineers	United States
Telefunken Gesellschaft für Drahtlose Telegraphie	Germany
Thyssens A-G	Germany
Timken-Detroit Axle Co.	United States
Torfplattenwerke A-G	Germany
Underwood Typewriter Co.	United States
Union Shoe	Austria

Name	*Country of Origin*
Vakander A/B	Sweden
Vattenbyggnadsbyran A/B	Sweden
Verein Deutscher Werkzeugmaschinen Fabriken Ausfuhr Gemeinschaft (or Faudewag)	Germany
Vereinigte Carborundum und Elekritwerke A-G	Germany
Vereinigte Kugellager Fabriken A-G	Germany
Warren, G. W., Co.	United States
Webber and Wells, Inc.	United States
Westinghouse Company (see Metropolitan-Vickers)	
Westvaco Chlorine Products, Inc.	United States
Wheeler, Archer E., and Associates	United States
J. W. White Engineering Co.	United States
Winkler-Koch Engineering Co.	United States
W. A. Wood Co.	United States

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Western Technology and Soviet Economic Development 1930 to 1945

Second volume of a three-volume series

By

ANTONY C. SUTTON

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TO MY WIFE

Betty Janet

Preface

THIS is the second volume of an empirical study of the relationship between Western technology and entrepreneurship and the economic growth of the Soviet Union.

The continuing transfer of skills and technology to the Soviet Union through the medium of foreign firms and engineers in the period 1930 to 1945 can only be characterized as extraordinary. A thorough and systematic search unearthed only two major items—SK-B synthetic rubber and the Ramzin 'once-through' boiler—and little more than a handful of lesser designs (several aircraft, a machine gun, and a motorless combine) which could accurately be called the result of Soviet technology; the balance was transferred from the West.

Once again I must express sincere appreciation to those who have helped me—and absolve them from responsibility for my errors. The Relm Foundation granted research funds and a fellowship tenable at the Hoover Institution, Stanford University. In addition the Hoover Institution provided research assistance from its Special Fund. Among those at Hoover who have given their personal assistance, particular recognition is due Dr. W. Glenn Campbell, Director of the Hoover Institution, for his unfailing support; Mr. Alan Belmont, Associate Director for Administration, for his prompt solutions to my varied problems; and Miss Carolyn Conrad, for research and secretarial work well and conscientiously performed. To these and others, thank you; without your understanding assistance, this study could not have been completed.

Acknowledgment is also due Congressman John E. Moss (Democrat, Sacramento) and his staff for assistance in locating some 600 boxes of Lend-Lease cargo manifests and letter files which had been temporarily mislaid by the Executive Branch of the Federal Government.

Finally, I must express my appreciation to the Douglas Aircraft Company (now McDonnell-Douglas) of Santa Monica, the Warner & Swasey Company of Cleveland, and the Kern County Land Company (now a division of

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None of these is, of course, in any way responsible for my errors, arguments, or conclusions.

A. C. S.

Stanford, California
November 28, 1968

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Glossary

Aluminstroi:	Aluminum Plant Construction Trust
Amburo:	American Bureau
Azneft:	Azerbaidjan Oil Trust
Burtsvetmet:	Non-ferrous Drilling Trust
CAXO:	Central Asia Cotton Union (strictly Sakho, but spelt thus in Gorton Papers)
Dalles:	Far East Lumber Trust
Donugol:	Don Coal Trust
Elmashstroi:	Electrical Machinery Construction Trust
GET:	State Electro-Technical Trust
Gipromez:	State All-Union Institute for Planning of Metallurgical Works
Giproshakht:	State Institute for Design of Coal Mines
Giprotsvetmet:	State Institute for Planning of Non-Ferrous Metals
Glavkhlopkom:	Chief Cotton Committee
Glavkontsesskom:	Chief Concessions Committee
Goelro:	State Commission for the Electrification of Russia
Gosplan:	State Planning Commission
Grozneft:	Georgian Oil Field Administration
GUAP:	Main Administration of the Aircraft Industry
Hectare:	2.47 acres
Khimstroi:	Chemical Industry Construction Trust
Kokstroi:	Coke Industry Construction Trust
Kombinat:	Combine
Kramkombinat:	Kramatorsky Combine
Lenmashstroi:	Leningrad Machine Building Trust
Mashinoimport:	All Union Association for Import of Machinery
Mekhanobr:	State Institute for Planning Ore-Treatment Plants

Moskhimkombinat: Moscow Chemical Combine
Moskvugol: State Association for Coal Industry in the Moscow Region Basin
Mosstroi: Moscow State Construction and Installation Trust
Narkomvneshtorg: People's Commissariat for Foreign Trade
OGPU (also GPU): All-Union Political Administration of the Council of People's Commissars (Secret-Police)
Orgametal: Institute for Organization of Production in Machinery and Metalworking Industries
Pood: 36.1128 pounds
Resinotrest: Rubber Trust
Selmash: All-Russian Syndicate of Agricultural Machines and Implements
Shakhtostroi: Shaft-Sinking Trust
Sharikopodshipnikstroi: Ball Bearing Industry Construction Trust
Sovnarkom: Council of People's Commissars
Soyuzstroi: All-Union Construction Trust
Sredazvodproiz: Central Asia Water Authority
Stal': Steel Trust
Skeklofarfor: Glass and Ceramics Trust
Svirstroi: Svir Dam Construction Unit
TsAGI: Central Aero-Hydrodynamic Institute, im. Zhukovski
Tsvetmetzoloto: All-Union Association for Mining, Processing and Sale of Non-Ferrous Metals, Gold and Platinum
Udarnik: Shock Worker (Leader in establishing new production norms under Party instruction)
Uralgol: Urals Coal Trust
Uralmash: Urals Machine Combine
Uralrud: Urals Ore Trust
VATO: All-Union Automobile and Tractor Trust
VEO: All-Union Electrical Trust
Vesenkha (VSNKh): Supreme Council of the National Economy
VINITI: All-Union Institute of Scientific Information
Vostokugol: Far East Coal Trust
Vsekhimprom: All-Union Trust for the Chemical Industry
Vsekomvodgosplan: All-Union Committee for Planning of Water Projects
Yugostal: Southern Steel Trust

CHAPTER ONE

Introduction

METHODOLOGY AND SOURCES

THE first volume of this study[1] concluded that foreign concessions and technical transfers were the most significant factor in Soviet economic development between 1917 and 1930. Concessions were abandoned in the early 1930s and replaced by technical-assistance agreements with Western companies. Later, as Soviet technical cadres became more skilled, the technical-assistance agreements were in turn partly, but never completely, replaced by purchases of complete Western plants built by Western companies, imports of Western equipment, and domestic duplication of this equipment. The technical-assistance agreement and the sale (or gift, under Lend-Lease or reparations arrangements) of Western equipment, in short, replaced the concession as the major transfer mechanism for the period 1930 to 1945.

Early Soviet recognition of the value of these transfer processes was well stated in *Za Industrializatsiiu* in a comment on Soviet industrial achievements prior to 1933: 'A combination of American business and science with Bolshevik wisdom has created these giants in three or four years. . . .'[2] Such frank recognition of the Western contribution has now been expunged from official Soviet history, although the existence of advanced technology within capitalist systems can be explained in Marxian terms. N. Bukharin held that a 'modern capitalist economy is *pregnant with a new technical revolution*. But this technical revolution *cannot develop* unless it breaks through its capitalist shell. . . .'[3] Thirty years later both Khrushchev and Kosygin urged their planners and engineers to look westward in the perennial effort to 'overtake capitalism'

[1] A. C. Sutton, *Western Technology and Soviet Economic Development, 1917 to 1930* (Stanford: Hoover Institution, 1968).

[2] *Za Industrializatsiiu*, August 14, 1933.

[3] N. Bukharin, *Socialist Reconstruction and Struggle for Technique* (Moscow: Co-operative Publishing Society of Foreign Workers in the U.S.S.R., 1932), p. 10.

and utilize the capitalist 'technical revolution' for the building of socialism. This Bukharinist argument may still be found in present day Marxist writing.[4]

The inability of the Soviet Union to carry out, with its own internal technical resources, the gigantic construction plans envisaged was in the 1930s frankly recognized in the Soviet press. For example, *Pravda*, in discussing the important Solikamsk potash project, admitted that 'the attempt of the Potash Trust to carry on work without foreign technical assistance proved futile. Thus in 1927–28 several large foreign companies were hired for technical assistance in the construction of the first potash mine. . . .'[5]

Of primary interest was the Soviet attempt in the 1920s to develop even more extensive and technically advanced projects without foreign assistance; such attempts were abandoned in 1929–30 and hundreds—perhaps thousands—of foreign companies[6] were called in to supervise construction of the First Five-Year Plan. This phenomenon, substantially supported by evidence concerning construction dates from Soviet sources alone, is in this book called the 'inability hypothesis.'

Most of this first group of foreign engineers entered Russia in 1929 and left in 1932–3 as a result of the valuta crisis. The benefits of the huge industrial capacity developed under their supervision gave considerable hope to the Communist Party. A rude awakening came in 1936–7 when the product of the enormous capacity developed in the early 1930s reached a plateau, to be followed by four to five years of stagnation during the purge era. Between 1936 and 1941 a number of highly important, but unpublicized, agreements were made with American companies in aviation, petroleum engineering, chemical engineering, and similar advanced technological sectors in which the Soviets had been unable to develop usable technology.

The Nazi-Soviet trade agreement of August 1939 gave the Russians another significant technological boost, although this has been overlooked in literature on the subject. The Soviet view of the pact was well expressed by Molotov: 'This agreement is advantageous to us because of its credit conditions (a seven-year credit) and because it enables us to order a considerable additional quantity of such equipment as we need. . . .'[7]

[4] Even today there is partial admission of continued dependency on the West. For a recent example, see *Pravda* of October 23, 1968, on increasing the effectiveness of technology. This article contains a straightforward directive from the Central Committee to use 'foreign licenses or technical documentation' as a basis for achieving higher technical levels, and also instructs Gosplan and other organs not to plan industrial production on the basis of Soviet experience alone.

[5] *Pravda*, January 16, 1930.

[6] The Stalingrad Tractor Plant alone called on the resources of 80 American firms and a lesser number of German companies.

[7] V. Molotov, *Statement at the Session of the Supreme Soviet of the U.S.S.R. on the Ratification of the Soviet-German Non-Aggression Pact* (New York: Bookniga, August 31, 1939).

Similarly, American Lend-Lease after 1942 gave a massive injection of modern technology which carried the Soviet economy well into the 1950s. Although Congressional intent was to limit Lend-Lease to the military prosecution of the war against Germany and Japan, at least one-third of the shipments had reconstruction potential,[8] and shipments continued through 1947, formalized in the 'pipeline agreement' of October 15, 1945.[9]

Complete corroboration for the general argument of this study comes from an excellent source: Josef Stalin. In June 1944, W. Averell Harriman, reporting to the State Department on a discussion between Eric Johnston and Stalin, made the following significant statement:

> Stalin paid tribute to the assistance rendered by the United States to Soviet industry before and during the war. He said that about two-thirds of all the large industrial enterprises in the Soviet Union had been built with United States help or technical assistance.[10]

Stalin did not add (it would have been irrelevant to his purpose) that the remaining third of large industrial enterprises had been built with German, French, British, Swedish, Italian, Danish, Finnish, Czech, and Japanese 'help or technical assistance.'

This heavy assistance has been briefly recognized heretofore in Western economic literature—the brevity due, of course, to a lack of systematized supportive data. Schwartz, for instance, observes that large numbers of foreign engineers went to Russia in the 1920s and 1930s, and that:

> Many of the Soviet Union's major new plants erected in the late 1920's and early 1930's were equipped with foreign-made machinery. . . . It seems correct to say that every or almost every major branch of the Soviet productive system received substantial aid from abroad and had much of its rapidly expanding corps of native engineers and technicians of all kinds trained directly or indirectly by foreigners.[11]

Bergson suggests that, 'in transforming its production methods under the five-year plans, the U.S.S.R. has been able to borrow technology from abroad on an extraordinary scale.'[12] Later Bergson provides the astute comment that

> . . . there is little necessary correlation between the quantity of imports and the quantity of technology imported; a prototype machine, a blue-

[8] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington, D.C.: Office of Foreign Liquidation, 1945), pp. 19–28.

[9] See Schedules 1 and 2 of the Agreement between the Governments of the U.S. and the U.S.S.R. on the Disposition of Lend-Lease Supplies in Inventory or Procurement in the United States, October 15, 1945 (Washington, D.C., 1945).

[10] U.S. State Dept. Decimal File, 033.1161 Johnston, Eric/6–3044: Telegram June 30, 1944. (For references to Decimal File, see Appendix D.)

[11] Harry Schwartz, *Russia's Soviet Economy* (New York: Prentice-Hall, 1950), p. 132.

[12] Abram Bergson, *Economic Trends in the Soviet Union* (Cambridge: Harvard University Press, 1963), p. 34.

> print, a technical book, or a technician can (but may not) suffice to transfer the 'knowhow'.[13]

Finally, however, Gershenkron in 1962 pointed out the unusual research gap: 'A serious study of the economic aspects of Soviet technology is still searching for its author or authors. . . .'[14]

Thus, although it has been quite correctly assumed by Western economists that the Soviets have borrowed technology from the West on a large scale, the assumption has not been empirically demonstrated. This study is designed to close the empirical gap. The conclusions suggest that Western scholars have been duly cautious and conservative concerning the impact of Western technology on Soviet development (as indeed they should be in the absence of complete data) and have underestimated the importance of the technological transfers, although their educated guesses have been in the right direction.

On the other hand, this technological impact does not appear to have been investigated by the U.S. State Department, although such an investigation would clearly come within the province of the Intelligence and Research Office of that Department.

Apart from Werner Keller's book *Ost minus West = Zero* (Droemersche Verlagsanstalt: Munich, 1960) which does not meet the methodological standards of the economist, the only previous research specifically related to the empirical aspects of Soviet technical transfers consists of several articles by D. Dalrymple of the U.S. Department of Agriculture.[15] The State Department Decimal File was found to be a superlative source of material in the form of reports from attachés and diplomatic offices, but the Department has not used this data for its own assessments; indeed, public statements by the Department are completely at variance both with previous academic assumptions and with the empirical findings of this study, itself based heavily upon the Decimal File.

For example, Edwin M. Martin, Assistant Secretary of State for Economic Affairs, made the following statement in 1961:

> I don't think there is convincing evidence that the net advantage to the Soviet Union of the continuation of trade is a major factor—or a particul-

[13] *Ibid.*, p. 311.

[14] Alexander Gershenkron, *Economic Backwardness in Historical Perspective* (Cambridge: Harvard University Press, 1962), p. 265.

[15] Dana G. Dalrymple, 'American Technology and Soviet Agricultural Development, 1924–1933,' *Agricultural History*, XL, No. 3 (July 1966), pp. 187–206; 'American Tractors and Early Soviet Agriculture,' *The Smithsonian Journal of History*, II (1967), pp. 53–62; 'Joseph A. Rosen and Early Russian Studies of American Agriculture,' *Agricultural History*, XXXVIII, No. 3 (July 1964), pp. 157–60; and 'The Stalingrad Tractor Plant in Early Soviet Planning,' *Soviet Studies*, XVIII, No. 2 (October 1966), 164–8.

arly significant factor in the rate of their overall economic development in the long term.[16]

A State Department publication briefly reviewing 40 years of Soviet economic development between 1920 and 1960 concluded that the U.S.S.R. has a 'self-developed technology.'[17]

This viewpoint was reflected by Secretary of State Dean Rusk in 1961 before the House Select Committee on Export Control: '... it would seem clear that the Soviet Union derives only the most marginal help in its economic development from the amount of U.S. goods it receives. ...'[18]

There is then a problem of credibility similar to one suggested in the first volume.[19] It was suggested previously that the concession as a development vehicle underwent a significant change in historical interpretation. Recognized as an important development mechanism in the 1920s, it was heavily downgraded by economic historians and almost completely forgotten in the years after 1930. The events covered by this study have also been ignored or given contrary analysis by the State Department. A prime requirement, therefore, is to establish acceptability for the data and credibility for the conclusions. This is particularly necessary because, as noted, academic assessments, although accurate, have not been based on precise empirical findings but on more or less unsystematic reports and general statements.[20] Further, the writer has used State Department files to establish a thesis apparently refuted by the State Department itself. Under such circumstances a high degree of precision and extensive and accurate detail are obviously necessary. For these reasons, fully documented detail, including names of individual foreign engineers and operating characteristics of specific items of equipment, is included within this volume.

[16] Edwin M. Martin, Assistant Secretary of State for Economic Affairs, before the House Select Committee on Export Control, December 8, 1961. This statement is surprising in the light of specific data found in the State Dept. files. For example, there is a European Affairs Division memorandum concerning an Ingersoll-Rand order for 100 gas-engine-driven compressors for Soviet oil fields, to cost $1.5 million. It is clearly estimated in the memorandum that this would increase production by 100,000 barrels per day. (See U.S. State Dept. Decimal File, 861.6363/364, December 12, 1939.) A glance at the footnote references in this volume will verify that the Decimal File alone, excluding the specialized Departmental collections, is replete with detailed information, contrary to Secretary Martin's statement.

[17] U.S. State Dept., *Background Notes—U.S.S.R.* (Washington, D.C.: Office of Media Services, Bureau of Public Affairs, 1965).

[18] U.S. House of Representatives, *Hearings before Select Committee on Export Control*, 87th Congress, 1st Session, October 25, 26, and 30, and December 5, 6, 7, and 8, 1961.

[19] Sutton, *Western Technology . . ., 1917 to 1930*, pp. 9–11.

[20] One of the most quoted sources (see Schwartz, *op. cit.*, p. 132) is Hans Heymann, *We Can Do Business with Russia* (Chicago: Ziff Davis, 1945). As the title suggests, this book is not a critical survey of technical transfers.

It is almost certain that this book heavily understates the volume of technical transfers. The State Department files, although excellent, are not complete. The Douglas Aircraft Company granted the writer access to its records (see chapter 14) and these yielded data on important technical assistance in far more detail than has been found in the State Department files. Some companies, such as Caterpillar Tractor and General Electric, which were involved in many important transfers, have not retained their records. In brief, there are at least two gaps in information: they occur when companies made agreements (as they legally could if they did not infringe the Espionage Act of 1917) without informing the State Department and when files have been destroyed. In addition, this study does not include widespread unofficial —or illegal—Soviet acquisitions: no doubt the object of Federal Bureau of Investigation and Congressional study.

METHODOLOGY AND DATA SOURCES

Details were obtained from several sources to determine both the technology used in Soviet manufacture and plant construction and its place of origin in the period 1930–45. For example, the Soviet standard blast furnace of 930 cubic meters has been identified as a Freyn Company, Inc., design. The turbines at the Baku Power Plant were built and installed by Metropolitan-Vickers, Ltd., of the United Kingdom. The merchant rolling mills at Kuznetsk were made and installed by Demag A-G of Germany. The coke ovens at the same plant and at Kertch were built and installed by Disticoque S.A. of France. The Karakliss cyanamide plant was built by Superfosfat A/B of Sweden. These and thousands of similar facts are precisely recorded and verifiable; the sources are always stated. Consequently those who wish to challenge the arguments have the initial burden of disproving recorded statements of fact.

These statements of verifiable fact are then aggregated. When individual plant construction of this period is analyzed, it is found that almost all major units, with only a few isolated exceptions, utilized a technology originating in the West; before 1933 most were built by[21] Western companies or at least had foreign equipment installed by Western engineers. No significant new plant built before 1933 without some major Western technical and construction effort has been identified. Indeed, as Josef Stalin himself stated, two-thirds of all large enterprises built before 1944 were built with U.S. assistance.

By far the most important source of data is section 861.5 of the U.S. State Department Decimal File, from 1928 to 1946. Some of the most useful information concerning technology, engineering, and construction was, however,

[21] See p. 13 for definition of 'built by.'

filed by the State Department Index Bureau under '861.5017—Living Conditions,' with few meaningful Document File cross-references, although 'living conditions' have no obvious connection with engineers' reports. This source was unearthed by a systematic search of all documents listed in section 861.5 purport lists which the Department was willing to declassify.[22] A few documents (no more than about 1 percent) have not been declassified. The purport list description of those still classified suggests they may support the case. The point to be made is that the reader should not be dissuaded by the *title* of the document reference (i.e., 'Living Conditions').

Unfortunately, a few reports (perhaps 5 percent or so) submitted by American companies to the State Department and supposedly at one time in the Decimal File are now listed as missing and are no longer to be found. These reports would contribute detail rather than substance to the argument; information on almost all technical-assistance agreements has been traced somewhere in the files. Blueprints and equipment specification lists are, however, invariably missing; this is particularly unfortunate, as blueprints are a means of tracing technological diffusion *within* the Soviet Union.

This official primary source is supplemented by three serial publications of Soviet trade delegations resident abroad: *Economic Review of the Soviet Union*, published by Amtorg in New York: *La Vie Economique des Soviets*, published by La Représentation Commerciale de l'U.R.S.S. en France in Paris; and *Sowjetwirtschaft und Aussenhandel*, published by the Soviet trade delegation in Berlin.

The German Foreign Ministry, Oberkommando der Wehrmacht, and Oberkommando des Heeres files provide data for the period between 1936 and 1945, as does the Nazi Party Hauptarchiv, at the Hoover Institution. This latter source contains lists of German equipment for which negotiations were made under the Nazi-Soviet pact of 1939.

Relatively little data (compared to that for 1917–30) originated in Soviet internal sources. The Trotsky and Smolensk archives are almost bare of industrial engineering papers. Gosplan (State Planning Commission) publications on the various plans are useful only as a check on anticipation; even the 'not to be distributed' *Gosudarstvennyi plan razvitiya narodnogo khozyaistva*

[22] The State Dept. had two main sources of interview information: returning American businessmen and American engineers. Several hundred reports of both types were read closely by the author to determine distortions and inaccuracies. In the final analysis much greater weight has been given to the engineers' reports. Engineers had the advantage of being in day-to-day communication with Soviet construction sites, had less reason to make thinly disguised pleas to the State Dept., and were by training more objective observers. Rarely did businessmen contribute anything of substance to State Dept. knowledge. However, the engineers consistently provided hard information; for an example, see the Ufa refinery flow diagram on p. 83. The original in the State Dept. files was obviously drawn during the interview with the State Dept. officer. The version in the text was redrawn by the writer.

SSSR na 1941 god (the 1941 annual economic plan) was rarely useful. Soviet newspapers concentrate on operating problems which came about as foreign engineers handed over facilities to Soviet personnel. Although technical-assistance agreements were briefly announced in the Soviet press in 1929–31, few details are given, except in the case of the 1929 Ford Motor Company agreement. However, a number of Soviet technical books are surprisingly open about foreign technology,[23] and some contemporary Soviet technical journals are helpful.[24]

The Fish Committee Hearings on Communist propaganda in the United States, held in New York in 1930,[25] provide an unexpected fund of information. Amtorg, under criticism for its espionage activities and anxious to show that it had some legitimate trade functions, submitted documentation concerning the activity of Russian nationals in the United States. This information was analyzed and yields an excellent picture of Soviet technical assistance from the U.S. in 1929–30.

IDENTIFICATION OF FOREIGN TECHNOLOGY

A consistent policy of positive identification of foreign technology is retained throughout this volume. In other words a unit, process, or technology must be clearly identified from acceptable sources as being of Western origin before it is so named. In cases in which this cannot be done, the assumption is that the technology is Soviet. For example, the Pengu-Gurevitch process used in construction of a small lubricating oil unit at Baku in 1931–2 has not yet been positively identified as Western, although, given the nonexistence of Soviet developments in petroleum refining, it is unlikely that the process was purely Soviet; it was probably 'copied.' However, in the absence of evidence to the contrary, it is noted as a Soviet development. A unit is thus always assumed to be Soviet-designed and Soviet-constructed in the absence of positive information to the contrary. *In brief, identification is always biased toward Soviet design and Soviet construction.* Identification sometimes becomes a complex matter. One cannot say, for example, that the Ufa refinery complex built between 1936 and 1941 was completely Western *or* completely Soviet

[23] See, for example, L. Aisenshtadt, *Ocherki po istorii stankostroeniya, SSSR* (Moscow: 1957).

[24] For example, *Za Standardizatsiiu, Za Industrializatsiiu,* and *Stal'*. The most useful (and the rarest) are newspapers produced by individual factories: *Industrial Spark,* produced (in English) by the Stalingrad Tractor Plant and *Informatsionnyi Biulleten,* produced by the Magnitogorsk Iron and Steel Combinat.

[25] U.S. Congress, Special Committee to Investigate Communist Activities in the United States, *Investigation of Communist Propaganda,* 71st Congress, 2nd session, Part 3, Vol. 3 (Washington, D.C.: 1930).

in origin.[26] Four units were built by Soviet organizations using Western processes, and ten units were built by Western companies: Alco Products, Lummus, and Universal Oil Products. Thus, Ufa can be claimed by both Soviet organizations and Western companies.

Derivation of the origin of equipment is not altogether a simple matter. In practice there is only one way to ensure that a process or piece of equipment is of Western origin: one must trace its physical transport from Western manufacturer to Soviet plant. It is possible, given sufficient time and data, to do this when the equipment is large or unique: for example, the General Electric generators for the Dniepr Dam or a Davy Brothers flywheel for the Kuznetsk rolling mill. It is a slow and complex but highly accurate method. In a few cases, Soviet sources report the origin of equipment; for example, the excavation work for the Magnitogorsk Iron and Steel Plant was handled completely by identifiable foreign draglines and excavators—Bucyrus, Marion, Oren-Koppel, etc.—and production statistics were reported on an individual machine basis.[27]

On the other hand it cannot be assumed that use of a Western name by the Soviets is necessarily an indicator of immediate Western origin for a specific item. There are cases in which a Western technological process was used, with or without assistance or permission, and given the Western name in cyrillic characters. Thus Sulzer, MAN, and Deutz diesel systems are listed by cyrillic equivalents of these names in Soviet literature in addition to Soviet model numbers.[28] By about 1930 small and medium diesel engines were being manufactured in the U.S.S.R. and still listed by Western diesel system names.

When equipment was unique or had a world-wide reputation, it was often duplicated in the U.S.S.R. and known simply by its Western name in cyrillics. Thus we find 'stoneya mashina' for Stone's machine in foundries, 'rokvell' for Rockwell hardness testing, 'kruksa trubka' for the Crookes X-ray tube, 'shtauffera maslenka' for the Stauffer lubricator, and 'blyming' for blooming mill; and the ubiquitous Stillson wrench is known as 'stil'sona klych.'

In still another category, completely Western technology was used, but with no indication of its Western origin in the Soviet name. For example, the Ford Model A automobile was 'Gaz AA' from the start of production, and the Hispano-Suiza aircraft engine was designated 'M 100'. In neither case was the Western name ever utilized. Thus use of a particular name, either Russian or Western, is not a clear indicator of origin; there must be supporting evidence for accurate identification.

[26] See pp. 83–4.
[27] Magnitostroi, *Informatsionnyi Biulleten*, Magnitogorsk, No. 1 (January 1931).
[28] *Izvestia Vsesoyuznogo Teplotekhnicheskogo Instituta*, No. 5 (1930), pp. 84–5.

A QUANTITATIVE FRAMEWORK FOR TECHNICAL ASSISTANCE DISCUSSION

This section provides summary statistics concerning the number of foreign concessions, technical-assistance agreements, and individual engineers and consultants in the U.S.S.R. from 1930 to 1945, as a framework for subsequent discussion.

Concessions were the main vehicle for technical transfers from 1920 to 1930. A fairly large number were in operation at the end of the decade. The official Soviet figures are as follows:[29]

Table 1–1 FOREIGN CONCESSIONS IN U.S.S.R., 1927–9

Date	Concessions in Operation	
	All Types	*Pure Concessions*
October 1, 1927	110	73
October 1, 1928	146	68
October 1, 1929	162	59

Source: A. Gurevitch (Chief, Bureau of Information and Statistics, Glavkontsesskom), in *Moskauer Rundschau*, No. 5 (February 2, 1930).

The decline of the concession is described in chapter 2. By 1935–6 only the Standard Oil, Danish telegraph and Japanese Sakhalin fishing, coal and oil concessions remained; the latter were liquidated in 1944.[30]

Technical-assistance agreements replaced the concession. Firm figures have been published by the Soviets for a few years only, but such agreements were actually in force throughout the period under discussion.[31]

Table 1–2 TECHNICAL-ASSISTANCE AGREEMENTS IN U.S.S.R., 1928–30

Date	Number of Agreements
1928–9	25
October 1929	70
March 1930	104

Source: La Vie Economique des Soviets, No. 116 (May 20, 1930), p. 20.

[29] See also Sutton, *Western Technology . . ., 1917 to 1930*, p. 9. When that volume went to press, these figures were not available; they supplement the data in table 1–1 of that volume.

[30] See p. 28 fn. 47.

[31] Indeed, they continue down to the present day; the Soviet Government has not since 1930–1 publicized its great dependence on foreign countries. Today, in late 1968, there are about 100 technical-assistance agreements in force between Western firms and the Soviet Union. (See *Business Week*, October 5, 1968, p. 124.) There are also periodic instructions from the Communist Party for more effective application of foreign science and technology. For a Soviet description see A. Kolomenskii, *Kak my ispol'zeum zagranichnuiu tekhniku* (Moscow: 1930).

Of the 104 technical-assistance agreements in force in 1930, approximately 81 were with German and American companies and were distributed among the following Soviet industries:

Table 1–3 TECHNICAL-ASSISTANCE AGREEMENTS IN U.S.S.R., 1930 DISTRIBUTION

Industry	*Number of Agreements*
Metallurgical	37
Chemical	25
Electrical	13
Minerals and fuel	12
Textiles	5
Clay and glass	3
Miscellaneous	9

Source: La Vie Economique des Soviets, No. 116 (May 20, 1930), p. 20.

This study identifies about 200 technical-assistance agreements between the Soviet Union and foreign companies in force between 1929 and 1945. These are listed in Appendix C; the list is almost certainly incomplete.

In considering aggregate numbers of individual foreign workers hired on a contract basis, two points should be borne in mind: first, that plant construction during the period from 1930 to 1945 took place mainly in the years 1930–2, so that most of the balance of the period to 1945 was taken up with absorbing this enormous capacity, expanding existing plants, and building smaller subsidiary units; and second, that foreign individuals travelling to the Soviet Union were usually highly skilled workers—the only groups of unskilled workers were American Communist Party members and Finnish Americans in the lumber areas. Engineering consultants and experts comprised the great majority.

How many were there? A Soviet source reported in 1936 that some 6,800 foreign specialists of all types worked in heavy industry in 1932.[32] Another Soviet source reports that 1,700 American engineers worked in heavy industry.[33]

These figures can be broken down further. In 1932 there were 200 Germans at Magnitogorsk.[34] About 400 to 500 Finnish Americans were reported working on the First Five-Year Plan.[35] More than 730 American engineers and specialists worked inside the U.S.S.R. at one time or another on the Stalingrad Tractor Plant.[36] There were about 20 U.S. engineers and 20 Germans at

[32] American-Russian Chamber of Commerce, *Handbook of the Soviet Union* (New York: John Day, 1936), p. 347.

[33] Amtorg, *Economic Review of the Soviet Union*, VII, No. 10 (May 15, 1932), p. 225.

[34] U.S. State Dept. Decimal File, 861.5017—Living Conditions/569.

[35] *Ibid.*, 861.50—FIVE YEAR PLAN/200.

[36] See p. 185. Some sources say 300 to 400; it depends on what one means: the total employed at any one time, the total at all times, or the peak employment figure.

Kramatorsk in 1931–2 and half a dozen Americans and more Germans in 1936–40 under a different contract.[37] The Metropolitan-Vickers Company of the United Kingdom had, prior to 1933, 350 erectors in the U.S.S.R.[38]

Numbers by themselves can, of course, be misleading. A single engineer with the right qualifications, used in the right place at the right time, even briefly, can have a fundamental influence on a plant or even an industry. Thus we find a Soviet source reporting, in reference to a small group: 'In a term of two or three months the American engineers investigated in detail all of the southern and Ural steel plants. . . .'[39]

We can, therefore, focus profitably upon individual engineers. L. A. Swajian, construction engineer for the Ford Motor Company River Rouge plant, was in turn Chief Engineer for construction of the Stalingrad Tractor Plant (1929 to July 1930) and the Kharkov Tractor Plant (after July 1931).[40]

John Calder's work epitomized American engineering practice in the U.S.S.R. At one time connected with construction of the River Rouge plant as well as the Packard plant in the U.S., he was from 1929 to 1933 the chief Soviet trouble-shooter, sent by Soviet authorities to any project in trouble or behind schedule. Calder held numerous official positions—Chief Construction Engineer at Stalingrad Tractor Plant (before Swajian), a similar position at Chelyabinsk, Technical Supervisor of 90 steel plants under the Stal' Trust, Technical Director at Magnitogorsk, Chief Consultant at the Lake Balkash copper project, and so on. Called by Maurice Hindus 'Russia's miracle man,'[41] he received the Order of Lenin (the highest Soviet order) and is generally known as the hero of the Soviet play *Tempo*, by Nikolai Pogodin.[42]

In 1940 we find individual American engineers in such high regard that the Soviets appealed through diplomatic channels to ensure continuation of their work in the Soviet Union. For example, the Soviets expressed to the American Embassy in December 1939 an 'urgent desire' to keep a Mr. Rasmussen (who was bringing into operation at Grozny a new aviation gasoline-cracking plant built by the Max B. Miller Company) on the job until work was completed.[43]

Those foreign engineers who worked for the Soviet Union between 1930 and 1945, whether under the First Five-Year Plan, during the 1936–9 period,

[37] U.S. State Dept. Decimal File, 861.5017—Living Conditions/568.

[38] See p. 170.

[39] A. Zaviniagin, 'U.S.S.R. Favors American Engineers and Equipment,' *Freyn Design*, No. 11 (March 1934), 19.

[40] Amtorg, *op. cit.*, VI, No. 18 (September 15, 1931), p. 412.

[41] Maurice Hindus, 'Pinch Hitter for the Soviets,' *American Magazine*, CXIII, No. 4 (April 1932), pp. 31–3, 134–6.

[42] Eugene Lyons, ed., *Six Soviet Plays* (Boston: Houghton Mifflin, 1934), pp.157–224.

[43] U.S. State Dept. Decimal File, 700.00116 M.E./24, Telegram, December 29, 1939.

under the Nazi-Soviet pact, or under Lend-Lease, were usually top-flight consultants, without whom the projects would have remained on paper only. The Soviets were adept at selecting, in almost every field from irrigation to metallurgy, first-rank foreign construction companies and the finest individual talent. This should not obscure the fact that the Soviets did hire a few grossly unqualified engineers—even outright frauds: e.g., garage mechanics posing as mechanical engineers. These occasionally survived their contracts by practising local politics in lieu of engineering.

DEFINITION OF THE PHRASE 'BUILT BY WESTERN COMPANIES'

In order to gage accurately the contribution of Western firms to the Soviet Union under technical-assistance contracts and similar mechanisms, a clear interpretation of the phrase, 'built by Western companies,' used extensively in the text, is necessary.

A few technical-assistance agreements called only for the transfer of a process technology and the provision of such drawings, specifications, and literature as were necessitated by the transfer. These were, however, uncommon in the period under discussion. Sometimes, as in the Douglas Aircraft agreement,[44] the Soviets started with this limited kind of contract and then expanded it to include the supply of construction materials, subassemblies, specialized tooling, engine-test results, and operator training. As used in this study, the term 'technical assistance' has the widest interpretation. It normally includes not only the supply of technology, patents, specifications, and laboratory results for an agreed period, but also the supervision of construction and equipment installation, including initial operation of at least the first plant. In other words there was at least one (and sometimes several) 'turn key' plant installation in almost every contract. On this account, many equipment sales contracts are viewed as technical-assistance agreements. When a foreign firm sells a complete plant, prints training and maintenance manuals in Russian, trains the operators, and provides backup service, this certainly constitutes technical assistance.

Thus engineers, specifications, and drawings would be sent from the United States, and the foreign engineers would organize and direct, through interpreters, the Soviet engineers and workers. For example, Stuck, at Magnitogorsk, stationed 27 American engineers at strategic points around the blast-furnace site to direct operations. The Soviets supplied raw labor, interpreters, and Soviet engineers, whose function was primarily to learn; these systems

[44] See p. 232.

were always advanced, and not only beyond the experience of tsarist engineers tolerated as holdovers or as 'prisoner engineers,' but also certainly far outside the experience of hastily trained but politically reliable Soviet engineers. Almost to the last man, American engineers in their reports and interviews made the comment that the contribution of the Soviet engineers was detrimental rather than useful. Theirs was a hastily acquired theoretical textbook training, and modern construction practice does not follow theoretical textbook lines.

Initial operation (start-up procedures) was almost always included in technical-assistance contracts. The training of operators and the provision of operation and maintenance manuals in Russian were commonly included. However, there are not a few cases reported in which the Communist Party intervened when a plant was superficially ready and brought the plant into operation with Soviet engineers and operators for propaganda purposes before the schedule established by the Western company. This resulted, of course, in serious damage to the plant; for example, the furnace linings at Magnitogorsk were burned out and the rolling mill bearings at Zaporozhe were damaged in this way. The Communist director usually placed the blame on his Russian technical assistants,[45] although the latter had no part in the decision and foreign engineers bitterly protested such practices. The French Chief Engineer for Disticoque S.A. coke-oven construction projects, for example, finally lost his temper, burned the construction drawings, and returned with his engineers to France. By 1935–6 foreign companies were including in their contracts a clause requiring control of start-up procedures and inspection of all equipment to be installed (even when parts originated in the Soviet Union) before taking responsibility for a project.

Thus 'built by' includes provision of technology and equipment, plus responsibility for satisfactory operation in a 'turn key' installation during an agreed initial period. Provision of labor (including middle-grade engineering talent), raw materials, and, increasingly, semi-fabricated materials (i.e., structural steel) was a Soviet responsibility.

THREE POINTS OF CLARIFICATION

Once again it must be emphasized that the argument is not that technology is the only factor in economic development, although the study is limited to this aspect and the writer himself considers it the most important factor.

[45] See S. Frankfurt, *Men and Steel* (Moscow: Co-operative Publishing Society for Foreign Workers in the U.S.S.R., 1935).

Other elements play their role: one of particular significance in the Soviet Union has been forced labor.[46]

Further, the distinction must be made between the Soviet system and the Russian people. It is easy to confuse an examination of this type with adverse reflections on Russian abilities. Such confusion would be grossly unfair. The Russian people have as much technical and scientific ability as any other people; indeed in certain areas of science and mathematics they appear to excel.

In short, the Soviets have been extraordinarily successful in presenting a façade of indigenous 'socialist' technological progress which they compare to continuing 'capitalist crises.' The statistical presentations of 'expanding socialism' and 'declining capitalism' emanating from Soviet and Western Marxist sources have been ingenious in their use of statistics, graphs, and reasons why capitalism, allegedly in decline for 50 years, still needs to be overtaken. Technical extravaganzas, such as Sputnik and Lunik, involving heavy investment in a narrow sector, are periodic stimuli intended to remind us that Soviet science and technique are, of course, far ahead of that of decadent capitalism.

Those readers who have not forgotten the fallacy of composition might, however, ponder on the alleged quip from one Muscovite to another: 'Why, if things are so good, are they always so bad?'

[46] See S. Swianiewicz, *Forced Labour and Economic Development* (London: Oxford University Press, 1965) and D. J. Dallin and B. I. Nicolaevsky, *Forced Labor in Soviet Russia* (London: Hollis and Carter, 1947). The State Dept. files contain considerable data on forced labor, including numbers and locations of the specific camps.

CHAPTER TWO

Soviet Liquidation of the Foreign Concessions

LIQUIDATION of the more than 350 foreign concessions which operated in the Soviet Union during the 20 years after the Bolshevik Revolution is a neglected topic of some importance. No comprehensive examination of the circumstances and methods of liquidation has been made, and this chapter, for reasons of space, can only outline some of the major factors.

By the end of the 1920s the Soviets were convinced they had found a more effective vehicle than the pure concession or the mixed company for the transfer of Western skills and technology. After 1928 the technical-assistance agreement (called the Type III concession in Volume I) and individual work contracts with foreign companies, engineers, skilled workers, and consultants replaced the pure and mixed concessions. These assistance agreements were more acceptable to the Soviets because under them the Western operator had not even a theoretical ownership claim and the Soviets could control more effectively both the transfer of technology and operations inside the U.S.S.R.

However, even while concessions were in the process of liquidation, proposals for new concessions were being solicited and some were even granted. For example, in 1930 the emphasis in Soviet trade journals was on public-utility concessions to develop power plants and water, gas, sewage, and city-transport supply systems.[1] Housing construction concessions were also offered from 1928 onwards to relieve the severe housing shortage.[2] After 1930, however, few concessions were granted—the last known, in March 1930, was to Leo Werke for production of dental products.[3]

[1] Amtorg, *op. cit.*, V, No. 3–4 (February 15, 1930), p. 62; also V, No. 11 (June 1, 1930), p. 233.

[2] *Ibid.*, V, No. 5 (March 1, 1930), p. 83.

[3] *Ibid.*, V, No. 6 (March 15, 1930), p. 114.

The formal end of the concessions policy came in a resolution of the All-Union Soviet of People's Commissars on December 27, 1930, repealing all former concession legislation and reducing Glavkontsesskom (chief Concessions Committee) to merely informational and advisory functions. Technical-assistance agreements, however, were specifically omitted from repeal.[4]

Liquidation of pure and mixed concessions had started as early as 1923 and continued throughout the 1920s, but the final stage began only with this resolution in 1930. At the end of the decade only 59 concessions, 6 joint-stock companies, and 27 'permissions to operate' remained in effect.[5] By 1933 no manufacturing concessions remained and the few trading concessions were closed down by the mid-1930s. Only the Danish telegraph concessions, the Japanese fishing, coal and oil concessions, and the Standard Oil lease remained after 1935.

The liquidation of foreign concessions followed the Communist plan. The political theory of such a system demands ejection of capitalist elements at some point, although Leninist tactics may promote temporary compromises such as concessions or joint ventures with capitalists for immediate goals or to solve pressing problems. The concessions were, as Lenin dictated, the means of obtaining 'the basics.' When their Western operators had been cozened into transferring as much capital, equipment, and skill into the Soviet Union as their credulity would allow, the concessions were expropriated. In 1930 Yugoff[6] concluded that the whole concessionary policy and practice of the Soviet Government had been guided by such a principle: to make war upon capitalism.

Let us examine the expropriation of foreign concessions by the Soviet Government in more detail. It was the economic and not the political factor in a concession which usually determined its duration. The only recorded attempt to use the concession as a purely political weapon occurred after the assassination of the Soviet diplomat Vorovsky in Switzerland in June 1923. As a result of the acquittal of the alleged murderers, the Soviets announced that no further concessions would be granted to Swiss citizens and that all offers would be rejected. As there were no Swiss concessions, and few Swiss commercial dealings of any kind, the announcement was merely a gesture.[7]

In all cases a period of duration was agreed upon and written into the concession agreement. In the case of a trading concession, the contract was

[4] A translation of the resolution is in U.S. State Dept. Decimal File, 861.602/237, Riga Consulate Report No. 8019, September 4, 1931.

[5] *Za Industrializatsiiu*, February 4 and 16, 1930.

[6] A. Yugoff, *Economic Trends in Soviet Russia* (New York: Smith, 1930), p. 223.

[7] Veridicus (pseud.), *Suisse and Soviets: Histoire d'un Conflict* (Paris: Delpeuch, 1926), pp. 103–4.

for one year and renewable; in the case of a manufacturing concession, the contract was for a much longer term, as would indeed be necessary to induce a foreign entrepreneur to invest his capital. For example, it was agreed that the Swedish General Electric (A.S.E.A.) concession, started in 1927, was to run to 1962. The Bryner and Company concession was to run for 36 years, or until 1960. The Japanese Hokushinkai oil concession on Sakhalin and most of the British Lena Goldfields concession were to run until 1975.

In no case, however, was a manufacturing or mining concession allowed to operate its full agreed-upon length, with the possible exception of the Japanese fishing concessions on Sakhalin and the telegraph concessions, which had clauses allowing revocation by either party on six months' notice. Two other concessions—with the Anglo-Russian Grumant and the Netherlands Spitsbergen Company, both operating coal mines on Spitsbergen—are reported to have been purchased from their operators in 1932,[8] but such purchases were rare.

By early 1930 the Soviet intention to close out the remaining concessions was clear, and Western government officials were remarkably united in their interpretation as to the reasons for, and the circumstances surrounding, closure. The Polish Foreign Office noted that only six Polish concessions remained in February 1930, and that, although they had been quite successful in the past, now 'with the exception of the Serkowski, most Polish concessions in the U.S.S.R. are faring very poorly, for two reasons; namely, the difficulty which the Soviets place in the way of shipment abroad by the concessionaires of their profits and the question of labor. . . .'[9]

By 1931 the German Government, which had previously encouraged concessions, was now urging its nationals that German concessions be closed out and no further capital invested, the principal difficulty being the transfer of cash balances to Germany. At this point the Stock Company, a large Leningrad concession, had already closed down and the Resch concession in the Ukraine, the Tiefenbacher button concession in Moscow, the German Building Construction Company, and the Krupp concern had applied for permission to close. The German Foreign Office pointed out that 'the difficulties of these firms in the past have been the subject of almost continuous diplomatic correspondence.'[10]

The American legation in Warsaw suggested in January 1930 that the Soviets were no longer interested in pure concessions and that the Soviets

[8] *Izvestia*, No. 294, October 23, 1932.

[9] U.S. State Dept. Decimal File 861.602/211, Warsaw Legation Report, February 8, 1930.

[10] U.S. State Dept. Decimal File, Report 936, Berlin Embassy, May 26, 1931.

'have even gone as far as sabotage in order to discourage the operators.'[11] Further, it was added that this interpretation was 'universal' among foreign diplomats in Moscow.

While officially the Soviets stated that disagreement with the British concession Lena Goldfields was over violation of the contract, the real reasons, according to well-informed circles in Moscow

> lay in the fact that the time had now come when the enterprise was about to yield profits for the concessionaires and that difficulties had arisen in connection with the transfer of these profits to foreign countries.

Similar problems beset the Estonian concessionaires. As long as concessions were being developed

> and as long as Estonian funds were being invested in these enterprises all was well. When, however, the moment arrived when the Estonian merchants began to secure returns from these investments, such difficulties were placed in their way by the Soviet authorities that the projects had to be abandoned. In this way great losses were incurred by the Estonians who had attempted to carry on business in the Soviet Union.[12]

Thus as each concession became profitable, it also became a target for expropriation.

METHODS OF EXPROPRIATION: PHYSICAL FORCE

Physical force was used in very few instances. Indeed, force was not necessary; the Soviet had ample economic weapons—unions, credit policy, customs, currency-export restrictions—which could be utilized without resorting to crude physical ejection of concessionaires.

However, physical force was used in at least one instance at an early date, before many—indeed most—concession agreements had even been made. What is curious is that the U.S. State Department had affidavits and detailed reports on file in 1924 relating to the forcible expropriation of the Caucasian-American Trading and Mining Company in 1923, but did not subsequently warn other venturing American businessmen.[13]

[11] U.S. State Dept. Decimal File 861.602/210, Warsaw Legation Report, January 13, 1930. The legation also reported a Rykov speech at a session of the Central Executive Committee in which he was reported as saying that foreign firms should invest capital, not capitalists—meaning profit-earners.

[12] U.S. State Dept. Decimal File, 861.5017—Living Conditions/163.

[13] See National Archives Microcopy T 640 (Claims against the Soviet Union by the United States), Roll 2 (end) and Roll 3 (start) for extensive material including maps and photographs, and particularly the following document addressed to the Dept. of State: *In the matter of the Application for the Support of a Claim—Caucasian-American Trading & Mining Co., a Delaware Corporation—against—Soviet Government of Georgia (Russia)*, February 9, 1924.

The Caucasian-American Company, registered in Delaware with the objective of developing the use of American agricultural equipment in Russia, signed a concession agreement with the Soviet Government on April 20, 1921. This was agreed to run until 1970. Agricultural equipment, including 70 Moline plows, was imported, and two American engineers were sent with it.[14] The company claimed that it was the first to introduce tractors into Russia, that it spent half a billion rubles, erected buildings, reclaimed marshes, trained workers, and introduced advanced methods in Georgian agriculture.

Two years later the company was physically ejected from its property. The description of the ejection contained in a memorandum to the U.S. State Department is worth quoting extensively. After stating that on February 26, 1923 a group of 'Bolsheviks,' including the top Party officials from Tiflis, came to the company property at Nakalakevie, the memorandum continues:

> . . . they were heavily armed, ordered [the company] to stop the work, arrested the apprentices, assaulted them, intimidated the American engineer, called a meeting at which it was resolved to take over the estate and to offer to the company land somewhere else. After the meeting they organized looting and destruction (pogrom) of the Company's property, much against the wishes of the terrorized population. The estate was looted, buildings, orchards and other property destroyed in the most barbarous manner, beautiful trees cut down, live-stock stolen, employees and books seized, goods supposed to have been given as promised, taken away. . . . Orachelashvili, who is now President of the Republic of Georgia seized the offices of the Company in Tiflis, including furniture. . . . Finally, the President of the Company, D. P. Abashidze was sentenced to death, to save his life he had to escape from the Caucasus and from Russia through Siberia which he did partly on foot. All this had been done in order to secure the documents in his possession, and which are proving that the Company fulfilled all terms of the agreement. . . . All this was done at the very time when after six years of Revolution, the Soviet Government advertised, that it was not as bad as described, and was inviting the outside world to have business dealings with it.[15]

METHODS OF EXPROPRIATION: BREACH OF CONTRACT

Few contracts have been found in which the Soviets fulfilled all the conditions agreed upon; the only exceptions were the short-term one-year renewable trading contracts and those covered by the 'arm's-length' hypothesis.[16] There

[14] *Agreement, Moline Plow Company and Caucasian-American Trading & Mining Company*, dated 6 February, 1922, National Archives Microcopy T 640–3.

[15] *Ibid.* The documents mentioned in the quotation are now in the National Archives files; these include translations, bills of lading of goods moved into the U.S.S.R. by the company, and signed agreements with the Soviet Government. See Microcopy T 640–2/3.

[16] See Sutton, *Western Technology . . ., 1917 to 1930*, chap. 17.

are numerous complaints recorded by concessionaires that the Soviets interpreted concession agreements only to suit their own purposes, and abided by neither the letter nor the spirit of the agreements.

One case involving breach of contract and economic pressure is recorded by the German courts: that of I.V.A. (International Warenaustausch Aktiengesellschaft).[17] I.V.A. was a concession devoted to assembling and packing eggs and exporting them to Germany. In late 1929 the Soviets arbitrarily denied I.V.A. the right to continue to export eggs and began to build up a Soviet egg-export organization. This dispute was submitted by I.V.A. to a Moscow court of arbitration, as allowed in its concession agreement. The Soviets then removed the only German member of the three-man court and replaced him with a third Russian member. The court found against I.V.A.

The Soviet Union then brought suit in the German courts to enforce its own decision against I.V.A. The German court decided in favor of I.V.A. 'on the grounds that the elimination of the German member of the Court of Arbitration had taken place illegally and without due course.'[18] The decision was upheld in the Kammergericht in Berlin, sitting as a court of appeals. A damage suit by the Soviets against I.V.A. in the Landgericht in Berlin was also decided in favor of I.V.A. However, the Soviets appealed these decisions within the German courts and the company, 'despairing of a definite settlement within a reasonable time,' went into bankruptcy.[19]

METHODS OF EXPROPRIATION: TAXATION

When concessions were profitable, domestic taxes were used to force expropriation. A prominent example is the Richard Kablitz Company, a Latvian concession which operated six plants in the U.S.S.R. from 1921 to 1930. Kablitz manufactured stokers, economizers, and boilers, and was the only manufacturer of this equipment in the Soviet Union. Although working conditions were not good, the company undertook a very large quantity of work, installing, for example, boilers in more than 400 Soviet factories. Until 1926 Kablitz made significant revenue and, although taxes limited profits, some earnings were exported.

In June 1926 Kablitz was forbidden to send currency abroad—a breach of the concession agreement. After negotiation, Kablitz was granted permission to export 40,000 rubles per year, but the necessary export certificates were not

[17] U.S. State Dept. Decimal File, 861.602/204, Report 373, Berlin Embassy, July 14, 1930. The file includes copies of the German court summaries.

[18] The German court held this was a 'positive violation of contract' (U.S. State Dept. Decimal File, 861.602/216, April 1930).

[19] Data from *Sevodnia* (Riga) No. 39, February 8, 1931. Copy in U.S. State Dept. Decimal File, 861.602/233, February 16, 1931, and Report No. 7506 (Riga).

forthcoming in either 1928 or 1929. An explicit demand by the company to export 40,000 rubles in 1929 was countered with a Soviet demand for a 'normative tax' of 300,000 gold rubles.[20] This tax forced the company into liquidation.

While admitting loss of its six factories and all invested capital, Kablitz requested compensation only for exploitation of its patents. This is in itself a revealing episode. One year previous to the imposition of the 'normative tax,' the OGPU had ordered Ramzin, a first-rate Russian engineer,[21] to work out designs to replace those of Kablitz. This was done, but the Ramzin-Kotloturbin designs developed were found to be useless and, in spite of protests of the now-expropriated firm, the Soviets continued to use the Kablitz patents without compensation.

Other concessions suggest that taxation was a common weapon used either alone or with other means to force out the foreign operator. The Czenstochova celluloid factory in Leningrad was burdened with a poorly prepared contract which the Soviets consistently interpreted to allow only a minimum of profits. The coup de grâce was applied in early 1930 when tax difficulties forced the firm to close down.[22] The Vint concession was forced out by continual increases in taxation from 1923 to 1928.[23]

The Soviet monopoly of foreign exchange meant that denial of permission to export proceeds could be coupled with taxation as a weapon. Tiefenbacher Knopfkonzession, employing 1,100 persons, is one example in which both methods were used.[24]

METHODS OF EXPROPRIATION: HARASSMENT

Harrassment, less open than physical ejection, was used as a weapon for expropriation. Drusag, the German agricultural concession owned 90 percent by the German Government, is an example in which Soviet harassment was countered by unsuccessful peace offerings by the German Government.

In 1929 and 1930 a series of labor incidents involved the German management of Drusag. These were climaxed in the trial of Director Ditlow on minor charges involving labor regulations. Ditlow was accused of allowing shepherds to work more than eight hours per day and of not supplying work clothes

[20] The U.S. Riga Consulate did not know of the 'normative tax.' Kablitz provided a jocular explanation: 'The telephone number of the respective concessionary is multiplied by the age of his wife. If the amount thus calculated looks insufficient, one or two ciphers are added to it.'

[21] Later tried on charges of industrial sabotage.

[22] U.S. State Dept. Decimal File, 861.602/221, May 6, 1930.

[23] Sutton, *Western Technology . . ., 1917 to 1930*, pp. 101–2.

[24] U.S. State Dept. Decimal File, 861.602/216, April 1930.

(which were in any event unobtainable). The 'evident object in view was to undermine the discipline at the concession.'[25] The Soviet authorities then seized and auctioned off the Drusag automobiles and typewriters. A levy of 3 percent was placed on the salaries of all German workers. Messages to the outside world were confiscated.[26]

A search of the U.S. State Department Decimal File produced numerous statements concerning such harassment. For example, the Tetuikhe Mining Corporation concession (after Lena, the largest such concession), was liquidated December 26, 1931, as the following attests:

> . . . in 1930 the Soviet Government having forced the Lena Goldfields concessionaires out of the U.S.S.R. began a campaign against the Tetuikhe Corporation, and published reports alleging that it had been in conflict with its workmen. Eventually, at the end of last December, the corporation suspended operations. . . .[27]

The Novik concession, for manufacture of felt products near Moscow, was liquidated in November 1929, 'due to the impossibility of the concessionaires to work in face of the opposition put in its [*sic*] way by the Soviets on labor questions.'[28]

In the case of the Standard Oil lease of a Batum refinery, we find the local press stirring up trouble. For example, *Zaria Vostoka* ran an article critical of the American management of the plant and took exception to the way 'the Americans talk to the Russian workers.'[29] Despite the criticism, Standard Oil was still operating its Batum refinery in 1935.

HISTORY OF THE LENA GOLDFIELDS, LTD., CONCESSION

The experience of Lena Goldfields, Ltd., largest of the concessions, is well worth exploring as a case history. The company was required to make specific investments in properties transferred to its care and to produce stipulated quantities of various minerals and metallurgical products.

An investment of not less than 22 million rubles was required. The Moscow *Izvestia*[30] reported early in 1929 that total investments by the company had reached 18,129,000 rubles, of which 15 million for mining equipment had

[25] U.S. State Dept. Decimal File, 861.602/212, Report No. 25, Berlin Embassy, February 20, 1930. The director of the Zellugol concession was fined 10,000 rubles and the director of the Leo Werke concession was fined 5,000 rubles on similar charges.

[26] *Ibid.*

[27] U.S. State Dept. Decimal File, 861.602/244, Report No. 89, Riga Consulate, February 26, 1932.

[28] U.S. State Dept. Decimal File, 861.602/211, Warsaw Legation Report, February 8, 1930.

[29] *Zaria Vostoka* (Tiflis), 'The Smoke of the Fatherland,' No. 268 (September 29, 1931), p. 3.

[30] No. 69, March 26, 1926.

been provided by a banking consortium including the Deutsche Bank of Germany and Blair & Company of New York.

The agreement further required a minimum annual production of 420 poods of gold, 1,000 poods of silver, one million poods of copper, 600,000 poods of zinc, and 180,000 poods of lead. According to *Ekonomicheskaya Zhizn*,[31] the 1926–7 output of gold was 499 poods, an amount which exceeded the required minimum by 79 poods. No reports of failure to meet stipulated production totals have been traced. The company paid royalties of two million rubles in 1926–7.

Although the Soviets breached the agreement from the start by not turning over to Lena Goldfields all properties included under Articles 1 and 2 and, more importantly, by not allowing the free sale of gold on the London gold market, signs of trouble did not appear until early 1928. In April of that year *Ekonomicheskaya Zhizn* printed an article, 'There Must Be an End to It,'[32] objecting to the Lena Goldfields policy of allowing mineral exploration to be undertaken by private prospectors (starateli), although this was allowed under the agreement and indeed was the system used by the Soviets themselves in the Alden fields. Some 18 months later the Soviet Government complained that 1928–9 royalties amounting to one million rubles had not been paid. Lena was unable to pay, as the fixed price paid by the Soviets for Lena's gold was approximately one-fourth the world price. Free export of Lena's gold, although permitted under the concession contract, was in practice prohibited. This forced default was followed on October 22, 1929 by an article criticizing trade unions for 'leniency' toward the company: 'The concessions stand as a sort of appendix, apart from the rest of our life. This part of class warfare has been neglected and all kinds of weeds grow there. . . .'[33]

This Soviet pressure coincided with completion of Lena's technical reconstruction and plant-expansion program. Herbert Guedella, Chairman of the company, reported in late 1928 that three years of intense reorganization and investment were producing results.[34] The large Bucyrus dredge was installed at Lenskoie in 1928. The new plant at Seversky was completed in September 1929. The Revda Iron and Steel Plant additions and renovations were completed in early 1929. A considerable amount of work had been done in opening up the Degtiarsky copper mines and 12,000 tons of copper per year were scheduled to be produced in 1930. The Altai district mines were completely re-equipped by the end of 1929. All this was facilitated by credits provided by Western bankers on the Lena Goldfields account.

[31] No. 283, December 11, 1927.

[32] No. 93, April 21, 1928.

[33] *Izvestia*, October 22, 1929.

[34] *Times* (London), November 20, 1928.

The actual ejection of Lena Goldfields personnel, as distinct from preliminary propaganda skirmishes, was a multi-pronged effort involving the OGPU, the Central Committee of the Party, the trade unions, and Glavkontsesskom. The latter requested payment of royalties within four months. Simultaneously, the OGPU raided and searched all units of Lena's widespread operations; these raids were not publicized in the Soviet press. Alexei Rykov, a prominent Bolshevik leader, then made a speech to the Central Committee suggesting that concessionaires were welcome if they operated on imported capital, did not expect unlimited profits, and did not indulge in counter-revolutionary activity. The Soviets sabotaged some Lena operations, and company personnel were ejected from other properties.[35] *Ekonomicheskaya Zhizn* then accused the company of delaying wage payment to workers for up to six days.[36]

These acts were followed by a propaganda campaign in both the domestic and foreign press concerning alleged nonpayment of royalties, nonfulfillment of the construction program, and demands for compensation to the Soviet Union for 'uneconomic work.' These accusations were then 'proven' by finding four Lena employees guilty of espionage.

An arbitration court, with Dr. Otto Stutzer as chairman, met at the Royal Courts of Justice, London, in the summer of 1930. Their decision was published on September 2, 1930.[37] The court found the main factors in the failure of the Lena Goldfields concession to be a series of unilateral actions taken by the Soviet Government.

It was determined that Lena had fulfilled its agreement by producing 1,844 poods of gold in four and a half years and by making the specific investments stipulated under the concession agreement.

A number of Soviet acts, explained below, were identified by the arbitration court as breaches of the contract. Article 20 gave Lena the absolute right to sell freely on foreign markets all gold produced. If the gold was sold to the Soviet Union, Article 20 stipulated that the prevailing London market price be paid. The Soviets breached Article 20 by instituting the penalty of death for selling gold abroad, by purchasing Lena's gold only for rubles and at an exchange rate fixed, not in relation to the London gold price, but arbitrarily at about one-quarter of the London price. Thus Article 20 was found by the court to be a 'nullity.'

The Soviet Government, it was found, had not provided police protection as required in Articles 35 and 80. Thefts of gold, estimated at between 30

[35] U.S. State Dept. Decimal File, 861.63—LENA GOLDFIELDS LTD./18, January 13, 1930, Warsaw Report.

[36] No. 20, January 25, 1930.

[37] *Times* (London), September 3, 1930.

and 40 percent of total output, were encouraged at least partly by this refusal of protection.

The Soviets did not transfer to the concession all properties specified in Article 2: particularly certain gold mines, iron-ore mines and the Altai fire-clay deposits. This forced Lena to import fire clay at great cost from Germany. The company had also been physically ejected from the marble-limestone field granted to it under Article 1. Limestone was essential as a smelter flux, and Lena was then forced to buy inferior limestone at great cost.

The civil rights of Lena employees had been removed and simultaneous OGPU raids had been made at nearly all the company's numerous establishments, spread over 2,400 miles. The OGPU had seized and searched 131 company personnel; 12 were arrested and 4 placed on trial and sentenced to prison terms for espionage.

The Soviets did not put in an appearance at the arbitration court, which awarded damages of £12,965,000 sterling (about $65 million) to the Lena Goldfields, Ltd.[38]

The question of compensation was immediately taken up by the British Government, and it is clear that only continued assistance from official sources, five years of negotiation, and the possibility of closing off trade between Britain and the U.S.S.R. brought any compensation at all to Lena.

An agreement was reached in November 1934 under which the Soviet Union agreed to compensate Lena Goldfields to the amount of £3 million ($12 million at 1934 rates of exchange) over 20 years. These payments, in the form of non-interest-bearing notes, were to comprise £50,000 on ratification by Lena shareholders, and 20 installments of £92,500 each, followed by another 20 installments of £55,000 each, paid at 6 monthly intervals beginning in May 1935.[39] This settlement was ratified by the Soviet of People's Commissars in March 1935.[40]

A routine inquiry by the Commodity Credit Corporation to the State Department in early 1937 reopened the Department's file and brought forth information about the notes given by the Soviet Government for Lena

[38] *New York Times*, September 3, 1931, p. 12, col. 3.

[39] Details from 861.63—LENA GOLDFIELDS LTD./36, quoting House of Commons, *Parliamentary Debates*, November 12, 1934, col. 1502. Lt. Col. J. Colville (Secretary, Overseas Trade Department): 'the company recognizes that the prospects of any settlement at all without the assistance they received from His Majesty's Government would have been slight.' This settlement was not received enthusiastically in the Commons. For example, Sir William Davison asked, 'Do I understand that this British company has been obliged, on the recommendation of the British Government, to settle for a sum of £3,000,000 which is to be paid over 20 years, in lieu of an arbitral award of £13,000,000?'

[40] *Za Industrializatsiiu*, March 22, 1935.

Goldfields and the Tetuikhe mining properties. These notes had been distributed to shareholders and privately traded in London. The Commodity Credit Corporation was offered a quantity of Lena Goldfields notes by Cookson Produce & Chemical Company, Ltd., of London in exchange for 15 million pounds of American tobacco.[41] The Departments of Commerce and State, in determining whether to accept such notes, concluded that payments had been made promptly by the Soviet Government and that there was no open market in the notes, although there had been a number of private sales at varying discount rates, one authority quoting 9 percent.[42]

From this source we also learn that the Soviets paid £940,000 in similar non-interest-bearing notes for the Tetuikhe claims. One-third of these fell due before 1938 and two-thirds before 1949. This agreement was concluded in 1932.[43]

The end result was that in the few cases in which the Soviet Union did pay compensation, it was below arbitrated value and did not bear interest, and thus gave the Soviet Union an advantage equivalent to long-term no-interest loans.

SOVIET EXPLANATIONS FOR LIQUIDATION

The reasons for liquidation given in the Soviet press can be summarized under three headings.[44] First, it was argued that concessions were losing their 'monopoly' or 'semi-monopoly' position and consequently the possibility of making 'enormous profits.' This explanation is consistent with Leninist teaching that private capital can only exist in monopoly circumstances. Second, the concessions were said to be unable to compete with 'more advanced' Soviet enterprises coming into production. Third, it was said that capital investment by foreign concessionaires was absolutely inadequate, and that in any event working capital was coming from State banks and not from capital imports; this was coupled with statements that British and American banks had refused credits.

These statements are only partially true and are not by any means full explanations. They ignore the acts of harassment, breaches of contract and trade-union pressure. The 'loss of monopoly' argument was hardly relevant

[41] U.S. State Dept. Decimal File 861.63—LENA GOLDFIELDS LTD./40.

[42] U.S. State Dept. Decimal File 861.63—LENA GOLDFIELDS LTD./41. However, the reader should not infer that all sales took place at this discount. The Soviets inserted some unusual redemption clauses and there were several methods of working out the discounts, giving quite different end results.

[43] See Sutton, *Western Technology . . . , 1917 to 1930*, p. 286, concerning Tetuikhe and the 'arm's-length hypothesis.' Tetuikhe obviously received more favorable treatment than Lena Goldfields.

[44] See, for example, *Izvestia*, March 2, 1930.

in a goods-short economy such as the Soviet Union. The concessionaires were always more efficient than the new Soviet enterprises and sold their products with little difficulty. It is true that foreign banks were reluctant to advance credits for internal operations, yet Drusag, for example, was amply financed by the German Government for many years and was, nevertheless, expropriated.

A standard propaganda ritual was practiced before expropriation of each concession. This ritual consisted of increasingly stronger criticism of errors or supposed errors committed by the concessionaire. Nothing appears to have been too remote or insignificant to escape attention. For example, the Control Company concession gave its employees small sums of money as Christmas gifts. *Izvestia* reported that these gifts were indignantly refused by the workers because 'tips have been abolished' and that Christmas was 'a new weapon for deceiving the workers.'[45] The point, of course, was brought up to prepare the way for expropriation.

Sometimes the ritual became a trifle forced, particularly when the operator had substantially fulfilled his agreement. For example, the Japanese coal concession, Kita Karafuto Kugio Kabusiki Kaisha, signed in 1925 for operation of three coal fields on Sakhalin, was criticized on insignificant grounds. The company built a 300-kilowatt electric-power station, a 361-meter cableway and a 1,500-ton conveyor system, but, it was said, brought in only 'obsolete new machines' with nothing for Soviet engineers to learn. This became the basis for criticism.[46] The company was expropriated in 1944.

In the case of a Japanese oil concession, the Soviets accused the concession of wasting oil because it allegedly utilized 16.5 percent of its output in operating the concession. The future of the concession, warned *Za Industrializatsiiu*, would depend on the ability of the Japanese concessionaires to 'supply sufficient capital.'[47]

Statements by the Hammer concession (the Moscow Industrial Concession) on its own liquidation reflect the official Soviet argument, but the Hammers were in an 'arm's length' relationship with the Soviet Union.[48] The official reasons for liquidation were that inadequate capital had been imported by the Hammers and that further credit had been denied by British and American banks. Thus expansion into new lines was curbed by inadequate capitalization.

[45] January 15, 1930.

[46] *Za Industrializatsiiu*, May 16, 1930.

[47] February 23, 1930. The Japanese coal and oil concessions on Sakhalin, the last surviving concessions, were liquidated in 1944. Harriman reports that Vyshinsky replied to a question concerning compensation for their expropriation: '. . . the Soviet Government would pay a small sum for a large property.' U.S. State Dept. Decimal File 861.b.6363/191: Telegram.

[48] Julius Hammer was a founding member of the U.S. Communist Party.

The concession was in debt to Gosbank, and there was competition from new State enterprises. As a result Hammer was reported as willing to sell, and the factory was put into the Moscow Chemical Trust.[49] Unlike those of other concessions, the Hammer debts, internal and external, were paid by the Soviet Government, and the Hammers were allowed to export their profits. Shortly after leaving the U.S.S.R., they opened the Hammer Galleries in New York and became the sales outlet for confiscated tsarist art treasures.

This favorable treatment, however, was unusual; most concessions were expropriated without meaningful compensation. However, the propaganda ritual was used to preserve a façade of legality over expropriation of the concession. Censorship of the operating results of concessions, coupled with the propaganda ritual, ensured that the historical record would be favorable to the Soviets. This objective has been almost completely achieved.

An excellent review of concession operations and liquidations before 1926 was made by W. Kokovzoff,[50] who concluded that others would suffer the fate of liquidation. He foresaw correctly, for example, the demise of the Harriman concession and that Harriman would one day be faced with 'insurmountable difficulties.'[51] Kokovzoff also noted that in 1926, of the 110 concessions granted, 24 had been liquidated, of which only 13 had not assumed their contractual obligations.[52] This means that 97 concessionaires had already made their investments as required in the contract. Kokovzoff pointed out that the most innocent report by any concession director to his home office was considered an act of 'economic espionage' and cited the case of Professor Clair, a Swiss citizen condemned to 10 years in prison for such activity; on this basis Kokovzoff correctly forecast the circumstances surrounding the expropriation of Lena Goldfields.

The Soviets themselves warned explicitly of the ultimate fate of the concession. Kokovzoff quotes several examples. One from *Le Messager de Paris* reports a speech by Bukharin:

> On the one hand, we admit capitalist elements, we condescend to collaborate with them; on the other hand our objective is to eliminate them completely ['radicalement'] to conquer them, to squash them economically as well as socially. It is a type of collaboration which presumes a furious battle, in which blood may necessarily be spilled.[53]

That this message was not seen and correctly interpreted by Western businessmen is almost incredible. About 250 agreements had yet to be

49 *Izvestia*, March 2, 1930.

50 'Les Soviets et les concessions aux étrangers,' *Revue des Deux Mondes*, XXXV (1926), p. 158.

51 *Ibid.*, p. 168.

52 *Ibid.*, p. 162.

53 *Ibid.*, p. 161. *Le Messager de Paris* was an official Soviet publication in Paris.

concluded; yet no warning was given by Western governments to their businessmen.

THE LESSONS OF THE FOREIGN CONCESSION

The concession was a Leninist tactical maneuver consistent with the announced plan to acquire the fruits of Western economic and technical strength. The policy began as the foreign counterpart of the New Economic Policy and continued long after the domestic Russian entrepreneur had been expropriated for the second time in 1924. As Lenin pointed out to the Russian Communist Party on November 27, 1920, 'Concessions—these do not mean peace with capitalism, but war upon a new plane.'[54]

Thus the ultimate fate of the concession was never in doubt. When his skills and his last dollar, pound, mark, or franc had been squeezed from the foreign concessionaire, the door would be slammed shut and his assets inside the Soviet Union expropriated.

In the final stage of this policy, the Russians employed an exquisite combination of tactics. The argument used in 1928–31 to encourage even more Western investment and designed to maximize economic benefits to the Soviet Union was also utilized as the main reason for expropriation. The Soviet theme in 1928–31 was 'either supply more capital or we will expropriate.' This threat worked well, for example, with Drusag, in which the German Government itself made further investments from 1926 to 1931, until it owned 98 percent of the concession. When the foreign businessman discovered such investment was endless, he withdrew and suffered his losses in silence. It is noteworthy that expropriation was given a façade of legality, usually preceded by a propaganda ritual designed specifically for foreign consumption.[55] A policy of rigid censorship concerning concession operation, particularly after the 1927 law which made the publication of concession news a crime of espionage, prevented widespread Western knowledge of the fate of the concession. This policy was aided by the silence of Western businessmen anxious to hide their failures and by the grant of compensation in several key cases in which the concessionaires had considerable political influence in the West.

The Polish, Estonian, Latvian, Lithuanian, Czechoslovakian, and Hungarian concessionaires came off worst, in the final analysis. After helping the Soviets develop Russia, they were ejected not only from their concessions but, in another 15 years, from their own homelands as well.

[54] V. I. Lenin, 'Report on Concessions to the Bolshevik Fraction of the Eighth Congress of Soviets,' December 21, 1920, in *Dokumenty vneshnei politiki SSSR*, III (Moscow: Gospolitizdat, 1957).

[55] It should be noted that ultimate expropriation was predicted by the United Kingdom and the United States foreign offices when the concession policy was first announced. See Sutton, *Western Technology . . ., 1917 to 1930*, pp. 295–6.

In brief, the lesson for the West is that any joint economic enterprise with a Communist nation is inexorably destined for seizure when the advantages to the Communist nation have ceased or when no further financial or technological investment can be extracted from the foreign partner.

Regrettably, a further lesson for Western businessmen is that his own government, for reasons of policy, may not always be in a position to provide prompt and accurate information on Soviet intentions. The U.S. State Department and the British Government had policies of 'noninterposition' and the German Government a policy of concession encouragement even when it was evident from material on file that concessions were a temporary tactic, and indeed had been predicted as such by all Western foreign offices.[56]

[56] Some British Members of Parliament went so far as to encourage investment in concessions for reasons of ideological sympathy with the Soviet Union rather than concern for the interests of British businessmen; see Anglo-Russian Parliamentary Committee, *Possibilities of British-Russian Trade* (London: 1926). Moreover, although most Western businessmen have been able to learn from their experiences, the same cannot be said for Western politicians. For example, the J. G. White Corporation of New York had unpaid claims against the Soviet Union totalling $387,000 and commented to officers of the State Dept., 'We believe it would be a great mistake for the Government of the United States to recognize the Government of Russia, for if our government did, there would probably be the same history of relations on a larger scale that we have had on a smaller scale.' (U.S. State Department Decimal File, 861.602/252, December 31, 1930.) Four years later President Roosevelt recognized the Soviet Union. The Soviets broke every one of their political commitments within a few months of signature.

CHAPTER THREE

Technical Assistance to Irrigation Construction

THE TURKESTAN IRRIGATION PROJECT OF A. P. DAVIS

THE Russian cotton-manufacturing industry was organized into factories about 1825. By World War I it was the third largest in Europe, with over eight million spindles in 745 factories and employing 388,000 workers. Domestic cotton growing, which supplied about one-half the raw material requirements, was concentrated in the Ferghana district of Turkestan and cultivated by an extensive irrigation system.[1]

After the October Revolution both cotton growing and cotton manufacturing almost ceased. Production of cotton textiles was restarted with German assistance and imported American raw cotton financed by the Chase National Bank.[2] These imports were a major drain on limited foreign exchange, and consequently there was a major drive to restore the old irrigation systems, add further irrigated acreage, and increase domestic cotton production. Irrigation of areas in Turkestan and Transcaucasia offered more promising solutions.

In tsarist times Russia had had 4,222,000 hectares under irrigation. Gosplan anticipated expending more than one billion rubles between 1928 and 1932 to increase this irrigated area by 1.5 million hectares: 50 percent in Central Asia, 20 percent in Kazakstan and Transcaucasia, and the remainder in the North Caucasus area.[3]

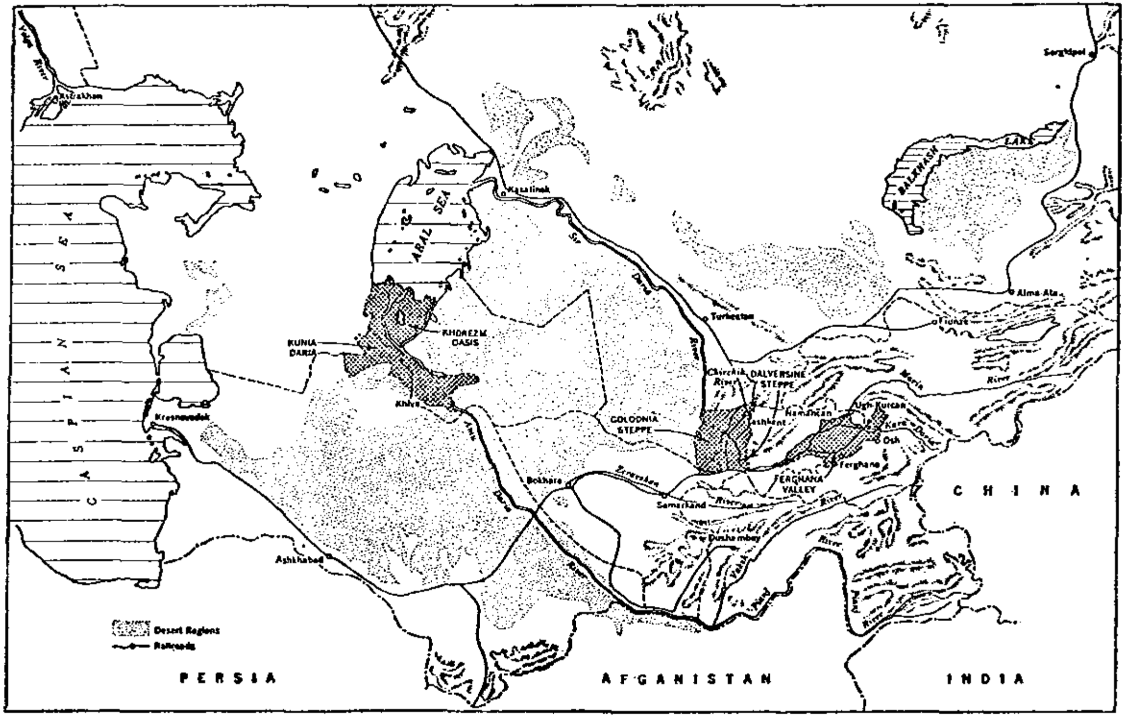
In 1913, Arthur P. Davis, construction consultant for the Panama Canal, former Director of the United States Reclamation Service, and one of the best-known of American irrigation engineers, had surveyed the feasibility of irrigating the Kara Kam desert of the Golodnaya Steppe (Hungary Steppe)

[1] W. Busse, *Bewasserungs Wirtschaft in Turan* (Jena: 1915).

[2] Sutton, *Western Technology . . ., 1917 to 1930*, p. 297.

[3] Amtorg, *op. cit.*, IX, No. 5 (May 1934), pp. 116–7.

Figure 3–1 CENTRAL ASIA IRRIGATION PROJECTS



Source: *Civil Engineering*, II, No. 1 (January 1932), p. 2.

in Central Asia. He finally recommended further surveys and preliminary planning work. For 15 years he heard nothing more about the project; then in June 1929 he was invited to Moscow and informed as he reported later, that his recommendations for Golodnaya Steppe had been adopted and that 'it had been ready for construction for several years and was then awaiting my criticism and approval. . . .'[4]

Davis concluded a preliminary technical-assistance contract with the Soviets, re-examined his earlier proposals and all available surveys and plans, inspected the ground, and agreed to remain in the Soviet Union as a consultant, 'giving advice as to necessary changes and further work to be undertaken.'[5] Davis was given complete engineering responsibility for the irrigation program in Central Asia. The organizational structure of Glavkhlopkom (Chief Cotton Commission) and its irrigation construction departments is outlined in figure 3–2, based partly on the original Soviet chart. Amburo (American Bureau) was the all-American engineering consultant organization within Glavkhlopkom and was responsible for new irrigation construction and operations. Davis was chief of Amburo in Tashkent, and a Major Olberg was chief of a similar office in Tiflis.[6] Although the American contingent was by far the most important, other foreign irrigation specialists were used. In 1930, for example, Amtorg reported, 'Twenty-three Japanese and Korean specialists have arrived to assist in the irrigation and sowing work.'[7]

THE AMERICAN BUREAU (AMBURO) IN TASHKENT

This is a sector of the Soviet economy in which the Western technical contribution can be precisely identified. Willard Gorton, a U.S. irrigation consultant employed by the Soviets as Chief Consulting Engineer for the Vaksh irrigation project and C. C. Tinkler of the Seabrook Engineering Corporation (which had road-building contracts in the Turkestan irrigation areas) smuggled their working papers and reports out of the U.S.S.R.[8] These papers throw

[4] A. P. Davis, *The University Hatchet* (Washington, D.C.: May 1932). See also: A. P. Davis, 'Irrigation in Turkestan,' *Civil Engineering*, II, No. 1 (January 1932).

[5] Davis, 'Irrigation in Turkestan,' *Civil Engineering*, II, No. 1 (January 1932).

[6] The Amburo office at Glavkhlopkom in Tashkent had two engineers from the United States in addition to Davis. The staff also included one interpreter, two translators, and two Russian-English typists.

[7] Amtorg, *op. cit.*, VI, No. 12 (June 15, 1931), p. 285.

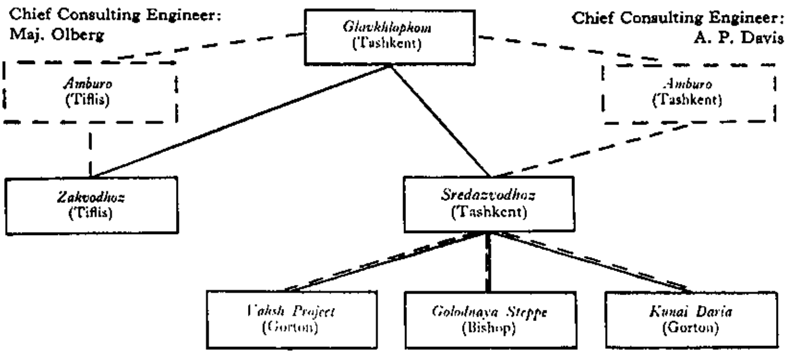
[8] Both document collections are in the vaults of the Hoover Institution on War, Revolution and Peace at Stanford University. The Gorton Papers owe their survival in the West to a negligent OGPU border guard. Tinkler's collection is smaller and does not contain original Soviet memoranda, orders, and reports, but is useful, as it covers the same time periods and locations as the Gorton Papers. The success with which the Soviets have thus been able to bury the record of foreign technical-assistance is illustrated by the observation that, if reliance were

considerable light on the actual, rather than the propagandized, processes of Soviet economic development in the 1930s. The difference between the propaganda image, which has unfortunately been reflected in most Western writing on Soviet economic development, and the actual construction process is almost unbelievably great. The work of this single American consultant is therefore described in detail. Willard Gorton's problems and functions were more or less similar to those of other foreign engineers and technicians.

Glavkhlopkom Order No. 220,[9] issued in Tashkent on November 22, 1930, placed Amburo under direct control of Glavkhlopkom Chairman Reingold. Instructions passed from Reingold to the Chief Consulting Engineer of Amburo (A. P. Davis) either directly or through the Liaison Officer (V. V. Tchikoff), also known as the Technical-Administrative Officer, or through the Chief of the Irrigation Department, F. Skorniskoff-Nelson.

A. P. Davis was director of Amburo work, with Liaison Officer Tchikoff in charge during his absence. It was specifically stated in Order No. 220 that the Liaison Officer had no authority over technical activities of the various *consulting* engineers without the prior authorization of Reingold, but all

Figure 3–2 ORGANIZATIONAL STRUCTURE OF GLAVKHLOPKOM (CHIEF COTTON COMMITTEE), 1930



——— Soviet nominal control
- - - - American advice and technical responsibility

Source: Gorton and Tinkler Special Collections, Hoover Institution, Stanford University. The Gorton papers include an original Soviet 'Administrativnaya skhema Amburo' (Administrative Chart of Amburo).

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placed only on Soviet-released information, this chapter would be limited to one sentence: 'The Zakvodhoz (Transcaucasian Water Economy Service) engaged two irrigation engineers.' [S. Bron, *Soviet Economic Development and American Business* (New York: H. Liveright, 1930), p. 145.]

[9] Order No. 220 is in the Gorton Papers.

Russian employees of Amburo were placed under direct charge of the Liaison Officer, who was a naturalized U. S. citizen.

Paragraph five of Order No. 220 begins, 'The American engineers of the Trusts (W. L. Gorton, L. E. Bishop, and others) although directly under orders of the Chairman of the Trust are at the same time members of the American Bureau. . . .' The paragraph then details instructions for the work of these engineers. The Amburo office had to co-ordinate its work, including that of employees of individual consulting engineers. Foreign engineers were required to present a verbal report every 15 days and submit written reports in duplicate not later than the fifth day of each month; these reports were to include the work of interpreters and others working under the consultants. All translations, memoranda, reports, minutes, and official correspondence had to be turned over to Glavkhlopkom in duplicate.

The objective of Order No. 220 was clearly to subordinate the American engineers to detailed central direction and maintain a check on implementation of Glavkhlopkom instructions by means of verbal and written reports. This betrayed Soviet misunderstanding of the abilities of a capable engineering consultant; these engineers had world-wide experience and were accustomed to developing large-scale government projects on a responsible individual basis.[10]

THE WORK OF FOREIGN IRRIGATION ENGINEERS

Gorton's experience is typical for a foreign consulting engineer in the Soviet Union in the 1930s and 1940s. Shortly after arriving he was appointed Chief Consulting Engineer for design and construction of the Vaksh irrigation project, the largest irrigation project implemented between 1930 and 1945.[11] A design and development program for Vaksh was drawn up by an engineering commission comprising engineers Khrustalev, Vassiliev, Yaltenovsky, and Rabinovitch, with Willard Gorton as Chairman. The charge to this commission was to consider: (a) the number of engineering designs to be established and the extent to which each design was to be developed, (b) the type and size of the important structures of the project, (c) the time objectives for the various plans, (d) co-ordination of investigations and preparatory work, and (e) any other technical matters. Any engineering disputes were to be settled by A. P. Davis through the chairman of Sredazvodproiz (Central Asia Water Authority). All Soviet engineers on the irrigation projects were to work under the super-

[10] The detailed check may have been due to lack of trust, or the need for bureaucratic 'make-work;' or perhaps the Russians believed that absolute central direction was more efficient in both the economic and the engineering phases than decentralized planning and individual responsibility.

[11] Gorton Papers, Glavkhlopkom Order No. 99, May 9, 1930.

vision of the American consulting engineers, and *Gorton was given full technical and economic responsibility for the Vaksh project.*[12]

It is this charge of responsibility by the Soviet authorities that counters any possible claim that the contribution of American engineers may have been negligible or secondary. This question of engineering responsibility was much in the minds of Reingold, Chairman of Glavkhlopkom, and his Party assistants. The top men in the trust were Communists with no engineering training and only a superficial knowledge of either cotton, irrigation, or construction.[13] They protected themselves from the omnipresent OGPU threat by placing full responsibility on foreign consultants. Gorton's appointment letter from Reingold contains the significant phrase, 'said engineer is entrusted, upon his full responsibility with the direction of designing the Vaksh project and its subsequent construction . . . [underline in original].'[14]

The direction is clear: 'full responsibility' for both design and construction. This is, of course, consistent with Gorton's position as Chairman of the Engineering Commission for the Vaksh project.

Choice of design was a separate and equally important task. The Russian and American engineers each developed designs for these irrigation projects. All designs then underwent evaluation by Amburo. Wilbur, assistant engineer to Davis, made initial evaluations and recommendations. A major part of Davis's work was to choose between competing designs according to Wilbur's evaluations. For example, on the design of the Vaksh head regulator, Wilbur wrote Davis that the Gorton design 'is satisfactory in every respect,' and, after proposing a few changes, concluded that 'the Gorton design is cheaper and better than the type B-7 proposed by Sredazvodproiz.' Thus a private American consulting engineer had the responsibility of deciding which of two designs, one American and one Russian, was to be used.[15]

Gorton's reports to the trust CAXO (Central Asia Cotton Union) give an excellent indication of the nature and extent of his work. A program was turned in covering each six-month period; a copy is available for the period March to December, 1931. During the first two weeks in March he was required to give written conclusions on the Vaksh project. This was followed by a two-week field trip to examine canal-cleaning methods. The next two weeks were spent examining earth work under progress at large projects and

[12] Gorton Papers, letter from Gorton to Yanchur, November 29, 1930.

[13] A. P. Davis, *The University Hatchet*, May 1932.

[14] Gorton Papers, Letter No. 4074, Reingold to Davis, May 4, 1931.

[15] Gorton Papers, memorandum from Wilbur to Davis, February 13, 1931. There is insufficient data to determine which parts of these irrigation projects, as finally built, were Soviet designed and which were American. It should not be assumed that they were all American-designed, as Russia had a history of irrigation projects originating in the nineteenth century.

indicating specifically, the ways in which imported equipment could be more profitably utilized. From May 15 to June he examined the tsarist-built Palvan and Gazavat canal systems and made proposals for redesign. June was spent on the problem of mechanizing canal cleaning, earth-work removal, and canal construction, and on proposals concerning the simplest type of mechanical equipment for use in Central Asia. After a month's leave, he spent August on the mechanization of large-project construction and made recommendations for the best use of existing equipment, the organization of labor, the choice of standard types of machines, and the production of parts for small irrigation structures. September was spent studying the use of local building materials in irrigation structures. October was utilized in determining the final design and construction schedule for the small Golodnaya Steppe project, and November on compiling conclusions concerning the 1932 construction schedule for the Vaksh project.[16]

For the six-month period covered by the next work program we also have copies of reports submitted by Gorton. On November 12, 1931, Gorton submitted to the manager of the Irrigation Department of CAXO a report entitled 'Conclusions with Reference to the Kunai Daria Project in Turkmenistan.' Three weeks later, on December 2, 1931, he submitted another report to the same department entitled 'Construction of the Lower Khan Main Canal Structures across Angren River.' Written answers to five questions submitted by CAXO were given on December 13, 1931, and a report on the Vaksh project is dated January 3, 1932. The next report was dated January 11, 1932. This was to the chairman of CAXO and entitled 'Methods of Doing Work and the Type of Canals in Ground with Considerable Settlement and Particularly in Ground Which Has Quicksand,' and was submitted with another report concerning the 'Cheapest Rational Method of Lining Farm Ditches in Cobbles and Loess Grounds.'[17]

The basic function, then, of a Western consulting engineer working for a Soviet irrigation construction bureau was to consider and report on problems, plans, and ideas submitted. Gorton's practice was to underscore deficiencies. For example, in his report to the chairman of CAXO concerning the Vaksh construction plan and proposed work for 1932 (January 3, 1932), Gorton points out the importance of transportation to the success of the project. This detailed report, the 'Vaksh Construction Plan, 1932,' emphasizes the key role of transportation and the probability that inadequate transportation would delay the project.

[16] Gorton Papers, 'Rabot Program.'

[17] Gorton Papers, Envelope 2.

There were also reports on soil problems: one on the results of soil analyses in the Vaksh River Valley (October 6, 1931); one to the Laboratory of the Water Institute concerning use of copper sulfate to remove algae (September 21, 1931), and others.

RELATIONS BETWEEN AMERICAN IRRIGATION ENGINEERS AND THE SOVIETS

Apart from normal engineering problems, there were two major areas of conflict between American engineers and the Soviet authorities. The Soviets did not, except in a very few favored cases, provide the living accommodations, transportation, or personal assistance specified in their agreements. Further, salary payments were almost always late and in most cases final terminal payment was either not made or made only in part after protracted argument.

The more experienced engineers learned to cope with bureaucratic procedures and shortchanging from Party officials. Gorton, for example, arranged his travel program according to the expense amount actually advanced to him. He decided that prepayment was essential, as travel expenses were 'forgotten' if claimed after actual expenditure. Before one trip to Ferghana Valley he wrote as follows:[18]

April 8, 1931
Tashkent

To Mr. Lezinoff
Manager, Irrigation Department

Dear Sir;

I estimate that I need 1000r for my coming trip to the Ferghana Valley. On my last request for advance funds of 1000r only 500 was supplied. Any shortage of funds supplied less than that requested meets with no objection from me but I must advise that when the money supplied is expended it will be necessary for me to return to Tashkent. I must further advise that expenses for meals and foods are at least 50% higher than they were when I was traveling in 1930.

Very respectfully,
W. L. Gorton
Consulting Engineer

[18] *Ibid.* Gorton retained a sheaf of copies of letters, labeled 'bellyaches,' which he had sent to various Soviet authorities. They are worth reading to illustrate the pettiness of Soviet officialdom. For example, they walled up Gorton's apartment so that he could not fuel the stove; this could only be done from the next-door apartment, occupied by a Party functionary concerned with fuel conservation.

Gorton's complaints were numerous. There was no interpreter. He was not paid for two months. His apartment had no heat. On other occasions the house needed repairs, the water was cut off, there was no coal and no electric power, and the well-pump was broken.[19]

In early 1931 Gorton finally exploded in a letter to Reingold:

> In view of all the above, I think the time has come to terminate the contract. For the Vaksh project you have your workers' enthusiasm, your exemplary brigades, and your socialistic competition and a highly trained corps of Soviet engineers all of which you pointed out yesterday. Furthermore, you pointed out to me that you had men capable of filling the position on the Vaksh which you had proposed to me to occupy. Under such conditions it appears to me that my services are unnecessary and that my work is not considered important enough to allow me what I require in order to perform my duties. Moreover, by dispensing with my services you will be able to carry the Vaksh construction to a conclusion with a 100% Soviet force.'[20]

However, it was Reingold, Chairman of the Cotton Commission—and not Gorton—who was finally replaced.

Gorton had trouble getting salary checks on time and was never completely paid for his work in the Soviet Union. Letters to Amtorg in New York from his wife, and letters between Amtorg in New York and Amtorg in Moscow illustrate a continuing problem of irregular salary payment.

At one point Gorton's checks were two months in arrears; no check was ever paid at the time required by the contract. The terminal payment was never made. Gorton received only 23 out of the 24 monthly payments, and received no payment for the $500.00 balance of his travel expenses. The exchange of letters with other engineers in the irrigation projects (Bremer, Fisher, and Major Olberg) indicated they did not receive full payment either. In effect, engineers' services were acquired at a discount, by breach of contract.[21]

This group of road and irrigation engineers, as a result of their excellent interpersonal communications, became hard bargainers where the Soviets were concerned.[22] Although they were shortchanged on their contracts, they certainly did considerably better than engineers in other sectors.

[19] *Ibid.*

[20] *Ibid.*

[21] Appendix A is a copy of the Gorton-Sredazvodhoz contract with the method of payment specified. It is often claimed in the West that the Soviets have never failed to live up to a commercial contract. This is demonstrably not so.

[22] A letter from Lyman Bishop to Tinkler (in Moscow) enclosed a check for $50 to cash on his return to the United States and requested him to 'see if I have any money in the bank.' The inference is obvious. April 1, 1930. (Tinkler Papers.)

IRRIGATION PLANNING AND CONSTRUCTION

At the end of two years in irrigation construction, Gorton had made two trips to the Vaksh valley, one trip to the Middle Anu Daria, two trips to the Ferghana valley, and three trips to the Dalverzin valley. He was then requested to report his conclusions. Gorton's report indicates that two things strongly impressed him: the necessity for good roads preliminary to construction and the necessity for proper maintenance and operation of equipment.[23] Neither recommendation was being followed. Further, he said, housing, storage, water, and sanitation facilities should be emplaced *before* construction started:

> It may appear that time will be lost if all such preparations are made in advance, but experience has demonstrated that both time and money as well as human lives are saved in the long run by adequate preparatory work.[24]

Gorton commented on the extreme shortage of capital equipment. He noted, for example, that a simple 18-inch circular saw operated by a 5- to 7-horsepower diesel engine by 'two unskilled but intelligent workmen will saw easily as much lumber in a day as 25 men using hand saws. . . .'[25]

Construction did not follow design; at the four-compartment square opening underdrain near Macoshkent, the walls were being built 8½ centimeters thick, although the design called for 10 centimeters.

> The reinforcing rod was being placed in such a way that the bars were twice as far apart in some places than in others. As a matter of fact the reinforcing was placed in such a manner as to be indescribable on account of the lack of uniformity in spacing. In some places where the reinforcing was supposed to be 5 cm. from the wall it was 1 cm. and in other places it was in the middle of the wall. . . .[26]

There were poor concrete pouring and form work, no machine mixing, no accurate measurement of the concrete mix, and no inspection of finished work. Gorton singled out the Dalverzin main canal where 'Large stretches . . . were of such poor quality as to be a shocking waste of money. . . .'[27] The concrete lining of the canal was 'badly defective' and the canal could not stand a full head of water.

Gorton then pointed out that the Soviet six-month and one-year plans were 'mostly a waste of time' unless certain data were known, and these

[23] Gorton Papers, W. L. Gorton, 'Report on the Assignment: General Conclusions and Recommendations on Questions Concerning Irrigation Construction on the Basis of Your Two Years Work in the American Consulting Bureau' (Tashkent: January 1932).

[24] *Ibid.*

[25] *Ibid.*, p. 6.

[26] *Ibid.*, p. 10.

[27] *Ibid.*, p. 12.

generally were not known. It was not necessary, wrote Gorton, to wait until final design decisions were made before ordering equipment and materials. It was possible to order materials for 10 million cubic meters of earth excavation, for instance, without knowing whether the final excavation total would amount to 18 or 19 million cubic meters.[28]

CONCLUSIONS ON IRRIGATION AND COTTON DEVELOPMENT

Soviet planners correctly recognized the principle of import substitution as an aid to internal economic development, and planned construction of irrigation networks and domestic production of cotton to replace cotton imports from the United States. Prerevolutionary irrigation projects were revived. A. P. Davis, one of the world's foremost irrigation experts, was hired, and a group of top American irrigation engineers percolated into the organizational structure of Glavkhlopkom.

Although most sectors of the early Soviet economy had a shortage of trained Russian engineers, this was not the case in irrigation. However, those Russian engineers who had developed and operated the prerevolutionary irrigation network could not, from the political viewpoint, be trusted. The function of the American engineers was partly as consultant, partly as technical watchdog.

Planning, as well as choice and development of design, was an American responsibility between about 1928 and 1933. Only the shortage of valuta forced the Soviets to dispense with this assistance.

Table 3–1 EXPANSION OF ACREAGE UNDER IRRIGATION, 1928–50

Time Period	*Planned Construction*	*Estimated Actual Construction*
Pre-1917, built under tsars	—	4,222,000 hectares
1928–1932	1,500,000 hectares	1,140,000 hectares*
1933–1937	1,012,200 hectares	1,000,000 hectares*
1937–1941	608,000 hectares	None
1945–1949	656,000 hectares	None (all rehabilitation and completion of earlier projects)
Estimated Total, 1950		6,362,000 hectares

Source: Naum Jasny, *The Socialized Agriculture of the U.S.S.R.* (Stanford: Stanford University Press, 1949), pp. 483–4.

* Jasny takes his figures from the official plans and points out that 'part of this had been irrigated previously.' According to Kh. M. Dzhalilov, *Golodnaya step' i perspektivy ee osvoeniya* (Tashkent, 1957), only about 200,000 hectares were under irrigation in Golodnaya Steppe by the late 1950's; this suggests the First Five Year Plan was only about 20 percent fulfilled as late as 1956.

[28] *Ibid.*, p. 13.

Table 3–1, based on Naum Jasny's data, suggests that the period of American engineering responsibility (1929–33) was also that period in which construction of the greatest irrigation area since tsarist times was initiated.

In the irrigation sector, transfer of Western process technology, as distinct from engineering skills, was not a significant factor. Irrigation is not a complex technology; it relies on applying a set of well-established engineering principles to solution of agricultural problems. The construction problems are those met in canal construction, i.e., soil mechanics and concrete work. Although a number of American gate and regulator designs were introduced, and American terminology came into general use—for example Shiti Staneya (Stoney Gate) and Shiti Teintera (Teintera Gate)—the American technical design contribution was probably not of major significance.

In plans for mechanization of canal construction and manufacture of excavating and operating equipment, however, the American engineers had a central role. The bases for mechanization of canal construction in Central Asia were calculated and reported on by Gorton. This work included a survey of existing equipment manufacturing facilities and recommendations of Western equipment models for introduction and duplication. There is every indication that he put the interests of his Soviet client first: the recommendation to purchase single models of Western equipment for examination and duplication was hardly in the interests of the U.S. manufacturer.

From other reports we learn that irrigation projects faced major difficulties in 1932. The valuta crisis led to cancellation of the contracts with most Western engineers. The Soviets were entitled to do this under the terms of most contracts. Heavy inflation boosted costs. Gorton estimated that on Vaksh, up to 1932, the Soviets had spent more than 30 million rubles to do $300,000 worth of work and comments that 'they are going to have a sad awakening some day. . . .'[29] The project almost collapsed in the summer of 1931 owing to transport difficulties. At the same time there were 26 imported draglines ready for work, but neither operators nor fuel were available.[30]

The general waste and inefficiency were enormous. Gorton estimated he lost 251 working days in two years through inefficient travel arrangements, workers' holidays, and lack of a skilled interpreter.[31]

In irrigation then, we find a sector in which the Western contribution in engineering alone was not as significant as in other sectors, but in which the use of Western technical skills enabled organizational difficulties inherent in the socialist form of 'planned construction' to be partially overcome.

[29] Gorton Papers, letter from Gorton to Davis, November 28, 1932.

[30] *Ibid.*

[31] These calculations are on the back of the small envelope in Envelope 2.

CHAPTER FOUR

Technical Assistance to the Non-Ferrous Metals Industry

In 1930 the engineering and metallurgical position of the Russian non-ferrous metals industry was extremely weak. The entire industry, including gold and rare metals, in all its phases from mining to refining, utilized only 346 Russian engineers and 458 Russian technicians. Moreover, three-quarters of these had less than one year of experience and only seven percent had more than three years of experience.[1] In short, almost all experienced Russian engineers had left Russia; only 20 with more than three years of experience remained. This handful of remaining engineers could by no means undertake the ambitious plans proposed for the industry, nor indeed even keep it operating. The only solution was to import experienced foreign engineers.

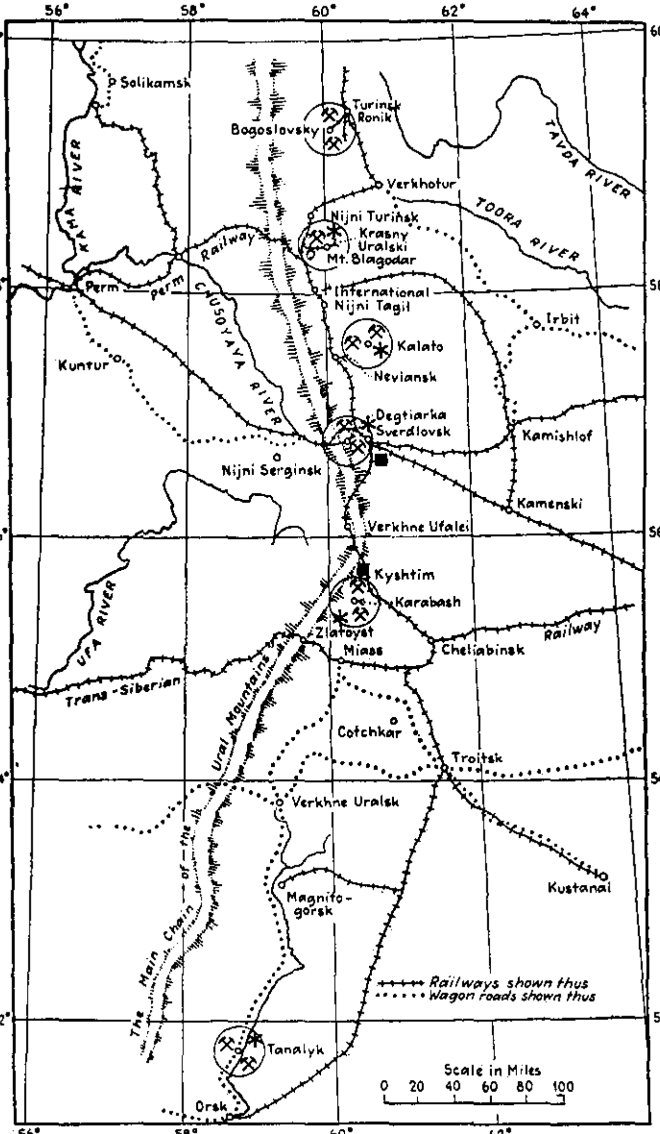
The scattered nature of non-ferrous mining and metallurgical activities makes this reconstruction of Soviet technological acquisitions more than usually complex and frustrating. There are, however, two clues which provide a quantitative framework. Soviet sources report that there were approximately 200 American engineers employed in their non-ferrous mining and metallurgical industries in addition to technical-assistance programs with foreign companies and consulting engineers. Further, John Littlepage, an American engineer and Deputy Director of Tsvetmetzoloto (Non-Ferrous Metals Trust), reported that he had four or five American engineers in each mine in the trust.[2] This suggests there were 10 American engineers in the Soviet Union for every Russian engineer of equivalent skill between 1929 and 1933.[3]

[1] I. P. Bardin, ed., *Metallurgy of the U.S.S.R. (1917–1957)* (Moscow: 1958), p. 598.

[2] John D. Littlepage, *In Search of Soviet Gold* (London: George G. Harrup and Co., 1939).

[3] Just over 10 percent of these 200 Americans replied to an enquiry by H. H. Fisher of the Hoover Institution in 1934. This was remarkable, as mining and metallurgical engineers, because of the confidential nature of their work, do not usually discuss their clients. Moreover, many anticipated the possibility of further Soviet

Figure 4–1 LOCATION OF URALS COPPER MINES, SMELTERS, AND REFINERIES



Copper smelter ■ Copper refinery Copper ore mine

The influx started in December 1929, when J. L. Thomson, an American mining consultant, arrived in Moscow to conduct an inspection of the Urals copper mines in behalf of Tsvetmetzoloto. Thomson's first survey trip was to Sverdlovsk, with instructions to determine how many foreign engineers and how much equipment was required to re-establish the copper mines in the Urals area. After visiting the Kalata and Karabash districts, he returned to Sverdlovsk and reported:

> What I saw was appalling—the waste, the slackness, the inefficiency, the divided authority, the disregard for human life, the consumptive faces of the workmen, the women performing the most grinding manual labor, the crooked shafts, the frayed cables, the worn out and obsolete equipment. . . .[4]

Extraordinary mining practices were observed by Thomson. For example, accepted mining practice is to sink the main working shaft in country rock, and then tunnel across to the ore veins. In this manner ground settling does not affect shaft alignment and the shaft guides remain true. In the Urals, shafts were being sunk right on the vein so that ore could be taken out on the way down. The ore is mined a little quicker but only at a heavy long-run cost. However, Thomson observed that 'if the technical man doesn't believe in this method, the Communist does and that's where the shaft is sunk. . . .'[5] In the United States dry drilling is banned by law in all states: it leads to silicosis. In the Soviet Union in 1930 no one had heard of wet drilling.[6]

Thomson recommended immediate hiring of 48 American mining engineers, mill-construction men, and plant operators for the Urals copper mines and smelters.

A reconstruction of the management organization between August 1931 and April 1933 is contained in figure 4–2. There was a thorough percolation of American engineers into all levels of the organizational structure. Leading positions in all units of the non-ferrous metals industry were held by Americans,

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contracts and were unwilling to prejudice the possibility of future employment. This factor was reinforced by the depression uncertainty and a clause in their contracts prohibiting discussion of work in the U.S.S.R. The response came from the middle layers of personnel: i.e., the key operating, design, and consulting personnel. Only rarely did individuals at the top level or the foreman level respond.

[4] *The Saturday Evening Post*, June 27, 1931.

[5] *Ibid.* Thomson also noted that at least one-third of the Kalata smelter had been built over mine workings and was in danger of caving in.

[6] Similar Western newspaper reports in the 1930s gave rise to claims of exaggeration, as well they might. However, even reports of the more absurd practices check out. For example, Warren, an American engineer, was called in to straighten out the Kalata smelter; of 21 pumps in the smelter, 16 had been rigged to pump *downhill*. There is no question that these things happened; too many independent reports cross-check for them to have been completely false. The only logical explanations are sabotage or complete incompetence.

including the position of Assistant Director of Tsvetmetzoloto, held by John Littlepage under Serebrovsky, the Russian Director. At lower levels, positions of director and technical director at combinats and mine managerships were commonly held by American engineers with Russian assistants.

This use of American engineers in everyday working positions was supplemented by several technical-assistance agreements with leading American companies which introduced their own consultants and methods. Between 1929 and 1933, then, the Soviet non-ferrous industry was almost completely run by American engineers. Between 1933 and 1936 these engineers were gradually withdrawn and hastily trained Russian engineers substituted; from 1936 to 1945 very few foreign engineers were employed.

THE KARABASH AND KALATA MINES AND SMELTER

The largest copper smelter in prerevolutionary Russia was the Karabash in the Urals, producing about 8,000 tons of black-fired copper per year. It was closed until 1925 and reopened with American technical assistance.[7]

Karabash was supplied by four mines: the Stalinsky, the American (later called the First of May), the Dzerzhinskya, and the Rikovsky. G. Jermain was the mine manager in 1931[8] under Milo Krejci, who was Technical Director of the Karabash Combinat, which included the Karabash smelter. Krejci had 11 American engineers, of whom three were Party members, working in the mines and smelter. There was considerable friction in the Karabash complex. Russian engineers, almost all non-Party men, resented the presence of Americans, and there is some evidence of sabotage.

In the early 1930s the Karabash smelter was under the supervision of Krejci and at that time produced about 80 percent of planned production, although 'it [was] an old project built before the war, [and] most of the original machinery [was] English, although the plant [had] some new German machinery.'[9] By 1939 the Karabash smelter was equipped with four Nichols-Herreshoff ovens, a Martin oven, and four Pierce-Smith converters.[10]

The Kalata mines were also under U.S. supervision in the early 1930s. The district is 80 kilometers north of Sverdlovsk in the Urals. After being flooded during the Revolution, it was reopened in 1923. The main mine—the Kalata—produced about 300 tons a day of 2.25-percent copper ore, but in 1933 the mine was on fire and only the neighboring Lovochka mine was producing ore.

[7] Sutton, *Western Technology . . . 1917 to 1930*, p. 81.

[8] Later Chief Engineer of Tsvetmetzoloto.

[9] U.S. State Dept. Decimal File, 861.5017—Living Conditions/643, Report No. 115, Riga, April 4, 1933.

[10] National Archives Microcopy T 84, Roll 27, Frame 663.

Figure 4–2 ORGANIZATIONAL STRUCTURE OF SOVIET COPPER MINING, SMELTING, AND REFINING INDUSTRY (1931) WITH WESTERN TECHNICAL ASSISTANCE

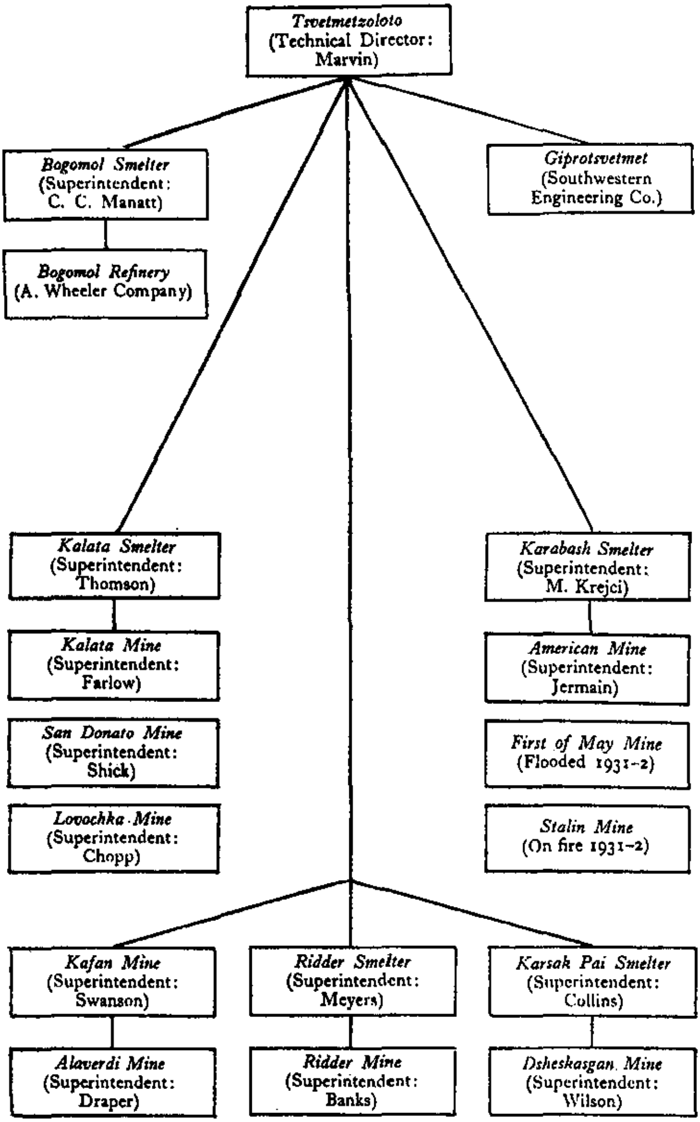


Table 4–1 SOVIET COPPER SMELTERS, 1941

Plant	Location	Capacity 1937 (Tons/Concentrate)	Production 1936	Production 1942 (Planned)	Western Technical Assistance
Karabash	Chelyabinsk	25,500	20,128	25,000	Expanded tsarist plant with U.S. and German equipment and U.S. technical assistance
Kalata (later Kirovgrad)	Sverdlovsk	38,500	22,996	40,000	
Karsak Pai	Karaganda	10,000	6,388	10,000	
Krasnoural'sk (Ordzhonikidze)	Sverdlovsk	40,000	22,840	40,000	Arthur Wheeler Corp. project
Lake Balkash	Karaganda	50,000	—	—	German technical assistance and John Calder as consultant
Baymak	Bashkir	5,000	4,759	10,000	Southwestern Engineering Corp. projects
Alaverdi	Armenia	5,000	4,744	10,000	
Kafan	Armenia	3,000	1,501	10,000	

Source: Die Kupfererzeugung der UdSSR (Berlin: Der Reichsminister der Luftfahrt und Oberbefehlshaber der Luftwaffe, 1941), pp. 24–5. Geheim Report No. 788, Microcopy T-84, Roll 127, Frame 1427764.

A description of an incident at Kalata offers some insight into the problems involved. The mine manager in the early 1930s was Hawkins, and his final act, as recounted by Thomson, was roughly as follows:

> Something else that the Russians do not believe in is leaving pillars to support the roof. Hawkins did succeed in having a pillar left in place in a certain station, and he posted a placard forbidding that it be shot. Furthermore, he gave pointblank orders to everyone to leave it alone. One morning it was gone. And when the level caved a loud cry went up that the Amerikanski was to blame. Hawkins blew up with a loud bang.
>
> The Trust heads did not want to lost Hawkins, and a meeting of executives was called to find out what he was angry about and soothe his ruffled feelings if possible. He was offered more money, more food, a better house but rejected them all. Two other Yankees and I heard him tell them, in good old Texas language that they were 'absolutely hopeless' and incapable of learning the first principles of good mining. No American miner he declared could be of any help to them or himself.[11]

This, by the way, dramatizes the problem of choosing between sabotage and incompetence as possible explanations. The incident could have been sabotage; it could just as well have been caused by a Russian miner on the night shift trying to make his ore quota the easy way by loading a close-at-hand pillar of ore.

[11] J. L. Thomson, 'Red Metal Mining in Russia,' in *American Engineers in Russia* (manuscript collection in Hoover Institution, Stanford University), p. 18.

Kalata had a prewar smelter supplied by these local mines and 'equipped with English and some German machinery.'[12] The capacity of the smelter was 100 tons per day, with one reverbatory furnace, three Great Falls 10-ton converters, and one Pierce-Smith 40-ton converter. The smelter and mines together employed 22 American engineers and technicians between 1930 and 1933, but later became a completely Russian-operated enterprise.[13] New installations included a Cottrell plant and an American 1,000-ton flotation mill.

GIPROTSVETMET: NON-FERROUS PLANNING INSTITUTE

Giprotsvetmet had responsibility for the design of non-ferrous mining and metallurgical installations. The bureau was headquartered in Moscow with field offices in Sverdlovsk and Leningrad.

In March 1930 the design bureau concluded a technical-assistance contract with the Southwestern Engineering Corporation of Los Angeles, which would act, according to Amtorg, 'as consultants in the preparation of projects, and the construction and operation of new and existing concentration plants in the Soviet Union.'[14] After pointing out that the company had designed milling plants in the United States, Mexico, and Canada, Amtorg added that the company would 'make available to the Soviet non-ferrous industry the latest developments and patents with regard to the concentration of ores.'

The Southwestern party of engineers was headed by E. R. Cullity[15] and was in Russia from June 1930 to January 1932, with responsibility for the supervision of design, installation, and initial operation of ore-dressing plants. The Southwestern projects were in Dzhezhakgan district, previously known as the Atabasarski concession, and the Caucasus and Urals. The company designed extensive concentrating facilities and complete plans for a 6,000-ton-per-day flotation mill.[16]

An agreement with the Radiore Company of Los Angeles was signed at the same time as that with Southwestern Engineering. Radiore, a front-rank geophysical exploration concern, contracted to locate non-ferrous and precious-metal ores by geophysical means.[17] Several exploration engineers left imme-

[12] U.S. State Dept. Decimal File, 861.5017—Living Conditions/643, Report No. 115, Riga, April 4, 1933.

[13] *Ibid.*

[14] Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), p. 131.

[15] *American Engineers in Russia*, Fisher, Folder 4. S. E. Hollister was a Southwestern engineer working on projects in the Don, South Kazakstan, Urals, and Leningrad. Other engineers in the Southwestern group were E. R. Kinney, T. H. Oxnam, and A. J. Bone.

[16] *Engineering and Mining Journal*, CXXXVI, No. 2 (February 1935), p. 4.

[17] Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), p. 131.

diately for the Soviet Union.[18] Little is known of their work except for one brief reference to indicate that the Radiore Company reported unfavorably on a copper deposit south of Kafan in Armenia.[19]

ARTHUR WHEELER ENGINEERING CORPORATION TECHNICAL ASSISTANCE AT COPPER SMELTERS AND REFINERIES

The Wheeler Engineering Corporation specialized in design and construction of non-ferrous metal plants, with experience not only in the United States and Canada but also in Chile and the Belgian Congo, where they had undertaken large copper-development projects. Extensive interviews with Frederick W. Snow, Chief Engineer of Wheeler, and other company engineers by U.S. State Department officials in the early 1930s have left a detailed picture of the development of the Soviet copper industry during the first 20 years after the Revolution.[20] As Snow had access to Tsvetmetzoloto records, his information is of great value and, as his salary was $25,000 per year, his services were no doubt highly appreciated.

The Snow memoranda suggest immense copper deposits in Russia. These were little prospected, and many were of low grade and required extensive construction of transportation facilities. In 1932, about 70 percent of the copper metal mined was coming from old re-equipped tsarist plants in the Urals, with Bogomol as the only Soviet-era development. Although the production plan for 1931 called for 150,000 metric tons, the total reported production in 1930 had been 47,000 tons, and in 1931, 48,423 tons. However, production actually *fell* in 1931, as more copper in that year came from scrap rather than mining operations. Accidents and the failure to open Bogomol were cited by Snow as reasons for the decline. The forced pressure of the Five-Year Plans created cave-ins at Kompaneinsk and fires at both Kalata and Karabash.

Although Wheeler then tried hard to get the proposed Lake Balkash development project, which opened about 1940, the company was unable to compete with credit terms offered by German and British firms. In September 1932 Wheeler retired completely from Russia. Chief Engineer Frederick Snow, however, returned to Tsvetmetzoloto as a consultant on individual contract at $25,000 gold (plus ruble payments) per year.[21]

[18] *Ibid.*, V, No. 13 (July 1, 1930), p. 281. Geolkom (Geological Committee) hired nine geologists, geophysicists, and engineers, of whom five were connected with the Radiore Company.

[19] U.S. State Dept. Decimal File, 861.5017—Living Conditions/691, Report No. 174, Riga, July 11, 1933.

[20] Based on several lengthy reports at 861.6352/15 and 861.5017—Living Conditions/471. These reports contain a great deal of information not available elsewhere on conditions in Soviet copper mines.

[21] U.S. State Dept. Decimal File, 861.6352/15.

THE BOGOMOL (KRASNOURAL'SK) COPPER COMBINE

Bogomol was the first Soviet copper combine; it required development of new copper ore mines, mills, a smelter, and a town. Designed by the Arthur Wheeler Engineering Corporation and started in 1926–7, it was not only a copy of the Noranda smelter in Quebec, Canada, but was also designed and supervised in the construction phase by the same company and many of the same engineers.[21] On completion of construction in 1931, it was taken over by the Red Army and renamed first Krasnoural'sk, and then Ordzhonikidze.

Construction records of the Bogomol copper smelter present a unique opportunity to compare the building of similar plants in free-enterprise and socialist environments. The writer knows of no other case where the parallels can be drawn so closely from the engineering, economic, and social points of view. This comparison is given in table 4–2.

Table 4–2 COMPARATIVE CONDITIONS AND RESULTS IN CONSTRUCTION OF SIMILAR COPPER SMELTERS IN CANADA AND U.S.S.R.

	Noranda Smelter (Quebec, Canada)	*Bogomolstroi Smelter (Urals, U.S.S.R.)*
Smelter design	Arthur Wheeler Engineering Corp. (New York)	Arthur Wheeler Engineering Corp. (New York)
Construction supervision	Wheeler Engineering and Noranda Mines, Ltd. (Canada)	Wheeler Engineering and Tsvetmetzoloto (U.S.S.R.)
Superintendent of construction	J. Gillis	Frederick W. Snow
Start of construction	Spring 1926	Spring 1926
Start-up of smelter	Dec. 16, 1927	Late 1931
Construction time	18 months	5 years
Cost (including mines development)	$3 million	Estimated 350 million rubles
Climate	Winter: −50°F	Winter: −50°F
Railroad link required	40 miles	Already built
Road link required	45 miles	Already built
Power supply required	Installed by Dec. 27, 1926	Supplied from existing Kushva plant
Labor employed	Average: 400 (maximum: 600)	Average: 6,000–7,000
Production	End 1929: passed 1,000 tons/day 1930: passed 2,000 tons/day 1931: passed 2,500 tons/day	1931: 3 tons/day
Incentives	(1) Management: profit (2) Labor: wages	(1) Soviet management: fear and ideology (2) Labor: coercion, wages and propaganda (3) U.S. consultants: profit

Sources: Noranda: L. Roberts, *Noranda* (Toronto: Clarke, Irwin and Co., 1956). Bogomolstroi: U.S. State Dept. Decimal File, 861.6352/15.

[21] U.S. State Dept. Decimal File, 861.6352/20, in which a report by George F. Kennan says that Bogomol was developed with the help of 'hundreds of foreign engineers and thousands of Russian engineers and workmen.'

Although climatic and engineering conditions for both smelters were substantially the same (except for the fact that road and rail links for Bogomol were already built), there was a significant difference in results. Noranda was built in 18 months by only 400 workers, while Bogomol required 5 years and 6,000 to 7,000 workers. Labor efficiency was far lower in Russia but the larger amount of labor available was used in an attempt to compensate for this disadvantage.

The Krasnoural'sk smelter was described by Jermain as 'new and beautiful, being equipped entirely with American machinery.'[23] There were four roasting furnaces, two reverbatories, and two Pierce-Smith 20-ton converters. The plant was equipped almost entirely with new American machinery, the bulk of which was from the Allis-Chalmers Company, with the balance from the Nichols Copper, General Electric, and Western Electric companies.[24]

Twenty-five Americans were employed at one time in construction. When completed, Krasnoural'sk employed 350 in the smelter, 2,000 in the mines, and 1,475 in the offices.[25]

Chief Engineer Snow of Wheeler Engineering recounted the difficulties attending the start-up of Bogomolstroi (Krasnoural'sk) to the State Department, but concluded:

> Red Urals is a good plant and will eventually produce. Particularly since the Red Army officials are now taking a distinct interest in it because of its military significance. It is a splendid illustration of all the weaknesses of the Soviet methods. Built as a rush plant of great military and industrial significance, it has taken five years to complete it, whereas a similar plant was built in one year as an ordinary commercial undertaking in Canada. Provided with a tremendous supply of labor and all modern equipment, it has failed to produce for a year after being in a theoretical position to do so. . . .[26]

In addition to the Bogomol smelter and mines, there was a 'gigantic copper refinery' at Sverdlovsk, also built under the Wheeler contract. It was similar in design to the Phelps Dodge refinery in Texas, and designed to produce 100,000 metric tons of refined copper with provision for expansion to 400,000 tons by the mid-1930s. This plant took about three years to erect, whereas the Phelps Dodge plant had been erected in 11 months as a regular job. Snow suggested that 'the delays at this plant and at Bogomolstroi have recently had

[23] U.S. State Dept. Decimal File, 861.63/92, Report No. 174, Riga, July 11, 1933.

[24] U.S. State Dept. Decimal File, 861.5017—Living Conditions/643, Report No. 115, Riga, April 4, 1933.

[25] *Ibid.*

[26] U.S. State Dept. Decimal File, 861.6352/15, which includes a report by Frederick W. Snow, Chief Engineer of Arthur Wheeler Engineering Corp. for the Bogomolstroi project.

a salutary effect in convincing the military and other authorities that something is wrong with the Soviet construction system.'[27]

THE KARSAK PAI AND KAFAN COPPER SMELTERS

In the years between 1910 and 1930, metal extraction procedures moved towards flotation of ores into concentrates followed by smelting in reverbatory furnaces. The first copper smelter in the Soviet Union to use such flotation methods with reverbatory furnaces was Karsak Pai, where flotation yielded a 30-percent concentrate converted by Bonnett system reverbatory furnaces into a 50-percent-plus matte and acid slag. The matte was then treated in converters to obtain blister copper.

The Karsak Pai plant needed only completion; the equipment was pre-revolutionary.[28] In the early 1930s the Technical Director was a Russian trained in the United States, and the Chief Engineer an American, as was the flotation plant superintendent, who increased mill capacity from 250 to 400 tons per day. Karsak Pai was also assisted by Milo Krejci, attached to Giprotsvetmet to solve field problems. As part of his work he produced a training manual which was translated, printed, and distributed to plant workers.[29]

The Chief Engineer between 1930 and 1932 was H. R. Wilson. He had the prime responsibility for bringing the mines up to standard, although two months after he left output was down to 15 percent of capacity.[30]

One of the two copper smelters in Armenia was the Kafan, formerly a French concession and almost completely rebuilt in the 1930s. T. F. Collins, an American mining engineer employed at the Kafan mines for 22 months in the years 1930 and 1933, commented that 'the new plant was planned by an American engineer and is entirely built according to American plans,' with a 1,000-ton-per-day flotation mill and two 150-ton smelters.[31] In 1933 the smelters were operating to capacity but there were still difficulties with the flotation plant. According to the Luftwaffe files, the plant operated only at 50 percent of capacity in 1941.[32]

THE LAKE BALKASH PORPHYRY COPPER DEPOSITS

Very large deposits of low-grade (1 percent and less) copper ore were prospected in the late 1920s near Lake Balkash. A mine was sited at Kounrad,

[27] U.S. State Dept. Decimal File, 861.6352/15.

[28] Sutton, *Western Technology . . ., 1917 to 1930*, p. 83.

[29] Milo W. Krejci, 'The Korsak [*sic*] Pai Enterprise,' *Case Alumnus*, XII, No. 3 (December 1933), pp. 12–3, 25–7.

[30] U.S. State Dept. Decimal File, 861.5017—Living Conditions/323 and 861.50—FIVE YEAR PLAN/189.

[31] U.S. State Dept. Decimal File, 861.5017—Living Conditions/854.

[32] *Die Kupfererzeugung der UdSSR* (Berlin: 1941).

and a refinery at Bertish Bay on the northern shores of Lake Balkash, a power plant, and a rail line to the coal deposits at Karaganda were also built. Construction laborers were predominantly expropriated kulaks. The Balkash project was typical in the extraordinary brutality utilized in Soviet construction:

> I saw them die at Balkashstroi by the tens of thousands. . . . We were doing a lot of grading and excavation work and having no machines we needed much labor. . . . But they were poor workers. So the chief of construction—a brutal drunkard named Ivanov, who was the husband of the sister of Stalin's first wife, Aleluyeva—enforced piecework rate, making not only the men's wages but their rations dependent on their work. There was never enough food. . . . They died like mice in the winter.[33]

The Wheeler Engineering Corporation made strong efforts to get the Lake Balkash development contract, but lost out to strong competition from European firms who were willing to take ruble payments and grant extensive credit.[34] Although New York banks offered to back Wheeler, his offer was not as favorable as those of the European group. Thus Wheeler himself remained on an individual contract, and development work was taken over by German firms. We know very little about the actual German development work at Balkash; there is a report in the Hoover files concerning a 'trainload' of German workers on their way to erect a plant at Lake Balkash in 1933.[35] John Calder was chief adviser to Ivanov and took over when Wheeler withdrew completely from Russia.[36] By October 1941, the Lake Balkash plant had two converters and two ovens producing 85 tons of copper per day, and employed some 5,000 workers. The equipment was chiefly of American origin.[37]

DESIGN AND OPERATION OF ZINC AND LEAD PLANTS

American engineers designed all Soviet zinc and lead plants. W. C. Aitkenhead worked for Giprotsvetmet from August 1930 to June 1932 and worked on the design of three electrolytic zinc plants, of which one was built and put into operation. Another metallurgical engineer, J. H. Gillis, worked from May 1930 to 1936 on the design and construction of 15 metallurgical plants. In one project he worked on the initial plans and then was promoted to a position as technical director, and then moved on to another plant as technical director. As Gillis specialized in electrolytic zinc plant design, it can be assumed that he had a dominant influence in the zinc industry. A 1937 State Department report indicated that most of his work had been 'with

[33] *Fortune*, April 1949, p. 82.
[34] U.S. State Dept. Decimal File, 861.6352/15.
[35] *American Engineers in Russia*, Fisher, Confidential Report.
[36] U.S. State Dept. Decimal File, 861.6352/15.
[37] National Archives Microcopy T84, Roll 127, Frame 665.

design, construction and operation of electrolytic zinc plants of which two have been completed and are in successful operation.'[38] His conclusions were that the plants as constructed were capable of efficient operation but that the irregularity of ore supply and fluctuating power supplies handicapped zinc output.[39]

Several large zinc concentrators, smelters, and refineries were built between 1930 and 1945. One was the Ukrtsink, at Konstantinovka in the Ukraine, with a 35,000-ton input of concentrate to produce 12,000 tons of refined zinc and 30,000 tons of sulphuric acid from roaster gases. Another was the Ordzhonikidze in the North Caucasus, to produce electrolytic zinc. According to Chamberlain[40] the plant produced 5 tons of zinc per day and for this required 300 office workers and 1,600 plant workers. In St. Louis a similar refinery producing 50 tons of zinc a day required only 16 in the office and 170 in the plant.

The Ridder lead-zinc smelter and refinery in Leninogorsk was completely Western in equipment. The concentrator had Blake crushers and Dwight-Lloyd roasting machines. The refinery had Parkes kettles with a Howard mixer, and a small Cottrell furnace copied from the one located at Port Pirie, Australia. There were five Faber du Faur retort furnaces, all Soviet-made but

Table 4–3 LEAD AND ZINC SMELTING AND REFINING WORKS, 1930–45

Location	*Plant Name*	*Capacity (1941) (Metric Tons)*	*Type of Plant*
Ukraine	Konstantinovka (Ukrtsink)	12,000 zinc	Zinc distillation
Transcaucasia	Elektrosink (Ordzhonikidze) (formerly Vladikavkaz)	30,000 electro-zinc 7,500 zinc 14,000 lead	Electrolytic zinc Zinc distillation Lead smelting
Chelyabinsk	Zinc plant	20,000 electro-zinc	Electrolytic zinc
Leninogorsk	Ridder lead works	14,000 lead	Lead smelting
Tschimkent	Kalinin lead works	60,000 lead	Lead smelting
Novosibirsk	Belovo	18,500 zinc	Zinc distillation
Primorsk	Tetuikhe	15,000 lead	Lead smelting
*Altai	Ust' Kamenogorsk		Electrolytic zinc

Source: Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941. Miscellaneous German Records, National Archives Microcopy T 84–122.
* Built during World War II.

[38] U.S. State Dept. Decimal File, 861.5017—Living Conditions/795, Report No. 1172, Paris, June 11, 1937.

[39] Both Aitkenhead and Gillis have reports in *American Engineers in Russia.*

[40] William H. Chamberlain, *Russia's Iron Age* (Boston: Little, Brown, and Co., 1934), p. 57.

copied from a Belgian 500-kilogram type.[41] The Belovo zinc plant at Novosibirsk, opened in 1931, had U.S. equipment.[42]

DEVELOPMENT OF AN ALUMINA-ALUMINUM INDUSTRY

A great deal of research was undertaken in tsarist Russia in aluminum technology. Bayer worked at the Tentelev chemical plant (St. Petersburg) perfecting the Bayer process, patented in 1887 and still the world's standard process for alumina reduction. Six years later Penyakov patented a dry process for converting bauxite into alumina. This process was used in France and Belgium before World War I. Work by other Russian scientists, including Fedotiv on the reduction cell, helped put prerevolutionary Russia in the forefront of aluminum technology, although the country was weak in production facilities.

The basic problem, which also presented itself to the Soviets, was that Russian bauxite deposits were small and of low grade. The Tikhvin bauxite deposits were initially explored in 1882 and in detail during World War I. Nevertheless, Russia did not manufacture alumina, but only a few aluminum goods from imported aluminum metal. The Alcoa concession[43] in the mid-1920s explored and drilled known bauxite deposits and confirmed these prerevolutionary findings.[44] The basic Soviet choice then was either to build an aluminum industry on the low-grade, limited Tikhvin bauxite deposits or to use nonbauxite raw materials. Nonbauxite material had not been used elsewhere in the world and required development of a new technology. A military demand for self-sufficiency dictated the choice of the nonbauxite option as well as use of the Tikhvin deposits.

Development of the aluminum industry in the late 1920s and 1930s was 'under the direction of Mr. Frank E. Dickie.'[45] Dickie, previously with Alcoa, was attached as consultant to Tsvetmetzoloto. A commission from Aluminstroi (Aluminum Plant Construction Trust) also visited Germany in 1929 to study the German aluminum industry.[46]

The first plant built in the Soviet Union, for production of 40,000 tons of alumina and 13,500 tons of aluminum per year, was at Volkhov, 75 miles east of Leningrad. Construction was begun in 1930, and the plant was brought

[41] *Engineering and Mining Journal*, CXXXVII, No. 10 (October 1936). This issue contains an extensive article on the Ridder plant.

[42] Amtorg, *op. cit.*, VI, No. 3 (February 1, 1931), p. 64.

[43] Sutton, *Western Technology . . . 1917 to 1930*, pp. 106–7.

[44] Alcan Hirsch, *Industrialized Russia* (New York: Chemical Catalog Co., 1934), pp. 89–90. Hirsch reported that even by 1934 only 7 million tons of bauxite had been located at Tikhvin.

[45] *Ibid.*, p. 90.

[46] Amtorg, *op. cit.*, V, No. 2 (January 15, 1930), p. 43.

into partial operation in mid-1932. Technical assistance was provided by Cie. de Produits Chimiques et Electrométallurgiques Alais, Troques et Camargue, of Lyons, France, and covered both design of the plant and supervision of erection by French engineers. Soviet operating engineers were trained in plants (Sabart et St. Jean de Maurieme) belonging to the company in France.[47] The alumina plant received bauxite from the Tikhvin deposits and converted it to alumina by the old Deville-Péchiney process, called the Mueller-Yakovkin process in the Soviet Union.

Another aluminum plant, also started in 1930, at Zaporozhe in the Ukraine, began to produce aluminum in June 1933 and alumina in early 1934 from Tikhvin bauxites. This was also designed and built under the technical-assistance agreement with Cie. de Produits Chimiques and included plants for the manufacture of synthetic cryolite and carbon electrodes—not part of the Volkhov project. Dneprovsk used the Pedersen process,[48] called the Kuznetsov-Zhukovski process in the U.S.S.R. The equipment for the plant was reported by a member of the U.S. Embassy in Moscow as coming from Italy.[49]

Kamensk, finished in 1939 to produce 108,000 tons of alumina and 30,000 tons of aluminum per year, used the standard Bayer wet alkaline process.

The Kandalakskii plant, using nepheline and not bauxite, was started in 1934 but not completed until 1955: a measure of the advantage of transferring known foreign techniques.

THE UNITED ENGINEERING CONTRACTS FOR ALUMINUM ROLLING MILLS

The United Engineering and Foundry Company contracts of January 1938 exemplify the advanced nature of the technology supplied by Western firms to the Soviet Union: indeed some of these projects strained the research and development abilities of the most advanced Western firms and were far beyond the abilities of the Soviet Union at that time.[50] The contracts do suggest, however, that the Soviet Union has had a remarkable ability to recognize advanced technology and enlist front-rank foreign firms in the acquisition process.

[47] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941. Miscellaneous German Records, National Archives Microcopy T 84–122, Bericht No. 10, p. 14; R. J. Anderson, 'Russian Aluminium,' *The Mining Magazine* (London), February 1938.

[48] The Pedersen process was developed by Prof. Harold Pedersen in Norway and patented in 1926. The work was financed by Norsk Aluminum (Norway) and Alcoa.

[49] U.S. State Dept. Decimal File, 861.6463/66, Dispatch No. 183, American Embassy in Moscow, September 28, 1934.

[50] The wide-strip mill used in the steel industry may even today (1968) be beyond Soviet capabilities. Only one such mill has been produced: a copy of the original United mill, installed in Poland, not the U.S.S.R.

The January 1938 agreement involved the sale of $3 million worth of equipment and technical assistance for aluminum mills at Zaporozhe. These were 66-inch (1680-millimeter) hot and cold mills complete with auxiliary equipment: the most modern mills in the world. Jenkins, the United Chief Engineer in the U.S.S.R., said of the Zaporozhe mill that 'not even the Aluminum Company of America has machinery as modern as it is.'[51] Both mills were 'completely powered and controlled by General Electric apparatus. . . .'[52]

The Stupino mill (Plant No. 150) near Moscow, by far the most important Soviet aluminum development project, was also the subject of an agreement in May 1939 between Mashinoimport and United Engineering and Foundry for the installation of hot and cold rolling mills. These were mills of extraordinary size, and, if erected in the West, would certainly have been the subject of interested discussion in the trade literature.

The Stupino installation comprised two sections: a hot mill and a cold mill. The hot mill had two units. One was a 2-high 66-inch hot rolling mill for rolling cast duraluminum, including Type 17-S and 24-S ingots. On a basis of 300 working days with two shifts operating at 70 percent efficiency, its capacity was rated at 45,000 metric tons of aluminum sheet per year. The 66-inch mill came into regular operation about February 1, 1940 and the 112-inch mill a few weeks later.

The cold mill contained two mills of similar size for cold working sheets produced in the hot mill. The 66-inch cold mill started about March 1940 and the 112-inch cold mill late in 1940. All finishing equipment was supplied and placed in operation by United Engineering for the Soviets.[53] The complete contract was worth about $3.5 to $4 million to United Engineering; for this amount the Soviets acquired an installation capable of rolling 2,000-foot-long aluminum sheets for aircraft. United Engineering said of it that 'nothing of such a size has ever been produced before.'[54] The electrical equipment for Stupino was supplied by General Electric, as was the equipment for a third (name unknown) aluminum mill.[55]

The Brown-Boveri Company supplied equipment for annealing and hardening aluminum (almost certainly associated with the above rolling mills) to an unknown plant operated by Tsvetmetzoloto.[56] The company commented on this equipment as follows:

[51] U.S. State Dept. Decimal File, 861.6511/37, Report No. 902, Moscow Embassy, January 31, 1938.

[52] *The Monogram*, November 1943. Although the source does not mention Zaporozhe, it does refer to the 'first rolling mill,' which was probably Zaporozhe.

[53] U.S. State Dept. Decimal File, 861.25/420, Report No. 298, February 5, 1940.

[54] *Ibid.* The Stupino plant also manufactured Hamilton 2-blade and 3-blade variable pitch propellers for aircraft.

[55] *The Monogram*, November 1943. Location of the third mill is not known.

[56] *Brown-Boveri Review*, January 1932, pp. 24–6.

> The large output required from this plant, the exceedingly large dimensions of the pieces to be treated, and the resulting high power requirements made necessary designs which considerably exceeded in dimensions and type of construction the scope of our furnace designs as used up to date.[57]

Twenty-one furnaces were constructed for a continuous process system with electrically driven conveyors. Two pusher-type furnaces were made for the 600-ton press, and another electric furnace with a step-type conveyor was made for the 1,500-ton press. Yet another continuous electric furnace with conveyor chain was installed by Brown-Boveri in the 3,000-ton press shop. The hot rolling mill was supplied with two electric continuous furnaces as well as a pusher-type furnace and a hardening furnace. The sheet and tube rolling mill had two electric annealing furnaces and a hardening furnace. The laboratory was supplied with eight small electric furnaces.[58]

Thus we may conclude that the technically weak Soviet non-ferrous metals industry was essentially designed and constructed by Western companies specializing in this field. In mining operations the assistance was given in the early 1930s only and limited to the provision of foreign equipment and American superintendents, later supplanted by Russian management. However, the design of smelters and refineries was completely American and the Russian operators were trained by foreign construction engineers.

[57] *Ibid.*, p. 24.

[58] *Ibid.*, p. 26.

CHAPTER FIVE

Technical Assistance to the Iron and Steel Industry

GENERAL DESIGN OF SOVIET IRON AND STEEL PLANTS

STALIN placed great emphasis on iron and steel as the basis for a socialist economy. His plans included rebuilding and expanding 20 prerevolutionary plants (suitably renamed after favored Bolsheviks) and construction of three gigantic new plants at Magnitogorsk, Kuznetsk, and Zaporozhe.[1] What has escaped Western economists is that the Soviet Union lacked entirely the technical resources to build even tsarist-era metallurgical plants, quite apart from the highly complex systems contemplated. No amount of Soviet investment, within a politically acceptable time period, could have replaced importation of the latest Western smelting and rolling-mill technologies.

Between 1927 and 1932 the responsibility for directing the transfer of modern technology to the Soviet iron and steel industry belonged to Gipromez and the Freyn Engineering Company of Chicago. Mr. Henry J. Freyn, President of the company, described the objectives of his 1928 technical-assistance contract as follows:

> The work of our group of engineers and operators located in Leningrad and attached to Gipromez [State All-Union Institute for Planning of Metallurgical Works], consists in making available to Soviet executives, engineers, and operatives [*sic*] the American training, knowledge and practical experience of our organization, to the end that the reconstruction and enlargement of the existing plants and the planning and construction of new iron and steel works be predominantly of American design and standards.[2]

[1] A. I. Gurevitch, *Zadachi chernoi metallurgii v 1932 g* (Moscow: 1932), pp. 8–9.

[2] Henry J. Freyn, 'Iron and Steel Industry in Russia,' *Blast Furnace and Steel Plant*, XVIII, January 1930, p. 92. See also Sutton, *Western Technology . . ., 1917 to 1930*, pp. 74–5.

The degree of his involvement in the actual planning process may be judged from Mr. Freyn's comment that 'one of the principal tasks of our Leningrad force is the allocation of the steel production demanded by the five-year plan, and provision for the necessary plant capacity. . . .'[3]

Freyn had retained a staff in the U.S.S.R. since 1927 and Kuznetsk was one of the projects designed with this assistance. The company agreement to build the Kuznetsk plant,with a pig-iron capacity of one million tons per year, was signed on June 4, 1930 with Novostal. A contemporary wrote: 'Between fifty and sixty American engineers will constitute the organization which will direct the execution of design, specifications, fabrication, and superintend the erection and initial operation of the Kuznetsky Steel Works.'[4]

In 1928 a Soviet commission of four members visited the offices of Arthur G. McKee and Company in Cleveland. These Cleveland discussions resulted in broad agreement on the type and location of another major unit, the Magnitogorsk plant, although the drawing completed in early 1928 was 'one small general plan showing the proposed plant layout that had been agreed upon by our engineers and the Russian Commission. . . .'[5] This McKee design was based on the Gary, Indiana, plant of United States Steel, at that time the largest integrated iron and steel plant in the world. The proposed project was then reduced to drawings by 450 American engineers working day and night. Design work alone on Magnitogorsk cost the Soviet Union two million gold rubles. R. W. Stuck describes this McKee design as complete 'to the last nut and bolt' before construction started; 'nothing of this size and magnitude had ever been done before . . . it is the finest design of a steel plant that was ever reduced to drawings. . . .[6]

Design work completed, a group of McKee engineers then outlined the mill layout and specifications to an audience of 75 to 100 Russian planners, bureaucrats, and steelworks engineers in Moscow. This design became the largest project in the First Five-Year Plan, and the showpiece of 'socialist construction.'[7]

Most competent Russian construction engineers had left Russia, and the tsarist metallurgical equipment plants such as Sormovo and Kramatorsk,

[3] *Ibid.*

[4] Arthur J. Whitcomb, 'Soviet Union to Build Steel Plant,' *Blast Furnace and Steel Plant*, XVIII, July 1930, p. 1135.

[5] *American Engineers in Russia*, Stuck MSS, Folder 5. R. W. Stuck was Chief Engineer in charge of blast-furnace construction at Magnitogorsk and later head of the McKee group in the Soviet Union.

[6] *Ibid.*, p. 26.

[7] John Scott has remarked, 'It was necessary to give this contract to a foreign contractor because of the obvious incapacity of any Soviet organization then in existence to do the work.' [*Behind the Urals* (Cambridge: The Riverside Press, 1942), p. 68.]

which in the late nineteenth century had produced some types of iron and steel plant equipment, had been stripped of their technical forces. The remaining competent engineers were in and out of OGPU camps. German engineers running the metallurgical plants in 1927–8 were politically suspect, and the hastily trained 'red engineers' more apt to talk than to do. Accordingly, Gipromez was initially charged with the transfer of American metallurgical technology to Soviet industry, rather than with the development of new designs. This transfer was achieved by employing American (and some German) engineers to simplify and standardize this foreign technology. This technology was then duplicated by metallurgical equipment plants such as the new Uralmash and the greatly expanded Kramatorsk plants. It is a mistake to assume that the Freyn Company, the McKee Corporation, and similar Western contractors acted only as consultants in the development of the industry.[8] Individual American engineers managed Gipromez departments, and the technical staff of Gipromez was for some years heavily Americanized. One engineer, W. S. Orr, at work in Leningrad Gipromez headquarters from 1929 to 1933, has provided a description of this technical penetration:

> When we first joined Gipromez we were only asked questions—the Russians made the layouts, reports and decisions. In about six months we were asked in on the layouts and decisions, in about nine months we were made Chief Engineers of steel plant projects and at the end of the first year some of our men were heads of departments. Last year one was the Assistant Chief Engineer of the entire bureau. Naturally we instituted American short-cut methods, weeded out a lot of unnecessary work and when we left we considered that Gipromez was the most efficient organization in Russia.[9]

The Americanization of Gipromez is significant as it coincides with a Sovnarkom (Council of People's Commissars) decision, in line with a McKee Corporation specification, to change Magnitogorsk from a plant 20 percent the size of the United States Steel plant at Gary, Indiana, to a plant equal in size to the Gary plant and with a pig-iron output of 2.5 million tons per year.

Koptewski,[10] Chief Engineer at Soviet steel plants in the early 1930s and with Gipromez at that time, recalls these significant German and American technical contributions, and suggests that both made 'a tremendous contribution towards facilitating the manufacture of standard metallurgical equipment. . . .' Koptewski also suggests that not only the standardization of the

[8] For example, see M. Gardner Clark, *The Economics of Soviet Steel* (Cambridge: Harvard University Press, 1956), p. 56. This is not intended as a criticism of Clark's excellent study. The data has not been previously forthcoming.

[9] *American Engineers in Russia*, Fisher material, Folder 3, Report 15.

[10] Sergei Koptewski, *The Costs of Construction of New Metallurgical Plants in the U.S.S.R.* (New York: East European Fund, Inc., 1952), p. 9.

blast furnace but also the advances in construction simplification and maintenance methods were initiated by Westerners. Blast-furnace equipment was standardized on foreign models by Gipromez to simplify production at the new machinery plants being built and equipped by foreign companies. For open-hearth departments, standard plans were drawn up for stripping, scrap yards, mixers, and 150-ton fixed and 250-ton tilting furnaces. Cast-iron teeming equipment, single- and multi-stage electric gas purifiers, and turbo air-blowers were standardized in drawings. In rolling mills the significant standard model was a blooming mill with an annual capacity of 1.5 million tons, based on a Demag 1150-millimeter design. Koptewski states that great effort was made to incorporate latest Western techniques into these standard designs. The procedure was much like converting a military aircraft from the development stage to mass production by freezing design at a particular point; in the case of Soviet industrial development, design was frozen on the most suitable of foreign designs.[11]

In the reports of foreign delegations and observers visiting those iron and steel plants, there is consistent evidence of the widespread use of foreign equipment and methods. The Hanczell Industrial Delegation from Finland, for example, reported as follows:

> Organization methods and most of the machinery are either German or American. The steel mill MORNING near Moscow, which was visited by the delegation is said to be one of the most modern establishments of its kind in the world. Constructed, organized and started by highly paid American specialists, it employs 17,000 workers and produces steel used by motor plants, naval shipyards and arms factories.[12]

We may then assert that Soviet iron and steel technology, a favored development sector, was wholly dependent on foreign design and engineering ability. This assertion is now examined in detail.

DEVELOPMENT OF IRON-ORE MINES BY THE OGLEBAY, NORTON COMPANY

Historically, Krivoi Rog is the base of Russian iron-ore production and was operated in the 1920s by mining engineers of Rawack and Grunfeld A-G of Germany. Early reports by the German firm were adopted and expanded by an Oglebay, Norton Company technical-assistance contract with Novostal.

[11] The saving in drafting costs alone was substantial. About 30,400 engineering drawings are required for an integrated iron and steel plant. Koptewski estimates these to have cost about 16 million (1934) rubles (*op. cit.*, p. 12). Scott estimates that the McKee Corp. had over 100,000 such blueprints in the cellar of the combinat building. (*Op. cit.*, p. 67.)

[12] U.S. State Dept. Decimal File, 861.5017—Living Conditions/456, Report No. 665, Helsingfors, April 2, 1932.

In January 1928 a group of American mining engineers specializing in iron-ore development reported on the Krivoi Rog ore mines and formulated plans for their rehabilitation, expansion, and future operation.[13] Their objective was to prepare operating and development plans and schedules for Vesenkha (Supreme Council of the National Economy). Between 1928 and 1934 the firm worked on all the major iron-ore deposits in the U.S.S.R. but concentrated its efforts on Krivoi Rog, the four major Urals iron-ore deposits, and those supplying Kuzbas. (See table 5–1.) J. M. Price was manager and a corps of American mining engineers was retained in the U.S.S.R. until 1934. Their work covered all phases of open-pit and underground iron mines and was the key element in modernization and mechanization. Initial implementation of modern methods and the introduction of imported mining equipment were supervised, and assistance was given in developing early Soviet models of Western equipment. Magnitogorsk, for example, was equipped with the largest current model of Traylor and Gates ore-crushers.[14]

Rodin[15] has pointed to the absolute and relative gain in *per capita* output of iron ore in the U.S.S.R. in the face of a 'marked deterioration' of two naturally determined factors: a decline in the proportion of open-pit-mined ore from 68 to 31 percent and a fall in yield of mined crude ore from 100 to 88 percent. Increased production was due to counterbalancing advantages: the amount of power equipment available per unit of output, the size of the average mine, and improvement in mining practices and mining equipment. These three advantages can be specifically traced to Western origins, while the disadvantages, as Rodin pointed out, were 'naturally determined.' The size of a mine is primarily determined by type of mining desired: open-pit or underground. Open-pit mines tend to be larger and, in the U.S.S.R., labor productivity at the best open-pit mines is three to four times greater than at

[13] *American Engineers in Russia*, E. S. Dickinson, Folder 4, No. 6. Oglebay, Norton Company is a large independent iron-ore producer based in Cleveland, Ohio. The company supplied (letter of April 12, 1934) a list of 21 engineers who had worked in the U.S.S.R. Some stayed on with individual contracts after expiration of the company agreement. Engineers were hired on one-year or two-year contracts. At least five have left detailed accounts of their work. F. W. Uhler was Chief Engineer at Sverdlovsk, directing the work of the Urals group of mines from June 1930 to July 1931. C. M. Harry was on a two-year contract to project new operations for Krivoi Rog. K. H. Donaldson was based at Sverdlovsk and traveled to mines at Zlatoust, Turin, and Samsky. H. H. Angst was on a two-year contract specializing in mining techniques, and worked at Lipetsk, Tula, Sverdlovsk, and the Urals mines. An anonymous engineer was based in Leningrad and made consulting trips for specific problems to Kharkov, Lipetsk, and Kerch'. See also U.S. State Dept. Decimal File, 861.5017—Living Conditions/347, for interviews with returning engineers.

[14] *American Engineers in Russia*, 'Statement of J. S. Ferguson Covering Personal Experiences in Russia over a Period of Eighteen Months,' April 30, 1933, p. 26.

[15] N. W. Rodin, *Productivity in Soviet Iron Mining, 1890–1960* (Santa Monica: The RAND Corp., 1953), Report RM-1116, p. 2.

the best underground operation (Krivoi Rog). The amount of ore mined by open-pit methods, however, has declined heavily since tsarist times (from 68 percent in 1913 to 31 percent in 1940), a reversal of the trend in the United States. The reasons are not clear. There is no reason to believe that iron-ore deposits with heavy overburden, requiring underground mining, are concentrated in the Soviet Union. In any event the U.S.S.R. has a much greater land surface, and iron ore is a commonly occurring mineral. These problems suggest inefficient iron-ore exploration methods.

Rodin concludes that there is a technological lag not explainable in terms of deficient power capacity. Rodin's conclusion is consistent with reports of Oglebay, Norton engineers working on development of these deposits. Modernization between 1928 and 1935 increased technical efficiency but was introduced unevenly and may have taken a long time to penetrate some mining areas.

This suggested technological lag may be exemplified by the much smaller size of power shovels at open-pit iron-ore operations. Introduction of power shovels began only in 1929, but the average shovel capacity remained small throughout the period under study. In 1929 Uralrud (Urals Ore Trust) had 17 power shovels averaging 0.88 cubic meters; in 1940–2 its shovels

Table 5–1 DEVELOPMENT OF SOVIET IRON-ORE MINES, 1928–40

Mine	District	*Million Metric Tons Produced in 1940*	
		Developed by Oglebay, Norton Engineers (1928–1934)	*Not Known to Have Been Developed by Oglebay, Norton*
Tula	Central industrial	0.63	—
Lipetsk	Central agricultural	0.49	—
Crimea	Kerch'	1.92	—
Tagil-Kushva	Urals	1.23	—
Kusa	Urals	—	0.25
Bakal	Urals	—	0.63
Magnitogorsk	Urals	7.85	—
Zagazine-Kamarevskaya	Urals	—	0.50
Khalilovo	Urals	—	0.35
Telbess-Temir Tau	Siberia	0.70	—
Krivoi Rog	Ukraine	18.90	—
Others		—	0.19
TOTAL		31.72*	1.92

Source: D. Shimkin, *Minerals: A Key to Soviet Power* (Cambridge: Harvard, 1953), pp. 43, 48–9.

* 95% of iron ore produced in 1940 by Oglebay, Norton-developed mines.

averaged 1.73 cubic meters. Rodin compares this to Lake Superior mines, which in 1924 had 447 power shovels averaging 2.5 to 3.0 cubic meters, and explains the difference on the basis that small-ore bodies are better worked with small shovels. This is, however, a remote argument. Ore-deposit size does not affect shovel size to any extent in the range of 1 to 3 cubic meters, although it might inhibit the use of very large shovels. The technological lag is more likely to have been due to the Soviet inability to duplicate large foreign excavators, thus restricting iron-ore mining operations to the use of smaller shovels.

DEVELOPMENT OF THE STANDARD BLAST FURNACE

Until 1928 Russian blast furnaces were units of comparatively small capacity, although they were well-suited to the widespread geographical distribution of Russian metal-consuming industries. The Freyn-Gipromez design assistance contract of 1928 resulted in a standard blast furnace of 930 cubic meters capacity which could produce 1,000 tons of pig iron per day, with features enabling expansion to 1,200 tons. This standard furnace was a definite innovation. It conformed closely to American Freyn basic design and was patterned for the use of Krivoi Rog ores, which are similar to Lake Superior hematites. The innovatory feature was the use of the same standard design (capable of slight change for different site conditions, raw materials, and pig iron specifications) in multiple locations.[16] Standardization yielded economies

Table 5–2 FREYN STANDARD BLAST FURNACES IN THE SOVIET UNION, 1934

Name of Plant	*Number of Standard Blast Furnaces*		
	Operating	*Building*	*Projected*
Dzerjinsky	1	1	5
Zaporozhe	1	1	4 or 6
Voroshilov	1	1	4
Azovstal	1	1	6
Lipetsk	0	2	4
Tula	0	2	4
Krivoi Rog	1	1	6
Nikopol	0	0	2 or 3
Tagil	0	0	6
Total	5	9	41 or 44

Source: Adapted from *Freyn Design*, No. 11 (March 1934), p. 6.

[16] Gordon Fox and Owen R. Rice, 'Soviet Standard Blast Furnace,' *Freyn Design*, No. 11, March 1934, pp. 1–6. For another detailed description of the standard blast furnace see: Gordon Fox and Owen R. Rice, 'Soviet Standardizes Blast Furnace Design,' *The Iron Age*, CXXXIII, No. 10, March 8, 1934, pp. 20–4, 58. Fox was Vice-President of Freyn Engineering Co. and Rice a metallurgical engineer at Freyn. The article includes furnace dimensions, details of Freyn-designed equipment, and locations in the Soviet Union.

in the engineering and production costs of equipment; about 22 furnaces were finally built from the Freyn drawings.[17] The first units required imported American (and German) equipment; later units utilized the same equipment design but were manufactured at the new Uralmash and Kramatorsk plants.

In brief; no new blast furnaces were built between 1917 and 1928. From 1928 to 1932 all Soviet blast furnaces were designed and built under supervision of either the McKee Corporation or Freyn Engineering, to U.S. designs. After 1933 the standard Freyn and, to a lesser extent, the McKee design (1,180 cubic meters) were duplicated until 1938, when the Gipromez 1300-cubic-meter or second standard design was introduced.

Turbo-blowers for the hot-blast stoves (Cowpers units) for blast furnaces of 115,000-cubic-foot-minute capacity were supplied for Kuzbas and Magnitogorsk by the Brown-Boveri Company of Switzerland.[18] This was 'one of the biggest modern blower plants' in the world, built at the Brown-Boveri works in Mannheim (Germany) and Baden (Switzerland), and installed and started up by Swiss and German engineers. Altogether five of these gigantic units went to Kuznetsk and six similar units, built at Mannheim, went to Magnitogorsk. Of new design, they were far beyond the technical capability of the Soviet Union at this time.[19] General Electric turbo-blowers were installed in at least six other iron and steel plants.[20]

Soviet plants fabricated some constructional steelwork for the new plants and then, after about 1932–3, ventured into the manufacture of simple blast-furnace equipment items, starting with Dewhurst slag ladles of 10-cubic-meter capacity at Kramatorsk. These were large, heavy ladles mounted on a railroad wagon chassis for removal of hot slag from blast furnaces to adjacent slag dumps. Ferguson, blast-furnace superintendent at Kutnetsk, reported 25 slag ladles of Soviet manufacture: the only Soviet-supplied equipment there, apart from some mill electrical motors of less than 25 horsepower.[21] Shortly afterwards came manufacture by Uralmash (Urals Machine Combine) of larger, Dewhurst-type, pig-iron (i.e., hot-metal) ladles of 12-cubic-meter capacity.[22] Both slag and pig-iron ladles had been manufactured, however, as far back as 1890 at the Sormovo and Briansk works. Then, in the 1930s,

[17] Institut promyshlenno-ekonomicheskikh isslodovanni NKTP, *Chernaya metallurgiya SSSR v pervoi pyatiletke* (Moscow: 1935), p. 55.

[18] *The Brown-Boveri Review*, XX, No. 1 (January/February 1933), pp. 46–9.

[19] 'A blower plant of this kind attains the thermal efficiency of a gas engine driven plant but is much cheaper to build and keep up and more reliable in operation.' *(Ibid.)*

[20] Amtorg, *op. cit.*, VII, No. 9 (May 1, 1932), pp. 209–10.

[21] *American Engineers in Russia*, 'Statement of J. S. Ferguson Covering Personal Experiences in Russia Over a Period of Eighteen Months,' April 30, 1933, p. 3.

[22] Koptewski, *op. cit.*, table 19. Koptewski calls Dewhurst 'Duerst,' being unfamiliar with the English spelling.

the Soviets manufactured more and more types of blast-furnace equipment, all to foreign design, until by 1940 they had the capability to produce more or less efficient duplicates of all such equipment.

STANDARD OPEN-HEARTH FURNACES

Open-hearth design was based on American and German models, standardized largely to one basic size: the 150-ton (56-square-meter) model.

Table 5–3 ORIGIN OF EQUIPMENT DESIGN FOR OPEN-HEARTH STEEL-MAKING

Unit	*Country of Origin*	*Firm*
Open-hearth furnaces (150 tons per heat)	U.S.	Freyn Engineering Co.
Charging equipment	U.S.	Morgan Engineering Co.
Electric stripper cranes	U.S.	Morgan Engineering Co.
Pouring equipment	Germany	Demag A-G
Soaking pits	U.S.	Freyn Engineering Co.
Roller bearings for cranes, charging cars and ingot cars	Sweden	SKF

The Kuznetsk plant had 15 American-designed open-hearth furnaces and Magnitogorsk had 14 similar furnaces of 150 tons per heat, installed to operate on either producer or mixed blast-furnace/coke-oven gases. The shops were equipped with Morgan (United States) and Demag (Germany) charging and pouring equipment, all in duplicate.

Of steel-making shops constructed before 1934, five plants (Kuznetsk, Magnitogorsk, Zaporozhe, Kirov, and Dzherzhinsk) are described as having 'modern Martin shops of the American type.' These furnaces were mainly 150-tonners, although there were three 300-tonners of Freyn design. Four other plants had 'modern German shops' with 70-square-meter furnaces. The remainder had tilting or special furnaces of foreign design.[23]

A German study made in 1944 suggests that this foreign influence continued at least through World War II.[24]

DEVELOPMENT OF STANDARD BLOOMING AND SLABBING MILLS

Primary blooming and slabbing mills are used to break down ingots into sizes more suitable for final rolling into various shapes. Such mills are essential

[23] Institut promyshlenno-ekonomicheskikh issledovanni NKTP, *op. cit.*, p. 72.

[24] Report No. 68 of the Gmelin-Institute, *Eisenhüttenindustrie*, National Archives Microcopy T 84–127–1428293 *et seq.*

to large-tonnage operations and form part of all modern integrated iron and steel plants. There were no modern primary mills of this type in the Soviet Union before 1932. Each of the metallurgical giants, Magnitogorsk and Kuznetsk, was equipped with a Western-built mill—a Demag 45-inch mill with General Electric control and drive equipment—produced abroad and installed and started up in the U.S.S.R. by Demag and General Electric engineers.

The Soviets then adopted a standard blooming mill based on United and Demag 1150-millimeter (45-inch) design and duplicated at the Izhorsky and Kramatorsky plants, with the help of United Engineering, for installation in other iron and steel plants. Western blooming mills range from 40-inch to 78-inch roll widths; adoption of a standard 45-inch width obviously imposed limitations on the range of rolled products produced by the mills, but was consistent with the planning objective of producing a limited range of steel shapes and sizes with standardized equipment.[25]

Table 5–4 DESIGN CHRONOLOGY OF SOVIET LARGE BLOOMING AND SLABBING MILLS, 1932–45

Date of Mill Start-Up	*Mills of Foreign Design and Manufacture*	*Mills of Foreign Design and Technical Assistance, Made in Soviet Union*		*Mills of Soviet Design and Manufacture*
Nov. 5, 1932: Kuznetsk	Demag A-G 45-inch mill; G.E. Co. control and drive equipment	—		—
1932: Magnitogorsk (section 1)	Demag A-G 45-inch mill; G.E. Co. control and drive equipment	—		—
Early 1933: Kirov (McKeevsky)	—	Izhorsk 45-inch 'standard'		—
June 1933: Dzherzhinsk	—	Izhorsk 45-inch 'standard'	Demag A-G and United Engineering	—
August 1933: Magnitogorsk (section 2)	—	Kramatorsk 45-inch 'standard'		—
1934–1941: Zaporozhstal	—	Kramatorsk 45-inch 'standard'		—
Chelyabinsk	Demag A-G 43-inch	—		—
Zlatoust	—	Probably Kramatorsk		—
Total Mills	3 before World War II	5 before World War II		None between 1917 and 1945

[25] See chap. 9 for information on assistance by United engineers in building the standardized duplicates.

Izvestia correctly claimed that the blooming mills at Kirov, Dzherzhinsk and Zlatoust utilized 'Soviet materials, Soviet workers and engineers.'[26] What *Izvestia* did *not* state was that these mills were of foreign design and duplicated in the Soviet Union with the help of U.S. steel-mill designers and engineers.[27] Adoption of a standard blooming mill design, although advantageous given the limited technical and innovatory resources available, inhibited adoption of newer rolling improvements. For example, the high-lift blooming mill, to handle wider ingots, was adopted in the United States after about 1940, but not in the U.S.S.R. The choice facing the Soviets, therefore, was to concentrate on duplication of a single standard proven design and achieve large-tonnage production by sacrificing the flexibility and economic advantages of a slower pace of technical adaptation. The road taken enabled training of cadres of mill operators and very rapid increases in production.

Bolshevik haste to meet propagandized deadlines also affected output; Frankfurt relates that the Kuznetsk mill was started up over the objections of Freyn engineers.[28] Output figures in the first four months suggest that a series of mill breakdowns was caused by this impatience. Start-up on November 5 produced 2,934 tons in that month and 6,108 tons in December. Then came two months with a little over 1,000 tons per month: less than 1 percent of capacity. In March the mill was in better shape and in September produced 30,000 tons, or 25 percent of capacity.[29]

THE UNITED ENGINEERING CONTRACT FOR HOT AND COLD CONTINUOUS WIDE-STRIP MILLS

By far the most significant advance in rolling technique in the twentieth century has been the American wide-strip mill producing hot and cold rolled wide steel strip—a prerequisite essential for automobile and appliance production.

The United Engineering and Foundry technical-assistance agreement, signed in February 1935, provided for transfer of both hot and cold stripmill

[26] November 26, 1932.

[27] See chap. 9.

[28] S. Frankfurt, *op. cit.*

[29] S. M. Veingarten, *Ekonomika i planirovanii a chernoi metallurgii SSSR* (Moscow: 1939), p. 361. Frankfurt's recollections of the premature start-up of the mill state that the Freyn engineers objected and boasts that 'Soviet people—builders, erectors, the operating staff—succeeded in mastering the complicated machinery without the help of Americans.' (Frankfurt, *op. cit.*, p. 113.) Any reader familiar with the highly skilled procedures of steel-mill operation will readily envisage the chaos that came to pass on November 5, 1932 at the Kuznetsk blooming mill.

Table 5–5 ORIGIN OF MAJOR ROLLING MILLS (OTHER THAN BLOOMING AND SLABBING MILLS) INSTALLED 1930–45

Plant	*Flat Strip, Sheet, Skelp, and Plate*	*Light Structurals and Rod Bar Mills*	*Rail and Heavy Structural Mills*	*Continuous Hot Strip Mills*	*Cold Reduction Mills*
Magnitogorsk	Sack skelp mill	Krupp rod mill Demag light bar mill	Demag rail and bar mills	U.S. 66″, Siemag	U.S. 66″
Kuznetsk	Schloemann plate mill	Two Schloemann merchant mills	Schloemann rail mills Schloemann structural mills	—	—
Zaporozhe	U.S. equipment in cold mill	—	—	U.S. 66″, United Engineering	U.S. 66″, United Engineering; Demag skin pass mills
Dzherzhinsk	—	—	—	Universal mill, Krupp-Grusonwerk A-G	—
Dnepropetstal	Tube Reducing Co., Mannesman	—	—	—	—
Nikopol	Tube Reducing Co., Brown-Boveri Co. (Vienna)	—	—	—	—
Lend-Lease (unknown)					
Location I	—	18″ merchant mill	—	—	—
Location II	Seamless pipe mill	—	—	—	—
Location III	Seamless pipe mill	—	—	—	—
Location IV	—	—	Rail mill, structural mill	—	—

Sources: American Iron and Steel Institute, *Steel in the Soviet Union* (New York: 1959).
U.S. State Dept. Decimal File, 861.60/325 and 861.6511/34.
U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).
Iron and Steel Industry, June 1937, pp. 475–7.

technologies to the U.S.S.R.[30] and included a $3-million equipment order and $1 million for technical assistance. The contract also provided for installation of a complete electrically driven rolling mill at Zaporozhe. Part of this mill was to be built at Kramatorsk according to United drawings and with technical assistance provided by that company.[31] The mill installation, complete with a blooming mill, was similar to one already completed by United Engineering at the Ford River Rouge plant with an annual capacity of 600,000 metric tons of 60-inch hot and cold strip. At the same time an agreement was signed with American Standard Corporation for $3 million worth of rolling-mill equipment.[32]

There is in the State Department files an excellent and objective interview of T. W. Jenkins, Chief Engineer for United Engineering in the Soviet Union, concerning the problems of installing the mill at Zaporozhe. The interview took place on February 2, 1937, some two years after signature of the agreement.

Jenkins had arrived in the U.S.S.R. in August 1936. Under the contract some of the equipment was to be built at the Kramatorsk plant. Jenkins and three other American engineers were to spend one year in the U.S.S.R. to install the United equipment, supervise construction in Soviet plants, and train Soviet engineers. One American engineer was stationed at Kramatorsk to ensure the quality of equipment being built there; this apparently presented some difficulties and Jenkins made arrangements, as could be done under the contract, for all Soviet equipment to be approved by the United engineer before shipment to Zaporozhe:

> One of the main difficulties experienced in this connection has been that the Soviet mechanics and engineers do not appreciate or understand the necessity for exact and precise work in connection with the construction of machinery. They do not keep within the allowances specified on the drawings. It is for this reason that many of the parts in the rolling mill which was operated in December did not stand up during the test.[33]

Jenkins suggested that installation might be completed by the end of 1937.

By January 1939 the hot-strip mill was installed and operating at about 30 to 35 percent of capacity.[34] By the end of 1940 the mill was producing about

[30] See chap. 9. For a detailed description of the design and equipment of the Zaporozhe strip mill supplied by United Engineering and Foundry Co. see M. Stone, 'Continuous Wide Strip Mill Now Being Built in Russia,' *Steel*, December 9, 1935, pp. 32–5, 57. Stone was an engineer with United Engineering and Foundry. Also see U.S. State Dept. Decimal File, 861.64/17 and 861.6511/34, Moscow Embassy, 1937.

[31] U.S. State Dept. Decimal File, 861.6511/34; *New York Times*, February 26, 1935, p. 27.

[32] U.S. State Dept. Decimal File, 861.6511/34.

[33] *Ibid.*

[34] U.S. State Dept. Decimal File, 861.6511/42, Report No. 2008, Moscow Embassy, January 17, 1939.

1,500 tons of steel sheets per day.[35]

Steel tube mills relied exclusively on American (Tube Reducing Company) and German (Pilger, Mannesman) processes. In 1939 Howard Kenworthy, Assistant Chief Engineer for the Tube Reducing Company of New Jersey, stayed for six months at the Nikopol tube plant supervising installation of seven machines for the manufacture of carbon-steel and stainless-steel tubes. Two similar machines were supplied by the Tube Reducing Company for installation by Soviet engineers at the Dnepropetrovski plant. The total contract to supply the 'most modern' tube-manufacturing equipment was estimated to be worth between $750,000 and $1 million.[36]

Several other complete modern steel mills were supplied under the U.S. Lend-Lease program.[37] An 18-inch merchant mill valued at $3.5 million was completed and shipped by February 1945. Two pipe-fabrication mills for production of seamless pipe valued at a total of $1.2 million were shipped in May 1945. Another project valued at $15 million included a blooming mill, rail mill, structural mill, railroad tie and fishplate mill, and soaking pits, and was also exported during 1945 under the Lend-Lease program.

In addition to these complete installations, orders for $13.2 million worth of auxiliary steel-mill equipment (with the potential of increasing Soviet steel output by 2.5 million tons per year) were shipped under the program.[38]

CONSTRUCTION OF THE MAGNITOGORSK COMPLEX BY McKEE CORPORATION[39]

Planned as the largest steel complex in the world, Magnitogorsk is a replica of the United States Steel plant at Gary, Indiana, with an annual capacity of

[35] *Ibid.*, 861.6511/46, Report No. 978, Moscow Embassy, December 4, 1940.

[36] *Ibid.*, 861.60/325, Report No. 2154, Moscow Embassy, March 7, 1939. The electrical equipment for the Nikopol tube mills was built by the Brown-Boveri Co. in Vienna. This equipment comprised: two 900-kilowatt motors for the boring mills, two 600-kilowatt motors for the forming mills, and four 180-kilowatt motors for the tube-finishing mills. Two other motors were supplied for the reversing rollers in the forming mills (180-kilowatt). In addition two 2000-kilowatt motor generators were supplied for the rolling mill together with the necessary switchboards and circuit breakers. See *Brown-Boveri Review*, January/February 1934, p. 10.

[37] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 17.

[38] *Ibid.* This discussion has concerned only some of the major iron and steel units. There is a complete detailed listing of 150 or so iron and steel plants dated 1944. (See Report No. 68 of Gmelin Institute, *Eisenhüttenindustrie*, National Archives Microcopy T 84–127–1428293 *et seq.*) This list included numerous installations not mentioned here; for example, a Davy mill in Leningrad, a Thomas Trio at Sormovo, a Bliss mill at Krasnyi Etna, several Lauta trios, a number of Universal mills, and numerous other foreign units. The writer has not found any evidence of a Soviet-designed mill in the period 1930–45.

[39] *Berliner Tageblatt*, August 4, 1931. In addition to references cited in this section, see: Fred N. Hays, '5 Great Power Plants Rise at Magnitogorsk,' *Power*, August

2.46 million tons of finished steel products. The Soviets started to build the plant with their own resources and then, after almost two years of fruitless effort and a competitive battle between McKee and Siemens of Germany for the contract, handed planning and design over to the McKee Corporation. *Pravda* reported that construction started in early 1928 with plans to expend 84 million rubles by September 30, 1930;[40] in fact, only 20 million was expended and a large proportion of that was for the McKee design work. 'The principal cause of delay,' said *Pravda*, 'is the lazy work of political and professional leaders.'[41]

R. W. Stuck, American superintendent in charge of Magnitogorsk construction for the McKee Corporation, arrived at the site late May 1930 and found that the Soviets had started work on Blast Furnace No. 1. Stuck photographed preliminary excavation work on the No. 1 furnace site and also on the No. 2 site when he had gotten it to a similar stage.[42] At the peak of plant construction in late 1931 there were 250 Americans, as well as a large number of German and other foreign technicians, at Magnitogorsk.[43] Blast-furnace construction alone required 27 U.S. engineers, stationed by Stuck at the most strategic points of the project. The greatest single problem was to restrain Soviet engineers (known among the Americans as '90-day wonders'), who were convinced that a hastily devised three-month training program and revolutionary ardor were adequate substitutes for capitalist engineering experience. According to Stuck, Russian blast-furnace construction techniques were 50 to 75 years out of date, and attempted improvements by Russian engineers reduced, rather than enhanced, efficiency. Another problem was the creation of construction schedules for propaganda, irrespective of engineering feasibility. The Communist Party required start-up of Blast Furnace No. 1 on January 31, 1932: however, at that time the furnace was only three-quarters completed. As Stuck said, 'It was put into operation against our insistent demands not to do such a foolish and rash thing as the furnace was not ready and would be destroyed. . . .'[44]

1932, pp. 79–80, for German power station equipment: W. A. Haven, 'The Magnitogorski Mines and Metallurgical Plant,' *Blast Furnace and Steel Plant*, January 1931. Haven was Vice President of McKee Corp. and includes a layout diagram of the plant. E. C. Kreutzberg, 'Filling Equipment for Blast Furnace Steps-up Output," *Steel*, March 26, 1934, reviews Otis Elevator equipment and skips for Magnitogorsk blast furnaces. Also see W. A. Haven, 'Some Comments on the Design and Construction of a Mining and Metallurgical Plant for the U.S.S.R.,' *Mechanical Engineering*, XLV, 1932, pp. 461–6, 497.

[40] *Pravda*, August 16, 1930.

[41] *Ibid.*

[42] The reader is referred to these comparative photographs: they illustrate the disorder of the Soviet attempt at excavation. See R. W. Stuck, 'First-Hand Impressions of Soviet Russia,' *Case Alumnus*, November 1932.

[43] *La Vie Economique des Soviets*, No. 114, April 20, 1930, p. 15.

[44] *American Engineers in Russia*, Stuck MSS, p. 41.

Attempts were also made, absurd as it may appear, to carry out construction according to pictorial rather than engineering objectives. According to Stuck, open-hearth stacks were built first, 'as these were very tall and made a nice picture. . . .'[45] There is support for Stuck's assertions: a close examination of early propaganda photographs of the Magnitogorsk plant indicates the absence of certain major components.[46]

Ultimate success in handling this political interference depended on personality. Ferguson, in charge of blast-furnace construction at Kuznetsk, had similar problems, laid down flat directives, and got away with them, while Stuck was rarely able to outwit or beat down the Party propagandists in their battle against engineering logic. Stuck outlined his construction problems at length and was particularly caustic in comments on Soviet planning and engineering practice. The contract provided that Magnitogorsk was to be designed and constructed 'according to the best and most modern metallurgical practice. . . .' There was, according to Stuck, dispute over where the best designs could be obtained; some Soviet engineers contending that 'German, French, British and their own methods were just as good and in most instances better than those prevalent in the United States.' On the contrary, Stuck estimated Russian practice at that time as being 'from half to three-quarters of a century behind the rest of the world.' Soviet engineering practice hardly impressed him; he noted, for example, the following:

> Even the anchor bolts for the building steel were not in line. They were never checked in spite of our pointing out . . . that serious results were bound to occur if the bolts did not line up properly. The steel was erected and the inevitable happened. The steel would not fit, the crane girder rails would not meet by four inches, yet the erectors started riveting the steel together and no one could stop them. The bricklayers started the brickwork around the columns even though they, as well as everyone else, knew that the steel was not set properly. Finally after an effort that almost took armed force to carry out I succeeded in having the work stopped and an attempt made to rectify the mistakes.[47]

Soviet purchasing commissions abroad buying equipment for Magnitogorsk were equally independent. For example:

> In connection with the gas cleaning system, the design called for disintegrators, which are large rotating drums driven at high speeds, causing the gas and water to be in more intimate contact and resulting in better cleaning of the gas. The design of the machines and their capacity were such that they would handle the greatest amount of gas the furnaces would ever produce. The design was approved by the Commission work-

[45] *Ibid.*, p. 42.

[46] See various issues of *U.S.S.R. in Construction.*

[47] R. W. Stuck, 'First Hand Impressions of Soviet Russia,' *Case Alumnus*, XII, No. 2, November 1932, p. 10.

> ing with our company, and the specifications sent to the Russian buyer in Germany, since the machines to be purchased were built in Germany. The Russian who was doing the buying felt that since he had not been consulted the design was certainly not correct, and that no one except he knew what they were doing. Therefore he, without consulting anyone else, bought machines of larger capacity. Consider for a moment what this meant. All piping connections, size of water lines, foundations of machines, buildings for the machines, in fact, all details of the design and installation were voided by his action in buying contrary to specification. . . . Of course, we were not let into the secret until the machines were purchased and on their way to the site.[48]

Both gas holders at Magnitogorsk were also imported from Germany and erected by German technicians at a cost of two and a half million gold rubles. Although erected in 1934, they were idle until 1940: operation was guaranteed only to $-15°C$ and the Plan did not allocate money for conversion, so for six years the combinat operated without a gas reserve.[49]

The General Electric Company, however, under its 1928 technical-assistance agreement, made an 'outstanding engineering contribution' by sending a 'special group of highly trained General Electric steel mill specialists who formed the nucleus of a steel mill electrical designing bureau . . . (at) Electroprom.'[50] This group supervised the electrical layout design for Magnitogorsk and other iron and steel plants. General Electric concluded, 'As a result of this co-operation, a large number of Soviet electrical engineers learned and obtained firsthand intimate knowledge of General Electric engineering methods as applied to the rolling mill industry.'[51]

CONSTRUCTION OF THE KUZNETSK COMPLEX BY THE FREYN ENGINEERING COMPANY[52]

Kuznetsk (known as Stalinsk after 1932) was designed and built by the Freyn Engineering Corporation of Chicago. The Freyn contract covered the entire Kuznetsk plant except the by-product coke plant and the chemical plants, which were the responsibility of a French company (Disticoque S.A.)

[48] *Ibid.*, pp. 8–9.

[49] Scott, *op. cit.*, pp. 182–3.

[50] *The Monogram*, November 1943, p. 19.

[51] *Ibid.*

[52] Based on *American Engineers in Russia*, 'Statement of J. S. Ferguson Covering Personal Experiences in Russia over a Period of Eighteen Months,' April 30, 1933, pp. 2–3. Ferguson was superintendent of blast-furnace construction at Kuznetsk. Also see E. P. Everhard, 'Kuznetsk Steel Plant in U.S.S.R.,' *Blast Furnace and Steel Plant*, December 1932, pp. 889–93, and M. J. Wohlgemuth, 'Building a Steel Plant in Soviet Russia,' *The Electric Journal*, February 1934, pp. 62–7. Wohlgemuth was Assistant Chief Electrical Engineer for Freyn at Kuznetsk, and his article has excellent data on the electrical equipment at the mill.

under contract to Kokstroi (Coke Industry Construction Trust). Freyn also supervised modernization of all tsarist plants scheduled for reconstruction elsewhere in Russia under the First Five-Year Plan. The only iron and steel plant not covered by the Freyn contract was the Magnitogorsk complex, under contract to McKee Corporation and Demag A-G. The rolling mills were built and installed by two German companies: Demag A-G and Schloemann A-G. Individual equipment items were purchased from the supplier offering the best terms and technical specifications, and were selected initially by Freyn, subject to approval by a Soviet commission. The company had contractual responsibility for equipment acceptance and operations during the initial six months. The 115,000-cubic-foot-per-minute capacity turbo-blowers were supplied by Brown-Boveri of Switzerland; the disintegrators were Zschocke. Freyn designed, built and installed the automatic ore-hoppers, the pressure burners and stock-line recorders. Demag A-G built the ore bridge cranes and Pollock-type hot-metal ladles as well as the rolling mills. Charging cars were by Orr, skip and bell hoists by Otis, clay guns by Brossius, stock distributors by McKee, and the automatic hot-blast controls by Bristol: all were manufactured in the United States. The only items for Kuznetsk manufactured in the Soviet Union were Dewhurst slag ladles.

The service units at the Kuznetsk plant were supplied from Europe. A refractories plant (for fire-clay and silica-brick products for the furnaces) utilized German equipment and was built by German engineers. In power plant No. 6, the generator (of the standard type) was made in the U.S.S.R., probably by the Elektrosila plant in Leningrad. The condenser equipment was from Wumag (Germany) and the turbine drives from Rateau (France).

Between 1929 and December 1932, construction of the first section of Kuznetsk was under general supervision of E. P. Everhard, who had 70 U.S. engineers working for him. They supervised construction and initial operation of the plant in December 1932, and when they left, the plant had achieved an annual rate of 450,000 tons, compared to the control figure of 330,000 tons.[53] The director of Kuznetsk while it was under construction was Sergei Mironovitch Frankfurt,[54] a former textile mill operator, while I. P. Bardin, a well-known Russian metallurgist, was Frankfurt's chief engineer. Assistants to Frankfurt were Party men with little knowledge of iron and steel plants. Everhard, senior American engineer on site, apparently had effective control while construction was under way. For example, Everhard comments (with reference to Frankfurt and Bardin):

> I made it a hard and fast rule that no Russian, not even the Red Director or technical superintendent could authorize the changing of the

[53] *American Engineers in Russia*, Folder 4, Report 9.

[54] S. Frankfurt, *op. cit.*

burden or temperature and volume of the blast. This precaution saved us trouble many times later on. . . .[55]

The rolling mills for the first section of Kuznetsk (construction of which was supervised by Americans) had been imported. The blooming mill was a 45-inch Demag with drive and control equipment by General Electric. The rail mill, the 24-inch structural mill, the 70-inch plate mill, and two merchant mills for rods, rounds, bars, sections, and agricultural shapes were made and installed by Schloemann A-G of Germany. All mill cranes were either from Germany or the United States, and all mill motors of over 25 horsepower were imported and mainly of General Electric design. The only Soviet-made equipment in the first section of the Kuznetsk rolling mills were mill motors of less than 25 horsepower made to General Electric design; these powered the 'live rollers.'[56]

The second section of Kuznetsk was begun immediately but with a significant difference. Construction was now under Soviet supervision; foreign participation was limited to the installation and operation of imported equipment, which consisted mainly of rolling mills. An article in *Za Industrializatsiiu* (Moscow) for March 24, 1933, reports on progress of this second section. The Soviet-built equipment consisted of the sixth turbo-generator, boilers number 5, 6, and 7, and 900-millimeter rolling mill, and the model 210 crane. The second unit of Kuznetsk included blast furnaces No. 3 and 4 of the standard type,[57] the last five open hearths, two section mills, a sheet mill, and coke-oven batteries No. 3 and 4. This second section included imported equipment and a larger proportion of Soviet duplicates of foreign equipment made with foreign technical assistance.

CONCLUSIONS

Iron and steel plant construction and reconstruction in the period from 1928 through 1932 was of American design and was built under the supervision of American and some German engineers, utilizing imported equipment from either the United States or Germany but usually manufactured to American design.

Gipromez, the metallurgical design bureau, was charged in 1928 with the transfer of American technology, and for this purpose a number of American engineers took over key positions. Its function was to compare foreign

[55] E. P. Everhard, *op. cit.*, p. 25. (See fn. 52 above.)

[56] *American Engineers in Russia*, 'Statement of J. S. Ferguson Covering Personal Experiences in Russia over a Period of Eighteen Months,' April 30, 1933, p. 3.

[57] Blast furnaces Nos. 1 and 2 had capacities of 1,164 cubic meters, and Nos. 3 and 4 had capacities of 1,163 cubic meters.

technologies, select the most suitable, and develop this as a Soviet standard; this standard design was duplicated during the period 1932 to 1945 with U.S. and German engineering assistance.

The standard blast furnaces were initially of Freyn design. The McKee design was not duplicated. The second standard was a 1300-cubic-meter design produced by Gipromez without assistance by 1938, but not widely utilized. The standard open-hearth furnace was a Freyn 150-ton design. The standard hot and cold continuous wide-strip mills were of United Engineering design. Product and merchant rolling mills were of the U.S. type, although originally made in Germany and then duplicated by Soviet machine-building plants. Demag slabbing and blooming mills were also adopted.[58]

Thus between 1928 and 1945 there was complete diffusion of iron and steel technology from capitalist countries (primarily the U.S. and Germany) to the Soviet Union; the Soviets utilized proven foreign designs and adapted them, with foreign help for their standards. No reverse diffusion from the Soviet Union to the U.S. has been found; neither has any indigenous Soviet innovation, apart from the Gipromez 1300-cubic-meter second standard design and several larger open-hearth furnace designs.

[58] Tube mills will be considered in Volume III. There were in Russia in this period Mannesman and Pilger mills and a Tube Reducing Co. mill (at Nikopol).

CHAPTER SIX

Technical Assistance to the Fuel Industries

'MISTER GRAVER, WHO BECAME COMRADE GRAVER'[1]

IN 1930 the Soviet Union had a refinery capacity of about 95 million barrels per year in shell still units which were built before 1917 and yielded kerosene and oils rather than gasoline. Volume I briefly outlines extensive construction of new shell still and pipe still units during the period 1927–30 by German companies (Borman, Pintsch, and Wilke), and then British (Vickers) and American companies (Graver, Badger, Foster-Wheeler, Max Miller, Winkler-Koch, and Alco Products).[2] This first construction phase (which ended in 1932–3 with the departure of American engineers, although some Germans remained on individual ruble contracts) added a refinery capacity of about 96 million barrels, including lubricating and Winkler-Koch cracking units, not previously known in Russia.

Even the propaganda magazine of the First Five-Year Plan acknowledged this enormous debt to American technology. Under the title, 'Mister Graver, Who Became Comrade Graver' this acquisition was described:

> Baku and Grozny adopted Graver—an American; following in Graver's footsteps came 'Badger'—a kerosene and oil still; then came 'Foster' and then a cracking still of the 'Winkler, Cokh & Jenkins' [sic] system. This year another foreign child adopted by the Soviet petroleum workers —the 'Max Miller' still which produces high-grade cylinder oils, will be put into operation.[3]

In 1932–3 the Soviets started to build their own refinery equipment, based on imported designs. Machine shops at Baku, Grozny, Podolsk and other locations were assigned to the oil industry for this purpose. Little progress

[1] *U.S.S.R. in Construction*, No. 12, 1931.

[2] Sutton, *Western Technology . . ., 1917 to 1930*, pp. 35–40.

[3] *U.S.S.R. in Construction*, No. 12, 1931.

was made, as both the shops and the personnel were unsuited to the heavy work involved in refinery construction.

THE RETURN OF U.S. FIRMS FOR CONSTRUCTION OF THE 'SECOND BAKU'

In 1936 American refinery construction companies were called back and remained in the Soviet Union until 1945. Badger, Alco Products, Universal Oil Products, Winkler-Koch, McKee, Petroleum Engineering, Lummus Company of New York, and Max Miller expanded older locations at Baku, Grozny, and Batum and built the refineries at the 'Second Baku.'

On July 10, 1936 a contract was signed by the Petroleum Engineering Company of Tulsa, Oklahoma and by the McKee Corporation for expansion of the Baku petroleum refinery.[4] Technical assistance, drawings, material, and equipment were sold for a total of $178,780 to build an absorption plant, crude stabilizer, gasoline-stabilizing units, butane-fractionating unit, and propane-fractionating unit. Capacity of the complex was 5,000 barrels per day with an input of 24 million cubic feet per day of natural gas. The Brown Instrument Company supplied the control equipment.[5] By 1939, however, the complex was reported only 80 percent complete.[6] It is a reasonable inference that similar contracts were let and units built at Batum. An Embassy official toured the Batum complex in 1938 and reported that it had four Winkler-Koch, four Jenkins, and four Foster-Wheeler stills.[7] This is a greater number than had been built in the period 1928–31. Since no Soviet construction has been reported, it is a reasonable inference that six units were built by American companies between 1932 and 1938. In the late 1930s the Universal Oil Products Company installed high-octane gasoline plants at both Grozny and Saratov. These were polymerization units about equal in size, and they were about 60 percent complete in 1940 when the American engineers were withdrawn.[8]

However, the major focus of American refinery-construction effort after 1936 was not in the Baku-Batum-Grozny region, but farther north, along the Volga River in the 'Second Baku.'

In 1938 another contract was made with the Universal Oil Products Company for installation of a hydrogenation and iso-octane plant (see figure 6–1)

[4] U.S. State Dept. Decimal File, 861.602/299, Report No. 1419, Moscow Embassy, June 27, 1938.

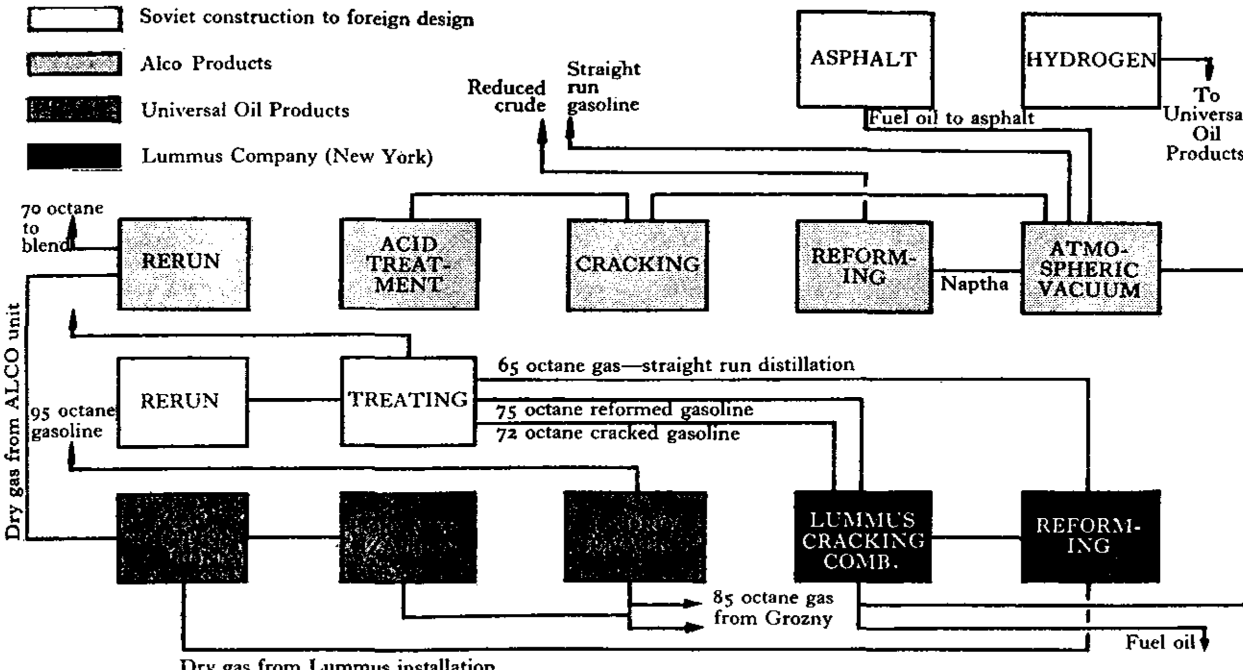
[5] *Ibid.*, 861.6363/345. These were original Brown control units, not copies made under the company's technical-assistance agreement. (See p. 165.)

[6] *Ibid.*, 861.6363/351, Report No. 2024, Moscow Embassy, January 19, 1939.

[7] *Ibid.*, 861.6363/341, Report No. 1327, Moscow Embassy, June 1, 1938. This is a lengthy but rather vague report; no other technical details are included.

[8] *Ibid.*, 861.6363/370, Report No. 263, Moscow Embassy, January 18, 1940.

Figure 6–1 FOREIGN AND SOVIET CONSTRUCTION OF THE UFA PETROLEUM REFINERY COMPLEX, 1938–40



Source: U.S. State Dept. Decimal File, 861.602/285.

at Chernikova, 35 kilometers from Ufa, in the 'Second Baku.'[9] This was the first installation of its type in the Soviet Union and of some importance, since to this time the Soviets had been unable to make 87 or 94 octane gasoline for aviation use. The hydrogenation units built by Universal Oil Products received 85 octane gasoline from Saratov and Grozny and polymerization charge stock from the Alco and Lummus units, and converted this into 95 octane aviation gasoline.[10]

The refinery at Ufa was built by Alco Products (the oil-refining division of American Locomotive) and consisted of an atmospheric vacuum unit, reformer, cracking plant, rerun unit, and acid-treating plant.[11] The value of the equipment supplied was $1 million, 50 percent payable when the equipment was delivered to the dock in New York and 50 percent when the plant was completely in operation. Alco provided supervision of construction and technical assistance, and supervised initial operation of the refinery. Until the plant began to produce in 1937, the Alco Company kept five engineers on the Ufa site to supervise construction and train Russian workers in operation. It was reported by Alco engineers that the OGPU was in 'absolute control.'[12] The total cost of the Alco Products contract, including services, was $2.5 million.

The third part of the Ufa complex was built by the Lummus Corporation of New York and consisted of cracking and reforming units to produce 500,000 tons of 66 octane gasoline per year, to feed into the rerun and treating units.[13]

In April 1939 only four of the six units under construction were actually in operation.[14]

There were numerous problems at Ufa; one reported by several engineers concerned attempts by Soviet engineers to change the original designs. Meredith commented, 'I was surprised to learn upon my arrival that the preliminary work already done by Soviet engineers had changed the original design and line-up of equipment as provided for in the plans.'[15] Soviet engineers had decided to discard the centrifugal refining process and 'to install in its stead a new chemical process which had recently been developed by a firm in Kansas.' Meredith suggested that this process was still in the experimental stage and not well-adapted to the type of crude oil intended to be run through the Ufa refinery. Later he added that 'during my entire stay in Ufa I

[9] *Ibid.*, 861.6363/340, Report No. 1292, Moscow Embassy, May 20, 1938.
[10] *Ibid.*, 861.6363/370, Enclosure to Report No. 263, January 18, 1940.
[11] *Ibid.*, 861.6363/348, Report No. 1651, Moscow Embassy, September 15, 1938. Also see 861.602/285, Report No. 2203, Moscow Embassy, January 16, 1937. For Soviet attitudes toward Alco Products and E. B. Badger and Sons during negotiations, see pp. 264–6 and U.S. State Dept. Decimal File, 861.602/263.
[12] *Ibid.*, 861.6363/348.
[13] *Ibid.*, 861.6363/340, Report No. 1292, Moscow Embassy, May 20, 1938.
[14] *Ibid.*, 861.6363/353, Report No. 2240, Moscow Embassy, April 10, 1939.
[15] *Ibid.*, 861.602/285.

was continually obliged to insist that the Soviet engineers construct the plant according to plan and not try to put in so-called improvements.' Meredith indicated to the Soviets that if the plant was not constructed exactly according to the plans as provided for in the contract, Alco would take no responsibility for the final results.

Crude oil for the Ufa plant came from fields about 200 kilometers to the southeast; Soviet organizations had nearly completed construction of the pipelines while the refinery was being built. From partial examination of the lines and from reports from other engineers, Meredith concluded that there would be considerable difficulty in maintaining the lines; there were no boosting stations anywhere along the 200-kilometer length and, despite the extreme Russian climate, no provision had been made for expansion joints, 'so that there will undoubtedly be continuous leaks and breakdown.'[16] The Alco Company was not able to acquire samples of the crude oil for analysis, but Meredith suggested that if it had the high sulphur and water content rumored, it would be 'extremely difficult to refine it by the chemical process which has been adopted.'[17]

That great value was attached by the highest political authorities to the work of these American engineers and the installations supplied by these firms was demonstrated in 1939, when the Soviets refused to allow the employees of the Max B. Miller Company to travel from Grozny to the U.S. Embassy in Moscow to have their passports renewed. The Soviets apparently thought the Americans were planning to leave the Soviet Union.[18]

Mashinoimport telegraphed the Miller Company in the United States, stating 'that the Company's engineers for "unknown causes" insist upon leaving and request[ed] the Company to instruct them to continue their work until the plant is in operation.'[19] In the meantime the Soviet authorities, according to the U.S. Embassy, stalled the engineers, first promising them transportation, then insisting it was not available, and finally stating that the trip to Moscow was not necessary, as 'arrangements' had been made with the U.S. Embassy. The Embassy commented that 'this misrepresentation could only have been made for the purpose of misleading the engineers into believing the trip to Moscow to be unnecessary.'[20]

[16] *Ibid.*

[17] *Ibid.* It appears extraordinary that the Alco Products Company would have received a contract to design a refining unit without samples of the crude oil to be used. It would be possible to do this from the Russian specifications but certainly not in the best interests of efficient operation. This is an example of the deep-seated Soviet distrust of foreign organizations: a completely unfounded distrust, as there is no question that the American firms were providing excellent equipment.

[18] U.S. State Dept. Decimal File, 361.11 Employees/360, December 28, 1939.

[19] *Ibid.*

[20] *Ibid.*

Later, after some negotiation, the Russians acquiesced to the principle that American citizens had freedom to travel to Moscow to renew passports but expressed concern over the departure of Rodman, Rasmussen (in charge of construction at Grozny for a Universal Oil Products polymerization unit), Miller, Hanson, and Owens:

> Potemkin [the Russian ambassador] expressed great concern over the serious effect which their withdrawal would have on the large investment of the Soviet Union in the respective plants the construction of which they have been supervising and particularly emphasised the urgent desire of the Soviet Government to retain the services of Rasmussen whose work appears to be most vital until the period specified under his contract shall have expired.[21]

Table 6–1 PERCENTAGE OF SOVIET REFINERY AND CRACKING CAPACITY WITH FOREIGN DESIGN AND CONSTRUCTION, 1932 AND 1945

	Foreign Design and Construction		*Soviet Construction Using Foreign Design*	
	*1932**	*1945***	*1932**	*1945***
Refineries	77.5%	n.a.	22.5%	n.a.
Lubricating oil plants	96.4%	99.3%	3.6%	0.7%
Cracking plants	91.6%	94.7%	8.4%	5.3%

Sources: 1932 data calculated from *The Petroleum Times*, February 13, 1932, p. 173. 1945 data calculated from data in U.S. State Dept. files.

* The data used were incomplete. This was by far the most difficult industrial sector to reconstruct, because of numerous name changes of individual refineries and the almost complete lack of usable Soviet data. Although these percentages do cross-check, for example, with the unpublished 1935 plan for refinery construction in the Smolensk archives, they are not presented as definitive. The general order of magnitude is, however, quite acceptable.

** Excludes tsarist construction.

These units were supplemented by four complete refineries supplied under Lend-Lease and shipped during 1943. A total of 100,000 tons of equipment comprised these four units.[22] In early 1944 the Soviets approached seven United States manufacturers of refinery equipment concerning equipment deliveries in the postwar period,[23] and equipment deliveries were made under the 1945 pipeline agreement.[24] In late 1944, when Soviet troops entered Rumania they dismantled large quantities of refinery equipment (including Romana Americana and Astra Romana refineries) from the Rumanian oil fields and shipped it to the U.S.S.R. It is interesting to note, in light of continuing U.S. and British Lend-Lease assistance and the alliance against Nazi Germany, that

[21] U.S. State Dept. Decimal File, 700.00116 M.E./24, Telegram, December 29, 1939.
[22] *Ibid.*, 861.24/1473, Telegram, Moscow to Washington, D.C., May 24, 1943.
[23] *Ibid.*, 861.50/2944, Memorandum, WEA to AA (State Dept.), May 29, 1944.
[24] To be covered in Volume III.

'removal of equipment [was] limited to companies owned by Americans and British and others have not yet been disturbed.'[25]

LUBRICATING-OIL UNITS BY MILLER AND ALCO PRODUCTS

At the end of 1931 the Soviets had about 11 million barrels per year of lubricating-oil capacity, one-half of which had been built before 1917 and the other half by German and U.S. companies at the end of the 1920s. The largest single unit added between 1932 and 1945 was a Max Miller bright-stock plant at Baku, designed to produce almost 3 million barrels per year of high-grade lubricating oils.[26] This was supplemented by a 700,000-barrel Russian-built Pengu-Gurevitch vacuum unit.

The Max Miller unit at Baku was erected under the supervision of Miller Company Chief Engineer Werner Hofmann. Twice during its construction Hofmann left the Soviet Union and was interviewed on the progress of his work. In December 1931 he reported problems with refinery construction; for example, on one job, he said that there were 'one thousand leaks where there should not have been more than ten or twenty.'[27]

In November 1932, leaving for the last time, he was more caustic in his comments on the Soviet Union in general and the Max Miller plant in particular. After dismissing the Soviet Union with the statement that 'the entire present regime is one big lie,'[28] he said that the Miller plant had cost $5 million but that only $25 worth of maintenance tools were available, adding that one shop had a half million dollars invested in one type of machine but that he couldn't get rags to wipe off the oil. Hofmann himself bought cloth in the foreigners' store to make wiping rags, but the workers took it to make children's clothes. These workers, he added, had neither protective clothing nor work clothes.[29]

Another lubricating-oil unit, with a capacity of 1.4 million barrels, was built at Batum by Foster-Wheeler. Three other units were built at Grozny (another Foster-Wheeler 1.4-million-barrel unit and two Alco Products units: one in 1933 and one in 1938–9), with an aggregate capacity of about 3.8 million barrels. In 1939 it was reported that the Max Miller Company had another lubricating-oil unit under construction at Grozny.[30]

[25] U.S. State Dept. Decimal File, 871.6363/11–244, Telegram 1106, November 2, 1944. Reparations as a development mechanism will be explored in Volume III.

[26] *World Petroleum*, May 1932.

[27] U.S. State Dept. Decimal File, 861.5017—Living Conditions/389, Report No. 755, Vienna, December 12, 1931.

[28] U.S. State Dept. Decimal File, 861.5017—Living Conditions/389, Report of November 9, 1932.

[29] *Ibid.*

[30] *Ibid.*, 861.6363/351, Report No. 2024, Moscow Embassy, January 19, 1939.

WINKLER-KOCH GASOLINE-CRACKING TECHNOLOGY

The Soviet Union continued to be dependent on Western technology (primarily American) for cracking petroleum into light gasoline fractions. Lend-Lease equipment deliveries were sufficient to bring the output of aviation gasoline from only 110,000 metric tons per year in 1941 to 1.67 million metric tons in 1944, despite the fact that several Lend-Lease cracking units were not delivered until after the end of the war.

In 1931–2 the Winkler-Koch Engineering Corporation of Wichita designed and furnished to the Soviets 15 cracking units to produce gasoline from fuel oil and gas oil derived from Russian crudes; these units comprised about 85 percent of the total cracking capacity in the U.S.S.R. in the 1930s.[31] *The Petroleum Times* reported: 'These units were erected by Russian labour and Russian engineers supervised by Winkler-Koch construction engineers. The operation and instructions to the Russian operators during the test runs of the units were in charge of Winkler-Koch operators.'[32]

This cracking capacity of almost 20 million barrels a year was erected in only two years; 'only 14 months elapsed from the time the first unit was completed and put on stream until the last of the 15 units was erected, tested out and fully accepted with all guarantees fulfilled.'[33]

Three Vickers (United Kingdom) units were erected at Baku and Grozny in 1928–9. It was apparently from the Vickers cracking system that the Soviets derived their own standard system. An article by Professor Andreyev in *The Petroleum Times* stated that 'the ability to conduct liquid-phase cracking—a technical process new to the U.S.S.R.—was in the main acquired at the Vickers refinery, the first industrial cracking plant to appear in the Soviet Union.'[34] This process was then called the Shukov-Kapelyushnikov system and was used to build two cracking units in 1931 at Baku with a total capacity of 2.1 million barrels a year. No further units were built to this system.

Winkler-Koch and Alco Products systems were used for those units built in the middle and late 1930s, at which time the Houdry catalytic plants were received under Lend-Lease; this certainly suggests that the 'Soviet-Vickers' process was not as effective as either the Winkler-Koch or the Alco Products system.

The U.S. responded in 1939 to the Soviet attack on Finland and decided that 'there should be no further delivery to certain countries of plans, plants, manufacturing rights, or technical information required for the production of

[31] *The Petroleum Times*, February 13, 1932, p. 173.
[32] *Ibid.*, p. 174.
[33] *Ibid.*
[34] December 29, 1934, p. 700.

Table 6–2 CRACKING UNITS BUILT IN SOVIET UNION, 1932–45

Location	*Built 1930–32*[1, 2] *(Units)*	*Capacity (Barrels/Day)*	*Built 1932–41*[3, 4] *(Units)*	*Capacity (Barrels/Day)*	*Built 1941–5*[5] *(Units)*	*Capacity (Barrels/Day)*
Batum	4 Winkler-Koch 2 Jenkins	14,000	Universal Oil Products*			
Baku	4 Winkler-Koch 2 Vickers 2 Kapelushnikov	14,000	Petroleum Engineering Co.* McKee Corp.*			
Grozny	6 Winkler-Koch 1 Jenkins 1 Vickers	21,000	Alco Products[3]* Max Miller[7]* Universal Oil Products[9]*			
Tuapse	4 Winkler-Koch	7,000				
Yaroslavl	1 Winkler-Koch	2,000	1 Winkler-Koch	6,000		
Konstaninovka	1 Winkler-Koch	3,500 (estimate)[1]				
Khabarovsk	—		2 Winkler-Koch	7,000[1]		
Saratov	—		Universal Oil Products[9]	6,000[1]		
Cherson	—		1 Winkler-Koch	2,800[4]		
Berdyansk	—		1 Winkler-Koch	2,800[4]		
Ufa	—		Alco Products, Inc.[8]* Universal Oil Products* Lummus Company[8]*			
Syzran	—				4 units Lend-Lease	7,000 each

Sources: [1] *World Petroleum*, May 1932, pp. 200–1; July 1931, p. 436. [2] *The Petroleum Times*, February 13, 1932, p. 173.

[3] Generalstab des Heeres. Microcopy T-78, Roll 491, Frame 6477382–759.

[4] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, *Erdölfund-und Erdölverar im Kaukasischen R* (incomplete title in original).

[5] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 16. An additional seven refinery and cracking units were supplied to the Soviet Union under U.S. Lend-Lease. As these were shipped after the end of World War II and did not come on-stream until the late 1940s and 1950s, they will be treated in Vol. III.

[6] U.S. State Dept. Decimal File, 861.602/285 (January 16, 1937). [7] *Ibid.*, 361.11 Employees/360, December 28, 1939.

[8] *Ibid.*, 861.6363/310. [9] *Ibid.*, 861.6363/370.

* Exact numbers of units unknown.

high quality aviation gasoline.'[35] This left the Soviets unprepared for the demands of World War II, so that one-quarter of all aviation gasoline had to be imported under Lend-Lease, together with four complete Houdry catalytic cracking and alkylation plants, totaling some three million metric tons of capacity.[36]

As part of Lend-Lease assistance, and at the request of 'government agencies,' the Standard Oil Company of New York was said either to have supplied or to be preparing to supply the Soviet Union with technical information, plant designs, and pilot manufacturing plants for the following processes: sulfuric acid alkylation for production of 100 octane gasoline, 'voltolization' of fatty oils for production of aviation lubricating oils, the manufacture of hydrogen from methane, the production of alcohol from refinery gases, and the production of Buna-S.[37]

The assistance in production of Buna-S is interesting in that the Soviets, as will be described later, had had an initial advantage in synthetic-rubber production by building on tsarist-era research and by establishing manufacturing facilities predating those in the West. Their requirement for foreign Buna-S technology would suggest that in the conversion from laboratory production to practical manufacture the system had failed in some respects.

WESTERN ASSISTANCE FOR MECHANIZATION OF COAL MINES

The first technical-assistance agreements concluded in 1926 were with U.S. and German engineering consultant firms for the coal-mining industry. Agreements with Stuart, James and Cooke, Roberts & Schaefer, and Allen & Garcia in the United States were renewed in the early 1930s,[38] so that these three companies operated continuously in the Soviet Union for at least five to six years, reorganizing and expanding coal mines in the Donbas and the Urals. Up to 1930–1 almost all equipment used in coal mines was imported, but in that year a few domestic machines based on Western designs and produced under technical-assistance contracts were first used in Russian coal mines.

Stuart, James and Cooke, Inc., made its first agreement, with Donugol (Don Coal Trust), in October 1926 and started work on March 25, 1927.[39] This agreement was for schematic projects for two mines in the Donbas. The work accomplished must have been acceptable, as the company was given a

[35] U.S. State Dept. Decimal File, 861.796/98a, Telegram, December 24, 1939.

[36] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).

[37] U.S. State Dept. Decimal File, 861.6363/439, Letter: Standard Oil of New York to State Department, April 5, 1943.

[38] See Sutton, *Western Technology . . ., 1917 to 1930*, chap. 3.

[39] Amtorg, *op. cit.*, VI, No. 6 (March 15, 1931), pp. 135–8.

more extensive contract to make schematic projects for the Yugostal (Southern Steel Trust) coal mines and five mines for Moskvugol (State Association for Coal Industry in the Moscow Region Basin). This contract was followed by another three-year contract for technical assistance to Donugol, Moskvugol, and Uralugol. Ten company engineers were assigned to this contract, which expired in November 1931. Other Stuart contracts in the coal industry (there was one for the iron-ore mines as well) included a two-year agreement with Donugol, signed March 24, 1930, for five additional engineers to rehabilitate Donbas coal mines, a contract with Shakhtostroi (Shaft-Sinking Trust) for five key technical men to plan coal mines west of the River Volga, and a contract for an additional five engineers to give technical aid to coal mines of the Vostokugol (Far East Coal Trust), east of the Volga. In all, the company had 11 separate contracts for technical assistance to the coal mines of the Soviet Union between 1926 and early 1931.[40]

The Allen & Garcia Company had two forces in Russia: 20 engineers at Kharkov and 15 at Tomsk. This company had previously built the largest mine in the world: the Orient, at Franklin, Illinois,[41] and in 1929 signed a second contract for technical assistance in the design and construction of new shafts in the Donbas and in Siberia.

One function of Allen & Garcia was to design coal-cleaning plants, but this work apparently was ignored by the Soviet planners. According to J. A. Garcia, writing in 1934:

> We made a good many designs for coal cleaning plants both in the Don Basin and Siberia, but none of them were built, and the other American engineering firms had the same experience from 1926 to date. However, the Germans did build one large cleaning plant for them in the Don Basin at Gorlovka, and Mr. Appleyard of England built a dry cleaning plant of about 100 tons per hour in 1933. Outside of these two plants our fellows know of no cleaning plants built in the entire Soviet Union since we started working with them in 1927.[42]

As a result of this planning decision, the Soviet Union transported two million tons of ash and dirt attached to coal in 1931 alone.

The use of individual foreign technical personnel (as distinct from those imported by formal agreement with foreign firms) in the coal mines probably peaked about 1931,—at least until German occupation of the Don. In 1931 there were about 2,000 foreign specialists in the Don coal mines, about 80 percent of them German.[43] In 1931 some German personnel started to return home as a result of bad working conditions, but other reports suggest that

[40] *Ibid.*

[41] *Ibid.*, IV, No. 18 (September 15, 1929), p. 302.

[42] *American Engineers in Russia*, Letter, J. A. Garcia to H. H. Fisher, March 28, 1934.

[43] U.S. State Dept. Decimal File, 861.6362/48.

a large number did remain throughout the 1930s, and even while some German miners were reported leaving the Donbas, American miners—perhaps as many as 1,500—were reported arriving in the Leninsk mines in Siberia. Five groups arrived by August 1931 and others were expected to follow.[44] Also, Isaac Goldfein, a chemical engineer at the Kemerovo coke plant for 10 years, reported that in late 1932 a group of 50 German engineers and technicians were sinking new shafts for an 800,000-ton-per-year coal mine in Kemerovo.

> The Russians sank the first shafts themselves, but they had difficulty in preventing the flow of water from underground water courses, and by following their own methods permitted large portions of the mine to fill with water. German engineers are engaged in damming up the flow of water by a freezing method.[45]

It was the larger mines that were designed and brought into production by American consultant firms between 1928 and 1933 and operated by German technicians after about 1931. The largest of these was the OGPU mine in the Shakhty district, with an investment of eight million rubles, closely followed by the Amerikanka, also with an investment of eight million rubles. Others were the Nikitovka, Lutiaino, and Karl No. 7–8. While not as large in initial development, these were far larger than existing operations. They all became the show mines for visiting Communists and foreign tourists. Astute observers, however, noted that women still comprised 50 percent of the underground labor force[46] and that 'prisoner-engineers' were used.[47] In the Kuznetsk Basin, the largest mine was the Capital Coke Mine, started in 1929 with a capacity of one million tons of coking coal per year; J. W. Powell was consulting engineer.[48]

The emphasis on concentrating existing coal mines into fewer large shafts (designed by the United States firms) while at the same time opening up new areas behind the Urals was continued from 1930 until 1945.[49] The concentration in the Donbas areas is shown in table 6–3.

There were no shafts producing in excess of 500,000 tons per year before 1928, while in 1941 more than 17 percent came from such large-capacity shafts; almost 83 percent of output came from shafts producing more than 100,000 tons per year in 1941, compared to only 31 percent in 1928–9.

Foreign technical assistance in coal mining expired before that in any other industry, and by 1932–3 Soviet industry was on its own, although still

[44] *Ibid.*, 861.6362/50.

[45] *Ibid.*, 861.5017—Living Conditions/536, Riga, September 28, 1932.

[46] K. Legay, *Un Mineur Français chez les Russes* (Paris: Editions Pierre Tisne, 1937), p. 58.

[47] E. G. Grady, *Seeing Red* (New York: Brewer, Warren and Putnam, Inc., 1931), pp. 50–1.

[48] Amtorg, *op. cit.*, IV, No. 10 (May 15, 1929), p. 201.

[49] See Sutton, *Western Technology . . ., 1917 to 1930*, p. 56.

receiving substantial quantities of imported equipment. The reorganization underway since 1926 under these contracts began to pay off. Whereas the average annual increase in labor productivity was 6.3 percent between 1928 and 1932, it rose to 10.7 percent between 1932 and 1937, although it subsequently dropped to 4.4 percent in the purge years 1937–40. In the same manner the capital-labor ratio changed dramatically as the mines were mechanized; from a base of 100 in 1928 the ratio rose to 205 in 1932 (a doubling in four years) and 409 in 1940 (a further doubling in eight years).[50]

Table 6–3 CONCENTRATION OF COAL MINING IN THE DONBAS, 1928–41

Annual Production of Shaft (Thousands of Tons)	*1928–9*	*1933*	*1941*
	(Percentage of Total Output)		
Under 10	4	3	0
10–50	33	18	—
50–100	31.6	31	17.4
100–200	20	26	20.2
200–500	11	19	45.1
Over 500	0.4	3	17.3

Source: I. M. Budnitskii, *Ugol'naya Prom'shlennost'* (Moscow: 1958), p. 7.

However, some doubt is thrown on such official claims by the comments of engineers working for American consulting firms. For example, William von Meding, of the Allen & Garcia Tomsk group, suggested that while the coal industry did show an increase in the early 1930s 'it was not nearly in proportion to the increase in capital investment or in the number of workers.' Von Meding specifically pointed to transportation deficiencies.[51]

Similarly, although Soviet plants started to produce coal cutters and mine equipment in the early 1930s under the Goodman and Casablancas technical-assistance agreements, they were still using large quantities of imported equipment in the middle and late 1930s. We have precise figures for the Kisel mines, producing 4.5 million tons of coal per year; in 1936 the Kisel district mines employed 54 coal cutters. Of these, 12 were of German make (Eickhoff), 24 were American, and 18 were the Soviet DTK-2.[52] The DTK-2 cutters

[50] Figures from C. E. Butler, *Productivity in Soviet Coal Mining, 1928–64* (Harvard University Economics Dept.: 1965–6), unpublished Ph.D. thesis, p. 478. The Butler thesis, by far the most comprehensive work on the Soviet coal industry generally available in the West, notes the increase in Soviet output and productivity, and concludes that 'part of the Soviet advantage in growth rates was due to great initial technological backwardness and the opportunity to borrow technology from other countries.' (P. 385.)

[51] *American Engineers in Russia*, Folder 3.

[52] Gmelin Institute, *Russland: Die Kohlenlagerstatten des Urals*, Bericht No. 66c; National Archives Microcopy T 84, Roll 127 (about 1940).

were copies of the Sullivan Machinery model,[53] and other coal-cutting equipment was made under the Goodman assistance agreement at the Gorlovka plant.

Thus the years between 1930 and 1941 witnessed the development of large-scale coal mines designed by American coal-mining consultants and the phasing out of small mines. These new mines were highly mechanized, at first with imported equipment and then after 1931–2 increasingly with Soviet-made equipment based on the most suitable of Western models. However, even by 1940 a large proportion of underground equipment was still imported. No indications of indigenous Soviet development have been found, either in coal-mine development or in mine equipment.

This American assistance was apparently well appreciated: in January 1944, upon an inquiry by Averell Harriman concerning postwar construction plans, Molotov indicated nothing specific except to inquire concerning the possibility of sending a U.S. expert for the Don Basin coal mines.[54]

THE RAMZIN 'ONCE-THROUGH' BOILER: AN INDIGENOUS DEVELOPMENT

In boiler construction we find an example of an indigenous Soviet development—the 'once-through' high-pressure boiler—adopted in 1936 for the bulk of the new construction program.

In 1936 there were four high-pressure boilers operating in the U.S.S.R.: two Czech Loeffler boilers with a capacity of 330,000 pounds per hour working at a pressure of 1,850 pounds per square inch,[55] and two once-through boilers—the experimental Ramzin boiler of 1931 and the commercial model of the Ramzin built in 1933 with a capacity of 440,000 pounds per hour at 2,000 pounds per square inch.[56]

Numerous other foreign high-pressure boilers, including the La Mont, Velox, Babcock and Wilcox, Ladd-Lakeside, Hanomag, and Borsig-Ilse No. 3, had been tested and data had been developed,[57] but the adoption of the

[53] U.S. State Dept. Decimal File, 861.797/35, Report No. 165, Moscow Embassy, September 7, 1934.

[54] *Ibid.*, 861.51/3019, Harriman to Hopkins, January 7, 1944.

[55] Built by Wiklowitzer Bergbau und Eisenhütten Gewerschaft of Czechoslovakia. Technical details are in Browlie, 'The Löeffler Boilers at Moscow,' *The Steam Engineer*, XXI, No. 5 (February 1933), pp. 216–8.

[56] The experimental Ramzin is described in *The Steam Engineer*, VII, No. 73 (October 1937), pp. 26–8. The commercial version is described in No. 76 (January 1938), pp. 160–1 and 168, and in T. Saur, 'The Ramzin Once-Through Boiler,' *Combustion*, X, No. 1 (July 1938), pp. 35–6. For a report on operating experience with a 'once-through' boiler after several years, see P. G. Kaufmann, 'Operating Experience with a Pulverised Fuel-Fired "Once-Through" Boiler,' *The Steam Engineer*, XIII, No. 156 (September 1944), pp. 358–64.

[57] *Genie Civile*, CIII, No. 25 (December 16, 1933).

Ramzin was advantageous, although it required extensive development of heat-resistant steels, high-pressure fittings, and automatic regulating instruments, as it avoided the heavy cost of the drums which for high-pressure use required expensive and complicated steel-working equipment.

Table 6–4 gives the weight of raw material inputs for several types of contemporary boilers and suggests a real savings advantage in terms of material for the Ramzin over the two-drum TKZ and single-drum TKZ, both based on Western designs.[58]

Table 6–4 COMPARATIVE MATERIAL INPUTS FOR VARIOUS SOVIET BOILERS, 1936

Input Material	*Boiler Type* Two-Drum TKZ (Based on Western Design) (tons)	Single-Drum TKZ (Based on Western Design) (tons)	Ramzin 'Once-Through' (Soviet Design) (tons)
Rolled steel	362	232	158
Tubes and headers	139	88	140
Boiler plates	30	16	9.5
Cast iron	26	5	15
Heat-resistant steel	—	—	14
Other materials	33	5	3
Total	590	346	339.5
Steam generating capacity: specific weight per lb./hr.	3.98	2.31	2.21

Source: The Steam Engineer, XIV, No. 167 (August 1945), p. 332.

However, in spite of concentration of design effort in the C.K.K.B. (Central Boiler Design Institute), development of a standard boiler, and introduction of the successful Ramzin 'once-through' boiler, Soviet development achievements by 1945 were limited. The position has been summarized by Paul G. Kaufmann in an article in the August 1945 issue of *The Steam Engineer* and based on Soviet source material: 'With regard to small boilers . . . there is no appreciable development evident in the Soviet technical literature. Nor was there any development in high pressure steam engineering before the war, apart from the introduction of the "once-through" boiler.'[59]

[58] P. G. Kaufmann, 'Development of Steam Boiler Design in Russia,' *The Steam Engineer*, XIV, No. 166 (July 1945), p. 292.

[59] P. G. Kaufmann, 'Development of Steam Boiler Design in Russia—II,' *The Steam Engineer*, XIV, No. 167 (August 1945), p. 333. There is also some evidence that the Soviets had boiler fabrication difficulties; for example, in mid-1938 the Republic Steel Company sold a quantity of welded seamless boiler tubes to the U.S.S.R. (See U.S. State Dept. Decimal File, 861.602/298, Report No. 1446, Moscow Embassy, June 6, 1938.)

CONCLUSIONS

This chapter has examined technical development of two natural fuels and the boilers used to convert fuel into energy.

In petroleum refining we find an extraordinary degree of dependence on American technology right through to 1945. Not only was almost all the Soviet capacity actually built by American firms but, even as late as 1940, duplication of this technology by the Soviets was not successful. This is confirmed by the diplomatic appeal, at the highest levels, to retain a single American engineer—Rasmussen—in the Soviet Union to complete a single cracking plant.

On the other hand, in coal production, also an early recipient of technical assistance, we find Soviet-built equipment in operation. The three U.S. consulting companies had left by 1933, and by 1934–5 Russian mines began receiving Soviet-made equipment—duplicates of foreign equipment already in use, perhaps, but still Soviet-made. By 1942–3 probably half of the equipment in Soviet coal mines had been domestically manufactured to foreign design. There are no signs of indigenous technical advance before 1945.

The third sector—boilers—suggests greater, albeit unsuccessful, technical advance. Although in 1945 there had been no appreciable advances in either small-, medium-, or high-pressure boilers, there had been—in the Ramzin 'once-through' boiler—an example of a purely indigenous Soviet development. This was put into operation but then discarded. It must be presumed that the Ramzin boiler was not used further because Western design effort was more satisfactory.

In brief, the three sectors provide somewhat different conclusions. Although all three were essentially dependent on the West, we find in petroleum refining no indigenous development and in coal mining a degree of success at copying Western equipment but no indigenous development. In the boiler industry we find that the Soviets copied Western designs and also produced an original design, adopted it, and finally discarded it as unusable.

CHAPTER SEVEN

Technical Assistance to the Chemical Combinats[1]

THE Soviet Union, normally secretive about its industrial structure, is unusually secretive concerning development of the chemical and allied industries. This has posed problems in tracing the use of Western technology. Two approaches have been used to help overcome the paucity of accurate data. First, the structure of several large combinats based on comparatively small tsarist plants and expanded between 1930 and 1945 is examined. Second, major chemical processes are examined for the origin of Soviet technology in these combinats. Cross-checking processes against the industrial structure provides additional information.

Construction of chemical combinats was irregular and progress was directly related to Western assistance. For example, the Berezniki combinat had extensive Western assistance and equipment in all units. In full operation by the mid-1930s, it was by 1941 the largest Soviet chemical complex, employing 25,000 persons and producing large quantities of explosives and military chemicals.[2] Similarly, Shostka, where Du Pont built a nitric-acid plant, employed 13,750 by 1936.[3] On the other hand, although much equipment at Bobriki (Stalinogorsk) was imported, greater reliance was placed on Soviet technical cadres and domestically produced duplicates of Western apparatus,

[1] This chapter is based on Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122, supplemented by U.S. State Dept. reports from returning engineers, articles in the Western engineering literature, Alcan Hirsch's *Industrialized Russia* (New York: Chemical Catalog Co., 1934), B. S. Blinkov's *Khimicheskaya promyshlennost' SSSR* (Moscow: 1933), and *Bolshaya Sovietskaya Entsiklopediya* (Moscow: 1945).

[2] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

[3] *Ibid.*

and progress was very slow. We know that efforts were made in 1931 to build Bobriki on a 24-hour 'crash' basis, but by 1937 only about 1,500 operating workers were employed in the combinat.

The Berezniki-Solikamsk project was by far the largest chemical project attempted between 1930 and 1945. The basic project for Berezniki, a synthetic-ammonia plant, was designed, supervised, and initially operated by the Nitrogen Engineering Corporation of New York under its President, Colonel Frederick Pope. The agreements between Nitrogen Engineering, Du Pont and Westvaco Chlorine and the Soviets are considered below in detail, and the construction of the more important chemical combinats is then examined.

THE NITROGEN ENGINEERING CORPORATION AGREEMENTS OF 1928 AND 1931[4]

The first agreement between Nitrogen Engineering and Khimstroi (Chemical Industry Construction Trust) was signed on November 11, 1928. The main provision covered

> . . . the erection and putting into operation, under NITROGEN'S technical advice and direction, of a plant or plants for producing synthetic ammonia within the territory of U.S.S.R., and the grant to KHIMSTROI by NITROGEN of the right to use within such territory the methods, principles and processes of NITROGEN for the construction and operation of such plants.

The first project under this agreement was a synthetic ammonia plant at Berezniki.

The 1928 agreement was extended and modified by a second contract, dated June 29, 1931. (See Appendix B.) Exhibit C of this 1931 agreement specified in detail the project contribution to be made by Nitrogen Engineering, and was quite similar to specifications contained in other technical-assistance agreements.[5] A project, according to Exhibit C, consisted of two parts: a preliminary and a final section.

The preliminary section was to contain a general plan drawn on a scale of not less than 1:1000, with a 'schematic indication of sewage, steam, water and gas pipes, electric lines, transport lines and sidings.' Drawings for buildings with equipment locations and foundations, economic and technical calculations

[4] A copy of the second (1931) contract is reproduced as Appendix B. The original is in the State Dept. files, together with a memorandum of discussion between Col. Pope and officials at the U.S. Embassy in Moscow in 1934. (See U.S. State Dept. Decimal File, 861.602/259, October 3, 1934. The first page has been removed; otherwise the documents appear to be intact, except for missing appendix containing a list of equipment supplied under the contract.)

[5] For example, the Douglas Aircraft agreement, p. 232.

for the various energy components with variations and calculations of costs and inputs, descriptions of processes (with calculations and methods of estimating energy and heat-power requirements), specifications and cost of equipment, labor requirements, and cost-of-production figures were also required.

The final section required a series of drawings on a scale of 1:50 or 1:100, covering the boiler house, gas plant, conversion plant, compression plant, purification plant, synthesis plant, catalyst plant, and general piping layout; detailed working drawings of the equipment 'of such scale and detail reasonably necessary to enable a first-class shop to manufacture the same'; and, in addition, detail drawings of piping, loads, apparatus, and the electrical layout, as well as detailed calculations concerning economic balance, raw material inputs, heat balance, and design assumptions.[6]

The June 1931 agreement extended this assistance to 1936 and also attempted, according to Colonel Pope, President of the company, to give Nitrogen engineers more protection while working in the Soviet Union. Under the 1931 agreement Vsekhimprom (All-Union Trust for the Chemical Industry) was granted 'in perpetuity' exclusive rights to 'build, extend, operate and transfer' chemical plants for the manufacture of synthetic ammonia according to Nitrogen Engineering (NEC) processes. All NEC patents had to be transferred to the U.S.S.R. for five years. Under Clause IV, consulting, technical, and engineering services were to be provided and NEC was to maintain a staff of engineers in the U.S.S.R., provide drawings and data on improvements, and give assistance in transferring technology. For five years the Soviet Union also had the right to send its engineers into any NEC factory in the United States. Further, NEC had to send 'detailed written instructions for the use of its technical staff in starting and operating the synthetic ammonia plants and all departments thereof constructed by Vsekhimprom.'

Disagreements arose between the Soviets and Nitrogen Engineering, and these were the subject of discussion between Colonel Pope and members of the U.S. Embassy in Moscow in mid-October 1934.[7] Colonel Pope pointed out that in the six years since the first agreement there had been numerous organizational changes in the chemical industry and 'new Soviet officials appear to consider it incumbent upon themselves to criticize the acts of their predecessors.'[8] Difficulties mounted as the Soviets 'began to copy our machines and patented apparatus.'[9] Pope negotiated the second agreement, hoping to alleviate these problems by providing for Swedish arbitration and

[6] See Appendix B.

[7] U.S. State Dept. Decimal File, 861.602/259, October 3, 1934.

[8] *Ibid.*

[9] *Ibid.*

> . . . since the Soviet Government was already copying equipment patented by NITROGEN and adopting various processes worked out by NITROGEN and since, in view of the peculiar nature of Soviet patent laws, no effective steps could be taken to prevent them from so doing, I assented to a provision in this contract which gave the Soviet Government the right to employ the processes of NITROGEN and to use its patents for a period of five years.

By 1934 the Soviets had become obligated to NEC to the extent of $1 million and refused a payment of $60,000 then due. Vsekhimprom 'gave a number of frivolous reasons for its refusal,' and this brought Pope to Moscow, where he was met by yet another board of directors who 'have resorted in their dealings with me to all of those small artifices generally practiced by dealers in second-hand clothes.' Colonel Pope indicated he had no intention to discuss the $60,000 but would refer it to arbitration. Vsekhimprom suggested that arbitration would cost $10,000 and 'I might find it preferable merely to reduce my bill by that amount.' When this was refused it was suggested that NEC give Vsekhimprom 'as a token of goodwill an instrument or two which was difficult to procure in the Soviet Union and which they sorely needed.' A list was drawn up containing $15,000 worth of instruments 'which they insisted should be donated to them by NITROGEN.' Vsekhimprom finally agreed to a donation of $8,000.

The Colonel added that he refused to discuss (with another trust) a further technical-assistance agreement and concluded as follows to the Embassy officials: 'I am disgusted with Soviet business and do not intend to waste my time and ruin my temper in engaging in other transactions with Soviet agencies.'[10]

THE DU PONT NITRIC-ACID CONTRACTS

The Du Pont Company built two nitric-acid plants in the Soviet Union under its 1929 agreement. These were at the Kalinin combinat and at Shostka in the Ukraine. Not very much information about these units is recorded except in reports from two Du Pont engineers after their return from the U.S.S.R.[11] One, J. K. Jenney, worked first at Kalinin and then, from August 1930 to February 1932, at the Shostka installation. His concluding comment was: 'After putting the plants into operation, one was conducted to what promised to be early ruin. The second was operated and maintained excel-

[10] Presumably the Soviets then paid the $60,000 overdue and met another commitment of $60,000 due in June 1935. This tactic of refusing to pay bills while attempting to get something else of value, or reduce the amount owed, was not confined to Nitrogen Engineering. See: Douglas Aircraft, page 235, for another example.

[11] *American Engineers in Russia*, Fisher, Folder 3, Item 22. See also U.S. State Dept. Decimal File, 861.5107—Living Conditions/241, Report No. 240, April 17, 1931, Berlin.

lently.'[12] Jenney also commented that there were no delays in construction because of transportation problems; this coincided with the priority given to chemical industry construction.[13]

Another Du Pont engineer, F. H. McDonald, also worked at both nitric-acid plants but added very little to this except that one unit was of 50-ton and the other of 20-ton capacity. However, McDonald did indicate that the technical director of one unit (not specified) was a Russian about 25 years old who had spent four to five months in the United States, was currently writing books on chemical problems, and, he suggested, had little knowledge of chemical engineering.

In 1932 negotiations were conducted for construction of a gigantic nitric-acid plant with a capacity of 1,000 tons per day, enormous when compared to previous plant capacities of 20 and 40 tons per day. This approximates 350,000 tons annually; 25 years later, in 1957, the largest Du Pont process nitric-acid plant in the United States at Hopewell had an annual capacity of 425,000 tons. Under its earlier contract Du Pont was obliged to supply such technical assistance to the U.S.S.R. for a period of five years and consequently inquired of the State Department whether this plant of 'excessively large capacity'[14] would meet with objection from the U.S. Government.

The State Department position is summarized in a memorandum dated April 6, 1932[15] which reviewed the matter of the export of military shipments to the Soviet Union and concluded that the Department would have no objection to construction of such a large nitric-acid plant.[16]

THE VSEKHIMPROM-WESTVACO CHLORINE PRODUCTS, INC., TECHNICAL-ASSISTANCE AGREEMENT

During the early twentieth century the production of caustic soda by the ammonia-soda process was replaced by a process utilizing the electrolysis of salt brine solution; this process yields chlorine and hydrogen in addition to caustic soda.

In February 1930 a technical-assistance agreement was concluded between Vsekhimprom and Westvaco Chlorine Products, Inc., of Virginia for technical assistance 'in the production of liquid chlorine and the manufacture in the Soviet Union of Vorce chlorine cells for salt brine electrolysis.'[17] The Soviets chose well; the Vorce cell, heart of the electrolytic method, is one of several

[12] *American Engineers in Russia*, Fisher, Folder 3, Item 22.
[13] *Ibid.*
[14] U.S. State Dept. Decimal File, 861.659—DU PONT DE NEMOURS & CO/5.
[15] *Ibid.*, 861.659—DU PONT DE NEMOURS & CO/9.
[16] *Ibid.*, 861.659—DU PONT DE NEMOURS & CO/9 to /11. See also chap. 15.
[17] Amtorg, *op. cit.*, V, No. 5 (March 1, 1930), p. 81.

methods of producing chlorine and caustic soda by electrolysis. The Vorce design, however, is compact, efficient, simple, and accessible, and utilizes strong, inexpensive construction of steel and cement with inexpensive anodes.[18]

The agreement provided for use of Westvaco patents on the Vorce cell. American engineers were sent to the U.S.S.R. and Soviet engineers studied cell production methods at Westvaco plants. It was anticipated that 'the first chlorine plant of the several to be constructed in the U.S.S.R. is to be completed in about six months.'[19]

THE BEREZNIKI-SOLIKAMSK CHEMICAL COMBINAT

The major construction effort in the chemical industry between 1930 and 1945, and also the focal point of the Nitrogen Engineering and other technical-assistance agreements, was this chemical combine, located behind the Urals comprising 10 integrated units and requiring an expenditure in excess of 100 million rubles.

The raw materials for the Berezniki complex came in part from the extensive Solikamsk potash deposits. These were the largest potash mines in the world, with a capacity some two and one half times that of the largest German mine. They were developed by the German firm Deilmann Bergbau und Tiefbau in the late 1920s.[20] In partial operation by September 1931, the Solikamsk mines were completely mechanized, to a great extent with Demag A-G equipment.[21] Coal was obtained from the Kisel fields to the south.

The site for the chemical combinat itself (to the south of Solikamsk) was the Luibimoff-Solvay soda plant, built in 1883. To this early enterprise were added plants to produce intermediate products—chlorine, synthetic ammonia, nitric acid, catalysts, and finally fertilizers and explosives. Power was supplied from a power station of 80,000 kilowatts' capacity, itself requiring an expenditure of 60 million rubles.[22] The water reservoir supplied 26,000 cubic meters per hour—twice the quantity supplied to the city of Moscow.[23]

Construction of the Berezniki chemical complex got under way in fall of 1929. By May 1930 foundations were completed, and in the fall of 1930 the walls of the first units were up. As will be seen in table 7–1, construction of this complex was a completely Western undertaking. The basic unit was a

[18] C. L. Mantell, *Industrial Electrochemistry* (New York: McGraw-Hill, 1950, third ed.), pp. 430–6.

[19] Amtorg, *op. cit.*, V, No. 5 (March 1, 1930), p. 81.

[20] Sutton, *Western Technology . . ., 1917 to 1930*, pp. 215–7. Also see Amtorg, *op. cit.*, VI, No. 18 (September 13, 1931), p. 145.

[21] Amtorg, *op. cit.*, IX, No. 11 (October 1934), p. 233.

[22] *Ibid.*, VII, No. 3 (February 1, 1932), p. 57.

[23] *La Vie Economique des Soviets*, VII, No. 143 (October 5, 1931).

Table 7–1 WESTERN TECHNICAL ASSISTANCE TO THE BEREZNIKI-SOLIKAMSK COMPLEX

Product or Production Unit	*Source of Technology or Construction*
Soda	Tsarist Luibimoff-Solvay process
Chlorine	Westvaco Chlorine Products, Inc.
Synthetic ammonia	Nitrogen Engineering Corp., under supervision of Col. Pope
Catalyst	Nitrogen Engineering Corp., under supervision of C. O. Brown
Nitric acid	Du Pont (not confirmed)
Boiler house for complex	German and U.K. boilers
Gas generator plant	Power-Gas Corp., Ltd. (United Kingdom)
Caustic soda II	Westvaco Chlorine Products, Inc.
Caustic soda III	Siemens-Billiter
Sulfuric acid	Petersen (tower system)

Sources: U.S. State Dept. Decimal File, 861.5017—Living Conditions/653, May 10, 1933; and 861.602/259, October 3, 1934.
U.S.S.R. in Construction, No. 5, 1932.
Alcan Hirsh, *Industrialized Russia* (New York: Chemical Catalog Co., 1934).

synthetic-ammonia plant built by Nitrogen Engineering. The 90-ton-per-day plant was designed, erected, and put into operation under Colonel Pope. The catalyst plant was designed, erected, and put into operation by the same company under supervision of Dr. C. O. Brown. Most of the ammonia was shipped to Perm for fertilizer and explosive manufacture; the balance was retained at Berezniki for the manufacture of nitric acid and ammonium nitrate. The nitric-acid unit, with a capacity of about 75 tons per day, was probably built according to Du Pont designs, while the ammonium-nitrate plant had a capacity of about 20 to 25 tons per day. The sulfuric-acid department, using the 'latest type of tower system' process was the first of the new units, opening in December 1932.

THE BOBRIKI CHEMICAL COMBINAT

The Bobriki (Stalinogorsk) chemical combinat was established 200 kilometers south of Moscow and comprised a group of plants somewhat similar to those at Berezniki, but larger and more varied in chemical production.[24]

The history of its construction is intriguing. Excavation was under way on a 'crash' basis in 1931; later that year a Linde oxygen process plant was in operation, and imported equipment for a silicate-ceramics plant and gas-generator station had been assembled.[25] In 1933 work was started on a

[24] U.S. State Dept. Decimal File, 861.5017—Living Conditions/653, Riga, May 10, 1933, Interview with Atherton Hastings, employed by Vsekhimstroi.

[25] Amtorg, *op. cit.*, VII, No. 3 (February 1, 1932), p. 65.

synthetic-ammonia plant and on units for production of nitrogenous fertilizers, sulfuric acid, nitric acid, and sodium nitrate.[26] In January 1934 it was indicated that the turbines would soon be in operation, and in September the synthetic methanol plant—the first in the U.S.S.R.—was reported in operation.[27]

However, troubles were reported by several sources.[28] The Oberkommando der Wehrmacht also records that in 1937 less than 2,000 workers were employed at Stalinogorsk: less than 10 percent of the Berezniki employment figure.[29] From this low employment figure and the paucity of output statistics it is inferred that Soviet construction organizations ran into considerable trouble after the erection of imported equipment or parts copied from foreign models in the Stalinogorsk chemical equipment manufacturing department.

The feature distinguishing Bobriki from Berezniki is that the former depended far more (although by no means completely) on Soviet technical resources than Berezniki, and was probably intended as a training ground for chemical construction and operating technicians.

Table 7–2 WESTERN TECHNICAL ASSISTANCE TO THE BOBRIKI (STALINOGORSK) CHEMICAL COMBINAT

Product	*Western Technology*
Synthetic ammonia	Nitrogen Engineering Corp.
Nitric acid	Most equipment from Germany and U.K.; some U.S. Probably assembled by Soviet organizations.
Sulfuric acid	Most equipment from Germany and U.K.; some U.S. Probably assembled by Soviet organizations.
Nitrogen fertilizers	Most equipment from Germany and U.K.; some U.S. Probably assembled by Soviet organizations.
Silicate ceramics	Foreign equipment assembled by Soviets.
Methanol	Probably Hastings (U.S.) design.
Chlorine	Westvaco Chlorine Products design; possibly Soviet-manufactured.
Oxygen	Linde process.
Chemical equipment manufacturing plant	Equipped with German, American, and English machinery.
Power station	Origin probably Western; assembled by Soviet organizations.

Sources: See text.

[26] *Ibid.*, IX, No. 1 (January 1934), p. 18.

[27] *Ibid.*, No. 11 (November 1934), p. 241.

[28] Alcan Hirsch, *op. cit.*, and U.S. State Dept. Decimal File, 861.5017—Living Conditions/653. Interview with Atherton Hastings, employed by Vsekhimstroi.

[29] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

Atherton Hastings, who worked at both combinats in the early 1930s, makes the point that although mistakes were made in construction and operation of Bobriki, great progress was made by learning from experience and the plant was producing a nucleus of chemical industry workers.

Another distinguishing feature of Bobriki was its chemical equipment manufacturing plant, the first in the U.S.S.R., for construction of heavy chemical machinery. This, according to Hastings, was efficient: 'It is equipped with German, American and English machinery and constructs heavy machinery not only for Bobriki plant but for all Russian chemical plants. . . .'[30]

Most of the equipment for Bobriki was, however, imported. For example, in reference to the gas generator station, Amtorg comments: 'The assembling of the equipment for the station was accomplished by Soviet engineers and workers alone.'[31] The same article also makes reference to 'assembling' the ceramic plant. If the equipment had been *manufactured* in the Soviet Union, it is almost certain that reference would have been made to this point.

This observation is confirmed by Alcan Hirsch, Chief Consulting Engineer to the chemical industry in the early 1930s, who states: 'Some of the equipment at Stalinogorsk has been imported from the United States, but most of it came from Germany and England.'[32]

THE KALININ CHEMICAL COMBINAT[33]

The Kalinin chemical combinat was based on the prerevolutionary Raspiapino lime and sulfuric-acid plants. The Tenteleev-process sulfuric-acid plant was entirely rebuilt, expanded, and fitted with new equipment. With the addition of Gay-Lussac and Glover tower units, it produced 40,000 tons per year, including fuming acid, by 1944.[34]

The synthetic-ammonia plant bought from Casale in Italy[35] utilized a water-gas process with a capacity of 16,500 short tons of nitrogen per year. There was also some direct American engineering assistance to the combinat, as it was reported in 1938 that an American engineer had been employed there since 1935.[36]

[30] U.S. State Dept. Decimal File, 861.5017—Living Conditions/653, Riga, May 10, 1933, Interview with Atherton Hastings, employed by Vsekhimstroi.

[31] Amtorg, *op. cit.*, VII, No. 3 (February 1, 1932), p. 65.

[32] Alcan Hirsch, *op. cit.*, p. 85.

[33] Formerly Raspiapino, also called Dzherzhinsky or Chernoreznitsky at Nizhni-Novgorod (Gorki).

[34] Wirtschaftsgruppe Chemische Industrie, *Die Schwefelsäureindustrie in der Sowjet-Union*, January 1944, National Archives Microcopy T 84–122–1421980.

[35] Sutton, *Western Technology . . ., 1917 to 1930*, p. 214.

[36] U.S. State Dept. Decimal File, 861.659—CHEMICALS/10, Report No. 883 from Moscow Embassy, January 21, 1938.

At Karakliss, in Armenia, a plant was finished in October 1931 to produce 10,000 tons of cyanamide a year, and later, when power was received from the new Leninakhan power station, output was raised to 20,000 tons of cyanamides and 4,000 tons of carbonates, with oxygen as a by-product. The complex was built with technical assistance from the Swedish company Stockholms Superfosfat Fabriks Aktiebolaget.[37]

Table 7–3 WESTERN TECHNICAL ASSISTANCE TO THE KALININ CHEMICAL COMBINAT

Plant	*Origin*
Lime plant	Tsarist plant
Sulfuric acid	Tsarist plant; Russian Tenteleev process plus Western tower units (Gay-Lussac and Glover)
Synthetic ammonia	Casale (Italy)
Nitric acid	Du Pont design and supervision with German equipment
Chlorine	Westvaco Chlorine Products (probable)
Calcium carbide	Stockholms Superfosfat Fabriks Aktiebolaget
Cyanamide	Stockholms Superfosfat Fabriks Aktiebolaget
Liquid oxygen	Linde process
Superphosphate	Stockholms Superfosfat Fabriks Aktiebolaget

Sources: V. I. Ipatieff, *Life of a Chemist* (Stanford: Stanford University Press, 1946), p. 413.
Die Chemische Fabrik, No. 9, (1928), p. 107.
Amtorg, *op. cit.*, 1930–3.
Vneshtorgizdat, *Economic Conditions in the U.S.S.R.* (Moscow: 1931), p. 22.

At Konstantinovka a chemical complex was built based on roaster gases from the zinc smelter. The sulfuric-acid plant comprised a Tenteleev contact system[38] and a tower system with a capacity of 25,000 tons. Arsenic was also produced. The superphosphate plant at Konstantinovka was started in 1927, but for some unknown reason construction was delayed for two years and probably completed sometime in the mid-1930s.[39]

One apparent exception to the rule of heavy Western assistance was the tsarist Moscow plant of Dorogomilov; five departments were added to the original unit and 'all formulae for the chemicals produced were developed by Soviet specialists, the construction work was supervised entirely by Soviet engineers, and over 90 per cent of the equipment installed was produced in Soviet plants.'[40] The plant probably used prisoner engineers and certainly produced poison gases.[41]

[37] Vneshtorgizdat, *Economic Conditions in the U.S.S.R.* (Moscow: 1931), p. 22.
[38] *Die Chemische Fabrik*, II, No. 25 (June 19, 1929), p. 304.
[39] Amtorg, *op. cit.*, IV, No. 10 (May 15, 1929), p. 202.
[40] *Ibid.*, VII, No. 1 (January 1, 1932), p. 20.
[41] V. I. Ipatieff, *Life of a Chemist* (Stanford: Stanford University Press, 1946).

The Gorlovka coke-chemical combinat was the first coke by-product plant to be put into operation. The first part, Ordzhonikidze Works I, consisted of two batteries of coke ovens (14½ tons capacity per oven) built by Koppers A-G, and equipment to produce by-products (benzol, sulfate, and tar) from the gas. Coal was supplied from several old coal mines and one modern mine known as '8-bis,' which delivered coal right into the coal-washing plant. The latter was built by a German company and was the first coal-washing plant in the Soviet Union.[42]

The Soviets then added Works II, comprising another two coke-oven batteries with by-products departments. It was a copy of the first installation, and in this book is called 'Soviet Koppers.' Simultaneously a complete synthetic-ammonia plant using the Fauser process was built to use the H_2 in the coke-oven gas and nitrogen from the air to make NH_3. Sulfuric-acid and nitric-acid plants laid the base for combining the NH_3 in the manufacture of either fertilizer or explosives. The synthetic-ammonia and related plants were put into operation in 1935 and demolished in 1941 at the time of the German invasion.[43]

We have accurate data on the Magnitogorsk by-product coke-chemical plant, as John Scott (now Senior Editor of TIME magazine) was in 1935–6 operator of the Magnitogorsk benzol department.[44] The by-product coke-oven installation, the largest in Europe, was a Koppers-Becker system installed by the Koppers A-G, although, as Scott points out, the design was developed partly by the McKee Corporation and several Soviet organizations. As finally built it was not nearly as large as originally planned. No departments came into production before the mid-1930s.

In 1936 the plant consisted of a condensation department with four German exhausters and a sulfate department with three imported saturators giving a maximum of 60 tons of ammonium sulfate per day. The benzol department had four stills producing 60 tons a day and a benzol rectification unit (opened in 1936) producing benzol, tuluol, and naphthalene. As John Scott says, 'All pumps and most of the apparatus of the benzol department were imported.'

Another combinat in Moscow was the Voskressensk, of which the sulfuric-acid plant (the largest in the world) had an annual capacity of 160,000 tons with possible expansion to 240,000 tons per year. The Benker-Milberg system was used[45] for production of phosphates and superphosphates.[46] Much of the

[42] *American Engineers in Russia*, Folder 4, No. 16.

[43] *Fortune*, October 1949, p. 117.

[44] John Scott, *op. cit.*, p. 155.

[45] *Die Chemische Fabrik*, 1928, p. 454. The mechanical furnace section was the Nichols Engineering and Research Corp. design, called VKhZ and manufactured and widely distributed in the U.S.S.R. [*Bolshaya Sovietskaya Entsiklopediya* (Moscow: 1945), LI, col. 14.]

[46] Hirsch, *op. cit.*, p. 83.

equipment was bought from Germany.[47]

The Grozny Chemical Combinat No. 22 had a butanol-acetone plant, utilizing an adaptation of the Weizmann fermentation process,[48] and a synthetic methanol plant, probably designed by Hastings.

Thus an examination of the Soviet chemical combinats built between 1930 and 1941 suggests a great amount of Western design assistance and equipment at locations of earlier tsarist enterprises. No evidence of significant practical Soviet contribution to chemical engineering is found in this period.[49]

TECHNOLOGY IN ALKALI PRODUCTION

Alkalis form the basis of many other chemical products; production of soda ash (sodium carbonate) and of caustic soda (sodium hydroxide), with or without chlorine as a by-product, are the most important sectors.

Table 7–4 METHODS OF ALKALI PRODUCTION IN THE SOVIET UNION, 1930–44

Plant	*Process Used*	*Capacity (Tons per Day)*	*Note*
SODA ASH			
Donsoda[1]	Solvay	270	Restarted February 1944[2]
Slaviansk[2]			
Old plant	Henningman	50	Restarted February 1944[2]
New Plant I	Solvay	210	Open 1937–41, restarted November 1946[2]
New Plant II	Solvay	210	(Open 1937–41, restarted November 1946[2])
Berezniki[1]	Solvay	90	Expansion of old plant (1890?)
Karabugaz[2]	Le Blanc	150	Expansion of old plant (1897)
Zapadonosibirsk[1]	Le Blanc	100	Expansion of Luibimoff-Solvay works (1898)
CAUSTIC SODA			
Donsoda[1]	'Levig' (Löwig)		
Slaviansk	Wet lime		
Berezniki	'Levig' (Löwig)		

Sources: [1] B. S. Blinkov, *Khimicheskaya promyshlennost' SSSR* (Moscow: 1933), p. 196.
[2] G. E. Lury, *50 let sovetskaya khimicheskaya nauka i promyshlennost'* (Moscow: 1967), pp. 158–62.

[47] *Die Chemische Fabrik*, 1931, pp. 2–38.

[48] Hirsch, *op. cit.*, p. 86.

[49] See chap. 18. Under the technical-assistance contract with the French firm Société Electrométallurgique de Montricher, nine furnaces were installed at Donoi-Postroi (each of 10,000-kilowatt capacity) to produce calcium carbide according to the Miguet system. Three copies of these furnaces were later built by the Soviets and installed in Leningrad. The 10,000-kilowatt capacity was the largest economical size for this process and gave the Soviets an estimated 250,000-ton capacity for the production of calcium carbide. W. G. McBurney, *et al.*, *German Carbide, Cyanamide and Cyanide Industry*, C.I.O.S. Report No. XXVII-92, p. 28.

Soda ash was produced in three plants in tsarist Russia, using the Solvay and Henningman processes. In the 1930s these plants were re-equipped and considerably expanded, and two new Le Blanc plants were added at Karabugaz and Zapadonosibirsk. (See table 7–4.) The process used at the Le Blanc plants is of interest. The Le Blanc soda process, although never used in the United States is historically most important. It was succeeded in about 1870 by the Solvay ammonia-soda process in Europe as well as Russia. However, in the new Soviet plants a return was made to the Le Blanc process,[50] which was no longer in use elsewhere in the world.

In caustic-soda manufacture we find the same use of an obsolete process. The Löwig process, originating in nineteenth-century Germany and not used in the West in the twentieth century, was the process selected for caustic-soda plants.[51]

THE RUSSIAN TENTELEEV PROCESS FOR SULFURIC-ACID PRODUCTION

The Soviet Union does not offer, even 50 years after the Revolution, an example of an indigenous technology utilized on a world-wide basis. However, tsarist Russia does offer an excellent example: the Tenteleev contact process for production of sulfuric acid. Developed in the Tenteleev St. Petersburg works (now called the Krasnyi Khimik), it was used in more than half the sulfuric-acid plants of prerevolutionary Russia, patented in Russia and throughout the West, and used in a number of Western countries.

Of the more than 40 Russian sulfuric-acid plants in existence before 1917, over 20 units utilized the Tenteleev process,[52] while the others used the Grillo-Schroder and Mannheim systems. In 1913 the Tenteleev process was used in the United States (by the Boston-Merrimac Chemical Company in

[50] B. S. Blinkov, *op. cit.*, p. 202. Whether the explanation lies in factor resource patterns occurring in Russia and not elsewhere, faulty planning decisions, or a static technology has not been explored. The writer hopes to re-examine this problem in a later study.

It should be noted that the use of a long-established process is not, of itself, an indication of inefficiency, at least in the chemical industry. There are many examples in the West in which an old process has been improved, redesigned or adapted to take advantage of new equipment, and so has competed successfully with newer methods. For example, in the acid-pickling process for removing scale from steel, the only change in centuries has been in the design of larger continuous units and improved equipment; the basic principle remains the same.

[51] M. B. Zelikin, *Proizvodstvo kauticheskoĭ sody khimicheskimi sposobami* (Moscow: Goskhimizdat, 1961), p. 14.

[52] An excellent summary of the Russian sulfuric-acid industry in 1917 is given in *Chemical and Metallurgical Engineering*, XXX (1924), pp. 384–8. The position in 1944 is described in Wirtschaftsgruppe Chemische Industrie, *Die Schwefelsäureindustrie in der Sowjet-Union*, January 1944, National Archives Microcopy T 84–122–1421980.

New York and by the General Chemical Company), Germany (by Dynamite Nobel in Hamburg), and the United Kingdom (by the Dynamite Trust in London), as well as in other Western countries. In all, 24 Tenteleev units were at work in Germany, Rumania, Sweden, the United States, and Japan at the end of 1911.[53]

By 1945 the Soviet sulfuric-acid industry was operating either on tsarist processes or standard Western processes. Reference to *Bolshaya Sovietskaya Entsiklopediya* for 1945 supports this statement. Seven pages are devoted to a discussion of sulfuric-acid production. Standard Western equipment (the Nichols-Herreshoff mechanical furnaces—called VKhZ designs—at Voskressensk[54] and the Lurgi revolving furnace) and standard chamber, tower, and contact methods are indicated on the diagrams. The contact method described in most detail is the German Herreshoff-Bauer method.

THE CHAMBER PROCESS FOR PRODUCING SULFURIC ACID

This process utilizes Glover towers, used throughout the world since 1859, to concentrate acid and remove nitrogen oxides. Gay-Lussac towers, also utilized, are arranged in series to recover nitrogen oxides from the spent gases.

Figure 7–1 SOVIET CHAMBER SYSTEM FOR MANUFACTURE OF SULFURIC ACID, 1945

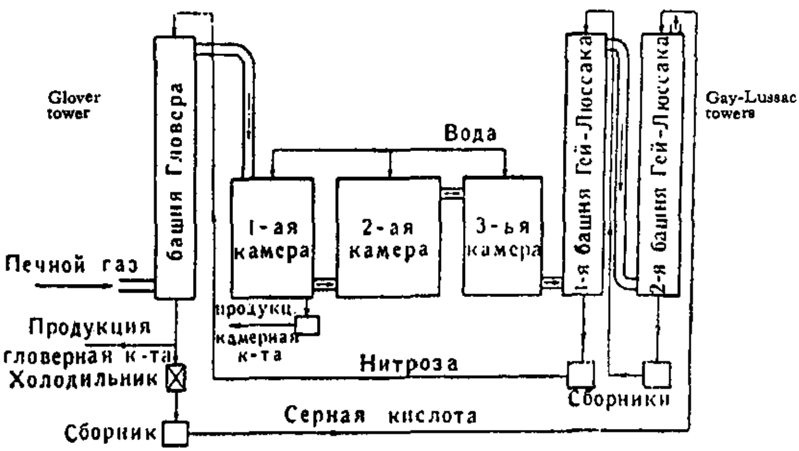


Diagram of Chamber System

Source: Bolshaya Sovietskaya Entsiklopediya (Moscow: 1945), LI, col. 18.

[53] George Lunge, *The Manufacture of Sulphuric Acid and Alkali*, I, Part iii (London: Gurney & Jackson, 1913), p. 1359.

[54] See *Bolshaya Sovietskaya Entsiklopediya* (Moscow, 1945), pp. 7–14.

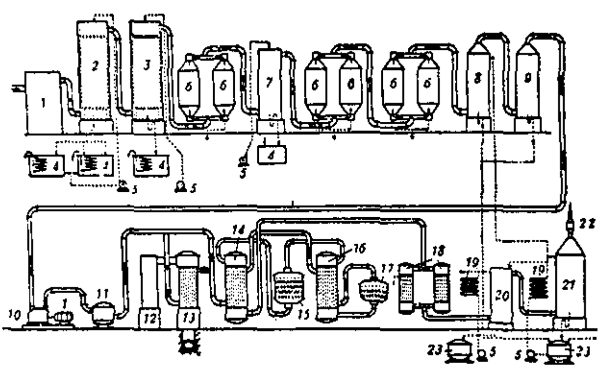
They are similar to Glover towers but taller and of smaller diameter. The many variations of this process in use throughout the world include Mills-Packard, Gaillard-Parrish, Opl, Petersen, and Kachkaroff-Guareschi (French).

This method was utilized in the U.S.S.R. between 1930 and 1945 in its varying forms, including the Gaillard-Parrish for two units in the Urals[55] and the Petersen at a large new plant at the Krasnyi Khimik in Leningrad.[56] In 1944 more than one-fifth of all sulfuric acid was being made by some variation of this chamber process.[57]

THE CONTACT PROCESS FOR THE MANUFACTURE OF SULFURIC ACID

Two basic processes used in Russia have been sulfur-burning contact system for converting SO_2 to SO_3 and for the manufacture of sulfuric acid based on utilization of roaster gases from metallurgical plants and coupled with use of towers. It is reported that in 1937 about 8 percent of Soviet sulfuric acid was obtained from the roaster gases of metallurgical plants,[58] leaving a balance of about 70 percent (allowing 20 percent for chamber processes) produced by contact processes using sulfur and pyrites.

Figure 7–2 SOVIET HERRESHOFF-BAUER CONTACT SYSTEM FOR SULFURIC ACID PRODUCTION, 1945



- 1, 6 electro-filter
- 2, 3, 7 towers
- 4, 5 pumps
- 7, 9 drying towers
- 10 compressors
- 11 oil separator
- 12 burner
- 13, 14, 16 heat exchangers
- 15, 17 contact apparatus
- 18, 19 cooler
- 20, 21 absorbing towers
- 22 sprinklers
- 23 collectors

Source: Bolshaya Sovietshaya Entsiklopediya (Moscow: 1945), LI, col. 22.

55 *Chemical and Metallurgical Engineering*, CXXXVII, No. 8 (August 1930), p. 472.

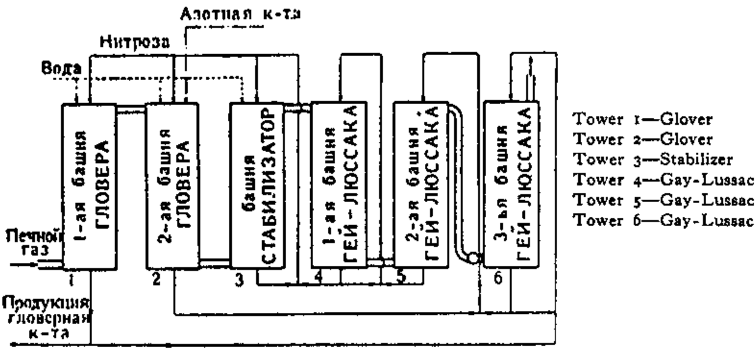
56 *Die Chemische Fabrik*, II, No. 40 (October 2, 1929) p. 442.

57 Calculated from Wirtschaftsgruppe Chemische Industrie. This is a minimum; incomplete data prevents more accurate calculation.

58 *Chemical Age*, July 28, 1945, p. 81. These figures are very approximate and are subject to revision.

Units for production of sulfuric acid from roaster gases were located at the Ridder lead-zinc smelter (using an adapted Glover process), in several Herreshoff-Bauer systems, at a Lurgi plant at Baku, and in the Benker-Milberg system at the Moskhimkombinat, and in other similar systems.

Figure 7–3 SOVIET SIX-TOWER SYSTEM



Source: Bolshaya Sovietskaya Entsiklopediya (Moscow: 1945), LI, col. 19.

PRODUCTION OF CHEMICALS FOR MILITARY USE[59]

The large production of explosives and 'war chemicals' in the Soviet Union at this time supports the argument that the nation had a war-oriented economy. Oberkommando der Wehrmacht Intelligence listed 52 chemical plants, including many old, small units manufacturing explosives and allied chemicals in 1936–9 for war use. The largest of these plants was the Okhtinsky chemical combinat in Leningrad, employing 14,000 workers in 1938, with the Du Pont-built plant at Shostka following closely with approximately 13,750 employees in 1936. The Nitrogen-Engineering-designed complex at Berezniki employed 25,000 workers in 1937 and manufactured thermit, powder, and nitroglycerin. In aggregate the Soviets probably had a quarter of a million workers in plants producing explosives and war chemicals in the years 1936–8.[60] The larger of these plants had been built by Western companies nominally for the manufacture of fertilizers; but conversion to explosives is a comparatively

[59] Based on Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84, Roll 122, Frames 1421291–6, Pulver und Sprengstoffwerke.

[60] Based on figures for the 24 works where employment was known; figures for the remaining 28 works are not given.

straightforward procedure, and the facts were suspected by the companies involved and the State Department.[61]

The Olgin chemical works in Moscow was fully equipped for production of poison gases during World War I. After the Revolution it was shut down until 1928, when it was re-equipped with imported German Hoffer compressors and an autoclave for high-pressure experiments, together with other equipment for gas production.[62] The plant was then operated by prisoner engineers, including Kravets, head of the Glavkhim planning department, at least until 1941 for the production of arsenic and cyanide compounds.[63]

Several sources reported great interest in poison gases and noted that absolute priority had been given to production of arsenic, an ingredient of poison gas. One excellent source is E. G. Brown, a metallurgical engineer and the only foreigner employed in the Tsvetmetzoloto laboratories which made analyses of ore specimens and designed reduction processes. The Soviet chemists made the analyses and Brown determined the reduction process to be used. He reported that every effort was made to increase the production of arsenic. For example, in the case of complex ores (containing, for instance, lead-silver and arsenic) he was ordered to design a plant to free the maximum amount of arsenic even if that meant losing other by-products.[64]

TECHNICAL ASSISTANCE FOR MINOR CHEMICAL AND PHARMACEUTICAL PRODUCTION

Chemical products required only in comparatively small quantities also received foreign assistance.

An ultramarine plant was built in Rostov with a capacity of 1,000 tons per year, utilizing foreign equipment and technical assistance.[65] A carbon disulfide plant with a seven-ton-per-day capacity was built by the Berlin firm of Zahn, utilizing the company's patents.[66] In 1930 the major British chemical producer, Imperial Chemical Industries, Ltd., agreed to sell 30 million rubles worth of chemicals to the Soviet Union on a credit basis; 'the agreement also provided for technical-assistance to the Soviet chemical industry in the

[61] U.S. State Dept. Decimal File, 861.659—DU PONT DE NEMOURS & CO./5, Du Pont to Secretary of State Stimson, February 19, 1932, which states: '... while we have no knowledge of the purpose of the proposed plant, yet the excessively large capacity contemplated leads us to believe that the purpose may be a military one.'

[62] Ipatieff, *op. cit.*, pp. 469, 487.

[63] Oberkommando der Wehrmacht, *op. cit.*, Plant No. 321.

[64] U.S. State Dept. Decimal File, 861.5017—Living Conditions/415, Riga, January 19, 1932. In a similar report, Steffenson indicated the emphasis on arsenic.

[65] *Die Chemische Fabrik*, II, No. 25 (June 19, 1929), p. 304.

[66] *Ibid.*, II, No. 42 (October 16, 1929), p. 461.

production of commodities manufactured by the British concern. . . .'[67] It was reported by Amtorg in the same year that 'several technical-assistance agreements have been concluded with large French construction firms, especially for the building of chemical enterprises. . . .'[68]

Technical assistance was also provided by I. G. Farben[69] and other German firms: Dürkopp-Werke, Charlottenburger Wasser und Industriewerke and Lenz. American firms providing technical assistance included Parke, Davis in pharmaceuticals, Moren and Company, and Chain-Belt;[70] also under contract were the Dutch firm Electro and the French firm Cellulose de Bourges.[71] H. D. Gibbs (U.S.) furnished plans and supervised the installation and initial operation of a small chemical plant in 1934 to manufacture phthalic anhydride, aluminum chloride, and antraquinone.[72]

CONCLUSIONS

The largest production complex (Berezniki) and the most important technologies (synthetic-ammonia, nitric-acid, and, to a lesser extent, sulfuric-acid and alkali production) originated in the West. Reproduction of foreign equipment for part of the Bobriki combine was coupled with imports but does not appear to have been immediately successful, although it no doubt provided useful training for technical cadres.

Findings on the Soviet chemical industry suggest that a great effort has been made to withhold details of this development from the outside world. This was essentially a military sector which reflected intense Soviet interest in chemical warfare and military preparations in general. The combination of technical backwardness and military necessity ensured that great efforts would be made to obscure both the development of individual plants and the processes utilized. However, despite military pressures, by 1945 the Soviet chemical industries provided no examples of indigenous Soviet technology.

[67] Amtorg, *op. cit.*, V, No. 11 (June 1, 1930), p. 226.
[68] *Ibid.*, V, No. 12 (June 30, 1930), p. 226.
[69] *Ibid.*, III, No. 19 (October 1, 1928) pp. 331–2.
[70] *Die Chemische Fabrik*, II, 1929, p. 47.
[71] *Ibid.*
[72] *American Engineers in Russia*, Fisher, Folder 1, Letter from Gibbs to Fisher.

CHAPTER EIGHT

Technical Assistance to the Coke-Oven, Synthetic-Rubber, Cement, Alcohol, and Wood-Distillation Sectors

KOPPERS-BECKER DESIGNS IN THE COKE-CHEMICAL INDUSTRY

COKE, derived from coking-quality coals, is an essential input for metallurgical industries. Russian coking capacity in the mid-1920s consisted chiefly of tsarist-era French and Belgian Coppe and Piette ovens; there were no modern vertical pusher ovens (also known as by-product ovens) of the Koppers or Koppers-Becker type which enabled by-products of the coking process to be utilized for chemical production. The United States had developed several types of efficient by-product ovens: the Wilputte, Hemet-Solvay, Cambria, and Simon-Carves, but by the 1920s Koppers and Koppers-Becker had the dominant position and their ovens were being installed in three-quarters of new plants in the United States. These designs were adopted by the Soviet Union. Almost all iron and steel plants built between 1928 and 1932, including the gigantic Magnitogorsk and Kuznetsk complexes, received imported Koppers-built by-product vertical pusher ovens; plants built since 1932 have used either 'Soviet Koppers' or 'NKVD Koppers' systems.

A complete list of these coke-chemical plants was compiled by merging data given in *Fortune* of October 1949 by Louis Ernst, a former engineer at Soviet coke-chemical plants (he lists 27 plants in operation in 1941 and others under construction by the NKVD), with data from the OKW files (which contain a list, dated March 1941, of 25 plants, some of which do not appear on the Ernst list.)[1]

'Soviet Koppers' designs are defined by Ernst in the *Fortune* article as 'built under Soviet supervision, according to Soviet design based on Koppers

[1] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84-122-1421229.

original designs with equipment partly imported, partly increasingly manufactured by Soviet factories.' The NKVD Koppers designs were Soviet Koppers ovens produced and installed under NKVD supervision by forced labor. These ovens were usually also operated by the NKVD using forced labor.

CONSTRUCTION OF COKE-OVEN BATTERIES AT MAGNITOGORSK AND KUZNETSK

The largest coke-oven and by-products installation built in the period 1930–45 was at the Magnitogorsk iron and steel complex. This plant was planned to contain eight batteries, each consisting of 69 ovens, with a late-1931 completion date. The Koppers Corporation of Pittsburgh won the contract for installation and at the end of 1930 sent 16 American engineers, together with a number of German Koppers A-G engineers, to Magnitogorsk. Only one battery of 61 ovens was completed by late 1931; another was completed in mid-1932, and two others in 1933. By November 1932 only one American and five or six German Koppers engineers were left at the Magnitogorsk coke plant.

Louis Gerhardt, the Koppers Chief Construction Engineer in the U.S.S.R., has described the organization of the construction effort and the utilization of foreign engineers and their place in coke-oven construction. Gerhardt was in charge of Koppers construction and had four American construction engineers working directly under him. Each American was teamed with one Soviet engineer and two Russian foremen. Each foreman supervised four subforemen, each of whom in turn supervised a gang of about 30 to 50 laborers.[2]

The greater part of the machinery and piping, and 13,000 tons of firebrick, came from Germany. Special castings came from the United States. Only the structural steel work was manufactured in the Soviet Union.

Although Magnitogorsk was initially projected to have eight batteries of Becker ovens, all with Koppers by-product recovery plants, and a four-battery complex was erected by Koppers under its technical-aid contract, only the original four batteries were in operation in 1945. The remaining four batteries planned were not built.

The Koppers engineers were very pessimistic about the future of the batteries constructed. They were designed to last 20 years, but it was considered doubtful that they would last four to five years, owing to inefficient operation by unskilled labor. Louis Gerhardt mentioned to a State Department

[2] U.S. State Dept. Decimal File, 861.5017—Living Conditions/569.

official that the ovens were already about '12 years old' after operating only a few months.

The chemical plant, based on coke-oven by-products, was allowed to lag in construction. It has been described by John Scott as 'shoddily projected but [having] a fairly good condensation department with four German exhausters.'[3] The sulfate department went into operation in 1935 and had three saturators producing 60 tons daily of ammonium sulfate. The benzol department, with four imported stills, went into operation in 1936, producing 60 tons daily of tar, benzol, tuluol, naphthalene, and other chemical products.[4]

The coke-oven batteries at the Kuznetsk iron and steel plant, the second giant of 'socialist construction,' were erected by French engineers working for Distocoque S.A. (the Koppers French licensee). They designed two batteries, each with fifty-five 17-inch ovens of the Koppers type.[5] About 20 French engineers under Chief Engineer Louis completed the first battery by March 1932 and put it into operation. At this point continuing friction between the French and Russian engineers came to a head, and sometime later in March, 'after a heated interview with the administration, Chief Engineer Louis returned to the foreign engineers' quarters, gathered together all the plans for the coking plant, and burnt them in the stove.'[6] The French engineers were ordered to leave and the second battery was completed by the Soviets with assistance from German engineers.[7]

CHANGES IN COKE-OVEN TECHNOLOGY

The technological structure of Soviet coke ovens changed completely between 1928 and 1947. In 1928 more than one-half of Russian coke was produced in tsarist-era ovens with little chemical by-products capacity. The balance of the capacity was German- and French-built, on Koppers, Otto, and Distocoque systems. During the period from 1928 to 1932, a decision was made to standardize on the basis of the Koppers system. By 1932 tsarist ovens accounted for less than one quarter of an output which had more than doubled (3.2 to 7.1 million tons). The balance of the capacity was split between Soviet Koppers ovens and Koppers systems imported and installed by the American, German, and French Koppers companies.

[3] Scott, *op. cit.*, p. 154.

[4] *Ibid.*

[5] U.S. State Dept. Decimal File, 861.5017—Living Conditions/434, March 4, 1932, interview with Aaron J. Winetz, coke oven engineer at Kuznetsk.

[6] U.S. State Dept. Decimal File, 861.5017—Living Conditions/454, Report No. 291, Riga Consulate, April 22, 1932, p. 8, interview with T. A. Hoffmeyer, Freyn Co. construction engineer at Kuznetsk.

[7] U.S. State Dept. Decimal File, 861.5017—Living Conditions/434, March 4, 1932.

By 1940 coke output had again tripled—to 23 million tons, of which more than 60 percent was now produced from Soviet Koppers ovens. The tsarist ovens were closed down and no systems were built after 1933 by foreign construction companies. Also by 1940 the NKVD was building Koppers ovens in more remote northern regions, using forced labor. The German invasion of the Ukraine in 1941 temporarily changed this pattern, but in 1947 almost 60 percent of the output was again being produced in Soviet Koppers systems. In addition, there was a significant increase in NKVD Koppers capacity.

We may therefore conclude that in the 20 years from 1928 to 1947 the Soviets increased coke-oven capacity by a factor of eight and replaced the small-scale prewar ovens almost completely with Koppers systems at first imported (as at Magnitogorsk and Kuznetsk) and then duplicated and built in the Soviet Union.

COKE-OVEN BY-PRODUCT TECHNOLOGY AND THE KOPPERS CORPORATION

The Soviet claim that 'in the years of Soviet power, the Soviet Union developed a new technique of coking through its own efforts'[8] does not stand up under investigation. As we have seen, there was a significant increase in coke-oven capacity, and an even more significant increase in chemical by-products capacity between 1928 and World War II, but both were wholly based on Koppers technology transferred to the Soviet Union.

It is also suggested by the Soviets that 'the experience which was acquired in the process of rebuilding and redesigning old plants was not sufficient for the construction of new plants on a high engineering level,' and that 'the coke-chemical industry which developed in the period of the First Five-Year Plan was on an engineering level which exceeded that of Europe.'[9] Soviet coke capacity was based on Koppers designs and built by Koppers until such time as the Soviets could duplicate the Koppers system in their own machine-building plants at Kramatorsk and Slaviansk and later at Orsk.'[10]

This combination of imported Koppers systems and domestic duplication to a single standardized design enabled the Soviets to acquire a large coking capacity in a short space of time. From 1931 to 1946 the standard Soviet coke oven was the 17-inch Koppers. Apart from one experimental design (the PVR-39, with paired vertical valves and recycling of combustion products)

[8] 'Koksokhimicheskaya promyshlennost' SSSR,' in *Metallurgiya SSSR (1917–1957)*, ed. I. P. Bardin (Moscow: 1957), p. 77.

[9] *Ibid.*

[10] See chap. 9 for U.S. assistance in the machine-building industry. See also I. L. Nepomnyashchii, *Koksovye mashiny, ikh konstruktsii i raschety* (Moscow: 1963).

tried at the Kharkov Coke-Chemical Plant in 1940, no attempt at indigenous innovation can be traced. Other types (Evans-Cope, Becker, and Otto) were purchased and installed but not standardized. By 1945 the Soviets had added very little of technical value, if anything, to this transfer; their whole effort had been spent on mastering and reproducing the most effective of foreign designs. The significant rates of growth in the coke industry[11] are explainable in terms of this transfer.

DANISH AND GERMAN EQUIPMENT IN THE CEMENT INDUSTRY

By 1929 all 31 of the tsarist-era cement plants were back in production (after being re-equipped with imported machinery) and were able to produce 13 million barrels of cement that year. All these plants had been expanded and modernized by several German firms and one Danish firm (F. L. Smidth and Company A/S of Copenhagen); the largest project was at Novorossisk in the Caucasus and had been undertaken by Friedrich-Krupp Grusonwerk A-G and designed to produce 400,000 tons of cement a year.[12] Also in 1929 a technical-assistance agreement was concluded with the American firm of

Table 8–1 ORIGIN OF CEMENT PLANTS IN THE SOVIET UNION, 1938

Revolving kilns		*Shaft kilns* *Ordinary*		*Shaft kilns* *Automatic*		*Total of all types*
Manufacturer	*No.*	*Manufacturer*	*No.*	*Manufacturer*	*No.*	
Allis-Chalmers	1	Candlo	5	Graber	1	225 foreign*
Amme-Gieseke	7	Dietch	34	Krupp	10	
Feollner	1	Schneider	73	Lundstedt	12	
Krupp	5			Tiele	1	
Miag	4					
Pfeiffer	12					
Polysius	13					
Smidth	46					
Russian	21					21 domestic
Total	110		112		24	246

Source: I. Ershler and S. Stoliarov, 'The Cement Industry in the U.S.S.R.,' *Pit and Quarry*, XXX, No. 8 (February 1938), pp. 61–4.

* Percentage of foreign installations (based on 246 known makes, not including 24 periodic kilns of unknown origin): 91.5 percent.

[11] G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962), p. 96. The average annual growth rate in the coke industry for the period 1928–55 is given as 9.1 percent.

[12] *Die Chemische Fabrik*, I, No. 44 (October 31, 1928), p. 640.

MacDonald,[13] and between 1930 and World War II some 16 large Portland Cement plants were added. Table 8–1 summarizes the origin of Soviet kilns (the most important components of a cement plant)—in use in 1938.

In 1927 the Soviets organized a bureau for design and construction of cement plants and from about 1930 onwards some basic equipment (kilns, mills, crushers, etc.) was built in the U.S.S.R., probably at the Leningrad Shipbuilding Works.[14] By 1938 some 21 kilns (of a total of 246, or 8.5 percent) were of Soviet construction to foreign design. Almost 50 percent of the revolving kilns were built by one Danish company—Smidth, manufacturers of the Unidan and Unax designs.[15] However, even the 21 mills built by Soviet organizations contained a great amount of imported equipment. Table 8–2 illustrates this for the Novo Spassk, the largest cement plant in the U.S.S.R. in 1938–9.

It is unlikely that, during the period under consideration, the Soviets availed themselves of the latest advances in American cement technology. This conclusion is gleaned from an article by one of the hired engineering consultants, who, after pointing out that the expectation of American cement engineers going to the Soviet Union had been that recent improvements in equipment would be adopted, was surprised to find an 'extreme conservatism' evident in all designs finally accepted for building.[16]

> The American engineers were closely questioned on all improvements in machinery and process, but very few of these new developments were incorporated into the plants actually built. The tendency to follow the older European types of design was very strong. On the high councils many of those who enjoyed authority showed a practical familiarity with this older type of cement plant and expressed extreme doubt as to the practicability of adopting modern American designs.[17]

The writer then pointed out that American engineers' plans were criticized in 'great detail' by these councils and changed many times, and that foreign engineers were expected to have 'great masses of detail' to prove every design point.

This argument regarding the negligible transfer of American technique is supported by the data in tables 8–1 and 8–2. In 1938 Soviet kilns were dependent on European, rather than American, design. Further, an article by two Soviet engineers,[18] while confirming that only 21 of the 110 revolving kilns

[13] *Ibid.*, II, No. 47 (November 20, 1929), p. 501.
[14] Amtorg, *op. cit.*, V, No. 18–19 (October 1, 1930), p. 373.
[15] See table 8–3.
[16] 'Facts about Russian Cement Plants Told by American Engineers,' *Concrete*, XXXIX, No. 5 (November 1931), pp. 53–5.
[17] *Ibid.*
[18] *Pit and Quarry*, February 1938, p. 61.

in 1938 were built in the Soviet Union, limited its claims concerning the Soviet-built kilns to the following statement: 'Several large new factories have been equipped mainly with equipment made in the country.'[19] Nowhere do the Soviet engineers claim provision of a cement mill with all Soviet-built equipment.

On the other hand, the Soviet cement mill design bureau was in 1938 undertaking design work for cement plants and mill equipment for delivery to Turkey, Iran, and the Mongolian People's Republic. The rationale behind constructing cement plants for export while importing equipment for domestic cement plants lies in the relative quality of imported versus domestic equipment. Soviet-built equipment was acceptable, even if less efficient, in barter deals with underdeveloped areas. It also provided a training ground for mill construction. The mistakes fell elsewhere, and at the same time provided an acceptable propaganda package: the U.S.S.R. exports cement mills and *therefore* has the ability to supply its own cement mill requirements.

Table 8–2 ORIGIN OF EQUIPMENT AT THE NOVO SPASSK CEMENT PLANT, 1938

Department	*Equipment Item*	*Soviet-Made, to Foreign Designs*	*Foreign-Made (Firm)*
Limestone Crushing Dept.			
	Preliminary crusher	—	Smidth A/S
	Hammer mill	—	Smidth A/S
Clay-Crushing Dept.			
	Toothed roll crusher	—	Smidth A/S
Raw Material Storage			
	Traveling crane	—	Babcock & Wilcox
Raw Materials Drying Dept.			
	Limestone driers*	Soviet-made	—
	Pulverized coal burners*	—	Peabody
	Pumps	—	Fuller-Kinyon
Raw Materials Grinding Dept.			
	4-compartment mills*	—	Smidth A/S
	Dish plate feeders*	—	Smidth A/S
	Speed-reducers (in mills)*	—	Wuelfel
	3-compartment mills*	Soviet-made	—
	Filters	—	Beta
Mixing Silos Dept.			
	Pumps*	—	Fuller-Kinyon (made by Claudius Peters)
	Filters*	—	Beta
Rotary Kiln Dept.			
	Kilns and coolers*	Soviet-made	—
	Speed-reducers*	—	Wuelfel
	Pumps	—	Fuller-Kinyon
Clinker Storage			
	Traveling crane	—	Babcock & Wilcox

[19] *Ibid.*, p. 64.

Table 8–2 (Continued)

Department	*Equipment Item*	*Soviet-Made, to Foreign Designs*	*Foreign-Made (Firm)*
Cement Mill House	4-compartment mills*	—	Unidan (Smidth)
	Plate feeders*	—	Smidth A/S
	Speed-reducers*	—	Wuelfel
	3-compartment mill	Soviet-made	—
	Pumps*	—	Fuller-Kinyon
Gypsum Storage	Tubular drier	Soviet-made	—
Fuel Preparation Plant	Roll crushers*	Soviet-made	—
	Tubular driers*	Soviet-made	—
	Pumps*	—	Fuller-Kinyon
	2-compartment mills*	—	Smidth A/S
	Plate feeders*	—	Smidth A/S
	Coal mills*	Soviet-made	—
Central Compression Plant	2-stage vertical compressors*	—	Five-Lille (France)
	Pumps*	—	Fuller-Kinyon
Power Plant	3,000-kilowatt steam turbines*	Soviet-made	—
	3,300-volt alternators*	Soviet-made	—
	Vertical Garbe boiler	Soviet-made	—
	Pulverized fuel furnace	—	Babcock & Wilcox
	2 boilers (750 square meters each)	Soviet-made	—

Source: Pit and Quarry, October 1938, pp. 55–64.
* Exact number unknown.

SOVIET DEVELOPMENT OF SYNTHETIC RUBBER

The Soviets can rightfully claim indigenous progress in development and initial production of synthetic rubber. The Russian chemist I. I. Ostromislensky worked on synthetic rubbers before the Revolution and in 1915 announced the first organic vulcanizing agents: symmetrical trinitrobenzene, m-dinitrobenzene, and benzoyl peroxide, as well as several agents not using elemental sulphur. Butadiene was produced in Russia in 1915 according to Ostromislensky's method, using a catalytic process starting from ethyl alcohol. Although Ostromislensky later went to work for the U.S. Rubber Company, his work was continued in the Soviet Union by B. V. Buizov, who in 1921 announced the vulcanizing properties of diazoaminobenzene, and by S. V. Lebedev, who in 1928 developed a process for producing butadiene from alcohol 'using a catalyst of magnesium hydroxide, with small proportions of kaolin and hydrous silica and much smaller proportions of iron, titanium and zinc oxides at a temperature of about 385°C.'[20] This pioneering Russian work was preceded only by an English patent (No. 24,790 of 1910) using sodium as the

[20] Harry L. Fisher, *Chemistry of Natural and Synthetic Rubbers* (New York: Reinhold, 1957), p. 85.

catalytic polymerizing agent in production of butadiene synthetic rubber and by a small German production effort using similar methods during World War I.

Commercial production and marketing of synthetic rubber began in 1929 with Thiokol in the U.S.; by 1940 there were a dozen synthetic rubbers in production in the United States and Germany, in addition to Lebedev's SKB, the sodium-butadiene type, in the Soviet Union.[21] During the 1930s the Soviets made some progress with SKB. Production time was halved, and in 1935 'rodless' polymerization was achieved by using disseminated sodium in large trays; by 1939 production reached 90,000 tons per year. However, Soviet synthetic rubber had a low tensile strength of only about 2,000 psi, compared to 4,500 psi for natural rubber and 4,000 psi for Neoprene (the Du Pont chlorophrene synthetic introduced in 1931). In the United States synthetic rubbers with low tensile strengths of this order, such as the U.S. Rubber Company Type AXF, were not introduced onto the market.

Table 8–3 SOVIET SYNTHETIC RUBBER PRODUCTION, 1939 AND 1945

1939: Types Produced		*1945: Types Produced*
1. SKB in three plants (butadiene polymerized with metallic sodium): tsarist research plus Soviet development		1. SKB 2. Resinit (Thiokol)
2. Resinit (Thiokol polysulphide elastomers): U.S. development	Supplied under Lend-Lease	3. Du Pont Neoprene (Sovprene): 2 plants, 40,000 tons each (polymerization of acetylene) 4. Houdry butadiene method: 1 plant, 40,000 tons 5. Houdry catalyst plant 6. Dow Chemical Styrene plant

Capacity at 1939		*Capacity at 1945*	
SKB	90,000 tons	SKB	90,000 tons
Resinit	Very small	Neoprene (Sovprene)	80,000 tons
		Houdry	40,000 tons
		Dow	(?)
		Total	210,000 tons (plus)

Sources: U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).
George Racey Jordan, *From Major Jordan's Diaries* (New York: Harcourt, Brace and Co. 1952), pp. 138–9.

[21] However, even this Soviet product was developed with U.S. technical assistance. In 1930 a Soviet rubber delegation went to the United States; Soviet rubber engineers were sent for training, three 'foreign specialists' were employed by Resinotrest (Rubber Trust), and four contracts for technical assistance were made with U.S. firms. See *Za Industrializatsiiu*, February 22, 1930.

Thus in 1941–2, when the U.S.S.R. was in urgent need of high-tensile strength synthetic rubber for military purposes, domestic production was small, of mediocre quality, and lacking in the oil-resistant and light-resistant qualities necessary for military use. Only two types were being produced: the original SKB (sodium butadiene) and Resinit (the Soviet version of the Thiokol product, made from ethylene chloride and sodium tetrasulfide).

The Soviet rubber position at 1941 is therefore interesting. The Russians had done early work of great significance on synthetic rubbers, and Ostromislensky's research had certainly placed Russia at least on a par with Western countries during World War I, and perhaps even ahead in theoretical work. This development work was successfully continued in the Soviet Union by his associates and finally led to the sodium-butadiene type, SKB. Thus at the end of the 1920s there had been little Western influence on Soviet synthetic rubber development apart from the usual exchange of theoretical knowledge among scientists. A plant was subsequently built on the basis of this internally generated research and by 1939 was successfully producing 90,000 tons a year. However, there was no technological progress from the original butadiene concept except in the slight improvement of manufacturing methods. While Germany produced and abandoned the numbered Bunas (85 and 115) and the U.S. brought out and replaced a dozen synthetic rubbers with varying properties, the Soviets stayed with SKB plus the adopted Thiokol product, Resinit.

The Baruch Committee on Russia recommended during World War II that the United States investigate Soviet experience with Buna rubbers. In the final analysis very little information was forthcoming and the results of this attempted exchange were slow and disappointing. It was found that the Soviets were producing only the original Buna-S (butadiene polymerized by sodium) and had no experience with improved Buna-S or emulsion polymerization methods. However, the Office of Rubber Administration did send a special mission headed by Ernest W. Pittman, President of the Inter-Chemical Company, to the Soviet Union. There is, in the State Department files, an interesting memorandum of conversation in which Colonel Dewey, Deputy Rubber Director, commented on this attempted exchange of information.[22] As synthetic rubber was the only sector in which the Soviets had undertaken technological development on their own on the bases of extensive tsarist-era research, it is worth quoting:

[22] Dept. of State, Memorandum of Conversation, 861.645/17, April 1, 1943. Participants were: Col. Dewey, Deputy Rubber Director; Dr. Gilliland, Assistant Deputy Rubber Director; Major General Wesson, Office of Lend-Lease Administration; Mr. John Hazard, Office of Lend-Lease Administration; Mr. Dean Acheson, Assistant Secretary of State; and Mr. Loy Henderson, Assistant Chief, Division of European Affairs.

In response to a suggestion which had been made last year by the Soviet authorities for an exchange of information with regard to the manufacture of rubber, the Office of Rubber Administration had sent to the Soviet Union a mission composed of four of the outstanding experts in the United States on the production of rubber. These men spent six weeks before their departure collecting data relating to American manufacturing processes to take with them. They left the United States in December 1943. When they arrived in Moscow they called immediately upon the appropriate Soviet authorities and had a discussion with them regarding the scope and method of the exchange of information. The Soviet authorities apparently were pleased at the ideas expressed by the members of the mission during this discussion and suggested that these ideas be reduced to writing.

Dr. Pittman, the Chief of the American mission, assisted by the other three members, thereupon prepared a proposal outlining the method of exchange of information and the scope of the exchange. This proposal was handed in the latter part of January to the appropriate Soviet authorities in the form of a letter. No reply to this letter was ever received. The Soviet authorities proceeded for a period of more than two months, however, to engage in sporadic conversation relating to the rubber industry and on two occasions went so far as to take the mission through rubber producing plants. The information which they furnished the mission was of too superficial a character to be of any practical use, and the members of the mission were hurried through the plants at such a fast pace that they derived no technical benefit from their visit.

In the meantime the Soviet Government sent a committee of highly qualified rubber experts to the United States in order to obtain information regarding American processes of rubber manufacture. This commission arrived a number of weeks ago. In view of the manner in which the American rubber mission was being treated, Colonel Dewey gave orders that no information of any practical value should be given to it until he had assurances that the American mission was being given information of value or until the return to the United States of the American mission. The Soviet Government now proposes, Mr. Dewey continues, in a letter to Mr. Stettinius that a formal agreement be drawn up providing for the exchange between the United States and the U.S.S.R. of information with regard to rubber. This proposal was of a more far reaching nature than that made by Mr. Pittman in January. It provided that the Soviet Government should furnish certain technical information to the American Government; that the American Government would furnish technical information to the Soviet Government not only regarding the processes with regard to which Mr. Pittman had suggested an exchange but also with regard to other processes which were in various stages of development in the United States; that for a period of several years the American Government should furnish the Soviet Government full details regarding any new processes or improvements in processes for manufacturing rubber which might be worked out; that the American Government should furnish the Soviet Government with machinery and technical personnel

> to enable it to build during 1943 and 1944 large rubber producing factories in the Soviet Union.
>
> Colonel Dewey said that a good deal of the information which the Soviet Government demanded could not possibly be put to practical use during the war; that the Russians were asking for some extremely complicated, technical secrets of American manufacturers the utilization of which would require elaborate machinery and equipment which could not be manufactured during the war period without interfering with other important war production; that it would be impossible to set up and begin operating plants containing such machinery and equipment during war time; that, furthermore, the production of this equipment and the explanation of its use to the Soviet authorities would require much time of numerous American technicians whose services are urgently required in the war production field.

On balance then, the Soviets gained far more than the United States in the World War II technical exchange in synthetic rubber, although this was the single area where the Soviets were presumed to be more advanced.

Gaps in Soviet synthetic rubber-manufacturing facilities were filled by Lend-Lease. Two complete plants were acquired for the manufacture of Neoprene by polymerization of acetylene, with a capacity of 40,000 tons each per year.[23] The U.S. also shipped a Houdry-method butadiene plant, a Houdry catalyst plant, and a Dow Chemical Company styrene plant. Table 8–3 summarizes this acquisition of U.S. synthetic rubber manufacturing facilities by the Soviet Union. The Du Pont Company, at the request of the State Department, supplied its Neoprene process, as well as two plants,[24] to the Soviet Union with the right to use patents and processes. Russian engineers visited Du Pont plants and were granted access to technical data. Du Pont engineers erected the plants in the Soviet Union.[25]

Several agreements to transfer allied U.S. technologies were negotiated with the assistance of the State Department. One agreement was with the Standard Oil Company for a process producing synthetic ethyl alcohol from petroleum gases. The Standard Oil agreement gave the Soviets special advantages (apart from designs, specifications, and operating instructions); for example, an inspection party was allowed to inspect the Baton Rouge plant. At first the party, headed by P. S. Makeev, was denied entrance on security grounds, but inspection was later allowed.[26]

[23] Now called Narit, in the U.S.S.R.

[24] *New York Times*, July 3, 1944, p. 24, col. 3.

[25] *Ibid.* Very large shipments of Lend-Lease synthetic rubbers confirm the shortages. Some $36 million worth of manufactured rubber goods, 1½ million pounds of synthetic rubber, and more than $115 million worth of tire casings, as well as camelback and rubber cements, were shipped. (Jordan, *op. cit.*, pp. 158–9.)

[26] Frank A. Howard, *Buna Rubber* (New York: Von Nostrand, 1947), p. 241.

RECLAIMED RUBBER TECHNOLOGY[27]

In the early 1930s the proportion of reclaimed rubber to total consumption was about one-half and increasing. Thus reclaim processing was as important as original manufacture. Up to 1932 there were two tsarist plants in Moscow and Leningrad processing reclaim from rubber footwear by the acid process. The Leningrad plant was reconstructed during the First Five-Year Plan and supplemented by a new and much larger plant at Yaroslavl which produced 23 tons of reclaim per day from rubber tires by the alkali process.

The technology used in the new Yaroslavl plant was completely American, and used equipment made in the United States and in the United Kingdom to American design. It was the equal of the most modern plants under construction and the technology was significantly in advance of current European practice. The grinding operation, for example, utilized a 2.5- to 4-ton capacity chopper 'used at the best American plants but little known in Europe, though its capacity is very considerable.'[28] The devulcanizing room was of American layout, using two Louisville presses and three Sargent conveyor dryers. The washing process utilized Anderson moisture-expellers. The recuperating unit utilized a Dorr thickener and an Oliver vacuum filter. The mill room was of American layout but much of the equipment was supplied by the United Kingdom.[29]

CARBON BLACK MANUFACTURE

Carbon black is an important raw material in the manufacture of tires, about five pounds being required for each 10 pounds of synthetic rubber. The Soviets acquired carbon-black technology from three sources before 1945. First, a small, crude plant to manufacture carbon black from gas was designed and built by the Marietta Manufacturing Company in 1930. Then during World War II Soviet engineers acquired a good deal of technical information from United States plants. After World War II the Soviets took as reparations the largest of the German plants manufacturing carbon black from crude anthracene residue.[30]

E. B. BADGER WOOD-DISTILLATION AND CONTINUOUS ALCOHOL UNITS

Two specialized plants for production of chemicals from wood products were erected by the E. B. Badger and Sons Company of Boston. In 1931–2

[27] Partly based on M. I. Farberov and V. N. Komarov, 'Russia's Reclaiming Process,' *The India-Rubber Journal*, CLXXXVII, June 23, 1934.

[28] *Ibid.*, p. 699.

[29] *Ibid.* See p. 699, for details of these units.

[30] U.S. Senate Foreign Relations Committee, *East-West Trade* (Washington, D.C.: November 1964), p. 51.

the Nadezhdinsk and the Ashinsky plants, near Sverdlovsk, were entirely designed by the Badger Company, and according to Alcan Hirsch, Chief Chemical Consultant to the Soviet Union 'closely resemble[d] the great plant they built for the Ford Motor Co. at Iron Mountain, Michigan.'[31] These were the most modern wood-distillation units and, as the Soviets have claimed, the largest in the world outside the United States. They produced 80 percent glacial acetic acid and C. P. Methanol grade wood alcohol, both using Badger Company processes. Alcan Hirsch described the equipment of the Ashinsky as follows:

> The still house is equipped with the latest type triple effect evaporators; acetic acid fractionating and concentrating apparatus, and wood alcohol and methyl-acetone refining equipment of the most modern, continuous type. The equipment is provided with heat exchangers and automatic temperature, pressure and flow regulators, and with the latest type controls and accessories for continuous production.

After stating that it was designed with emphasis on economy, Hirsch added that 'upward of a million dollars was spent on equipment being imported from this country.'[32]

In December 1935 a further agreement was made under which E. B. Badger and Sons agreed to build three complete continuous 97-percent alcohol-distillation and refining units, three complete 99.8-percent anhydrous alcohol units, three complete benzol-refining units, and three 'calandria for heating crude alcohol.'[33] These were completed in 1937 and 1938. The Soviets obviously continued to lag in alcohol technology in 1941, as in that year the Kellogg Corporation advised Amtorg that it was unable to supply an ethyl alcohol plant.[34]

CONCLUSIONS

This chapter has considered eight major chemical or allied industries.

The development of coke ovens—particularly by-product coke ovens—was based wholly on Koppers and Koppers-Becker designs, at first built by the Koppers Corporation or its licensees and then gradually by the Soviets themselves.

[31] Hirsch, *op. cit.*, p. 82. For a description of the Ford Iron Mountain wood-distillation plant, see W. G. Nelson, 'Waste-Wood Distillation by the Badger-Stafford Process,' *Industrial and Engineering Chemistry*, XXII, No. 4 (April 1930), pp. 312–5. The process was 'a radical departure from established procedure' and the plant was 'probably the cleanest wood distillation plant in the world.' A pilot plant had been built in 1924 after extensive investigation. The Soviets were able to acquire the Badger-Stafford process within one to two years after the Ford Motor Co.

[32] Hirsch, *op. cit.*, p. 83.

[33] U.S. State Dept. Decimal File, 861.602/284, Report No. 2209, Moscow Embassy, January 16, 1937.

[34] U.S. State Dept. Decimal File, 861.659/17, January 16, 1941.

The cement industry was almost completely of European origin; 91.5 percent of the kilns operating in 1938 were of foreign manufacture—chiefly Danish. Those of Soviet manufacture contained a great amount of foreign equipment and were built to foreign design.

Synthetic rubber is of considerable interest as the Soviets started with an initial advantage in the form of tsarist research. SKB rubber was a purely Soviet development, but by World War II Soviet development had slipped behind Western development and this necessitated imports of Neoprene, Houdry, and Styrene processes and equipment for manufacture of special rubbers. Reclaimed rubber technology was wholly American and carbon-black technology was American and German in origin.

Wood-distillation plants were built by E. B. Badger and Sons of the U.S. in 1931–2, and the same company built three continuous alcohol-distillation units in 1936–7.

Thus in these major chemical industries, seven technologies (coke-chemicals, carbon black, cement, high-tensile-strength synthetic rubber, reclaimed rubber, wood distillation, and alcohol distillation) were transferred from the West with no indigenous Soviet development. The eighth technology, synthetic rubber from butadiene, was one in which the Soviets had an initial research advantage; however, the Soviet industry did not develop as rapidly as that in capitalist countries, and in 1941 technology for more advanced synthetic rubbers was imported under the Lend-Lease program.

CHAPTER NINE

Technical Assistance to the Machine Building and Allied Industries[1]

Two plants, Uralmash and Kramatorsk, were of major significance in Soviet development between 1933 and 1945. These plants built machinery for heavy industry, including the iron and steel and non-ferrous smelting and rolling sectors. Both were equipped with the finest obtainable Western equipment and produced standard adaptations of Western designs, enabling multiple production of heavy equipment and machinery of known and reliable capability without investment in research and development.

The key to Soviet development is mass production for capital industries of heavy equipment (furnaces, kilns, compressors, etc.) of a standard type based on a proven Western design. This principle has three essential components: first, flow or multiple-unit rather than single-unit production; second, standardization to avoid the cost of customizing for a particular location and market; and third, avoidance of research and development costs by adaptation of a proven design.

EXPANSION OF THE FITZNER & HAMPNER MACHINE-BUILDING PLANT AT KRAMATORSK

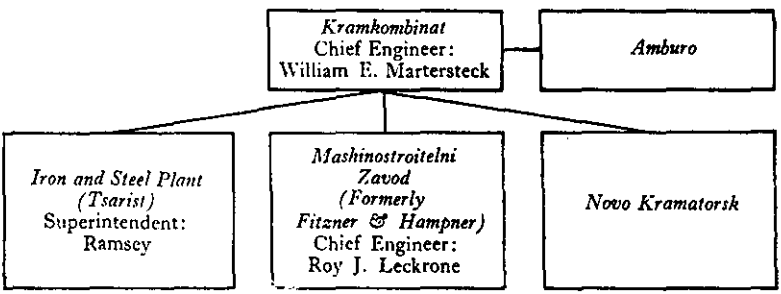
The Fitzner & Hampner plant founded in 1896 at Kramatorsk, about 225 kilometers southeast of Kharkov, manufactured general mining and metallurgical equipment (including cranes, ladles, and slag cars), using iron and steel products made in four small blast furnaces and rolled in mills associated with

[1] Sources for this chapter include the U.S. State Dept. Decimal File; Oberkommando der Wehrmacht records in the National Archives; articles in the U.S. trade press for the machine tool industry; L. A. Aisenshtadt's *Ocherki po istorii stankostroeniya SSSR* (Moscow: 1957); and an informative article by Joseph Gwyer, 'Soviet Machine Tools,' in *Ordnance*, November–December 1958. For a different argument, see David Granick, *Soviet Metal-Fabricating and Economic Development* (Madison: University of Wisconsin, 1967). Granick's study is based wholly on Soviet source material.

the plant. This plant was little used by the Soviets until the early 1930s. Then enormous capital investments in the newly formed Kramatorsky combine (Kramkombinat) turned the old plant into the largest machine-building unit in the Soviet Union, with three main sections: the original iron and steel mills at Kramatorsk, the Fitzner & Hampner machine works (both considerably expanded with new imported equipment), and a gigantic new enterprise, Novo Kramatorsk, far larger than the early plant. The latter was opened in sections beginning in 1931.

The first new unit of Novo Kramatorsk was a steel construction shop to manufacture structural steel work for the Dniepr Dam and the Magnitogorsk and Kuznetsk iron and steel plants. A large forge shop followed, 'equipped with modern machinery imported from abroad and partly produced in Soviet factories'[2] to produce forgings of up to one and a half tons. In addition there were two iron foundries: one of 27,700 square meters for large and medium castings and one of 17,000 square meters for small castings. A 60,000-square-meter steel foundry—the largest in Europe—was added. It was supplied by four open-hearth and four electric furnaces.

Figure 9–1 STRUCTURE OF KRAMKOMBINAT, 1930–2



Source: Construction from data in U.S. State Dept. Decimal File, 861.5017—Living Conditions/568, /553.

Later extensions comprised three mechanical shops (A, B, C). Shop A produced rolling-mill equipment; Shop B blast-furnace equipment, open-hearth furnaces, and coke ovens; and Shop C vacuum drums, cylinders, generator shafts, pinions, and turbine rotors. More than 600 machines of the finest Western make were installed in these three shops. The first group of departments opened in 1932. By August 1934 the plant had 13 large departments operating. The balance came into operation by 1936–7.

[2] *U.S.S.R. in Construction*, No. 7 (July 1932). The Soviet machines were the simplest types of lathes and drilling machines, as the machine-tool plants were not producing modern units. All the heavy presses and forges were imported.

Technical assistance supplied to Kramkombinat began on an informal basis; i.e., it was unrelated to specific Western firms, and comprised groups of both American and German engineering designers and specialists. After 1936 it was supplied by contract with United Engineering and Foundry, and possibly by Demag A-G.

The American contribution began with a conversation sometime in 1929 between Meshlauk (in charge of heavy industry) and William Martersteck, a member of the Freyn Engineering Company staff in the U.S.S.R. Martersteck was an experienced steel-rolling-mill designer and suggested to Meshlauk that the Soviet Union should make its own rolling-mill equipment rather than import it. It was suggested that this would provide training for Soviet engineers and in any event help solve the eventual problem of repairing imported equipment. Meshlauk was impressed. He sent Martersteck back to the United States, where, independently of the Freyn Corporation, he gathered a party of 20 U.S. engineers and designers. They returned in December 1930 to the Kramatorsk plant.[3]

Martersteck was Chief Engineer of a group consisting of five machine-shop designers, three foundry experts, one pattern-shop expert, one open-hearth expert, one expeditor for the planning department, two crane designers, five steel-mill machinery designers, and one steel-mill operator. All were employed on a two-year contract payable in U.S. dollars plus rubles. Total wages for the group were $14,350 and 10,600 rubles per month.

After several months spent working on small projects, the group was requested to design a rolling mill: the standard blooming mill later produced at Kramatorsk. In February 1932, concurrently with Soviet financial difficulties, the group was informed that the contract would be terminated March 1, 1932 and replaced with another contract employing only Martersteck, seven designers, and Ramsey, the steel-mill operator—with a 50 percent pay cut. One of the crane designers refused and returned to the U.S.[4] By the end of 1933 only one designer, Puttman, remained in the Soviet Union.

The Martersteck group formed, for about 18 months, a mill-design bureau. Individual American and German engineers were also employed in both the

[3] U.S. State Dept. Decimal File, 861.5017—Living Conditions/568, Riga Consulate, November 22, 1932, interview with Karl E. Martersteck (his son); and 861.5017/553, Riga Consulate Report No. 892, November 4, 1932, interview with Miriam Martersteck, Russian wife of Karl.

[4] As the group had a two-year contract, this was a clear breach of contract by the Soviets. A somewhat harsher view is given in a letter written by E. G. Puttman, a blooming-mill specialist. Puttman says that half the group was dismissed on 'trumped-up charges' and a month later the others had their dollar allowances cut. After bargaining for 5 months, Puttman was given the Soviet terms: accept or face termination. He accepted and a simple rider covering the changes was added to the contract. He was unable to obtain a copy of this 'voluntary agreement.' (See U.S. State Dept. Decimal File, 861.602/254.)

old and new Kramatorsk plants. The Chief Engineer of Mashinostroitelni Zavod was Roy J. Leckrone,[5] who reported that 26,000 Russian workers were fabricating steel for the Dniepr Dam and making iron and steel plant machinery and 400 gun limbers.

Although Martersteck and Leckrone stayed on until 1933, most American designers and engineers left at the time of the valuta crisis and were replaced with Germans—some 500 at Kramatorsk alone—willing to work for rubles without foreign currency.[6]

The machine-shop equipment at Kramatorsk was evidently British and German. Sir Walter Citrine, General Secretary of the Trades Union Congress of Great Britain, reported in 1936 after a lengthy tour of Kramatorsk, 'I saw many machines by English makers, amongst them Craven, Asquith, Herbert, Igranic and Richards, and these and German machines dominated the shops. . . .'[7]

In 1936 the United Engineering and Foundry Company of Pittsburgh signed an agreement with the Soviet Union to design, construct, and install both hot and cold steel-strip mills. These reflected the very latest in American steel technology. Such wide-strip mills were essential for production of automobile body sheets. The contract included special designs in millimeter measurements and technical assistance to the Kramatorsk works to build such mills. Soviet engineer P. Perepelitsa spent two years in the United States at United Engineering plants and American engineers in turn worked at the Kramatorsk plant. On his return to the U.S.S.R. in 1937, Perepelitsa wrote an objective comparison of work at the United plants and at Kramatorsk[8] and quite clearly had greatly benefited from his lengthy exposure to American production methods.

Preparations for installing the strip mill in the U.S.S.R. were supervised at Kramatorsk by T. W. Jenkins,[9] who summarized the Russian engineering position at that time as follows: 'Soviet engineers are not yet able to execute American blueprints which require great precision and . . . the lack of highly skilled workmen for the execution of such work is a great handicap to Soviet plants.'[10] Even casting for the strip mills required skilled workmen from

[5] U.S. State Dept. Decimal File, 861.5017—Living Conditions/542, Istanbul Consulate, October 5, 1932.

[6] *Ibid.*, 861.5017—Living Conditions/553. The Germans were treated as Russians and paid 150 rubles per month, whereas the American designers had been earning up to $1,000 plus 500 to 600 rubles per month.

[7] W. Citrine, *I Search for Truth in Russia* (London: Routledge, 1936), p. 222.

[8] *Za Industrializatsiiu*, No. 10, January 12, 1937.

[9] U.S. State Dept. Decimal File, 861.6511/35, Report No. 19, Moscow, February 3, 1937.

[10] *Ibid.*

the United States.[11] It is interesting to note that the Perepelitsa article is reasonably consistent with Jenkins' criticisms and, coming at the time of the purges, is a remarkably frank commentary.

On the other hand, some progress in learning was undoubtedly being made in the U.S.S.R. In 1936 Kramatorsk turned out the first Soviet coking machine, a copy of a Koppers model, which, while not of the same order of construction complexity as a strip mill, still represented a considerable advance from the 1930–2 period.[12]

During the German occupation, Kramatorsk was turned over by the German occupation authorities to Berg und Hüttenwerke-Gesellschaft Ost m.b.H., which repaired the buildings, plant, and existing machinery, and assembled raw materials. Initial work consisted of the repair of mining machinery.[13] Early in 1943 Alfred Krupp requested a special report on Kramatorsk, submitted on August 13, 1943 by Dr. Hedstueck, deputy plant manager. This report resulted in an order to all Krupp departments in Germany to render all necessary assistance to the renamed Neue Maschinenfabrik Kramatorsk, 'especially as regards placing at their disposal the material and manpower

Table 9–1 ANNUAL CAPACITY OF SOVIET HEAVY-MACHINE-BUILDING PLANTS

Non-Military Heavy Equipment	*Kramatorsk**	*Uralmash**	*Expanded Tsarist Plants***
Standard blast furnaces	6 per year	4 per year	4 per year
Standard (150-ton) open hearths	30 per year	20 per year	20 per year
Standard blooming mills	3 per year	2 per year	2 per year
Other blooming mills	13 per year	10 per year	12 per year
Gas generators	150 per year	50 per year	50 per year
Heavy forgings	24,000 tons	20,000 tons	—
Mining equipment	—	17,000 tons	—
Non-ferrous metallurgical equipment	—	5,000 tons	—
Heavy presses	—	5,000 tons	—

* Output for Uralmash includes all important items. Kramatorsk also produced turning lathes, 125-ton cranes, heavy hoists and gas-blowing machines. Kramatorsk output includes that for the Fitzner & Hampner plant established in 1896 and incorporated into the new Kramatorsk plant next door. Both plants had a considerable military capacity.

** Output estimated.

Sources: American-Russian Chamber of Commerce, *Handbook of the Soviet Union* (New York: John Day Co., 1936), p. 152.
U.S.S.R. in Construction, No. 7 (July 1932).

[11] *Ibid.*

[12] I. L. Nepomnyashchii, *op. cit.*, p. 5.

[13] *Report on Russian Foundries*, April 14, 1943, Nazi Industry Reports, No. 4332 (at Hoover Institution).

urgently required for starting production in the tank maintenance plant which is of vital importance to the fighting troops.'[14]

By August 1943 there were 2,000 Russian workers at Kramatorsk, working mainly on tank and military equipment repairs and producing small tools such as shovels, hammers, and wheelbarrows. Very little complex equipment was manufactured, although one order was for 1,000 cylinder-boring and grinding sets for the Wehrmacht.[15]

THE URALMASH PLANT AT SVERDLOVSK

Uralmash was another giant plant, only slightly smaller than the expanded Kramatorsk complex. Designed to build equipment for the mining and metallurgical industry, Uralmash also produced large quantities of military goods.

Uralmash opened July 15, 1933, but as late as 1936 was working at only 60 percent capacity. The complex contained numerous shops and departments handling production procedures all the way from raw-material conversion through steel manufacture to the production of finished heavy equipment. By 1936 Uralmash could produce prefabricated submarines.

Table 9–2 REPRESENTATIVE LIST OF GERMAN EQUIPMENT SUPPLIED TO URALMASH

Description	*Cost (Millions of Marks)*	*Supplier*
Generator plant (peat)	1.25	'Machine factory in Berlin'
Boiler plant (550 square meters)	0.75	'West German' plant
Steam turbines	—	'Silesian machine plant'
Cranes	2.0	Several German plants
Tilting furnaces	0.5	'West Germany'
Roll-turning machines	0.6	'West German plant'
Forge ovens	0.4	'Middle Germany factory'
Forge shop cranes	0.7	'Rhineland machine plant'
Forging press and installations	0.8	'Rhineland machine factory'
Drilling banks	1.0	'Berlin tool plant'
Drilling machines, lathes, etc.	3.0	'Rhineland machine factory'

Source: Sowjetwirtschaft und Aussenhandel, Handelsvertretung der UdSSR in Deutschland, Berlin SW., IX–XII, 1930–3.

Construction required some 12,000 workers; 'about 150 foreign specialists and workers were engaged to help in the construction and operation of the

[14] *Report on Neue Maschinfabrik Kramatorsk,* in Nazi Industry Reports, No. 2959 (at Hoover Institution).

[15] *Ibid.*

factory.'[16] The construction and design of several key departments, such as the foundry, were American in concept, and American engineers were hired to design layouts and develop methods of reinforcing concrete for the plant.[17] The complex included foundries, hammer and press shops, forge shops, heat-treating shops, two mechanical departments, and machine fabrication and assembly shops. The equipment came largely but not completely from Germany.

Scott received a conducted tour of the plant in 1935–6 and wrote an enthusiastic description:

> It is one of the best-looking plants I have ever seen. The first mechanical department was a beautiful piece of work. A building a quarter of a mile long was filled with the best American, British and German machines. It was better equipped than any single shop in the General Electric Works in Schenectady. There were two immense lathes not yet in operation. Later I found out that they were used for turning gun barrels.[18]

CHANGES IN THE SOVIET DEMAND FOR IMPORTED MACHINE TOOLS

The Kramatorsk and Uralmash plants were primarily intended for construction of heavy equipment, although they did manufacture heavy machine tools such as presses and forges. Machine tools—lathes, shapers, grinders, broachers, and similar tools—were manufactured in large, specialized plants, some of which were expanded tsarist plants and some completely new Soviet enterprises.

This construction and expansion of giant specialized tool plants did not, as has been suggested by some observers, reduce the total Soviet demand for foreign equipment in the 1930s,[19] although it did change slightly the structure of that demand. In 1931 most American, United Kingdom, and German machine-tool exports in all categories were going to the Soviet Union. (See table 9–3.)

[16] *Factory and Industrial Management*, LXXX, No. 2 (1931), p. 637.

[17] Amtorg, *op. cit.*, IX, No. 10 (October 1934), p. 198.

[18] Scott, *op. cit.*, p. 103.

[19] For example, see Harry Schwartz, *Russia's Soviet Economy* (New York: Prentice Hall, 1950): 'But as Soviet machine tool and machinery factories increased their output as Soviet engineers mastered advanced foreign technology, the U.S.S.R.'s imports of machinery and technicians from abroad could be and were reduced.' (P. 241.) On the other hand American engineers working in Russia correctly foretold the need to continue machine tool imports. For example, see A. M. Wasbauer, 'Machine Tools for the Soviets,' *American Machinist*, v. 78, February 1934, pp. 147–9. In 1933–4 Wasbauer was on the Design Commission in charge of heavy-machine-tool design.

Table 9–3 PERCENT OF U.S. MACHINERY EXPORTS GOING TO SOVIET UNION, 1930–1

Equipment Item	*1930 (Percent)*	*1931 (Percent)*
Drilling machines	51.79	78.05
Foundry and molding equipment	57.56	73.81
Milling machines	42.01	70.26
Forging machinery	51.92	67.54
Vertical boring mills	36.25	65.68
Lathes	50.73	65.61
Planers and shapers	36.61	64.60
Other metal machines	35.98	59.98
Grinding machines	29.56	57.90
Sheet and plate metal working machines	30.93	53.91
Other metal working machines	36.79	35.82

Source: Amtorg, *op. cit.*, VII–VIII, No. 10 (May 15, 1932), p. 223.

In the case of the United Kingdom, the impact of Soviet purchases was almost complete; in 1932 the Soviet Union took no less than 90 percent of all United Kingdom machinery exports.[20] In some machinery categories the Soviets took almost all United Kingdom exports: £161,000 worth of presses were exported, of which £157,000 worth (98.1 percent) went to the Soviet Union. In the same year the U.K. exported £382,000 worth of planers, of which £365,000 worth (95.5 percent) went to the Soviet Union. Of other machine tools such as lathes, drilling machines, and grinders, 90 percent of U.K. exports went to the U.S.S.R.[21]

By 1935–6 production of engine lathes, semi-automatic and single-spindle automatic lathes, planers, and some pneumatic tools had been 'mastered' by the Russians, but objectives for the following year still included such machine tools as axle-turning lathes, six-spindle automatics, internal grinding machines, and radial drills, and many other types.[22]

At the end of the 1930s, the Soviet Union was still importing significant quantities of machine tools, and its trade agreements were negotiated with this as a primary objective. The 1939 trade agreement between Germany and the Soviet Union placed great emphasis on machine tools. After indicating that Germany would grant a 200-million-Reichmark credit, a 'Strictly Confidential' German Foreign Office memorandum adds:

> The credit will be used to finance Soviet orders in Germany. The Soviet Union will make use of it to order the industrial products listed in schedule

[20] *Engineering*, July 27, 1934, p. 86.

[21] *Ibid.*

[22] 'Machine Tool Building in Russia,' *Machinery*, v. 42, October 1935, p. 107.

> A of the agreement. They consist of machinery and industrial installations. Machine tools up to the very largest dimensions form a considerable part of the deliveries. And armaments in the broader sense (such as optical supplies, armor plate and the like) will, subject to examination of every single item, be supplied in smaller proportion.[23]

Soviet requests and delivery schedules under the agreement reflect a primary interest in large, specialized machine tools.[24] It appears that German-occupied Czechoslovakia also played an important role in supply of machine tools. Between March 1939 and August 1940, more than 85 percent of Czech exports to the Soviet Union consisted of machines and apparatus of various kinds, and much of the remaining 15 percent consisted of iron and steel products.[25]

Soviet stripping of Manchurian industry in late 1945 confirms their overriding interest in machine tools; so many machine tools were removed that the productive capacity of the considerable Manchurian metal working industry was reduced by some 80 percent. For example, the Manchurian Machine Tool Company plant at Mukden was completely removed to the Soviet Union. An American engineer from the Pauley Mission visited the plant in June 1946 and reported, 'There was very little to observe in this factory except the absence of equipment. Everything of value was removed.'[26]

Between September and October of 1945, 120 Soviet officers and men had been billeted in the plant; in 40 days, with the help of 200 Japanese employees, they 'stripped the equipment listed, crated it individually and completely, and shipped it out by rail.' This plant produced small lathes, automatic lathes, drilling machines, and milling machines. Similarly, the Manchu Machine Works was stripped of 90 percent of its equipment, and half a dozen similar large plants, each with several thousand machine tools, were removed to the U.S.S.R.[27]

[23] Raymond J. Sontag and James S. Beddie, *Nazi-Soviet Relations, 1939–1941* (Dept. of State, Washington, D.C., 1948), p. 83. (Translation of Foreign Office Memorandum, August 29, 1939.) See also the negotiations between Germany and the U.S.S.R., 1939 to 1941, in the Hauptarchiv, Hoover Institution, Boxes 1137 and 1138.

[24] Hoover Institution, Hauptarchiv, Box 1138. For example, see Documents 324623–29.

[25] Hoover Institution, Hauptarchiv, Box 1137, *Ausfuhr-Warenverkehr des Protektorate Böhmen und Mähren mit der U.d.S.S.R. vom 16.3.1939 bis 31.8.1940.* See Tariff Classes 38, 40, and 41.

[26] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July, 1946* (Washington, D.C.: 1946), Appendix 7, 'Plant Inspection Report 1-J-3.' The question of reparations will be covered in Vol. III.

[27] *Ibid., Appendix 7*, 'Plant Inspection Report 1-J-7.' The Northeast Economic Commission says the plant was 100-percent stripped; the U.S. inspecting engineer says the figure was closer to 90 percent.

A continuing interest in machine tools is also suggested by the recommendations of the Pauley Mission on Japanese reparations,[28] the machine tool section of which was written by Owen Lattimore.[29] 'Although I do not believe that the U.S.S.R. should assert a substantial claim for reparations from Japan, nevertheless certain plants and machine tools may well be made available to the U.S.S.R.'[30]

The reason given was that low levels of economic development in the Far East would make absorption of this industrial capacity by other countries 'difficult' and that China and the Philippines were not technically ready to receive such reparations.[31] Lattimore presented the topic to the Reparations Committee on January 12, 1946 and suggested that after war damage was taken into account Japan might have 850,000 machine tools available for reparations. As China and the Philippines had already been ruled out on the grounds they were economically backward and therefore had no need for such equipment, the obvious recipient would be the Soviet Union. China had already lost its share of reparations by quick Soviet action in Manchuria, where the machine tools taken by the Soviets were actually a charge against Chinese reparations claims.[32]

This continued Soviet demand for certain important categories of machine tools is supported by tabulations compiled by Joseph Gwyer.[33] Between 1932 and 1945 approximately one-half of the steadily increasing machine-tool

Table 9–4 COMPOSITION OF SOVIET MACHINE TOOL PRODUCTION, 1932–45

Tools Produced	*1932*	*1940*	*1945*
Total machine tools produced	19,978	58,437	38,419
Group A: lathes (not turret or semi-automatic)	7,145	11,523	13,063
Group B: vertical drilling machines	6,838	15,251	7,168
Groups A and B as percent of total	72.8%	45.8%	52.7%

Source: Adapted from Joseph Gwyer, 'Soviet Machine Tools,' *Ordnance*, XLIII, No. 231, November-December 1958, pp. 415–9.

[28] Edwin W. Pauley, *Report on Japanese Reparations to the President of the United States, November 1945 to April 1946* (Washington: April 1, 1946).

[29] For background of Owen Lattimore, see Anthony Kubek, *How the Far East Was Lost* (Chicago: Regnery, 1963), pp. 263–4.

[30] Pauley, *Report on Japanese Reparations . . . 1946*, p. 13.

[31] *Ibid.*

[32] *Ibid.*, pp. 18–9.

[33] Joseph A. Gwyer, 'Soviet Machine Tools,' *Ordnance*, November-December 1958.

production was comprised of just two elementary types: simple lathes (excluding turret and semi-automatic lathes) and vertical drilling machines. (See table 9–4.)

If we analyze Soviet production in complex machine-tool categories, we find that by 1945 the Soviets were hardly beyond the prototype stage. In 1932 no broaching machines were made, and in 1945 only five. In 1932 only 46 slotters were made; this declined to 20 in 1945. No radial drilling machines were made in 1932 and only 43 in 1945. Some 233 planers were made in 1932, but only five in 1945. Finally, only 42 machines described as 'large, heavy, unique' were made in 1945.[34]

Thus the structure of Soviet machine-tool production in 1945 is quite clear. Output was concentrated on producing very large numbers of very simple machine tools. Even tools of moderate complexity (radial drills, broachers, and slotters) were imported. Thus the dependence of the Soviet Union on the West was almost as great in 1945, as far as machine tools were concerned, as in 1932. Only two groups of fairly simple machine tools had been mastered with any degree of certainty by 1945, and this circumstance was brought about only by Western technical assistance to individual machine-tool plants.

TECHNICAL ASSISTANCE TO MACHINE-TOOL PLANTS

The Podolsk plant, about 24 miles from Moscow, employed some 2,000 workers on the production of turret lathes. This plant had a technical-assistance agreement with Frank D. Chase, Inc., and was subsequently reorganized on American lines by John W. Lundin, who installed a large refinery and metal casting plant.[35] The Frank D. Chase consulting organization also undertook three other large foundry projects. The first, in 1929, was for production of sewing-machine castings; for this purpose the company brought back Soviet engineers to the United States and 'made the design, drawings, specification and purchase of equipment in this country.'[36] The very large foundry at the Stalingrad Tractor Plant was built under a Frank Chase contract, as was the foundry at the Putilovets plant; in these, Chase also supervised construction, installation of equipment, and initial operation. The Putilovets plant was

[34] *Ibid.* It could be argued quite accurately that Lend-Lease was supplying Soviet imports of more complex tools. However, if the Soviet Union had the production capability for these tools it is likely that requests would have been for other urgently needed equipment. Lend-Lease was not a bottomless barrel, and the Soviet Union was required, even though the Administration gave first priority to the Soviets, to establish priorities and make choices.

[35] U.S. State Dept. Decimal File, 861.5017—Living Conditions/274 and /482. See also Sutton, *Western Technology . . ., 1917 to 1930*, p. 72.

[36] *American Engineers in Russia*, C. R. Cody folder.

'the first modern mechanically equipped foundry completed in Russia [and] also one of the early projects of the Five Year Plan. . . .'[37]

The Prisposoblenie plant of Orgametal in Moscow was stocked in the early 1930s with 'the very latest in American machine tools—rows of milling machines and other machine tools of the most approved design.'[38] This was in addition to a sprinkling of German millers, shapers and lathes. According to Walter Wells,[39] Prisposoblenie had the responsibility of establishing standards, and dies and jigs were built at Prisposoblenie for Soviet tool-manufacturing plants.

The Krasny Proletariat plant in Moscow was an expanded tsarist plant previously known as Bromley Brothers, making small diesels with German technical assistance in the late 1920s and then lathes. The first lathe models produced in 1929–30 were cone pulley types, replaced in 1932 by the new Soviet standard lathe 'which follow[ed] very closely the design of the German standard machine' and was produced in three sizes—150, 200, and 300 millimeters (center height).[40] In 1932, 20 were produced and in 1933 only 550, although 6,000 were planned.[41] By 1937 the plant employed some 7,500 workers, still producing standard lathes.

Another very large Moscow plant was the Ordzhonikidze (Works No. 28), built in 1930–2 and by 1940 employing 5,000 in three shifts. Production started with 65-millimeter turret lathes 'which were direct copies of a Warner & Swasey machine.'[42] In 1934 the Plan added production of a semi-automatic multi-tool lathe: 'a copy of the Fay automatic.'[43] In 1937 another model was added—the first multi-spindle automatic built in the Soviet Union: 'a copy of the Cone machine.'[44] *American Machinist* commented, 'With these machines as the base, Ordzhonikidze built-up experience in the shops and the design office. These were the only three types of machines made until the beginning of World War II when Russia modernized and improved tooling. . . .'[45]

The Leningrad Ilytch works concluded a technical-assistance agreement in 1928 to run for three years with the firm Vereinigte Carborundum und Elektritwerke A-G of Neu-Betanek in Czechoslovakia.[46] This plant was

[37] *Ibid.*

[38] Walter Wells, 'An American Toolmaker in Russia,' *American Machinist*, LXXV, November 26, 1931, p. 816.

[39] *Ibid.*

[40] L. A. Aisenshtadt, *Ocherki po istorii stankostroeniya SSSR* (Moscow: 1957), pp. 171–3.

[41] *Machinery*, September 1931, p. 54. Included is an outline drawing of the lathe.

[42] *American Machinist*, November 19, 1956. (See also chap. 18.)

[43] *Ibid.*

[44] *Ibid.*

[45] *Ibid.*

[46] *Die Chemische Fabrik*, I, No. 18 (May 2, 1928), p. 256.

Table 9–5 SELECTED SOVIET MACHINE TOOLS AND WESTERN ORIGINS, 1930–50

Class of Equipment	*Models* (basic model in *italics*)	*Years Produced*	*Western Origin of Basic Model*	*Specialist Plant in the U.S.S.R.*	*1941 Plan Output*
Gear-cutting machine	*Pfauter*, 532, (750 mm)	1931—after 1950	Pfauter (Germany)	Komsomolets (founded 1909)	70
Boring machine	*R-80*, A-80, (80 mm)	1930—after 1950	Union		
Cylindrical grinding machine	*Fortuna*, 316, 316 M (250 mm)	1930—after 1950	Fortuna	Zlatoyet	1,647
Centerless grinder	*3180*, (5–75 mm)	1945—after 1950	Cincinnati		105
Shaper	*Sheping*, 7S35, 735 (500 mm)	1926—after 1950	Pre-World War I model	Samotochka (founded 1898)	
Bench lathe (150 mm)	*Chemnitz*, 162 SP, 1615, 1615 M	1930—after 1950	Chemnitz (Germany)	TZ-K	4,638
Bench lathe (200 mm)	*Standard DIP series*, 1D62, 1D62M, 1A62	1932?	Standard German model (replaced Tn series)		5,387
Gear-cutting lathe			Krause (Austrian)		95
Turret lathe (65 mm)	*136*, 1M36	1935—after 1945	Warner & Swasey Model 2A		1,600

Sources: L. Aizenshtadt, *Ocherki po istorii stankostroeniya, SSSR* (Moscow: 1957)
L. Turgeon, *Prices of Metalworking Equipment in the Soviet Union, 1928–1951* (Santa Monica: RAND Corp., 1953), Research Memorandum RM 1112.

expanded after 1934, by an expenditure of more than 30 million rubles, to include production of two models of the German Stock tool grinders (after expropriation of the Stock concession); the plant also produced in 1934 its first Cincinnati universal tool grinder, 'fully equal to the American product.'[47]

Similarly the Frunze plant was reported as 'preparing to produce the German automatic lathe, Index, of the firm Hahn and Kolb, Stuttgart and . . . to produce 45 units in this year [1934] and 500 units up to 1938.'[48]

SPECIALIZED AND AUTOMATIC EQUIPMENT

While the expanded tsarist and new machine-tool plants concentrated on producing large quantities of single models based on Western designs, there remained an unfilled need for specialized equipment of a sophistication far beyond Soviet capability. As each machine model was produced, imports were halted even if the Soviet version was decidedly below the import in quality; machine imports from the early 1930s to the present time have been concentrated in specialized equipment not produced in Soviet plants.

Given the Soviet concentration on mass production of standardized products, automatic machinery was a prime requirement. Such machines came primarily from the United States. One such order was for a shipment of 47 Fay automatic lathes[49] for machining the motor cylinders, pistons, and sprocket shafts of the No. 60 Caterpillar tractor being built at Chelyabinsk.

The use of imports to supplement limited internal production capabilities is well exemplified in the case of gear-cutting machines. In 1933–4 the only gear-hobbing machine produced was the Pfauter model at the Komsomolets plant in Yegorievsk, near Moscow, an old tsarist plant founded in 1909 and specializing in production of this single German machine model. The Pfauter had very limited capacity. Specialized equipment was therefore needed to produce, for example, the high-quality gears used in high-speed rolling mills. For this purpose an engineering delegation was sent to the U.S. in 1934 to investigate available types of gear-cutting equipment. An order was placed with Farrel-Birmingham Co., Inc., of Buffalo, New York for two 'huge Sykes machines.' Although of design similar to others in Farrel-Birmingham's own plant, they were 'considerably larger, the one intended for the Kramatorsk plant having capacity for cutting gears up to 8 meters. . . .'[50] These machines,

[47] *American Machinist*, March 14, 1934.

[48] *Ibid.*

[49] Ralph E. Miller, 'American Automatic Machinery Aids Soviet Reconstruction,' *The Iron Age*, CXXXI, No. 4 (January 26, 1933), pp. 16–24. Miller describes these machines, shipped in 1932, in detail. A comparison of the Fay (in Aisenshtadt) with Miller's description of the machines produced supports the estimate of American and Soviet capabilities.

[50] 'Large Farrel-Sykes Gear Generators for Soviet Russia,' *Machinery*, XLIII, November 1936, pp. 211–2.

weighing 130 tons each, could cut gears weighing up to 50 tons each. One Sykes machine was for Uralmash and one for Kramatorsk.[51] Design of the Sykes machines occupied eight engineers and draftsmen for more than one year and actual manufacture about 15 months. They were probably the largest such machines in the world.

In the field of rolling-mill equipment, a large gear drive was made by the United Kingdom firm of David Brown and Sons (Huddersfield), Ltd., from castings supplied by the English Electric Corporation. This gear drive weighed 24 tons, was designed to encounter peak loads of 10,800 horsepower and was described as 'probably the largest gear wheel of its kind ever cast in one piece.'[52]

Other special designs, supplied by the British firm of Davy Brothers, Ltd., of Sheffield, were for large forging manipulators ranging from 5 to 15 tons capacity. Known as the Davy-Alliance models, they were the result of a special Davy study of forging manipulators.[53] The same company also supplied a 6,000-ton Davy patented forging press for the Stalingrad tractor works.[54]

Similar equipment for steel works was supplied by Craven Brothers (Manchester), Ltd., of Reddish, who in the early 1930s supplied a double 50-inch center lathe with a 112-foot by 9-foot 9-inch bed and 8-foot face plates.[55] German firms supplied similar large specialized equipment; for example, Maschinenfabrik Augsburg-Nürnburg A-G (MAN) supplied a 300-ton overhead traveling crane to serve a 15,000-ton forging press.[56]

Thus for the whole period under consideration the Soviets depended entirely on more advanced countries for imports of machine tools beyond the two simplest types.

THE ACQUISITION OF BALL- AND ROLLER-BEARING TECHNOLOGY

The Swedish SKF Company established a ball-bearing manufacturing plant in Moscow in 1917. After the October Revolution the company was given a concession agreement to continue operation of the original plant and build new facilities for the manufacture of complete ball and roller assemblies.[57] The new plant was opened in 1929. Although the basic agreement was for

[51] See p. 130 *et seq.*
[52] *Engineering*, CXL, July 26, 1935, p. 99.
[53] *The Engineer*, CLII, July 1931.
[54] *Ibid.*
[55] *Ibid.*, CLIV, 1932, p. 253.
[56] *Engineering*, April 27, 1934, pp. 482–3.
[57] Sutton, *Western Technology . . ., 1917 to 1930*, pp. 177–8.

40 years, both SKF plants were taken over in 1930 and renamed Moscow Ball-Bearing Plant No. 2.

Yearly production for the ex-Swedish SKF plants was three million ball and roller bearings. By 1937, under the management of 10 ex-SKF engineers, including the chief engineer (they all remained under individual ruble work contracts), production reached eight million bearings per year. The plant employed 15,000 workers in three shifts.

Table 9–6 TECHNICAL ASSISTANCE TO BALL- AND ROLLER-BEARING PLANTS

Location	*Technical Assistance*	*Production*
Moscow, Plant No. 1 (Kaganovitch)	RIV (Italy)	1938: 18 million ball and roller bearings
Moscow, Plant No. 2	Former SKF (Sweden) concession	1937: 8 million ball and roller bearings
Saratov, Plant No. 3	Imported U.S. equipment	Started about 1941 to produce 22 million ball bearings per year

Source: Oberkommando der Wehrmacht, National Archives Microcopy T 84–122–1421222/3.

Construction of Moscow Ball-Bearing Plant No. 1, the Kaganovitch, exemplifies Soviet economic development during the years 1930–45. The only completely new ball- and roller-bearing plant, with a full product range, to be constructed between 1930 and 1941, it covered an area of 1.5 million square feet under one roof. Whereas in 1931 all European anti-friction bearing plants together produced 120,000 pieces per day, the Kaganovitch alone was scheduled to produce 100,000. With an ultimate capacity of 40 million bearings annually, Kaganovitch could have equalled one-third of 1931 world production and one-half the United States production.

The plant cost 116 million rubles, including 35 million for 5,000 imported machines. It was conservatively described by Amtorg as 'one of the largest and most up to date of its kind in the world,'[58] with an output destined to provide all bearings necessary for production of the Amo (Fiat) 3-ton truck, the Yaroslavl (Hercules) 5-ton truck and bus, the Ford Models Gaz A and Gaz AA, the Fordson tractor, two models of the International Harvester tractor (produced at Kharkov and Stalingrad), the Caterpillar 60-horsepower tractor (produced at Chelyabinsk), and the Velo motorcycle and bicycle plant (Birmingham Small Arms Company). The Kaganovitch plant was a vital unit in Soviet industrialization.

[58] Amtorg, *op. cit.*, 'The Moscow Ball Bearing Factory,' VII, No. 9 (May 1, 1932), pp. 197–200.

The history of the Kaganovitch plant began in 1928 when Orgametal attempted to develop a construction plan.[59] In 1929 the plan was sent to Berlin, where a prominent German expert was employed as a consultant. Later in the year a Soviet Bearing Commission went to the U.S. and retained another engineer as consultant. Then followed a complex series of international expeditions, consultations, designs, and redesigns; 'finally a total of five bureaus in four countries, with three working simultaneously, were required to present a final plan. . . .'[60]

The technical-assistance picture was equally complicated. The Italian firm RIV (Officine Villar-Perosa of Turin) signed a technical-assistance contract to 'supervise the job complete from project to finished plant in operation.'[61] The company also accepted a 'large number' of Soviet workers and technicians in its plants for training.[62] RIV was a subsidiary of Fiat, which was partly American-owned; this provided a funnel for the transmission of American bearing technology, which U.S. manufacturers had been reluctant to provide directly. Albert Kahn, Inc., of Detroit designed the buildings.[63] In August 1930 Sharikopodshipnikstroi (Ball-Bearing Construction Trust) was transferred from the Machine-Building Trust to VATO (All-Union Automobile and Tractor Trust) and a number of top-flight U.S. engineers were sent to work in both Sharikopodshipnikstroi and the Kaganovitch plant itself. See table 9–7 for the organizational structure.

The Kaganovitch production program included 120 sizes of bearings: i.e., ball bearings (53 sizes, from E12 to 318), tapered roller bearings (35 sizes, from 40 to 200 millimeters outside diameter), helical roller bearings (20 sizes), cylindrical roller bearings (9 sizes, including the Hoffman type, from 40 to 160 millimeters), and simple ball retainer assemblies.[64]

The specifications and tolerances were based on the International Standard, somewhat more rigorous than the Society of Automotive Engineers standards used in the United States. Specifications also reflected foreign practice in the products using bearings. For example, in helical roller bearings, 'the final

[59] A series of five articles entitled 'Bearings for the Soviets,' by Frank Schubert, appeared in *American Machinist* in early 1933 and describes in detail the planning, construction, and output of the Kaganovitch plant. See *American Machinist*, LXXVII: April 12, 1933, pp. 229–32; April 26, 1933, pp. 273–6; May 10, 1933, pp. 296–9; May 24, 1933, pp. 334–7; and June 7, 1933, pp. 369–73.

[60] Schubert, *op. cit.*, *American Machinist*, LXXVII, April 12, 1933, p. 230. These countries were the United States, Germany, Italy, and the United Kingdom. Sweden, foremost in ball-bearing technology, was not a candidate, as the Soviets were in the process of expropriating the Swedish SKF ball-bearing concession.

[61] *Ibid.*, p. 232.

[62] Amtorg, *op. cit.*, V, No. 18–19 (October 1930), p. 386.

[63] Schubert, *op. cit.*, *American Machinist*, LXXVII, April 12, 1933, p. 231.

[64] *Ibid.*, April 26, 1933, p. 273.

Table 9–7 ORGANIZATION OF THE BALL-BEARING INDUSTRY, 1932

VATO
(Sharikopodshipnikstroi)
Chief Consulting Engineer:
H. S. Trecartin

Plant No. 1 (Kaganovitch)	Plant No. 2 (ex-SKF concession)
Director: H. J. Miller	Director: (Swedish engineer)
U.S. engineers in charge of:	
Tapered roller-bearing division	
Ball-bearing division	
Helical-bearing division	
Cylindrical-bearing division	
Russian engineers with U.S. assistants in:	
Stores dept.	Technical management under ten Swedish engineers
Forge shop	
Turning shop	
Heat-treating shop	
Grinding shop	
Ball-making shop	
Roller-making shop	
Press operations	
Assembling and packing	
Tool and die shop	
Repair and maintenance shop	

Sources: H. S. Trecartin, *Iron Age*, October 13, 1932.
F. Schubert, *op. cit.*

decision was based on Ford practice for bearings to be used in Ford type units and on the largest available commercial bearings for those to be used in other units.'[65]

Hoffman specification bearings were used on Yaroslavl 5-ton trucks and buses and International Harvester specifications for tractors produced at Stalingrad and Kharkov.

When the processes and specifications had been decided upon, the task became one of selection, purchase, and installation of equipment. Schubert comments: 'After the general technological processes had been laid out here, in America, the selection of machines became the making of a decision between

[65] *Ibid.*, p. 275.

two (or perhaps three, if available) different makes of machines for each operation.'[66]

Two Soviet buying commissions were appointed: one for Italy and Germany, and another for the United States and the United Kingdom. A buying plan was established which apportioned equipment purchases as follows:

United States: 185 grinding machines (a key component) valued at over $1 million, together with some helical roller winders[67]

Italy: electric furnaces, ball-making equipment, some ring-grinding equipment, roll-lapping machines, and polishing machines

United Kingdom: grinding machines

Germany: forging equipment, automatic screw machines, chucking machines, presses, gaging, and laboratory equipment

These were unusually large purchases; indeed, some German orders were transferred elsewhere as the firms were unable to handle such large quantities. For example, in Germany the initial 1931 order alone comprised 100 single-spindle chucking machines, 80 multiple-spindle chucking machines, 80 internal grinders, 120 oscillating grinders, and 30 ball grinders.

Altogether, about $30 million worth of equipment for Kaganovitch was made, installed, and initially operated by Western firms.[68] The Soviet machine-building plants, just getting into production, supplied the simpler tools: 'many lathes, some milling machines and some grinders. . . .'[69] Indeed, one of the first machines installed was a simple cylindrical grinder built in the Leningrad Karl Marx factory, a copy of the German model, Fortune. The special steel required was supplied by Elektrostal in Moscow and Zlatoust in the Urals; both plants had Western technical assistance.

For a plant of this size and complexity, construction was remarkably swift. Some site-grading was in progress in November 1930, and the plant was almost complete by September 1931. By January 1932 the first trial batch of bearings had been produced, and by March 1,000 machines were installed. The second

[66] *Ibid.*, May 10, 1933, p. 299.

[67] It is a reasonable deduction that a great deal of this equipment—particularly the grinding machines—came from the Bryant Chucking Grinder Company of Springfield, Va. (now part of the Ex-Cello Corp.). In 1931 Bryant shipped 32.2 percent of its output to the U.S.S.R., and in 1934 55.3 percent of its output. Then there were no shipments until 1938, when the Soviets again bought one-quarter of Bryant's annual output. Major shipments were made under Lend-Lease. After that there were none. In 1959 Bryant was prevented by Congressional action from shipping 46 Centalign-B machines for the manufacture of miniature ball bearings, mainly used in missiles. (U.S. Senate, Committee on the Judiciary, 87th Congress, 1st session, *Export of Ball Bearings Machines to Russia* [Washington, 1961], I, p. 41.) These shipments, from 1931 to 1959, coincide with the Soviet construction of ball-bearing plants.

[68] *Ibid.*, p. 299.

[69] *Ibid.*

section was opened in November 1933 and in that year the plant produced about 50 types of ball and roller bearings.

Understandably, such an enormous plant had its teething problems.[70] Planned to produce 24 million bearings in 1934, it achieved an annual rate of only 18 million by 1938. The SKF concession (renamed Plant No. 2), planned to produce only 3 million in 1933, was producing 8 million bearings per year by 1937 under its Swedish engineers, despite the severe problems after expropriation, when production fell 50 percent and the rejection rate increased from 2 to 14 percent.[71]

The large imports of ball and roller bearings under Lend-Lease suggest that the Soviets had problems assimilating bearing technology. In 1945 alone, $6 million worth of ball and roller bearings and their parts as well as manufacturing equipment were shipped under U.S. Lend-Lease.[72]

PLANS FOR THE MANUFACTURE OF DIESEL ENGINES

Before the October Revolution diesel engines were manufactured at the Nobel works in Petrograd and at the Kolomna works.[73] Both manufactured engines under license from Diesel. These arrangements ceased with the October Revolution and were replaced in 1927 with a license and technical-assistance agreement to manufacture MAN diesels at the old Nobel works (renamed Russky Diesel) and the Kolomna plant.[74]

During the late 1920s, production of diesels was expanded to occupy four plants: the Kolomna, Sormovo, Russky Diesel, and Krasny Proletariat; and about 20 million rubles was spent between 1926–7 and 1930 on these efforts to expand. Kolomna 'mastered' production of diesels (for the second time) in 1930, and was scheduled to produce two-thirds of Soviet diesels by 1932–3. The other three plants, together with the Dvigateli Revolutsii plant, the

[70] Walter Citrine, General Secretary of the Trades Union Council (United Kingdom), toured Kaganovitch in 1935 and was not impressed with plant construction, maintenance or working conditions: 'Not a single door fitted properly, the concrete floor was full of holes and rolled up and down, like the waves of the sea. . . .' (*Op. cit.*, p. 85.)

[71] H. S. Trecartin, 'Industrial Russia,' *The Iron Age*, October 13, 1932.

[72] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).

[73] 'The L. Nobel plant in St. Petersburg . . . was founded in 1862. The first diesel of 20 hp. was made in the plant in 1898. . . . In the period 1903–1910 the plant built marine diesels with a total capacity of 54,850 hp.' [E. M. Penova, ed., *Podvodnoe Korablestroenie v Rossii (1900–1917)*, (Sudostroenie: 1965), p. 356.] See also A Cyril Yeates, 'Nobel's Contribution to the Early Development of the Diesel Engine,' *Gas and Oil Power*, XXXII, No. 385 (October 1937), p. 255.

[74] *U.S. Naval Institute Proceedings*, 77, No. 3 (March 1951), p. 273.

Table 9–8 PLANNED MANUFACTURE OF DIESEL ENGINES: 1928–41

Soviet Plant	*Sulzer System*	*Nobel System*	*MAN System*	*Otto Deutz System*
Russky Diesel (tsarist Nobel Plant)	Marine diesels (1,400–2,700 hp.) Stationary diesels (1,500–3,000 hp.) Compressorless diesels (100–300 hp.)	Small diesels with compressors (150–1,000 hp.)*	—	—
Kharkov locomotive works (tsarist plant)	Marine diesels (100–465 hp.) Marine diesels Type S-47 (800–1,200 hp.) Stationary diesels (1,000–2,700 hp.)	—	—	—
Nikolaevsky im. Marti (tsarist shipyards)	Marine diesels (1,400–2,700 hp.)	—	—	—
Kolomna (tsarist plant)	—	—	Double action MAN (2,250–4,500 hp.) MAN system (165–1,575 hp.) including locomotive engines	—
Sormovo (tsarist plant)	—	—	MAN system (120–2,970 hp.)	—
Krasny Proletariat (formerly Bromley Brothers)	—	—	—	Small Deutz system diesel engines (10–200 hp.)
Dvigateli Revolutsii (Gorki)	—	—	MAN system BK-38 (70–150 hp.), unknown 'B' series with compressors	—

Source: Izvestia Vsesoyuznogo Teplotekhnicheskogo Instituta, No. 5, 1930, pp. 84–5.

* The tsarist plant had a Nobel license to manufacture diesel engines.

Komitern plant at Kharkov, and the Nikolaevsky shipbuilding yards, were planned to handle the building of the remaining one-third.[75]

At the same time, plans were made to expand production of Sulzer and Deutz diesel engine systems, each plant specializing in one foreign system with a limited range of end uses. The Sulzer agreement made in 1927 gave Lenmashstroi (Leningrad Machine-Building Trust) the right to make Sulzer diesels, the firm sending its own engineers and blueprints to assist in the process.[76]

The Kolomna works produced a variety of MAN-system diesels without compressors ('G' series) and with compressors ('B' series), in a range of horsepowers from 165 to 1,575. All were four-cycle engines. Production was scheduled to include locomotive engines for the E el-9 diesel electric locomotives and double-action marine diesels of 2,250 to 4,500 horsepower. The main productive effort in both large-horsepower and specialized models was expended at the Kolomna works on the German MAN system.

The Russky Diesel works specialized in heavy marine diesels and stationary diesels produced on the Sulzer system, together with smaller diesels on the Nobel system (R.D. construction). The Kharkov locomotive works concentrated on medium-size engines for ships and stationary use. The Nikolaevsky Shipyards (im. Marti) handled repair and construction of large marine diesels of between 1,400 and 2,700 horsepower on the Sulzer system. The Sormovo works, a very large tsarist plant, produced small and medium-sized marine diesels on the MAN system. Krasny Proletariat (formerly Bromley Brothers) specialized in small diesels (10–200 horsepower) on the Deutz system. Dvigateli Revolutsii at Gorki produced small and medium horsepower stationary diesels on the MAN system.[77]

Thus, each of the seven Soviet diesel engine plants produced a well-defined, narrow line of engines based on a single Western system. These domestically produced diesels were supplemented throughout by specialized imported engines. For example, the Krasny Oktiabr' electricity-generating plant at Stalingrad was equipped with three MAN 2,230-horsepower engines coupled to AEG 1,610-kilowatt a.c. generators.[78] A large order for 100 marine diesel engines for fishing boats with 96 to 104 horsepower was placed in 1932 with Ruston & Hornsby, Ltd., of England.[79] Even at the end of the 1930s large diesels were still imported; in 1938, for example, National-British Thomson

[75] *Izvestia Vsesoyuznogo Teplotekhnicheskogo Instituta*, No. 5, 1930, p. 78.

[76] Kassell, Lt. Cdr. Bernard M., '1,000 Submarines—Fact or Fiction,' *U.S. Naval Institute Proceedings*, LXXVII, No. 3 (March 1951), pp. 267–75.

[77] *Ibid.*

[78] *Izvestia Vsesoyuznogo Teplotekhnicheskogo Instituta*, No. 1, 1931, pp. 10–28.

[79] *Far Eastern Review*, March 1932, pp. 124–6.

Houston engines of 4,032 horsepower were made in the United Kingdom for Soviet power stations.[80]

The practice of producing Soviet diesels to standard well-known foreign designs, supplemented by selective imports, continued through the 1930s while Soviet research organizations experimented and tested different types, including those for tractor and road use.[81] In 1940, according to a German source, there was still only a limited range of diesel and gasoline motors produced in the U.S.S.R.[82]

[80] *Oil Engine*, No. 1, January 5, 1938, p. 283.

[81] See, for example, *Diesel Power*, II, No. 2 (November 1933), pp. 702–5; and *The Automobile Engineer*, XXV, No. 336 (September 1935), pp. 333–6.

[82] 'Motorenbau in Sowjet-Russland,' *Brennstoff-und Wärmewirtschaft*, January 22, 1940, pp. 7–10.

CHAPTER TEN

Technical Assistance for Electrical-Equipment Manufacture and Power-Station Construction

MANUFACTURE of electrical equipment, including transformers, switchgear, lamps, and motors, was concentrated in the VEO (All-Union Electrical Trust) with 34 plants: 14 in Moscow, 14 in Leningrad, and the rest in the Ukraine and Urals. This trust included all the tsarist electrical plants as well as several large units constructed after 1930; its principal works were Elektrosila (Leningrad, electrical machinery), Elektrozavod (Moscow, electrical machinery and switchgear), Dynamo (Moscow, traction motors and equipment), and Elektroapparat (Leningrad, switchgear). Technical-assistance agreements were concluded with numerous foreign companies, the most important of which were International General Electric (1929, extended through 1944), Metropolitan-Vickers (extended from the early 1920s to 1935)[1] and Radio Corporation of America (1927, extended to April 1941). These agreements were of enormous benefit to the U.S.S.R.; in 1932–3, for example, a proposal was made to build 150 new types of electrical apparatus under the General Electric and Metropolitan-Vickers agreements alone.[2]

As electrical-equipment manufacture was concentrated in a few plants of great size, the industry can be effectively considered on a plant-by-plant basis.

GENERAL ELECTRIC ASSISTANCE TO THE KHEMZ TURBINE PLANT AT KHARKOV

The second largest unit constructed under the Second Five-Year Plan[3] was a giant new turbine-manufacturing plant located in Kharkov. Begun in 1930,

[1] Metropolitan-Vickers engineers were expelled from the Soviet Union in 1933; the agreement may have continued for several years, but not beyond 1935.

[2] *The Electrical Review*, April 15, 1932, p. 555.

[3] Gosplan, *Vtoroi piatiletnii plan razvitiia narodnogo khoziaistva SSSR (1933–1937 gg)* (Moscow, 1934) I, p. 587.

partially opened in 1933, and completed in 1935, it absorbed a planned investment of over 87 million rubles. With an aggregate annual capacity of 2.3 million kilowatts of finished equipment, it had a productive capacity more than twice that of General Electric, which until that time had been the largest producer of turbines in the world.[4] Such a plant was urgently needed to produce large steam-turbine generators for the GOELRO (State Commission for the Electrification of Russia) program; up to 1933 these had all been imported.

VEO contracted with the International General Electric Company and Metropolitan-Vickers for design, construction, and technical assistance to KHEMZ. General Electric was the world's largest builder of steam-turbine generators, and prepared in Schenectady 'the complete architectural and engineering design for this new turbine manufacturing plant in which steam turbine generators of General Electric type in capacities of 50,000 kW and over were built.'[5]

General Electric engineers went to Kharkov to erect the plant and supervise installation of German equipment, and many Soviet engineers went to Schenectady for training. General Electric engineers also became members of Soviet commissions to purchase foreign equipment and tools for installation at KHEMZ. Solomon Trone, a General Electric engineer at KHEMZ, stated that 'the Kharkov plant is equipped with German machinery, but is, as far as possible, modelled after similar American plants.'[6]

The impact of KHEMZ was immediate and significant. Whereas before 1935 all generators and most turbines had been imported, after this date only one turbine was imported—an advanced design for the Union Heat Engineering Institute in Moscow.

The other turbine-manufacturing plant was the Putilovets plant in Leningrad, also a producer of locomotives, tractors, and automobiles. The Putilovets turbine shop had technical assistance from Metropolitan-Vickers, and the turbine shop was completely refitted with British machine tools in 1930–3 under the supervision of British engineers.[7]

[4] 'Kharkov Turbo-Generator Works,' *Metallurgia*, October 1932, pp. 187–8.

[5] *The Monogram*, November 1943, p. 19.

[6] U.S. State Dept. Decimal File, 861.5017—Living Conditions/616. Detailed information on General Electric work in the U.S.S.R. is scarce, as the company instructed its large force of engineers and workers not to discuss its work in the U.S.S.R. This instruction was interpreted by some of these personnel to include discussion with the U.S. State Dept.

[7] U.S. State Dept. Decimal File, 861.5017—Living Conditions/635, March 29, 1933. 861.5017—Living Conditions/617 records Metropolitan-Vickers assistance at the KHEMZ plant.

MOSCOW ELEKTROZAVOD[8]

The Moscow Elektrozavod plant employed more than 25,000 in 1941 and produced about one-fifth of Russian electrical equipment; the plant concentrated on transformers, rectifiers, electrical equipment, and accessories for the automotive and tractor industries, including electric light bulbs and special-purpose bulbs.

The transformer shop was stocked with Western equipment during the late 1920s and early 1930s, mostly from Siemens and A.E.G. in Germany. The A.T.E. shop produced electrical equipment, including magnetos and generators, for automobiles and tractors. The bulb shop was established by a group of eight German technicians between 1930 and 1935. There was a searchlight department with technical assistance from Sperry Gyroscope Company of the United States, and possibly there were other military production units. These shops were supplemented by a tool-making shop.

Elektrozavod was a heavy employer of German technicians—especially skilled toolmakers, almost all of whom came from the Berlin area, and were administered under a Foreign Bureau headed by Swassman. In December 1930 there were more than 100 Germans in the plant as heads of departments and in similar key positions. Pose also comments that a 'considerable number of foreign workers were placed in responsible posts.'[9] In the transformer department, German foremen included Müller, Schwartz, Drause, and Heinz, and the inspector was Schippel. In the A.T.E. department, Baument and Lampe were foremen. Horn was head of the bulb department repair shop, and Pose himself was in charge of the 14 imported machines in the rotor workshop.[10]

Not only were Germans scattered among the lower management levels but all-German and mixed German-Russian shock brigades and individual udarniks were created. Socialist competition was developed among German workers at Elektrozavod and at other electrical-equipment plants, such as Elektroapparat and Svetlana, both in Leningrad.[11] There was also General Electric technical assistance at Elektrozavod. Manufacture was begun on 220,000-volt transformers, at first for the Svir system, and then for other electric projects. These were G. E. designs, produced with the technical assistance of General Electric.[12]

[8] Details are from F. Pose, *German Workers in a Moscow Factory* (Moscow: 1933).

[9] *Ibid.*, p. 50.

[10] *Ibid.*, pp. 50–1.

[11] For an American view of Electrozavod, see U.S. State Dept. Decimal File, 861.5017—Living Conditions/775, Report No. 399 from Moscow Embassy, February 19, 1935, an interview with Andrew Smith who worked at the plant. Also see Andrew Smith, *I Was a Soviet Worker* (New York: E. P. Dutton, 1936) for a full-length description of life at Elektrozavod.

[12] *The Monogram*, November 1943.

THE UTILIZATION OF HEROULT AND DETROIT ELECTRIC-FURNACE DESIGNS BY ELEKTROZAVOD

The Technical Director of the electric furnace department of Elektrozavod was an American, C. H. vom Bauer, under whom the production of standard electric furnaces at the rate of 100 per year was attained. By the end of 1933 the Soviet Union had about 450 electric furnaces in operation, accounting for about 2 percent of its total steel output. By comparison, electric furnaces produced 1½ percent in the United States and 1 percent in Germany.

Electric furnaces are used in both ferrous and non-ferrous metallurgical industries where cheap electricity is available and high-quality metals are required. Great emphasis was placed by Soviet planners on electric-furnace steel manufacture and, fortunately, we have precise data for the years 1928 to 1943.[13]

Until 1928 all Russian electric furnaces were imported. The Soviets hired C. H. vom Bauer, a well-known New York consultant on electric furnaces, who became Technical Director of the newly formed electric furnace department of Elektrozavod in Moscow, as noted above. Vom Bauer remained in this post until 1932, instituted electric-furnace manufacture, and, after returning to the United States, presented data on his achievements at the Sixty-Third General Meeting of the Electrochemical Society in Montreal. He estimated that between 1914 and 1932 some 149 foreign electric furnaces had been imported into Russia, including 76 Heroult, 26 Detroit, 10 Ajax-Wyatt, and 30 high-frequency furnaces, and three Miguets and a few other special types.[14]

Production under vom Bauer concentrated on three main series: Heroult, Detroit and Ajax-Wyatt, 'all built according to the author's [i.e., vom Bauer's] specifications. The operation of these furnaces was superintended by the author during the years 1931 and 1932.'[15]

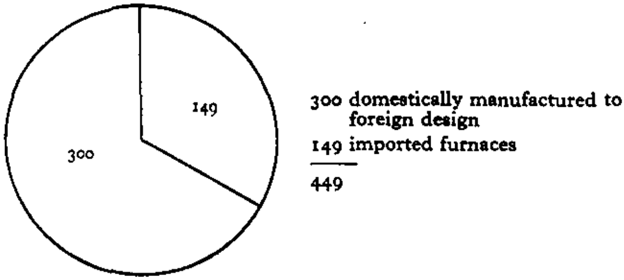
Most furnaces, both imported and newly built, were Heroults and were used in the iron and steel industry. The 'Soviet Heroult' was so close to the regular Heroult that vom Bauer does not bother to distinguish between Soviet-made and imported furnaces. After 1933 only large-capacity Heroults were imported. The greater number of new installations were 'Soviet Heroults,' almost all of 3-ton or 5-ton capacity. By the early 1940s the U.S.S.R. had

[13] C. H. vom Bauer, 'The Electric Furnace and Its Products in the U.S.S.R.,' *Electrochemical Society: Transactions*, LXIII, 1933, pp. 305–8. The vom Bauer data is supplemented by the detailed equipment lists of Soviet steel plants in Bericht No. 68, from the Geheim-Archiv of the Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), prepared by the Gmelin Institute (National Archives Microcopy T 84–127–1428132).

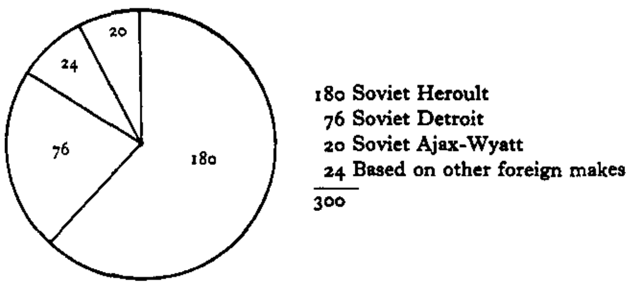
[14] Vom Bauer, *op. cit.*

[15] *Ibid.*, p. 305.

Figure 10–1 ORIGIN OF ELECTRIC FURNACES IN THE U.S.S.R., 1934



Distribution between imported and domestic electric furnaces



Design origins of Soviet domestically manufactured electric furnaces

more than 300 Heroult furnaces, of which only about 76, or one-quarter, had been imported.

The standard smaller furnace (less than one ton per heat) was the Detroit. Of these, 26 were imported between 1914 and 1932 and about 50 'Soviet Detroits' made between 1928 and 1933 under vom Bauer's supervision.[16]

The third standard type was the Ajax-Wyatt Type 1–3. Ten were imported between 1914 and 1932; the Soviets made an additional 20 between 1928 and 1931, also under vom Bauer's supervision. Apparently none were built after 1932. While Heroult and Detroit furnaces were manufactured, special types continued to be imported.[17]

[16] We cannot estimate construction after 1933, as the OKW lists only steel plants in Bericht No. 68 and use of this type of small furnace is concentrated in non-ferrous plants.

[17] *Ibid.* The OKW records state that several large 10- to 35-ton Heroults were installed in 1935–6.

Electric-furnace manufacture typifies Soviet development during this period. In 1928 all such furnaces were imported. The Soviet Union hired, for a period of four years, one of the top-ranking foreign experts in the field, and vom Bauer organized production of Western models. The Soviet continued this production by concentrating on the two standard foreign models (Heroult and Detroit) most suited to their conditions.

THE DYNAMO (KIROV) PLANT

This was a large prewar plant employing about 10,000 in 1937 and manufacturing electric locomotives, mine locomotives, electric motors, dynamos, generators, and war equipment. The factory started manufacture of the General Electric 3,000-volt d.c. main line electric locomotives based on the G. E. Suram locomotive.[18] These locomotives, eight of which were supplied by the General Electric Company, were of the 125-metric-ton C-C type designed for multiple-unit operation for both passenger and freight work. The first two locomotives were constructed in the U.S. and shipped complete. The balance of six were shipped complete except for the motors, which were manufactured at the Dynamo plant from G.E. drawings under supervision of G.E. engineers.[19] The Dynamo engine became the pattern for further manufacture.

SPERRY GYROSCOPE COMPANY AND THE LENINGRAD ELEKTROPRIBOR PLANT

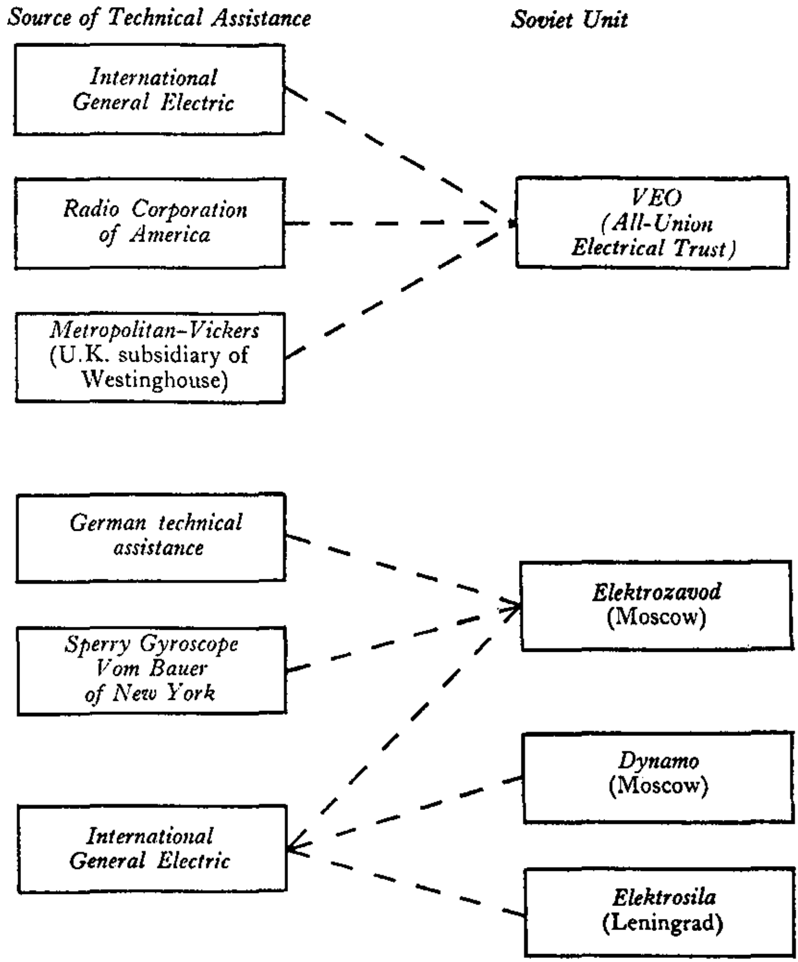
The Elektropribor was a tsarist-era plant, expanded and modernized under the Soviets, by agreement with Sperry Gyroscope Company of the United States, to manufacture electrical equipment (light bulbs, radios, voltmeters, ampere meters, and batteries). The plant had a separate division for the manufacture of army and navy instruments.

In the fall of 1931 the Sperry Company sent Mr. 'A,'[20] an American mechanical engineer, to the Elektropribor plant with instructions to supervise the assembly of machinery supplied by Sperry and to 'instruct in copying and designing such machines.'[21] Mr. 'A' worked for two years at Elektropribor and then went to the U.S. Consulate in Riga to renew his passport. The interviewing officer commented that 'he was a pathetic figure. He seemed frightened, uneasy and his attitude was one of humility and servility which is unusual in the average American.'

[18] *Ibid.*
[19] *General Electric Review*, XXXVIII, May 1935, pp. 220–1.
[20] Name withheld by author in view of the State Dept. comments quoted.
[21] U.S. State Dept. Decimal File, 861.5017—Living Conditions/680.

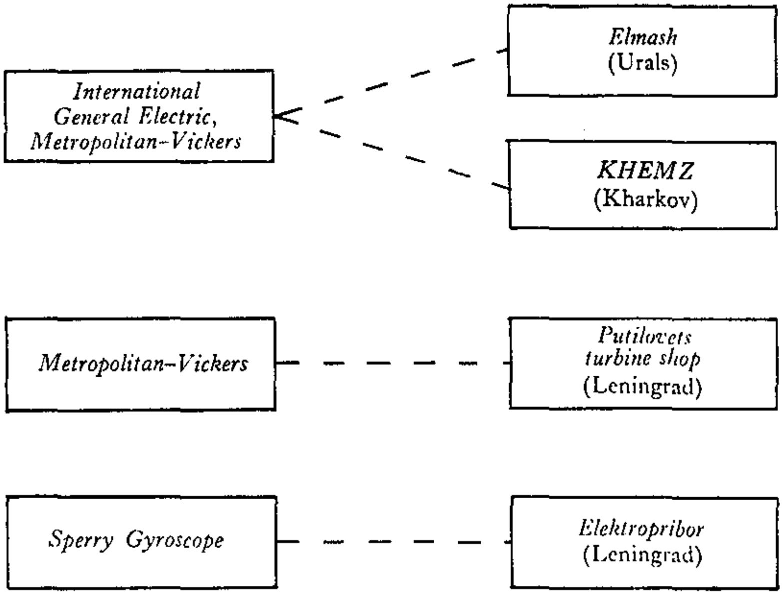
Although Mr. 'A' supplied information to the Riga Consulate, he was concerned as to whether it would be treated confidentially; the OGPU had attempted to get him to 'supply . . . secret American military information.' He had refused to do this and put his refusal in writing.

Figure 10–2 FOREIGN TECHNICAL ASSISTANCE TO PRINCIPAL PLANTS UNDER VEO (ALL-UNION ELECTRICAL TRUST), 1930–45*



* Not all agreements extend for the full period.

Figure 10–2 (Continued)



Sources: see text.

Later, after a senior Sperry official had visited the U.S.S.R., the OGPU came back to Mr. 'A' demanding information on bomb sights which the Soviets had begun to import from the Sperry Company. Just before leaving the U.S.S.R., he was again approached by the OGPU, which suggested that there were Sperry products which the company would not sell the U.S.S.R. and that the Russians 'would be pleased to have plans and specifications of these.'[22] Interest was also indicated in questions posed by the 'American Secret Service.' This placed Mr. 'A' in something of a dilemma and no doubt accounted for the attitude noted by the Riga Consulate, particularly as Mr. 'A' was 'sure' that the 'agents of the GPU at the present time [are] in the employ of the company' (i.e., Sperry in the U.S.).

THE URALS ELEKTROMASH COMBINAT

Urals Elektromash has been claimed, probably with accuracy, as the largest electrical-equipment building plant in the world. As planned, it comprised 14 separate but integrated factories with an aggregate annual output value of 2 billion rubles, seven times greater than that of all existant Soviet electrical

[22] *Ibid.*

equipment manufacturing plants. Employment was over 100,000, with about 12,500 engineers and technicians. The combine had its own city of 300,000 inhabitants.[23]

Two of the main shops at Urals Elektromash were the turbo-generator shop, with an annual production of 38 large steam generators of 50,000 to 160,000 kilowatts, and a machine-building shop for production of large modern mechanical equipment for mining and heavy industry, such as rolling-mill motors and generators. The transformer shop specialized in production of equipment in excess of 200,000 volts. A general apparatus shop produced oil switches, circuit breakers, electrical switchgear, crane and motor control apparatus, and similar units. A cable shop produced cable for other shops of the combinat.[24]

Amtorg summarized Western assistance as follows: 'Prominent American and British specialists are participating as consulting engineers in designing the plant. . . . The combine will employ the most modern machinery and technique.'[25]

THE RADIO CORPORATION OF AMERICA AGREEMENTS, 1927–41

In 1927 the Radio Corporation of America concluded an agreement with the Soviet Union for extensive provision of technical assistance and equipment in the radio communications field.[26] RCA was 'frequently consulted by the Soviets in the construction of radio stations' and the Soviet Radio Delegation to the U.S. in 1930 was able to visit a number of American radio stations 'under the auspices of the Radio Corporation of America.'[27]

In 1935 the VEO proposed another general agreement[28] whereby RCA would furnish 'engineering, technical and manufacturing information in those portions of the radio field in which RCA is or may be engaged.'[29] On September 30, 1935, RCA concluded an agreement[30] and approached the State Depart-

[23] Amtorg, *op. cit.*, VI, No. 18 (September 15, 1931), p. 426.

[24] 'Der Plan des Elektromaschinenwerks im Ural,' *Sowjetwirtschaft und Aussenhandel*, 1931, pp. 34–6.

[25] The American and British specialists were almost certainly from General Electric and Metropolitan-Vickers (the Westinghouse subsidiary), but the writer has no firm evidence at this point concerning their work at Elektromash in the Urals. Both General Electric and Metropolitan-Vickers are very reticent concerning their work in the U.S.S.R.

[26] See Sutton, *Western Technology . . ., 1917 to 1930*, pp. 250–2.

[27] Amtorg, *op. cit.*, V, No. 21 (November 1, 1930), p. 435.

[28] U.S. State Dept. Decimal File, 861.74 RADIO CORPORATION OF AMERICA/19–20.

[29] *Ibid.*, 861.74 RADIO CORPORATION OF AMERICA/20.

[30] A copy of the agreement is in U.S. State Dept. Decimal File, 861.74 RADIO CORPORATION OF AMERICA/30 and in 811.20161/52.

ment for permission, with the argument that if the agreement was not made with RCA then VEO would go to its European competitors. The Departmental reply indicated the 'proposed agreement will not be contrary to any policy of our government.'[31]

The extensive contract emphasized technical assistance and included 'the entire field of manufacturing and experimental activities of RCA and its subsidiaries. . . .'[32] The fields of technology to be transferred included both radio and television transmission and reception, electro-vacuum apparatus, sound recording, sound motion picture equipment, measuring apparatus, and remote control apparatus. RCA made a related agreement with Glavesprom (People's Commissariat of Heavy Industry), and Soviet personnel were sent to the United States for training.[33] A payment of $2.9 million was made to RCA and it was further agreed that the Soviets would purchase quantities of equipment from the company.

In 1938 eight RCA engineers were in the U.S.S.R. supervising installation of this equipment. In exchange for the purchase of $230,000 worth of RCA television equipment and $825,000 worth of related equipment, including some for military use, RCA also supervised erection of a television station.[34] The RCA Chief Engineer, L. F. Jones, was unable to complete installation, however, as Soviet construction organizations had not completed the building and materials supplied by Soviet plants were not delivered in time to complete the project by the agreed date of January 1, 1938.[35]

In particular, work was delayed on the station antenna. Jones did not want to report this to the Soviet authorities for fear the Soviet engineer on the job would be arrested as a 'wrecker.' Previous delays had been reported, however, and the Soviet engineer—not in any way to blame—was arrested a few days later on charges of wrecking activities. This delayed the work even further, as a second Russian engineer had to be trained. Thus in this instance RCA negotiated an extension of this section of the general agreement to avoid repetition of the accusation of wrecking and further delays.[36]

In 1939 the RCA agreement was extended to September 30, 1941,[37] but in

[31] U.S. State Dept. Decimal File, 861.74 RADIO CORPORATION OF AMERICA/21.

[32] *Ibid.*, 861.74 RADIO CORPORATION OF AMERICA/30, November 26, 1940.

[33] *Ibid.*, p. 6.

[34] U.S. State Dept. Decimal File, 861.74 RADIO CORPORATION OF AMERICA/26, Report No. 1283, Moscow Embassy, May 14, 1938.

[35] *Ibid.*, 861.74 RADIO CORPORATION OF AMERICA/25, Report No. 707, Moscow Embassy, November 10, 1937.

[36] *Ibid.*, Attachment to Report No. 707, Moscow Embassy, November 10, 1937, Memorandum of Statements. See also Metropolitan-Vickers below, p. 171.

[37] U.S. State Dept. Decimal File, 861.74 RADIO CORPORATION OF AMERICA/28, Memorandum, Division of Controls, August 3, 1939.

April 1941 this extension was modified and limited to May 31, 1941.[38] The annual charge for technical assistance had been $120,000; this figure was reduced to $77,777 on July 27, 1939. A further request by Kalinin, a Soviet leader, in April 1941 for a reduction of the fee was turned down by RCA.[39]

THE INTERNATIONAL GENERAL ELECTRIC COMPANY TECHNICAL-ASSISTANCE AGREEMENT OF 1929

On May 24, 1929 the Soviet Union ratified an agreement signed by Amtorg and International General Electric Company—by far the most important single agreement in the development of the Soviet electrical equipment industries.

The contract provided for a 'broad exchange of patents as well as exchange of designing, engineering and manufacturing information' for a period of 10 years. In practice the 'exchange' was a one-way transfer; this is clear from the second and third paragraphs of the formal announcement. The second paragraph stated that:

> American engineers will be sent to the Soviet Union to assist the Soviet Electrotechnical Trust in carrying out its plans of expansion of the electrical industry, in all its phases. The engineering assistance to be rendered by the International General Electric Company will involve the construction of electrical apparatus and machinery for use in electric lighting. . . . Soviet engineers will visit this country to study American methods employed in the manufacture of electrical equipment and its application to industry.[40]

The diffusion of General Electric technology within the Soviet Union from 1929 until the end of World War II was extraordinarily extensive. The following summary lists plants where this technology was transferred directly, i.e., with the help of General Electric engineers; it does not include those plants and industries benefiting from an indirect infusion of equipment made in plants with General Electric technical assistance.[41]

According to General Electric engineers then working in the Soviet Union, the Soviets had 'full rights to all patents and working drawings of the American

[38] *Ibid.*, 861.74 RADIO CORPORATION OF AMERICA/38, Letter, RCA to State Dept., April 30, 1941.

[39] *Ibid.*, Letter, RCA to Kalinin.

[40] Amtorg, *op. cit.*, IV, No. 11 (June 1, 1929). This contract was in addition to a previous contract concluded in 1928 which covered purchase of $26 million worth of General Electric equipment over a period of several years with credit terms of five years granted by General Electric. See Sutton, *Western Technology . . ., 1917 to 1930*, p. 198.

[41] This supply of equipment was considerable. For example, in the case of the Dniepr Dam, General Electric supplied enough oil circuit breakers to occupy 50 railroad cars. [Amtorg, *op. cit.*, VI, No. 20 (October 15, 1931), p. 465.]

concern.'[42] Although the equipment had been designed by Americans, most of it came from Siemens in Germany and some from British and French manufacturers. At the time, Amtorg noted that 'much of the American equipment purchased in past years is used by the Soviets as models for the construction of similar machinery in their own plants.'[43]

Table 10–1 PARTIAL LIST OF PLANTS AND ACTIVITIES BENEFITING FROM DIRECT INTERNATIONAL GENERAL ELECTRIC TECHNICAL ASSISTANCE*

Magnitogorsk Iron and Steel Combine	VEO
Kazakhstan Copper Combine	Elektrozavod (Moscow)
Leningrad Electro-Technical Institute	Izolit Insulation Plant
Glavenergo (Leningrad)	Electric Welding Equipment Plant
Stalin Automobile Plant (Moscow)	Elektroapparat Plant
Elektrosila Plant (Leningrad)	KHEMZ Turbine Works
Grozneft oil fields	Elektroprom
Ukraine coal mines	Kuznetsk Steel Combine
Lena gold mines	Azov Steel Mill
Balakhna Paper Combine	Tomsky Steel Mill
Zaporozhstal Works	Dzherzhinsky Steel Mill
Baku oil refineries and oil fields	Orsk Benzine Cracking Plant
Suram Pass section of Transcaucasian Railroad	Zaporozhe Aluminum Plant
Dynamo Electric Locomotive Plant (Moscow)	Elektrik
	Dniepr Dam

Source: The Monogram, November 1943.
* Excluding power stations.

Unfortunately the General Electric Company instructed its engineers not to discuss conditions in the U.S.S.R. with State Dept. officers, and corporate files covering work in the U.S.S.R. have been destroyed.[44] Thus the only record is from those engineers who, when interviewed by State Dept. officials, 'forgot' their instructions and gave details of their work. For these reasons our knowledge is fragmented.

[42] *Ibid.*
[43] *Ibid.*
[44] U.S. State Dept. Decimal File, 861.5017—Living Conditions/428. Unfortunately, General Electric engineers mostly abided by this corporate injunction. For example, H. H. Fisher contacted (for his 1934 Hoover Institution study) a number of General Electric engineers, but only two replied; O. B. Bemis said that he had worked for G.E. on the Dniepr Dam (see Folder 1) and C. Thomson, G. E. chief erector, in a 1934 letter indicated that he had worked on the Stalingrad stations and at Dnieprstroi, adding that he might have to return, so that 'tact plus the danger of involving my Company in an unpleasant situation bars me from making any statements.' A subsequent letter, January 9, 1936, added nothing new to the 1934 letter. (See correspondence folder.)

We do know that one group of seven engineers worked at VEO offices in in Moscow designing steel mill equipment for location in the Urals and Siberia. The equipment itself was supplied by General Electric and Siemens Schukert.[45]

The General Electric adviser on transfer of electric welding technology, particularly important in shipbuilding and submarines, was E. J. O'Connell.[46] With the assistance of the company, a number of new welders were developed: multi-operator machines of 1,500-ampere capacity, automatic welders, spot welders, butt welders, and roller welders. Expanded in the early 1930s, the Elektrik Plant (Moscow) became the principal supplier of welding machines. Electric welding was then used extensively in shipbuilding, submarine construction, steel construction, machine-building, and boiler manufacturing.

One consulting General Electric power plant engineer, Solomon Trone, spent about six months of every year from 1927 to 1933 in the U.S.S.R. and claimed that in his work he visited 'nearly every important electrical project.'[47] The inference that General Electric equipment became the Soviet standard throughout the country is not unbelievable. It is supported by the fact that the writer has found no evidence of indigenous Soviet development in the electrical-equipment field.

It is also a reasonable inference that General Electric transferred the latest technology under its various assistance agreements. For example, in 1938–9 the General Electric Company was negotiating the sale of $500,000 worth of General Electric equipment 'including high power transmission lines of a higher voltage capacity than any in use in the United States except on the Boulder Dam project,'[48] and in 1944–5 the General Electric Company made a second set of generators for the Dniepr Dam, but more advanced and of greater capacity than generators supplied by the company more than a decade previously.[49]

THE BROWN INSTRUMENT COMPANY TECHNICAL-ASSISTANCE AGREEMENT

Problems in developing instrument-manufacturing technology noted by Mr. 'A' and others[50] led to a second agreement with an American manufacturer

[45] U.S. State Dept. Decimal File, 861.5017—Living Conditions/515.

[46] *Ibid.*, 861.5017—Living Conditions/421. In accordance with Company instruction O'Connell would not discuss technical aspects of his work with the State Dept. officer.

[47] *Ibid.*, 861.5017—Living Conditions/616.

[48] *Ibid.*, 861.6463/68.

[49] See p. 168. The interested reader should also see the November 1943 issue of *The Monogram* (published by the General Electric Company), which supports these arguments in great detail. The *General Electric Review* also published a few articles in the 1930s which give support.

[50] See p. 150.

of recording instruments, but only after the Soviets had tried unsuccessfully to copy the company's instruments.

The technical-assistance contract with the Brown Instrument Company was signed in January 1936 for three years and included 'furnishing measuring instruments and instruction to the Soviet heavy industries.'[51] Instruction was given to Soviet engineers in the U.S. plants of the company and in Soviet plants. In the words of M. Mark Watkins, Brown Export Division Sales Manager, instruction was for 'learning the intricacies of making recording instruments. . . .' The purchase of at least $500,000 worth of instruments was contingent upon provision of this instruction. Watkins noted that there was a considerable demand for such instruments in the steel and oil industries but that the Soviets were not yet technically equipped to make them. This observation was based on

> . . . the fact that during his travels in the Soviet Union for the last month he has seen many copies of the Brown instruments made in this country and they were so poorly constructed and were working so inefficiently that he was convinced that the Soviet authorities had signed the technical aid contract with his firm since they had been unable to copy their instruments satisfactorily. . . .[52]

Another contract, rather similar to the Brown contract, was made by J. J. Higgins, an engineer with patents in the field of electrical equipment. This contract with GET (State Electro-Technical Trust) and the Moscow lamp works required Higgins to provide technical assistance in the manufacture of incandescent lamps and radio tubes and to undertake the design work for these products. Higgins, having spent 20 years with the Westinghouse Company in the United States, was well qualified for such work.[53]

THE GREAT NORTHERN COMPANY TELEGRAPH CONCESSION[54]

Maintaining one of the very few foreign concession operations to survive the 1920s, Great Northern Telegraph operated its international telegraph concession from 1919 until the late 1930s. This Danish company was given the 'exclusive concession for an indefinite period to provide service from all points in the Union of Soviet Socialist Republics to all foreign countries except Finland.'[55] The agreement was revocable by either party on six months' notice. The company handled about eight million words a year in the 1930s, all in international messages.

[51] U.S. State Dept. Decimal File, 861.602/278.

[52] *Ibid.*

[53] *American Engineers in Russia*, Fisher material.

[54] See Sutton, *Western Technology . . ., 1917 to 1930*, pp. 249–50.

[55] U.S. State Dept. Decimal File, 861.72/13.

Great Northern had numerous offices in the Soviet Union, each under a Danish manager, with a total employment of about 200; the Moscow office employed 23, including 10 Danes. There was an even larger staff in Leningrad. In 1935 it was reported that there was no real friction between the Soviets and the company, although the Soviet Government did operate its own radio and land lines for most government messages, thus infringing on the agreed concession monopoly. However, the company's relative efficiency operated to its advantage; Great Northern handled messages from London to Moscow in five to six minutes, whereas the Government transmissions 'usually require hours'; Moscow-New York was handled by the company in one hour, but by the Soviet offices in two to ten hours.

Accordingly, the commercial, diplomatic, and even official Soviet traffic went Great Northern, and the Government was not seen as a serious competitor. It was 'an interesting fact that official government messages written in illegible longhand and those containing texts difficult to transmit, frequently are given to the Company although not intended for Company transmission by the sender.'[56]

AMERICAN, BRITISH, AND CANADIAN LEND-LEASE SHIPMENTS

Shipments under United States Lend-Lease were considerably greater than either British or Canadian shipments of electrical generating stations. George Jordan notes that 17 stationary steam stations and three hydroelectric power stations were sent with a value in excess of one-quarter billion dollars.[57]

According to the State Department, power plants were supplied both for the reconstruction of damaged plants in recaptured areas and for new plants behind the Urals. Up to September 1945, $135 million worth of equipment was shipped, with another $32 million worth following under the agreement of October 15, 1945. A more revealing way of looking at this is in terms of physical capacity; the total capacity supplied was 1,457,274 kilowatts, divided as follows:[58]

Stationary steam plants	631,939 kilowatts
Stationary diesel plants	327,498 kilowatts
Railroad power trains, steam	267,500 kilowatts

[56] *Ibid.*

[57] Jordan, *op. cit.*, p. 51. He gives the figures as $263,289,000; the State Department as $178,000,000. There were additional shipments under the October 15, 1945 'pipeline agreement' to be covered in Sutton, *Western Technology and Soviet Economic Development, 1945 to 1965*.

[58] U.S. State Dept. *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 16.

Trailer-mounted diesel plants	72,945 kilowatts
Railroad power cars, diesel	103,000 kilowatts
Hydroelectric stations	54,392 kilowatts

In 1944 the General Electric Company received a contract to build another nine hydroelectric turbogenerators to fit the same foundations at the Dniepr Dam as the original General Electric installation in 1931; however, as designed, the generators produced 15 percent more energy and the systems were re-engineered by General Electric to incorporate the 15 years of technical advances since 1930.[59] There is no question that this assistance was vitally needed; the Moscow Embassy reported in 1943 that the 'extreme importance attached to delivery of equipment for Soviet hydro-electric stations was the subject of special request by Mikoyan.'[60]

Altogether about two million kilowatts of generating capacity was supplied before the end of 1945 under the U.S., Canadian, and British Lend-Lease programs to the Soviet Union. The capacity lost in German-occupied areas was fully replaced.

Although a large number of power stations were sent under U.S. and British Lend-Lease, there is no record of their final location in the Soviet Union. We can deduce some possible end-uses from a comment by the British Thomson-Houston Company of the United Kingdom:

> . . . normal peace-time products of the B.T.H. Company were urgently required for war production purposes. . . . Equipment for five complete power stations was sent to Russia, as well as a large number of 500 kW transportable turbo-generators, which were used for supplying electricity to damaged towns as they were re-taken from the enemy. . . .[61]

Altogether, 40 of these transportable turbogenerators, each suitable for supplying a complete town with electricity, were supplied.

Up to mid-1944, Canadian companies supplied equipment valued at $25 million for eight or nine hydroelectric power stations[62] under Lend-Lease. The United Kingdom also supplied equipment valued at about $30 million for about a dozen power stations.[63]

[59] *Electrical World*, October 21, 1944, p. 6. The original General Electric turbines had been removed in 1941 and relocated east of the Urals.

[60] U.S. State Dept., 861.24/1564, Telegram 809, Moscow to Washington D.C., July 6, 1943.

[61] H. A. Price-Hughes, *B.T.H. Reminiscences: Sixty Years of Progress* (B.T.H. Ltd.: 1946), p. 111–2.

[62] *Electrical Review*, June 23, 1944, p. 887. There is an unsubstantiated report that the U.S.S.R. established a purchasing agency in Canada in 1944 for H.E.P. equipment. See U.S. State Dept. Decimal File, 861.24/1775a, April 22, 1944.

[63] *Electrical Review*, May 19, 1944, p. 690. This question will be taken up in Sutton, *Western Technology and Soviet Economic Development, 1945 to 1965*.

FOREIGN EQUIPMENT AND SUPERVISION FOR CONSTRUCTION OF LARGE POWER STATIONS

In 1933 the Soviet Union had 10 power stations operating with generating capacity in excess of 100,000 kilowatts; these were Kashira, Shterovka, Shatura, Krasnyi Oktiabr' in Leningrad, Moges in Moscow, Zuevka, Dniepr, Nivges at Gorki, Chelyabinsk, and Krasnya Zvesda at Baku. Table 10–2 illustrates the extensive, if not complete, utilization of Western equipment installed under foreign supervision.

Table 10–2 FOREIGN EQUIPMENT IN LARGE POWER STATIONS OPERATING IN 1933*

Power Station	*Capacity (Kilowatts)*	*Western Equipment*
Kashira	186,000	Babcock & Wilcox boilers (enlargement of tsarist station)
Shatura	136,000	Metropolitan-Vickers,[9] Brown-Boveri turbo-generators[10]
Moscow (Moges)	107,000	Metropolitan-Vickers turbines[1]
Krasnyi Oktiabr' (Leningrad)	111,000	Metropolitan-Vickers turbines and boilers,[4] German and Swedish transformers and circuit breakers,[4] U.S. insulators on high tension lines[4]
Shterovka	157,000	Metropolitan-Vickers (2 turbo-generators), Brown-Boveri (2 turbo-generators), Siemens-Schukert (2 turbo-generators)[6]
Zuevka	150,000	Metropolitan-Vickers turbines[1]
Dniepr	310,000	Newport News turbines[3]
Gorki	158,000	Metropolitan-Vickers turbo-alternators,[7] AEG[8]
Chelyabinsk	110,000	Metropolitan-Vickers turbines[1]
Baku	109,000	Siemens-Schukert turbines,[2] Metropolitan-Vickers generators[9]

Sources: Stations in operation: *Pravda*, No. 13, January 13, 1933.

Western origins:

[1] Great Britain, *Correspondence Relating to the arrest . . .*, Command Paper 4286 (London, 1933).
[2] *U.S.S.R. in Construction*, No. 3, March 1932.
[3] Sutton, *Western Technology . . ., 1917 to 1930*, p. 204.
[4] *The Electrician*, April 11, 1930, p. 464.
[5] Sergei Koptewski, *The Costs of Construction of New Metallurgical Plants in the U.S.S.R.* (New York: East European Fund, Inc., 1952).
[6] Allan Monkhouse, *Moscow 1911–1933* (Boston: Little, Brown & Co., 1934).
[7] Amtorg, *op. cit.*, V, No. 11 (June 1, 1930), p. 224.
[8] *Ibid.*, VII, No. 7 (April 1, 1932), p. 164.
[9] *Ibid.*, V, No. 20 (October 15, 1930), p. 400.
[10] *Ibid.*, No. 18–19 (October 1, 1930), p. 365; VI, No. 8 (April 15, 1931), p. 178.

* Includes all stations over 100,000 kW.

It is from Allan Monkhouse, Metropolitan-Vickers Chief Engineer in the U.S.S.R., that we derive information concerning skilled engineering and operating labor for power stations. Monkhouse suggested in 1935 that the prewar 'technical intelligentsia' in electrical power generation was not 'decimated' (as in other sectors) and that from 1923 onwards electrification plans were put into effect by those who had held similar responsible positions before the Revolution. In addition, by this time the Soviets had 'turned out many thousands of young men trained in the rudimentary theories of electrical engineering.' Monkhouse makes an interesting comment:

> With regard to skilled workmen, this has not been as serious a difficulty in the building and operation of power stations as might be generally thought because during the constructional periods the main responsibility for skilled workmanship fell upon the erectors sent to the U.S.S.R. by foreign contractors; and of course, once the stations are complete there is not a great deal of work about a power station which necessitates employing highly skilled workmen.[64]

If the reader combines the Monkhouse statement above with data in table 10–2 on the origin of power station equipment, he will readily envisage the primary role of Western contractors in Soviet power-station construction.

The Metropolitan-Vickers Company of the United Kingdom was probably the most important single foreign firm in the electrification of the Soviet Union.[65] Between 1921 and 1939 the company handled about $25 million worth of contracts in the U.S.S.R. involving installation of one million kilowatts of electrical generating capacity as well as other electrical equipment and the provision of technical assistance in the construction of steam turbines, generators, and other types of electrical equipment.[66] The company, according to its own history, trained 'large numbers of Russian engineers' at its works in the United Kingdom.[67] The importance of Metropolitan-Vickers may be gleaned from a series of articles in the London *Times* relating to the arrest of Metropolitan-Vickers engineers in Moscow in 1933 on charges of espionage:

> The Metropolitan-Vickers Company has been continuously engaged in Russia since 1923 and to a greater extent than any other British firm has worked on the electrification of that country. Over a period of ten years about 350 British subjects have from time to time been employed by the Company there, and the plant it has installed in Russia is said to be equivalent to one-sixth of the total generating plant of all kinds in Great Britain. . . .[68]

[64] Allan Monkhouse, 'Electrical Development in the U.S.S.R.,' *Proceedings of the Institute of Electrical Engineers* (London), LXXVI, No. 462 (June 1935), p. 641.

[65] See Sutton, *Western Technology . . ., 1917 to 1930*, pp. 199–200.

[66] J. Dummelow, *1899–1949* (Manchester: Metropolitan-Vickers Electrical Co., Ltd., 1949).

[67] *Ibid.*, p. 121.

[68] 'The Moscow Trial, New Light on the Case of 1933,' reprinted from the *Times* (London) of May 22, 23, 24, 25, 1933.

The company certainly had its share of problems. After the company had worked for ten years on Soviet electrical projects, its engineers were arrested in 1933 in a raid reminiscent of the 1930 Lena Goldfields raids by the OGPU. The arrests were part of a widespread purge of 'wreckers' although the technical problems reported in the British press appear to have been similar to the usual 'teething problems' of all new plants, as the *Times* noted.

There is some confusion concerning the 1933 Metropolitan-Vickers case, unlikely to be solved until the British Foreign Office records are examined.[69] There is no question that Metropolitan-Vickers, like other foreign firms and engineers working in the Soviet Union, tried to protect Russian engineers, insofar as they could, from absurd charges of sabotage and wrecking. Russian engineers were taking the blame for the ineptitudes and failures of central planning. In this regard,

> the Metropolitan-Vickers Company habitually took the blame for such defects as occurred and made a practice of replacing parts long after the maintenance period had expired, irrespective of whether the defects were the fault of the Company or, as was more frequently the case, were due to the inefficiency of the customers operating staff. . . .[70]

It was the pressure from the Party to rush installation and operate equipment far beyond its safety limits that was leading to breakdown. The British installation engineer, Gregory, for example, regarding the outdoor switchgear and the 12 oil circuit breakers of 165 kilovolts each for Dnieprstroi, says, 'These switches are the largest switches that have ever been made by our Company. The largest switches erected in Russia. . . .'[71] Given all the known difficulties in installing such new and major equipment of this type, the Soviets still blamed Gregory for faulty installation, after themselves attempting to rush the job. Gregory pointed out in his defense that the oil filters were very difficult to obtain and that there was a lot of work to be done.

> So it really amounted to this, that in spite of the delays there were three switches completed in 48 days. These switches were 45 tons each. So now I will leave that to the technical experts to judge whether those switches were done in good time, and whether if done in a shorter time, they would be done properly. . . .[72]

[69] The British Government records became available after this book went to press. Extensive information is listed in *Index to the Correspondence of the Foreign Office for the Year 1933* (Kraus-Thomson, Nendeln/Liechtenstein, 1969) and *Index to "Green" or Secret Papers* (Kraus-Thomson, Nendeln/Liechtenstein, 1969), under both Metropolitan-Vickers, Ltd., and names of individual company engineers.

[70] 'The Moscow Final, New Light on the Case of 1933,' reprinted from the *Times* (London) of May 22, 23, 24, 25, 1933, p. 12.

[71] Dummelow, *op. cit.*, p. 150.

[72] State Law Publishing House, *Wrecking Activities at Power Stations in the Soviet Union*, II, p. 111.

Table 10–3 MAIN PLANTS MANUFACTURING ELECTRICAL EQUIPMENT IN COMMISSARIAT OF HEAVY INDUSTRY, 1933

Name of Plant	*Product*	*Western Technical Assistance (1929–33)*
Leningrad District		
Stalin Metal works	Steam boilers	Babcock & Wilcox
	Steam turbines	Metropolitan-Vickers
Elektrosila works	Turbo-alternators Generators Rolling-mill motors Mercury-arc rectifiers Marine equipment	International General Electric
Elektrik	Electric welding equipment Induction furnaces	International General Electric
Elektroapparat	Heavy switchgear	International General Electric
Elektropribor	Switchboards Instruments (industrial)	Brown Instrument Co.
	Sperry gyroscopes	Sperry Gyroscope Co.
Radio works	Radio equipment X-ray apparatus	Compagnie de TSF
Svetlana works	Rectifiers	AEG (Germany)
	Radio receiving valves	Siemens-Schukert
Krasnyi Zoria telephone works	Telephone equipment	Ericsson (Sweden)
Moscow District		
ATE works	Electrical equipment for automobiles and tractors	AEG
Transformer works	Transformers	Siemens-Schukert Sperry Gyroscope
Lamp works	Lamps Neon-tube advertising signs Sodium lamps	International General Electric
Electric furnace shop	Electric arc furnaces	Vom Bauer
Dynamo works	Traction equipment Locomotives	International General Electric
Projector and domestic equipment works	Projectors	W. Coffman & Co.
Isolator works	Electrical porcelain	Vakander
	Electrical insulating materials	International General Electric
Moscow Röntgen works	X-ray equipment	Compagnie de TSF
Elektrougli	Brushes Batteries	Ex-AGA concession
Electric lamp works	Electric lamps Valves	J. J. Higgins (U.S.)

Table 10–3 (Continued)

Name of Plant	*Product*	*Western Technical Assistance (1929–33)*
Other Districts		
Revtrud works	Train-lighting sets Locomotive head lamps	Not known
KHEMZ	Large motor generators Industrial motors Industrial switchgear and control gear Relays Meters Steam turbine	General Electric General Electric Metropolitan-Vickers General Electric
Volta Works	Motors Industrial equipment	Not known
Uralmash	Electrical equipment	See text

Sources: Plants and products: Monkhouse, *op. cit.*
Technical assistance: see text.

Metropolitan-Vickers was the major influence in almost all power projects besides the Dniepr Dam (a General Electric-Newport News project). However, there were also a few foreign engineers on individual contracts for design and supervision of dam construction. B. E. Torpen worked on hydroelectric design and construction in the Don Basin for about three years.[73] Major G. R. Olberg was requested to supervise construction of the Mingechaur Dam in Azerbaidjan, as large as the Coolidge Dam in the United States. This contract was apparently terminated during the valuta crisis.[74] Two governments supplied advice and aid: four Swedish experts from the Stockholm Hydraulic Bureau came to assist construction of the Svir Dam,[75] and the United States Government supplied 'drawings, photostats and specifications of machinery' used on the Fort Peck and Sardis Dams in the U.S.[76]

Space precludes a thorough examination of smaller power stations, but some examples will suggest the number of such stations receiving foreign equipment; figure 10–3 also illustrates the impact of foreign equipment for one grid area, Leningrad. The Kusnetsk Iron and Steel Plant had two 6,000-kilowatt Rateau turbines and four 24,000-kilowatt Wumag main turbines. The condenser equipment was German but the generators were Soviet-built, probably at Elektrosila.[77] The Krasnyi Oktiabr' metallurgical plant at Stalin-

[73] *American Engineers in Russia*, Folder 3, Item 7.

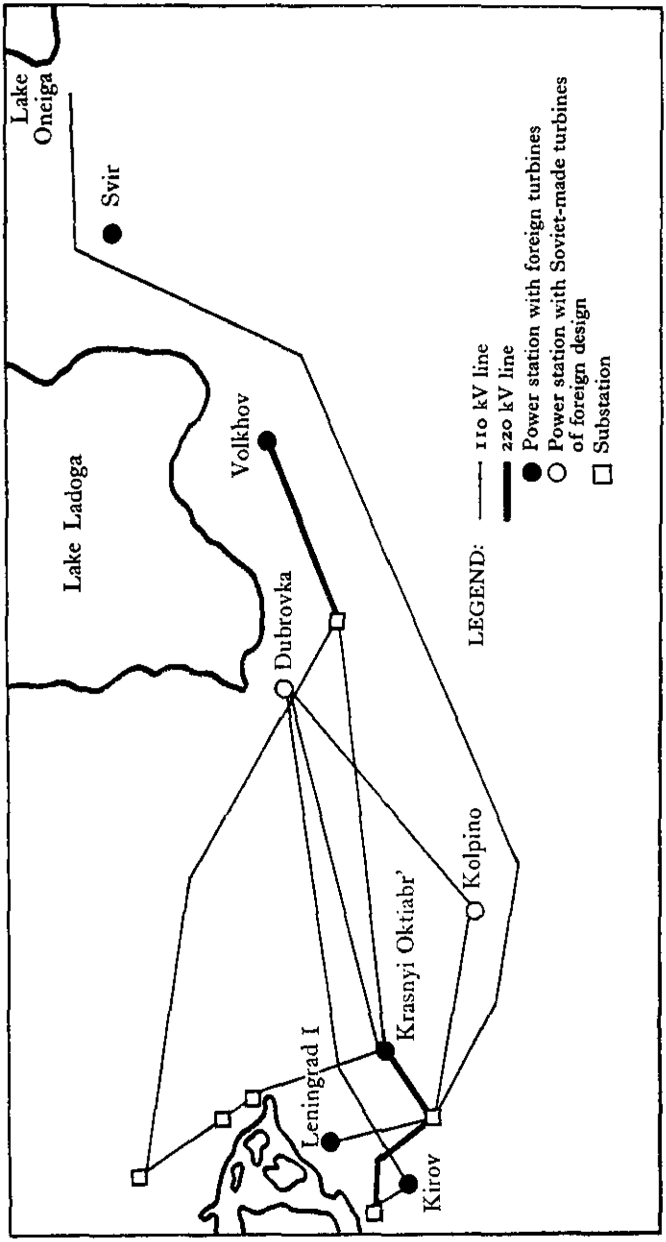
[74] *Ibid.*, Item 14: see also U.S. State Dept. Decimal File, 861.5017—Living Conditions/602.

[75] U.S. State Dept. Decimal File, 861.6463/44.

[76] *Ibid.*, 711.00111 Armament Control/1525.

[77] *Far Eastern Review*, January 1933.

Figure 10–3 ORIGIN OF STEAM AND HYDRAULIC TURBINES IN THE LENINGRAD GRID SYSTEM, 1930–44



Source: Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), *Schema des 220 und 110 kV Leitungsnetz von Leningrad: Karte II*, National Archives Microcopy T 84–122.

grad had three 2,230 MAN diesel engines coupled with AEG 1,610-kilowatt a.c. generators.[78] The Leningrad metal works had Metropolitan-Vickers turbines.[79] Plant 1 at Leningrad had five German 15,000-kilowatt turbines and one English turbine.[80] Plant 5 (Krasnyi Oktiabr') at Leningrad had Metropolitan-Vickers equipment.[81] The Svir hydroelectric station had four vertical Kaplan turbines: three from Sweden and one made by Lenmash.[82] The Volkhov plant had eight Swedish Francis vertical turbines coupled to four Swedish and four Soviet generators.[83] The Magnitogorsk Iron and Steel Plant power stations had two Bergman and one AEG turbine coupled with a Soviet-built turbine.[84] The Kalinin station had two Brown-Boveri turbines coupled with two from Elektrosila.[85] The Orechevo-Suchevo station near Moscow had Metropolitan-Vickers turbines.[86]

After about 1933, power stations began to receive Soviet-built standard turbines and generators based on foreign designs and built in the U.S.S.R., at first with foreign technical assistance and then completely as Soviet undertakings. These were of standardized sizes.[87]

Much of the Don Basin equipment was destroyed or evacuated in 1941 and the Germans were not completely successful in restoring the electric power generation industry in the occupied areas. According to one report, probably written in July and August of 1943, the Germans had restored about one-fifth of electric power capacity in the occupied territories, or about 500,000 kilowatts of operating capacity (against an original installation of 2.5 million kilowatts).[88]

[78] *Izvestia Vsesoyuznogo Teplotechnicheskogo Instituta*, No. 1, 1931, p. 10.
[79] Monkhouse, *op. cit.*, p. 185.
[80] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Plant No. 21, National Archives Microcopy T 84–122–1421674/749.
[81] *Electrician*, April 11, 1930.
[82] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Plant No. 44, National Archives Microcopy T 84–122–1421674/749.
[83] Monkhouse, *op. cit.*, pp. 138–41.
[84] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Plant No. 313.
[85] *Ibid.*, Plant No. 50.
[86] State Law Publishing House, *op. cit.*, p. 62.
[87] See p. 154.
[88] Breakdown of the figures does not indicate any particular preference for restoration of industrial, mine, armament, or town electrical power supply systems. Restoration was accomplished as follows:

District power supply	21.8 percent of original installation
Local power supply	15.9 percent of original installation
Mines (original plant very small)	0 percent of original installation
Foundries	21.5 percent of original installation
Iron and steel works	23.3 percent of original installation
Industry	16.4 percent of original installation

Source: Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, National Archives Microcopy T 84–122–1421745.

CONCLUSIONS

There was a considerable manufacturing of electrical equipment in tsarist Russia; the facilities were later re-equipped and expanded and then supplemented by several giant new manufacturing plants. This program was undertaken in close cooperation with internationally known companies, including International General Electric, Metropolitan-Vickers, and RCA. Two plants, the KHEMZ and the Urals Elektromash, were truly gigantic—much larger than the main home plants of General Electric and Metropolitan-Vickers. Agreements with RCA, Sperry Gyroscope, Brown Instrument Company, and others provided assistance in specialized areas.

The 10 largest power stations built by 1933, in addition to numerous smaller stations, had Western equipment; later stations received equipment that was Soviet-made to standardized Western designs.

It is not an exaggeration to say that by 1945 Soviet electrical equipment was completely based on Western (mainly General Electric) models. This is one sector where a truly remarkable pattern comprising thousands of transfers can be precisely identified.

CHAPTER ELEVEN

Technical Assistance to the Automobile and Tractor Industries

DEVELOPMENT OF AN AUTOMOBILE INDUSTRY

THE Soviet automobile industry before 1930 was limited to production of the prerevolutionary Fiat light truck, utilizing imported parts. After 1930 the industry relied completely on American technical assistance. One completely new plant, the Gorki, was built under Ford Motor Company supervision in the early 1930s[1] and two tsarist plants in Moscow and Yaroslavl were expanded and completely re-equipped with up-to-date American machine tools. These three plants, together with a smaller Moscow assembly plant which opened in 1940, constituted the Soviet automobile industry before World War II.

THE AMO PLANT IN MOSCOW

This tsarist plant, owned by Ryabushinski and Kuznetsov before the Revolution, was still producing a few 1912-model Fiats (the original model) in early 1929. In mid-1929 the A. J. Brandt Company of Detroit undertook an extensive two-year reorganization and expansion of Amo, which was then renamed Automobile Works No. 2 (Stalin), and is today known as the ZIL (plant im. I. A. Likhachev). This plant produced 50,000 medium-sized trucks per year, in addition to large automobiles and buses. The early Amo-Fiat models were hand-built. The reconstructed plant mass-produced the ZIS 5 and ZIS 6 trucks (i.e., the Autocar 2½-ton truck) until 1944 and the heavy ZIS 101 and ZIS 102 automobiles until 1941. Both were based on U.S. designs and specifications.[2]

[1] The important Ford Motor Company agreement of 1929 to build the Gorki plant is described in Sutton, *Western Technology . . . 1917 to 1930*, pp. 243–9: the equally important Fiat agreement of 1966, which transfers mainly U.S. (not Italian) machine tools, will be covered in Sutton, *Western Technology . . . 1945 to 1965*.

[2] Alexander Barmine, *One Who Survived* (New York: G. P. Putnam, 1945), p. 237.

This Brandt-built plant was described by Carver, a skilled American observer, as 'by far the largest and best-equipped plant in the world devoted solely to the manufacture of trucks and buses. Basically, the equipment is the last word in American practice.'[3]

A similar comment was made by C. P. Weeks, Vice-President of Hercules Motor Corporation (Canton, Ohio). After a four-hour tour of the expanded Amo, Weeks commented that it was superior to both the Mack and White plants and was 'the best-equipped plant in the world.'[4] Amo was further described by Carver as follows:

> From the forge shop, which is equipped with batteries of steam and board drop hammers, forging machines and furnace equipment, and the foundry with its bull ring, continuous pouring floor, sand conditioners, etc., through to final assembly and finishing department, no detail has been missed. The press room is a dead ringer for some of ours. . . .'[5]

The production equipment was entirely American and German.[6] In late 1929 Amtorg placed an order on behalf of Amo with the Toledo Machine and Tool Company for $600,000 of cold-stamping presses.[7] In 1932 an order was placed with Greenless Company of Rockford, Illinois for multi-cylinder lathes.[8]

In 1936 a second technical-assistance agreement was concluded for Amo with the Budd Manufacturing Company of Philadelphia and the Hamilton Foundry and Machine Company of Ohio to produce 210,000 chassis and bodies per year for a new ZIS-model automobile.[9]

The Budd Company sent engineer R. L. Adams and two shop men to supervise installation of $1 million worth of dies made by the company for ZIS production. One feature of the contract which intrigued the Budd Company was a requirement that 100 finished sets of body stampings were to be made from the dies *in the United States* and shipped with the dies. These were to be used to build 100 ZIS automobiles under the supervision of Budd engineers in the Soviet Union to celebrate the 1936 anniversary of the October Revolution. The Hamilton Foundry supplied the presses required for follow-on fabrication of sheet metal for bodies and chassis in the Soviet Union.

In spite of this assistance, troubles were encountered in producing the Autocar model, although blueprints and technical advice had been freely

[3] W. L. Carver, 'AMO and Nizhni-Novogorod Plants Lead Soviet Plans,' *Automotive Industries*, LXVI (March 12, 1932), pp. 418–9.

[4] U.S. State Dept. Decimal File, 861.5017—Living Conditions/307.

[5] Carver, *op. cit.*, pp. 418–21.

[6] Amtorg, *op. cit.*, VI, No. 21 (November 1, 1931), p. 489.

[7] *Ibid.*, IV, No. 20 (October 15, 1929), p. 372.

[8] *Ibid.*, VII, No. 8 (April 15, 1932), p. 176.

[9] U.S. State Dept. Decimal File, 861.60/288.

given. For example, Weeks commented that 200 castings had been made of one part but that not one was usable, because of inaccuracies in dimensions and faulty materials.

In late 1937 neither the Ford-built Gorki (discussed below) nor the Brandt-built Amo plant was fulfilling production schedules, because of 'tremendous disorders.'[10] The truck conveyor at the Amo plant was idle 23 percent of the time, and the M-1 model conveyor at Gorki was idle 35 percent of the time. Serious technical difficulties were encountered in production of both the M-1 model and the ZIS. Parts were not supplied on schedule.[11] The U.S. Moscow Embassy concluded from various reports that the Soviet automobile industry was 'in sore need of further assistance.'[12]

These problems were overcome at least in part, and 1938 production, as reported by the Oberkommando der Wehrmacht intelligence, was not unsatisfactory, although raw output figures tell us nothing about quality. Production of the Amo plant in 1938 was given as follows:

ZIS Model 5 (2½ tons, Autocar)	59,724 units
ZIS Model 6 (4 tons, unknown model)	3,169 units
ZIS Models 101 and 102 (Budd design)	3,900 units
Buses (Autocar chassis)	1,335 units[13]

Some 40,000 workers were employed in this plant in 1940.

HERCULES MOTOR CORPORATION RECONSTRUCTION OF THE YAROSLAVL PLANT

In 1929 the Hercules Motor Corporation, of Canton, Ohio, received a contract similar to that of A. J. Brandt to expand and reconstruct on American lines the Yaroslavl Automobile Works No. 3, known previous to the Revolution as Akt Obs Vozdukhoplavanie. In 1915 the plant had been equipped to produce 1,500 Crossley and Wolsey automobiles per year. Although intact after the Revolution, the plant was used only as a repair shop from 1918 to 1931, producing a few trucks with imported engines.

The agreement with Hercules Motor Corporation was signed in August 1929, and Amtorg indicated that:

> The Hercules Company will supply the Soviet Automobile Trust with the necessary drawings and other technical data and will send engineers to the U.S.S.R. to assist in designing and manufacturing the engines. In addition, Soviet engineers will study the various phases of production of motors in the Hercules plant. . . .[14]

[10] *Ibid.*
[11] *Pravda*, No. 267, September 27, 1937.
[12] U.S. State Dept. Decimal File, 861.60/289.
[13] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.
[14] Amtorg, *op. cit.*, IV, No. 18 (September 1929), p. 279.

Table 11-1 WESTERN ORIGIN OF SOVIET AUTOMOBILES AND TRUCKS, 1930–45

Soviet Automobile or Truck Model	*Description*	*Western Model of Origin*	*Western Technical Assistance*
Amo-F-15	1.5-ton flatbed truck	Fiat 15 (1912 model)	Fiat S.p.a. engineering assistance, 1929.
GAZ A	Pickup truck	Ford Model A	Ford Motor Co. (new plant).
GAZ AA (also GAZ MM, and GAZ 63)	1.5-ton flatbed truck	Ford Model A (MM had Ford Model B engine)	Ford Motor Co. (new plant).
GAZ 410	1.5-ton dump truck	Ford Model A	Ford Motor Co. (new plant).
GAZ AA	Fire engine	Ford	Ford Motor Co. (new plant).
GAZ M-1 (and M-20)	Passenger automobile	Ford 1934 model	Ford Motor Co. (new plant).
ZIS 5	2½-ton flatbed truck	Autocar Model S.A.	Ryabushinski-Kuznetsov Co. plant (tsarist) re-equipped and expanded by A. J. Brandt.
ZIS 6	4-ton flatbed truck	Unknown; probably Autocar Model S.A.	Ryabushinski-Kuznetsov Co. plant (tsarist) re-equipped and expanded by A. J. Brandt.
ZIS 101	Heavy passenger automobile	Budd Co.*	Ryabushinski-Kuznetsov Co. plant (tsarist) re-equipped by A. J. Brandt (1929–30) and Budd Co. (1936).
ZIS 21, 21A	Gas generator truck	—	Ryabushinski-Kuznetsov Co. plant (tsarist) re-equipped and expanded by A. J. Brandt, Budd Co. and Hamilton Foundry.
YaZ 3	3-ton flatbed truck	Fiat S.p.a.	Fiat S.p.a. (pre-1929).
YaZ 6	5-ton flatbed truck, bus	Hercules Motor Co.	Akt. Obs. Vozdukhoplavanie plant (tsarist) re-equipped and expanded by Hercules Motor Co.
YaZ 10	8-ton dump truck	Hercules Motor Co.	Akt. Obs. Vozdukhoplavanie plant (tsarist) re-equipped and expanded by Hercules Motor Co.
L.K. 1	Trolleybus	Hercules Motor Co.	Akt. Obs. Vozdukhoplavanie plant (tsarist) re-equipped and expanded by Hercules Motor Co. (after 1933).

Sources: See text.

* Budd supplied body dies to Ford specifications.

The basic vehicle design used at Yaroslavl was American except that the engines were 'bored somewhat larger, the frames reinforced and special heavy axles . . . fitted.'[15] That is to say, a heavy truck specification was used.

In 1932 Yaroslavl was again expanded, in order to produce 4,000 heavy trucks per year, although even by 1938 production had only reached a total of 2,377 YaZ 5-ton trucks and buses.[16] This 1938 output, requiring about 15,000 workers, was distributed as follows:

YaZ 3 (3-ton truck)	826
YaG 6 (5-ton truck)	1,289
YaG 10 (8-ton truck)	27
L. K. 1 (trolleybus, chassis)	235[17]

As noted, this was also the Soviet bus-building plant, the chassis being made at Yaroslavl and the bodies in Leningrad and Moscow. The single-deck four-wheel trolleybus, known as the L.K. 1, had a Yaroslavl chassis and traction equipment made at the Dynamo plant in Moscow.[18]

THE CONSTRUCTION OF OTHER AUTOMOBILE PLANTS

Construction of a large new automobile plant (modeled after the River Rouge plant) at Gorki by the Ford Motor Company has been described in Volume I.[19] This plant started operation on January 1, 1932, but in 1936–7 it still had major operating problems. In 1937 S. S. Dybets, Director of the Gorki plant, former mechanic, and reputed active member of the I.W.W. in the United States, was removed from office. The charges included Menshevik associations and Bukharinist tendencies.

As built, the plant had a capacity to produce 140,000 vehicles per year. In 1938 it was reported operating at about 85 percent capacity, producing the following:

GAZ AA (light truck)	84,288
GAZ M (automobile)	23,256
Gas generator vehicle (M chassis)	1,738

[15] Carver, *op. cit.*, p. 419.

[16] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

[17] *Ibid.*

[18] No technical-assistance agreement was traced for these buses. The specification given by W. Konovaloff ('The First Trolley Buses in Moscow,' *The Electric Railway, Bus and Tram Journal*, June 15, 1934, pp. 286–8), however, would have been too advanced for Soviet capabilities in the early 1930s—so presumably some agreement was made. The exterior is rather similar to some German models. See also U.S. State Dept. Decimal File, 861.5017—Living Conditions/688.

[19] Sutton, *Western Technology . . . 1917 to 1930*, pp. 246–9.

GAZ AAA (2-ton truck)	6,314
S, 193, M55 (buses)	1,796[20]

This represented some improvement over 1937, when the M-1 conveyor line had been reported idle 35 percent of the time.[21] Further improvements were registered after the invasion of the Soviet Union by the Nazis and after Lend-Lease equipment assistance.

Two assembly plants were supplied with parts for assembly manufactured at Gorki. One was the Gudok Oktiabr' (with an annual assembly capacity of 6,000 automobiles), which merged with the main Gorki plant in 1932. The other was Automobile Assembly Plant No. 2 (the KIM, in Moscow), with an assembly capacity of 24,000 automobiles. This plant had been erected with Ford technical assistance in 1930–1. Employment was reported at 10,000 in 1940, with a probable output of 50,000 vehicles in 1941.[22]

UNITED STATES AND SWISS ASSISTANCE IN THE MANUFACTURE OF AUTOMOBILE PARTS

Construction of truck and automobile production plants required the establishment of a series of smaller industries supplying parts. In the United States these are partly supplied to the major automobile producers on a subcontract basis; in the U.S.S.R. such parts had previously been imported.

For the manufacture of automobile springs, bumper bars, and similar components, VATO made an agreement with the Gogan Machine Company of Cleveland, who sold them the necessary equipment and sent an engineer and two mechanics to the Soviet Union to supervise equipment installation and initial production operations. Emil Lutzweiler, the Gogan engineer, and the two mechanics were sent first to the Moscow truck plant (Amo) and then to the Ford plant at Gorki.[23]

Amtorg reported in late 1930 that a former samovar factory—the Kirjanov—was being rebuilt with 'the assistance of German and American specialists' to produce Ford headlights: the 'first of its kind in the U.S.S.R.'[24]

Automobile glass was produced in a Moscow plant of Steklofarfor (Glass and Ceramics Trust), with C. E. Alder as supervisor of some 300 Russian workers. The plant used imported American machinery.[25]

[20] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, Microcopy T 84–122.

[21] U.S. State Dept. Decimal File, 861.60/288.

[22] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941. Miscellaneous German Records, National Archives Microcopy T 84–122.

[23] U.S. State Dept. Decimal File, 861.5017—Living Conditions/441, Report No. 615, Stuttgart, March 16, 1932.

[24] Amtorg, *op. cit.*, V, No. 24 (December 15, 1930), p. 494.

[25] U.S. State Dept. Decimal File, 861.5017—Living Conditions/287, Report No. 889, Stockholm, June 27, 1931.

Electrical equipment for automobiles, trucks, and tractors was the subject of an agreement between VEO and the Electric Auto-Lite Company of Toledo, Ohio. The company prepared 'a detailed layout and working project for a plant to manufacture complete electrical units for automobiles and tractors.'[26] This plant, the only one of its kind in the U.S.S.R., had the capacity to produce 450,000 complete electrical units per year for automobiles and 270,000 electrical units for tractors. The agreement called for furnishing manufacturing information, providing American engineers to work in the U.S.S.R.,[27] and training Soviet engineers in the United States.[28] The agreement was implemented in the Soviet Union by M. Buchenberd, Vice-President of the Electric Auto-Lite Company. Magnetos (Bosch design) and spark plugs (design unknown, but possibly Champion) were produced in a Moscow electric-apparatus factory where 'German and Swiss machinery is used almost exclusively and it is all new.'[29]

The Swiss company Scintilla A-G had a technical-assistance contract similar to those of Ford and Hercules Motors to erect and start up a plant for the manufacture of ignition equipment.[30]

The rapidity with which the Soviets were able to acquire even closely guarded Western processes is little short of amazing. The manufacture of carburetors provides a good example. In 1928 the Holley Permanent Mould Machine Company in the United States developed a mechanized metal-casting process for producing carburetors to replace the previous slow-earth-moulds technique. The new technique was much quicker and required much less labor. The secret was in the composition of the heat-resistent lining of the moulds. The Holley Company sold only two sets of equipment: one to Ford in the United States and one to Siemens-Schukert in Germany. Then the Soviets announced that they too had the 'Kholley' carburetor manufacturing process and were going to put it to use.[31] The Samara carburetor and motor plant was sub-

[26] Amtorg, *op. cit.*, V, No. 6 (March 15, 1930), p. 106.

[27] *Ibid.* See also U.S. State Dept. Decimal File, 861.6463/46. The Electric Auto-Lite employees raised the question of their status and rights if they became employees of the Soviet Government. Clearly they preferred to remain employees of Electric Auto-Lite.

[28] U.S. Congress, *Investigation of Communist Propaganda* (71st Congress, 2nd session, Special Committee to Investigate Communist Activities in the United States), Part 3, Vol. 3 (Washington, D.C.: 1930).

[29] U.S. State Dept. Decimal File, 861.5017—Living Conditions/417.

[30] *Automotive Industries*, LXI, No. 17 (October 26, 1929).

[31] *Pravda* (Leningrad), No. 24, October 15, 1932. The 'advantage of coming late,' even with the carburetor, may be suggested by the observation that, in Great Britain alone, some 28 different carburetor models were developed between 1889 and 1933. [See *Motor Cars Handbook of the Collection*, Part II (London: H.M.S.O., 1959).]

sequently developed to supply the entire automobile, tractor, and airplane industries with carburetors.[32]

In early 1932 the 'first automobile repair station of a standard type' was opened in Moscow; it was 'equipped with American machinery.'[33]

At this time a large plant for the manufacture of rubber and asbestos parts for automobiles and tires for automobiles, bicycles, and motorcycles—'one of the largest in the world'—was erected at Yaroslavl. Designed to employ 22,000, the plant came into production at the end of 1932 and cost more than $100 million. Technical assistance for the rubber-tire plant was supplied by the Seiberling Rubber Company of Akron, Ohio, which supervised initial operations and trained Soviet engineers and foremen at Akron. Amtorg stated that the Seiberling Company 'will prepare all the designs, plans and specifications for the construction. . . .'[34] The automobile-tire-producing capacity was 3,100 per day, in addition to 9,000 bicycle and 480 motorcycle tires.[35] Some 35 different asbestos parts, including brake linings and clutch facings, were also made.[36] Technical assistance to the asbestos unit was supplied by the Multibestos Company of Walpole, Massachussetts, and a number of American engineers were hired on individual contract.[37]

Another rubber-tire plant was supplied by the United States under Lend-Lease: this was the Ford Motor Company tire plant, capable of producing one million automobile tires per year. It was dismantled and shipped complete to the U.S.S.R.[38] There were some problems in re-erection of this tire plant in Moscow, as the Soviet Union was not able to duplicate the basement and sublevel features 'which were part of the Detroit plan.'[39] By February 1944, 75 percent of the plant equipment was on site and another 15 percent en route. A request was then made for installation drawings for Goodrich-type tire-building machines from the National Rubber Company and for two American engineers to handle the erection of the Farrel-Birmingham calendars; given these, the Russians expected that production would start in June 1944.[40]

In the allied field of highway construction, the Seabrook Construction Company provided technical assistance for road construction in the Moscow

[32] Amtorg, *op. cit.*, VI, No. 23 (December 1, 1931), p. 533.
[33] *Ibid.*, VII, No. 2 (January 15, 1932), p. 43.
[34] *Ibid.*, IV, No. 16–17 (September 1, 1929), p. 279.
[35] *Automotive Industries*, LXI, No. 17 (October 26, 1929).
[36] U.S. State Dept. Decimal File, 861.659—ASBESTOS, Report No. 623, Riga, August 11, 1932.
[37] *Ibid.*
[38] U.S. State Dept. Decimal File, 861.24/1567.
[39] *Ibid.*, Telegram 810, Moscow to Washington, D.C., July 6, 1943.
[40] U.S. State Dept. Decimal File, 861.654/19, Telegram 451, Moscow to Washington D.C., February 10, 1944.

area and had road-building contracts in Turkmenistan and possibly in the Caucasus.[41] Technical assistance for bridge construction was provided by a highly qualified consultant, Leon S. Moisseiff, Consulting Engineer to the Port of New York Authority.[42]

THE ORIGIN OF THE STALINGRAD TRACTOR PLANT

Site selection and staking out for the Stalingrad Tractor Plant were reported in 1926.[43] Little else was done for three years. In March 1929 a delegation of 13 Soviet engineers arrived in the United States and in co-operation with several American companies outlined a plan for a plant to produce 50,000 Caterpillar-type tractors (of 15 to 30 horsepower) per year.[44] The Stalingrad Tractor Plant, largest in Europe, was a packaged plant built in the United States, dismantled, shipped to the U.S.S.R., and re-erected at Stalingrad under supervision of American engineers. All equipment was manufactured in the United States by some 80 firms; the plant produced the International Harvester 15/30 model.

The original Gosplan request had been for a plant to manufacture only 10,000 tractors per year. The Russian planners estimated a construction time of four or five years even for a U.S. construction company.[45] Work on a 50,000-tractor-per-year plant actually started in June 1929. The framework was completed December 23, 1929[46] and the structure roofed and walled by February 15, 1930.[47] Three months later 20 percent of the equipment in the machine shops and assembly departments, 75 percent of the forge-shop equipment, and 40 percent of the casting-shop equipment had been installed.[48] In the following month the balance of the equipment was received and installation of the foundry completed.[49]

The Stalingrad Tractor Plant was the first of three massive plants for the production of tractors in peace and tanks in war. It was built in every sense

[41] Amtorg, *op. cit.*, IV, No. 12–13 (July 1, 1929), p. 232.

[42] *Ibid.*, No. 18 (September 15, 1929), p. 306.

[43] Report of the Ford Delegation to Russia and the U.S.S.R., April–August 1926 (Detroit, 1926), Ford Motor Company Archives Accession No. 49.

[44] 'While preliminary work on the site of the Stalingrad Tractor Plant had been conducted for some time, the actual work on the construction of the principal departments started only in June when the plans arrived from the United States.' [Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), p. 135.] 'The entire designing of the Stalingrad . . . tractor plant, which is to produce annually 40,000 wheel tractors of 15–30 h.p. was carried out in the United States.' [Amtorg, *op. cit.*, IV, No. 19 (October 1, 1929), p. 336.]

[45] Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), p. 135.

[46] *Ibid.* See photograph on p. 134.

[47] *Ibid.* See photograph on p. 135.

[48] Amtorg, *op. cit.*, V, No. 13 (July 1, 1930), p. 287.

[49] *Ibid.*

of the word in the United States and reassembled by 570 Americans and 50 Germans in Stalingrad. The plant was delivered in component parts, and installed in a building supplied by McClintock and Marshall and erected under John Calder of the Austin Company. *Za Industrializatsiiu* pointed out that 'it is very important to note that the work of the American specialists . . . was not that of consulting but of actually superintending the entire construction and the various operations involved.'[50]

Each item of construction and equipment was the responsibility of a major U.S. firm. This effort is summarized in table 11–2.

Table 11–2 DESIGN AND CONSTRUCTION OF THE STALINGRAD TRACTOR PLANT

Operation or Supply	*U.S. Firm*
Design of plant	Albert Kahn, Inc.
Design of forge shop	R. Smith, Inc.
Design of foundry	Frank D. Chase, Inc.
Equipment for cold-stamping department	Niagara, Bliss
Equipment for heat-treating shops	Rockwell
Equipment for power station	Seper
Equipment for power-station equipment	Westinghouse
Equipment for chain-belting, conveyor system	Chain Belt Co.
Supply of buildings	McClintock & Marshall
Superintendent of construction	John Calder

Sources: *Za Industrializatsiiu*, July 5, 1930.
Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), p. 135.
Norton T. Dodge, 'Trends in Labor Productivity in the Soviet Tractor Industry,' Ph.D. Dissertation, Harvard University, Economics Department (February 1960).

The American chief engineer had no administrative chores. These were handled by Russian and American assistants. All technical problems were settled by American engineers on the spot. The Stalingrad Tractor Plant, therefore, was American in concept, design, construction, equipment, and operation. It could just as easily have been located outside Chicago, except for the placards claiming 'socialist progress.'

It is worthwhile to recall that the contemporary Soviet press was reasonably open about this U.S. assistance. For example, an article in *Za Industrializatsiiu*[51]

[50] *Za Industrializatsiiu*, July 5, 1930. The original Gipromez plant was significantly changed by the American construction companies and equipment suppliers. The floor area of the forge shop was decreased from 12,600 to 7,200 square meters and the forge shop work force from 655 to 335 men.

[51] *Ibid.*

drew three conclusions: first, that the preparation of the plans for the Stalingrad plant by American engineers with 'participation' of Soviet engineers made completion of the plant possible within a 'very short time'; second, that work and training by Soviet engineers in the United States resulted in a 'considerable improvement in engineering processes' and the application of American standards; and third, that work in the United States gave the Soviets a first-hand opportunity to study American tractor plants and verify data on operation of American machine tools. Even though this article understated the amount of American assistance, it constituted altogether a quite remarkable admission.

THE KHARKOV TRACTOR PLANT

Kharkov was identical to the Stalingrad plant. By using the steel-work dimensions given in the Stalingrad blueprints, the Soviets anticipated saving 440,000 rubles in the purchase of fabricated structural steel in the United States. A *Pravda* article[52] noted this and questioned whether the assembly shop trusses, doors, and windows should be bought in 'knocked-down' form from the United States (as in the Stalingrad plant) or built and assembled by Soviet plants and engineers. Finally much of the structural steel was bought in Czechoslovakia.

Although the original intention was to build Kharkov as an all-Soviet undertaking, American engineers were called in at a very early point. Leon A. Swajian, for example, became Chief Construction Engineer and was subsequently awarded the Order of Lenin for his work at Kharkov.[53] A fairly large number of foreign specialists were invited in; a booklet of 80 pages (including 74 illustrations) is devoted to the activities of foreign workers at the Kharkov Tractor Plant.[54]

To Leon Swajian we owe the observation that these tractor plants were built very much more quickly in the U.S.S.R. than in the U.S.A. although the same supervising engineers and equipment were used. After commenting that no other construction job had required so much work in a single year, Swajian added that in the U.S. giant plants are not built all at once; we build a few departments, subcontract, and buy spares outside, so that:

> Ford's River Rouge plant was more than a dozen years in building. When I took charge it was already partly built; I worked there six or seven years and when I left construction was still in progress. But in the U.S.S.R. with government financing and no other plants from which to buy spare parts, with the plant dependent on itself—down to the smallest operation

[52] June 5, 1930.

[53] F. E. Beal, *Foreign Workers in a Soviet Tractor Plant* (Moscow: Co-operative Publishing Society of Foreign Workers in the U.S.S.R., 1933), p. 9.

[54] *Ibid.*

> on the basic raw material—the whole plant must be built at once. And very swiftly too, if it is not to tie up capital too long. The Kharkov job was pushed to completion more swiftly than any job I have ever had to do with.[55]

Even in mid-1933, when the plant was in operation, there were still 25 Americans at Kharkov, including the Foundry Maintenance Superintendent, the Assistant Maintenance Superintendent, and the engineer in charge of pyrometer equipment.[56]

As at Stalingrad and Chelyabinsk, the equipment was almost all foreign—'either German or U.S.—if German then patterned after American makes';[57] in fact no equipment at the Kharkov plant has been identified precisely as Soviet. The forge shop had $403,000 worth of American forging machines and dies;[58] and the heat-treating equipment, automatic furnace-temperature controls, and similar equipment were supplied by Leeds and Northrup of Philadelphia.[59]

Kharkov produced the International Harvester 15/30 model until 1937, when it changed over to the Russian NATI model. After World War II the plant went back to production of the original International Harvester 15/30.

THE CHELYABINSK TRACTOR PLANT

The Chelyabinsk plant was started in 1930 without foreign technical assistance as another duplicate of the Stalingrad Tractor Plant. One year later, in March 1931, a letter to the Soviet press signed by 35 Chelyabinsk Tractor Plant engineers and economists charged that the plant was 'on the verge of total collapse.'[60] The letter explained that planning had begun early in 1930 and construction in April. Supposedly the building had been completed in September of that year. Although operation had begun on November 6, 1930, no usable tractors had been produced as of March 1931. The first 'tractors' were built of 'junk,' there were 'freaks' in the design of the metal stamps, there was no hoisting gear in the mechanical and assembly shops (the walls were not strong enough to bear the weight), the compressor shop

[55] Amtorg, *op. cit.*, VI, No. 18 (September 15, 1931), pp. 413–5.

[56] U.S. State Dept. Decimal File, 861.5017—Living Conditions/677, Report No. 155, Riga, June 14, 1933.

[57] *Ibid.*

[58] Amtorg, *op. cit.*, V, No. 22–23 (December 1, 1930), p. 462.

[59] L. M. Herman, 'Revival of Russia's Tractor Industry,' *Foreign Commerce Weekly*, XXI, No. 2 (October 6, 1945), p. 12.

[60] 'The Chelyabinsk Experimental Tractor Plant on the Verge of Collapse,' *Za Industrializatsiiu*, No. 77, March 19, 1931, p. 3. Subsequent articles indicate further delays and problems. See *Izvestia*, March 22, 1931, and *Za Industrializatsiiu*, April 18, 1931.

was not working, and the boilers received from Germany had not been installed. So ran some of the complaints in the letter.

American engineers, including John Calder, the expert trouble-shooter, were then called in to take over reconstruction of the plant and operating responsibility. A pilot plant was established and operated by John Thane and an American assistant, both former employees of the Caterpillar Company.[61] The Chief Consulting Engineer from 1931 to 1933 was Edward J. Terry. An interview with Terry by a State Department official[62] provides information on the fate of the plant in the next two years. Even by early 1933 'very little had actually been completed'; the foundry and the forge were not finished, nor were the conveyors nor the sand-handling equipment for castings.

One puzzling point concerning Chelyabinsk is the extent of the assistance rendered by the Caterpillar Company, of Peoria, Illinois. In 1968 company officials did not have a technical-assistance agreement on file nor could any current official recall an agreement. However, the Stalinets S-60 tractor was an exact copy[63] of the Caterpillar 1925–31 model. Ex-Caterpillar engineers supervised operations, and one of these stated 'that he had seen at the works American specifications and drawings and also standard drawings belonging

Table 11–3 SUMMARY OF SOVIET TRACTOR PRODUCTION AND WESTERN MODELS, 1930–45

Soviet Model	*Years Produced*	*Soviet Plant*	*Western Origin*
Wheeled Tractors			
FP 10/20	1928–33	Putilovets (Kirov)	Fordson
International 15/30	1930 after 1948	Kharkov, Stalingrad	International Harvester
Universal 10/20	1934–7, after 1945	Kirov, Vladimir	International Harvester Farmall
Track-Laying Tractors			
NATI	1937–41 1944–9	Kharkov Stalingrad	No data on origin of the NATI
Stalinets S-60	1931–7	Chelyabinsk	Caterpillar
Stalinets S-65	1937–41	Chelyabinsk	Diesel version of Caterpillar 60

Sources: See text.

[61] *Factory and Industrial Management*, LXXXII, 1931, p. 804.
[62] U.S. State Dept. Decimal File, 861.5017—Living Conditions/663, May 27, 1933.
[63] U.S. State Dept. Decimal File, 861.659/TRACTORS/5, October 26, 1933.

to the American company.'[64] Moscow *Pravda*[65] agreed that negotiations with Caterpillar were inconclusive. The Soviet representative at the Chelyabinsk Detroit office then reportedly purchased a Caterpillar tractor, took it to pieces in his Detroit office, and proceeded to design the plant.[66] This is rather an unlikely way to design a tractor plant and would certainly account for construction problems at Chelyabinsk.

In May 1933 'practically all the machine tools and production equipment in the plant was [*sic*] either American, English or German of the highest quality and the most modern for that time. . . .'[67]

German equipment installed at the Chelyabinsk Tractor Plant included oil breaker switches (700,000 marks' worth),[68] various drop hammers (about half a million marks' worth),[69] a wheel lathe (300,000 marks),[70] a compression unit (200,000 marks),[71] forging machines (1¾ million marks' worth),[72] 15 gear-cutting machines (200,000 marks),[73] a mold for the iron foundry (400,000 marks),[74] a Universal milling machine (200,000 marks),[75] grinding machines (350,000 marks' worth),[76] and heavy presses (1 million marks' worth).[77]

By 1937 the plant employed about 25,000 workers. The only model produced between 1933 and 1937 was the Stalinets (Caterpillar) S-60; a 50-horsepower (drawbar) model of the crawler type. About 6,460 were produced in 1937:[78] a long way from the planned 50,000 per year. In 1937 the production model was changed to the Stalinets S-65, which was a Caterpillar 60 with slightly increased horsepower and a diesel engine. A total of just over 3,000 were produced, including another model with a gas generator.

[64] *Ibid.*

[65] No. 146, May 29, 1933. *Za Industrializatsiiu*, No. 125, June 1, 1933, says that the company rejected a technical-assistance contract.

[66] *Za Industrializatsiiu*, No. 125, June 1, 1933.

[67] Norton T. Dodge, 'Trends in Labor Productivity in the Soviet Tractor Industry,' Ph.D. Dissertation, Harvard University, Economics Department (February 1960).

[68] *Sowjetwirtschaft und Aussenhandel*, Handelsvertretung der UdSSR in Deutschland, Berlin SW, X, No. 17 (1931), p. 30.

[69] *Ibid.*, XI, No. 6 (1932), p. 15.

[70] *Ibid.*, XI, No. 7 (1932), p. 18.

[71] *Ibid.*, XI, No. 10 (1932), p. 21.

[72] *Ibid.*, XI, No. 6 (1932), p. 14.

[73] *Ibid.*, XI, No. 16 (1932), p. 23.

[74] *Ibid.*, XI, No. 10 (1932), p. 21.

[75] *Ibid.*, XI, No. 8 (1932), p. 31.

[76] *Ibid.*, XI, No. 15 (1932), p. 22.

[77] *Ibid.*, XI, No. 10 (1932), p. 21.

[78] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

THE PUTILOVETS (KIROV) TRACTOR PLANT IN LENINGRAD

The Putilovets, oldest engineering plant in Russia, attempted to produce copies of the Fordson tractor in the late 1920s.[79] This was unsuccessful and the plant was rebuilt and greatly expanded in 1929–31 under the supervision of Ford Motor Company engineers to produce the Fordson-Putilovets (FP) tractor.[80] Thus by 1931 the plant was organized along American lines with completely new American and German equipment. An American engineer, Bowers, was running the two foundry shops;[81] Karl Holgdund, an American citizen, was superintendent of the drop hammer shop;[82] and the modern forge shop was also under American management. According to one observer, the design, drawings, specifications, and equipment were all American.[83]

The first Soviet motor for combines, the Viskhom-2, was a modified Fordson tractor motor. Production started in March 1932.[84] In the spring of 1934 the tractor model was changed from the Fordson, found to be too light for Russian conditions, to the International Harvester Farmall tractor, known in the U.S.S.R. as the Universal. The changeover may in part have been brought about by what C. P. Weeks, Vice-President of Hercules Motor Corporation, calls the 'acknowledged failure' of the FP in workmanship and engineering detail.[85] The Farmall was the standard row-crop steel-wheeled tractor even after World War II, when it was produced at the Vladimir Tractor Plant, opened in 1944.

Another tractor plant added in World War II was the Altai (Robtovsk), opened in 1943 with equipment evacuated from the Kharkov Tractor Plant.

AGRICULTURAL COMBINE PLANTS

Of five agricultural combine plants, four produced copies of the Holt machine, although, according to the J. I. Case Company representative in the U.S.S.R. 'they do not stand even a modest comparison with our products. . . .'[86]

The first 'Soviet Holt' combine harvesters were supplied with engines by the Hercules Corporation in the United States, although, according to Vice-President Weeks, these were not ordered until the machines were completed.[87]

[79] Sutton, *Western Technology . . ., 1917 to 1930*, p. 140–1.

[80] U.S. State Dept. Decimal File, 861.50—FIVE YEAR PLAN/60, p. 5 of attached report.

[81] U.S. State Dept. Decimal File, 861.5017—Living Conditions/689.

[82] *Ibid.*,

[83] *American Engineers in Russia*, Folder 4, Item 2, G. R. Cody.

[84] Amtorg, *op. cit.*, VII, No. 6 (March 15, 1932), p. 140.

[85] U.S. State Dept. Decimal File, 861.5017—Living Conditions/307.

[86] *Ibid.*, 861.5017—Living Conditions/517.

[87] *Ibid.*, 861.5017—Living Conditions/307.

The Selmash (All-Russian Syndicate of Agricultural Machines and Implements) Agricultural Equipment Plant, located at Rostov on Don, was a large new plant equipped with 2,802 new imported machine tools.[88] A short published list of these machines included a milling machine,[89] a steam turbine,[90] and a gas producer.[91] Twenty-eight American and German technicians instructed technical personnel and workers to operate the imported equipment; construction at Selmash was supervised by U.S. engineers. Production was planned at 100,000 each of wagons, plows, and hay mowers per year, in addition to 30,000 drills and 40,000 binders.[92] A separate combine harvester plant to produce 5,000 'Soviet Holt' combines per year was also erected.

Table 11–4 AGRICULTURAL COMBINE PLANTS, 1930–45

Name of Plant	*Annual Capacity*	*Origin of Technology and Assistance*
Selmash	15,000 combines	Holt combine
Kommunar (Zaporozhe)	10,000 combines	Holt combine
Saratov	25,000 combines	Soviet motorless combine
	13,000 pickups	—
	15,000 windrowers	—
Novosibirsk	25,000 combines	Holt combine
Krasny Aksai	Combines (number not known)	Holt combine
	Corn harvesters (number not known)	New Idea corn harvester

Source: U.S. State Dept. Decimal File, 861.5017—Living Conditions/517, Gloeckler Report, p. 12.

Increases in the production of corn, beans, sugar beets, and sunflowers required special equipment such as the row-crop tractor, first introduced into the United States in 1925.[93] The first Soviet row-crop tractor, produced in 1935, and called the Universal, was a steel-wheeled reproduction of the International Harvester Farmall tractor. But this hardly worried the J. I. Case Company sales representative in the U.S.S.R., who commented:

> 'That insignificant plant Krasny Aksai . . . is an old plant not fit for mass production. They are copying . . . the New Idea Corn Picker. Our corn harvester showed better results in the test contracted last year in the Caucasus than the New Idea or any other of our competitors [*sic*] machines.'[94]

[88] Amtorg, *op. cit.*, V, No. 9 (May 1, 1930), p. 187. (The size of the plant is illustrated on pp. 180–1.)

[89] *Sowjetwirtschaft und Aussenhandel*, IX, No. 6 (1930), p. 18.

[90] *Ibid.*, IX, No. 20 (1930), p. 38.

[91] *Ibid.*, IX, No. 11 (1930), p. 44.

[92] Amtorg, *op. cit.*, V, No. 9 (May 1, 1930), p. 187.

[93] Naum Jasny, *The Socialized Agriculture of the U.S.S.R.* (Stanford: Stanford University Press, 1949), p. 462.

[94] U.S. State Dept. Decimal File, 861.5017—Living Conditions/517, Gloeckler Report, p. 12.

Similarly, the Novosibirsk combine plant, expanded from the old International Harvester plant, had 10,000 workers producing about 40 'Soviet Holt' combines per day. This plant had four Americans and one German technician to help start production.[95]

This close relationship between the United States and development of a modern Soviet agricultural equipment industry was recognized in the Soviet press. For example, the following comment was made in reference to the start of manufacture of the Holt combine at the Kommunar plant in Zaporozhe:

> It is quite obvious that carrying out this huge program within such a short time would be impossible without utilizing the technical experience of capitalist countries. America is the leading source of modern engineering practice. Some things can be learned from Germany, but in the agricultural machine building industry the United States must be taken as a model. . . .[96]

Izvestia pointed out[97] that the Krasny Aksai works was building combines according to a U.S. model.

In August of 1930, however, it was announced that the Saratov Combine Plant was to produce 15,000 combines per year; this combine was to be a type 'not popular in the United States,' i.e., a five-meter motorless combine with a power take-off from the tractor. Said *Pravda*, 'The preparation of these models was done without foreign technical assistance . . . because foreigners could not be helpful in designing a machine entirely unknown to them. . . .'[98] The article added that a group of American and European engineers skilled in conveyor methods of production was to be hired.[99] The plant utilized German press equipment.[100]

CONCLUSIONS

The building of the new Ford Gorki plant, the reconstruction of the Moscow and Yaroslavl auto plants, and the construction of three giant tractor plants were all undertaken between 1929 and 1934. The second half of the decade was generally occupied in bringing these enormous plants into operation, although several new automobile-assembly plants were also started. Both automobile and tractor capacities were the same in 1941 as in 1933; the reported increase in production came by utilizing the capacity built in the early 1930s to its fullest extent.

[95] U.S. State Dept. Decimal File, 861.5017—Living Conditions/537, Interview with A. D. Korn. Mr. Korn's contract is attached to the report.

[96] *Torgovo-Promyshlennaya Gazeta*, LXX, No. 1771 (December 10, 1929).

[97] *Izvestia*, April 18, 1930.

[98] *Pravda*, August 11, 1930.

[99] *Ibid.*

[100] Amtorg, *op. cit.*, VII, No. 13–14 (July 15, 1932), p. 295.

The automobile and tractor industries were completely dependent on foreign (primarily American) technology for design, construction, and equipment, as well as initial operation. There was a German contribution, but this mainly consisted of supplying equipment manufactured to U.S. designs.

The product of these gigantic plants were Fords, a specially designed Budd Company model with a Hercules engine, Caterpillar and International Harvester tractors, and Holt and Farmall agricultural machines. No indigenous Soviet technology has been traced, with the exception of the five-meter motorless combine produced at Saratov. Indeed, the Soviets had enormous problems just assimilating transferred U.S. technology; and this objective itself was not achieved until about 1941.

At the time of the German invasion in 1941, the Soviet Union had one completely new automobile plant (the Ford Gorki unit) and two greatly expanded and reconstructed units for trucks at Moscow (the Amo) and Yaroslavl. The Rostov plant was probably not in production in 1941; other units were assembly plants only. At the same time tractor production was concentrated in three new very large plants at Stalingrad, Kharkov, and Chelyabinsk, together with the expanded and rebuilt Putilovets at Leningrad. The Altai (Robtovsk) plant, added in 1943, and the Vladimir plant, added in 1944, both produced Western models.

CHAPTER TWELVE

Technical Assistance to the Railroad System

THE DEVELOPMENT OF A MODERN RAILROAD SYSTEM

In February 1930 a delegation of 34 Soviet railroad engineers arrived in the United States to make a study of Pennsylvania Railroad operations. As D. E. Sulimov, First Vice-Commissar of the Commissariat of Transportation, noted, 'This is the first Soviet railway delegation to make a comprehensive study of American railway systems, the technical achievements of which have aroused the greatest interest in the Soviet Union. . . .'[1]

The commission was interested, he added, in studying American rolling stock and hoped to accomplish much with 'the co-operation of American engineering and industry.'[2] The delegation traveled more than 16,000 miles examining United States railroads[3] and concluded that adoption of the American railroad system was essential for Soviet economic progress:

> . . . we realize well that we shall not be able to carry through this program in the most effective manner unless we avail ourselves of the great fund of experience accumulated by the most technically advanced countries, particularly the United States.[4]

This implied a comparison to the lightweight European rails then utilized in Russia which limited train loads, speed, and equipment utilization.

Sulimov added that the delegation was interested in making arrangements with American firms to further this technical transfer and that they would negotiate agreements for designing locomotives, freight cars, and gondolas, and were interested in technical assistance for production in the Soviet Union.

1. Amtorg, *op. cit.*, V, No. 5 (March 1, 1930), p. 74.
2. *Ibid.*
3. Amtorg, *op. cit.*, V, No. 8 (April 15, 1930), p. 147.
4. *Ibid.*

In conclusion, thanks was given to the Pennsylvania Railroad, Great Northern Railroad, American Locomotive Company, and the Baldwin Locomotive Company for their assistance.

An agreement was concluded immediately with Ralph Budd, President of Great Northern Railroad, to visit the U.S.S.R. and present a plan for reorganization of the industry along American lines.[5] Budd returned with Sulimov and the delegation to Russia.[6]

On returning to the United States at the end of 1930, Budd released public statements which glossed over the many problems of Soviet railroading,[7] but the official report which he submitted to the Soviet Government left no doubt as to the backwardness of their railroads.[8] The objective of his trip was reported as follows:

> [In 1930] they [the Russians] were undecided as to whether they should modernize to the so-called transcontinental railway plant or change to the American system and standards. It was for the purpose of reporting on this question that I spent the summer of 1930 in that country. . . .[9]

To achieve such modernization, it was suggested that grade reduction was one means to increase capacity; a reduction from the prevailing 0.6 to 0.8 percent to the United States standard of 0.3 to 0.4 percent would be an effective means of increasing capacity and avoiding double tracking. After listing grade practices that should be halted, such as level tracking across bridges and frequent changes of gradient, Budd recommended extensive grade reductions and studies toward that end. Practically all sidings were on level gradients, whereas in good railroad practice 'sidings are not allowed to determine gradient but the location of sidings is influenced by gradient. . . .' Budd noted that main line tracks varied from alignment, that clearances were insufficient, that ballast had been neglected, that ties were not satisfactory (Budd provided repair specifications), and that existant rails should be replaced with 110-pound rails (Budd gave U.S. rail specifications), among other technical considerations.

Budd's recommendations are an excellent indicator of the state of railroad conditions in 1930 and provide a standard with which to measure progress in the following decade. In order to acquire the best transportation system at the lowest cost, according to Budd, Soviet railroads would have to:

[5] Amtorg, *op. cit.*, V, No. 9 (May 1, 1930), p. 188.

[6] *Ibid.*, No. 12 (June 15, 1930), p. 257.

[7] *Ibid.*, No. 22–23 (December 1, 1930), p. 464.

[8] Ralph Budd, *Report on Railways of the U.S.S.R. 1930*. The Soviets, of course, did not publish the report, but a copy of Vol. I is in the National Archives and another copy is in the Hoover Institution.

[9] *American Engineers in Russia*, Letter from Ralph Budd to H. Fisher, February 7, 1934.

(1) Adopt automatic couplings on all cars and locomotives
(2) Adopt air brakes throughout
(3) Strengthen the track, particularly with more and heavier ties and improved ballast
(4) Improve track standards, with better rail sections, bolts, and tie plates
(5) Carry out extensive track realignment
(6) Reduce main line gradients
(7) Adopt the train order system of handling
(8) Use larger modern cars
(9) Use larger modern locomotives
(10) Use heavier rail sections
(11) Use passing sidings and yard tracks for longer trains
(12) Build engine houses and terminals for larger locomotives
(13) Adopt automatic block signals
(14) Modernize repair shops
(15) Adopt a consolidation program to reduce number of lines
(16) Undertake a campaign for safety, cleanliness, and better care of material[10]

Budd further noted that climate and topography were quite similar to those in the United States and that, except for Moscow and Leningrad suburbs, electrification was not justified 'to any considerable extent.'

Brief extracts from the diary of W. Robert Wood,[11] who also made a long official inspection of the complete Soviet railroad system, illustrate the magnitude of the problem then facing Soviet railroad authorities and pointed out by Budd.

> June 11, 1930 Today we inspected round houses and shops, and I must say it looks rather hopeless as the workers seem to do about as they please. . . . Their day's output is eleven freight cars repaired and three or four passenger cars; with many less men at our St. Cloud shops we could turn out nearly that number *new* freight cars besides the repaired cars of twenty or thirty per day [*sic*]. . . .

[10] The reader is directed to two excellent reports published by the Association of American Railroads which are indicators of the considerable progress made in Russia between 1930 and the 1960s: Association of American Railroads, *Railroads of the U.S.S.R.* (Washington, D.C., n.d.), and *A Report on Diesel Locomotive Design and Maintenance on Soviet Railways* (Chicago: AAR Research Center, 1966).

[11] *American Engineers in Russia*, 'Trip to Russia,' Folder 7. Numerous comments similar to those of Budd were made. Wood noted, for example, that the Russians were using untreated pine ties with a life expectancy of only four to five years and said no larch was available in the U.S.S.R. However, larch is a common soft wood in the Soviet Union and was noted by American engineers as being found 'in abundance and not used.' (P. 14.)

> July 18, 1930 [At Penza] . . . walked over the yard where they have made a problem by building four bridges right in the terminal.
> August 5, 1930 Arrived at 8 a.m. at a tunnel that presents a problem. It is wet and ice forms in the winter. It also is caving in. Tunnel is about 1½ kilometers long and at east end has a reverse curve due, they told us, to missing their alignment when constructing. This is probably the only tunnel in the world with three curves in it. The Engineer must have missed connecting by twelve feet. . . .
> August 5, 1930 [At Sverdlovsk] The station layout and yard layout is the worst we have ever seen . . . the project was most fantastic.
> August 6, 1930 . . . there are reverse curves at every station and between stations put in for no apparent reason. . . .

Thus in 1930 the problems observed by Budd and Wood were undeniably substantial. A decision was made to overcome them by adopting American railroad practice and specifications. American operating personnel were hired, including a large group from the Baltimore and Ohio Railroad. C. A. Gill, formerly with the Reading Railroad, was made Chief Consulting Engineer of the Soviet railroads.[12]

However, the track reforms instituted in the early 1930s were several years coming to fruition, and this particularly limited the use of American-sized engines, which were too heavy for the weak track. Five locomotive types were put on trial, including two of unusual design. Three types were standard: the FD, which was Soviet-made, embodying many U.S. features; the U.S. 2–10–2; and the U.S. 2–10–4. In addition an articulated Beyer-Garrett was bought from the United Kingdom and a Soviet-built 4–14–4 was also placed under test; these last two engines were the results of an attempt to overcome the weak-track problem by lowering the load per wheel: i.e., spreading the weight over a greater number of wheels. This effort was not, however, successful, and concentration was placed on standard tsarist and American locomotives.

Between 1935 and 1945 many American recommendations were implemented. The decade was marked by reconstruction, double-tracking of key routes, installation of automatic block signals, and new siding and loop construction. This, coupled with the extensive reorganization of railroad operations, led to major improvements: increased loads, greater average speeds and faster turn-around times.

World War II did not affect the railroad system as adversely as might be expected. Railroad mileage by 1943 had been reduced by one-third,[13] and most of this had to be rebuilt after recapture. Lend-Lease provided an ample supply of railroad materials for this purpose. The locomotive stock fared even better. Locomotives were moved back behind the lines in 1941. Only about 15

[12] *Ibid.*, Folder 1.

[13] J. N. Westwood, *Soviet Railways Today* (New York: Citadel Press, 1964), p. 17.

percent fell to the German armies,[14] and these were of the older types. Lend-Lease supply of 2,600 new locomotives (see table 12–1) placed the Soviets in a better position by 1943–4 than before the German invasion.

Table 12–1 ORIGIN OF SOVIET STEAM LOCOMOTIVES, 1930–45

Soviet Locomotive Class	*Years Made*	*Wheel Arrangement*	*Number Produced or Purchased*	*Origin of Locomotive Class*
B	1929	2–10–2 tank	6	Skodawerke Pilsen (Czechoslovakia)
K	1931	0–6–0	'Batch'	Henschel and Sohn (Germany)
Ta	1931	2–10–4	5	American Locomotive Co. (U.S.)
Tb	1931	2–10–2	5	Baldwin Locomotive Co. (U.S.)
FD	1931–41	2–10–2	3,220	Based on U.S. 2–10–2 (U.S.), manufactured at Voroshilovgrad (Lugansk)
Ja	1932	4–8–2 and 2–8–4	1	Beyer-Peacock (U.K.)
Is	1933–41	2–8–4	650	Based on U.S. 2–10–2 (U.S.), manufactured at Kolomna (passenger version of FD type)
C	1933	0–6–0 tank	'Batch'	Beyer-Peacock (U.K.)
B	1933	0–4–0 tank	'Batch'	Beyer-Peacock (U.K.)
So	1936–54	2–10–0	5,000	Bryansk (tsarist E 0–10–0)
AA	1936	4–14–4	1	Voroshilovgrad (Lugansk)
Su	1940 1926–51 (all classes)	2–6–2	2,830	Tsarist Class S (Kolomna, Sormovo)
Sh, a	1943	2–8–0	200	Standard U.S. Army type
E	1943	0–10–0	9,500	Prerevolutionary Class E (Kuibyshev and other works)
—	1943	2–10–0	2,400 (?)	Baldwin Locomotive, American Locomotive (U.S. Lend-Lease)

Sources: H. M. Le Fleming and J. H. Price, *Russian Steam Locomotives* (London: Marshbank, 1960).
Neue Zürcher Zeitung, July 26, 1944.

THE DESIGN OF RUSSIAN STEAM LOCOMOTIVES

The Vladikavkaz steam locomotive, first produced in 1910, became in its several versions the basic Soviet steam locomotive until the end of World War II. Westwood estimates that it was the most numerous class of steam locomotive in the world, accounting as late as 1960 for about one-third of the Soviet locomotive stock.[15] Another type—the FD—was placed in production

[14] *Ibid.*

[15] J. N. Westwood, *History of Russian Railways* (London: George Allen & Unwin, 1964), p. 87.

in 1933 at Voroshilovgrad (the old Lugansk works), and is described by Westwood as 'a Soviet 2–10–2 design embodying many American features.'[16] In 1935 series production started of a similar but smaller locomotive, the SO 2–10–0.

During World War II some 2,000 American 2–10–2 engines were received by the Soviets under Lend-Lease (forming the Ea class). Some features of this engine were incorporated into the L class which first appeared in 1945 from the Kolomna works. Other numerous classes of locomotives are the TE and TL series, formed from German locomotives captured in World War II. Table 12–1 summarizes by class the origin of Soviet steam locomotives (both prototype and production) between 1930 and 1945.

SOVIET ELECTRIC LOCOMOTIVES

The first Soviet electric locomotives were made by the General Electric Company and were to form the basis of Soviet-designed and built locomotives. General Electric supplied eight locomotives, of which two were complete and six provided with engines manufactured at the Dynamo works in Moscow with General Electric technical assistance. With a total weight of 124 tons, each had an axle weight of 22 tons. The traction motors had an hourly rating of 340 kilowatts and developed 2,760 horsepower.[17] These were called the Ss class and between 1932 and 1934 some 21 were built at the Kolomna locomotive works with electrical equipment from the Dynamo works.

The General Electric locomotive design was not produced between 1934 and 1938. Seven similar engines were bought from the Brown-Boveri Company of Italy.[18] These had dimensions similar to those of the General Electric but were not developed further.

In addition to these purchases of foreign electric locomotives, the Soviets developed the VL 19, the prototype of which was tested in late 1932. This locomotive had an axle weight of 19 tons with 340-kilowatt traction motors. Westwood notes that about 150 were built between 1932 and 1938. The VL 19 was a Soviet design, although it used a 340-kilovolt General Electric motor. It was made the production standard. However, mechanical and other weaknesses led to abandonment of the standard VL 19 and a return to the General Electric design. The first of these was produced in 1938 and designated VL 22; a more powerful 400-kilowatt unit replaced the earlier engine in 1941 and this model became the postwar standard.[19]

[16] *Ibid.*, p. 88.

[17] *General Electric Review*, XXXVIII.

[18] Westwood, *Soviet Railways Today*, p. 46.

[19] *Ibid.* Westwood notes on p. 47 of *Soviet Railways Today* that other prototypes (the SK and the PB) were built but not multiplied. An experimental high-voltage

Electrification of suburban services began at Baku in 1926 with German equipment, withdrawn in 1940. Moscow suburban electrification was based on the Sv class using Vickers electrical equipment and operated until replacement by the Sd class in 1939. The Sd equipment built in the Moscow Dynamo plant was similar to the Vickers with a 170-kilowatt motor.[20]

Attempts to develop diesel electric locomotives provide an example of the ineffective transfer of foreign technology, ending in abandonment of the dieselization program in 1937. A number of diesel electric locomotives were built for the Soviets before 1930 in Germany. The first was Lomonossoff's 1-Eo-1 model of 1924–5, with a MAN 1,200-brake-horsepower engine. This was followed in 1927 by another with a Krupp gear box and the same MAN engine. Several other oil-engine locomotives were built as prototypes between 1928 and 1933, all, except one, utilizing MAN engines with horsepower ranging up to 3,000 in twin units.

The exception was a prototype built by the Hohenzollern works of Krupp with two Sulzer engines and Brown-Boveri traction motors.[21] This Krupp prototype was copied by the Kolomna works near Moscow and after encouraging trials was put into series production and became the Soviet Class E el 12. A motor was built for the unit at Kolomna on the MAN diesel system.

The locomotives worked well enough around Moscow but when sent to the arid areas of Turkestan their performance deteriorated. Westwood comments on the problem as follows:

> . . . the work of the diesel locomotives was quite unsatisfactory, and did not match the results achieved on trials. . . . Not only design faults, but also poor quality manufacturing and assembly began to be revealed in day-to-day operation. Fuel pumps failed, cylinders developed cracks, bearings overheated, there were transmission failures, crews were sometimes driven from the cab by smoke and smouldering lubricants. These troubles were aggravated by lack of spare parts and the unavailability of skilled technicians. . . .[22]

Construction of diesel electric locomotives was halted in 1937 and effort was concentrated on steam locomotive production.[23] The significance of this failure in the light of expectations may be judged from the Second Five-Year

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locomotive, based on the G.E. Ss class, was designed, and a prototype was built in 1938, tested for three years, and then abandoned (p. 54). Another, built at the Dynamo works was similar to the German Höllentalbahn locomotives, except for the cab structure. Technical details are in *Electric Railway Traction*, December 8, 1939, pp. 139–41.

20 Westwood, *Soviet Railways Today*, p. 60.

21 See 'Dieselelektrische Lokomotive für Russland,' *Zeitschrift des Vereines Deutscher Ingenieure*, September 16, 1933, for technical details.

22 Westwood, *Soviet Railways Today*, p. 69.

23 *Ibid.*, p. 70. Postwar diesels were based on General Electric/Alco Products technology. This will be covered in the concluding volume.

Plan estimates that by 1937 Kolomna would have an annual capacity of 100 diesel locomotives and Orsk a capacity of 540.[24]

CAR, WAGON, AND AXLE MANUFACTURE

Until 1933 axles for railroad wagons and cars were manufactured on a small scale in the old tsarist locomotive plants. In 1933 'an interesting plant for machining railway carriage and wagon axles on a vast scale' was bought from Craven Brothers (Manchester), Ltd., in the United Kingdom.[25] This enormous plant, comprised of numerous special machines (such as four-axle parting, ending, centering, and shouldering machines), was designed to produce 270,000 axles per year of a standard type—a capacity equal to total railroad axle requirements projected through 1945. The equipment was specially designed 'in order that the machines [could] be operated by semi-skilled or possibly by unskilled workpeople.'[26]

Considerable amounts of new railroad rolling stock were supplied under the Lend-Lease program. By 1945 the following had arrived in the U.S.S.R.: 1,900 steam locomotives, 66 diesel electric locomotives, 9,920 flat cars, 1,000 dump cars, 120 tank cars, and 35 heavy-machinery cars.[27]

Car repair work was developed along lines adopted from the Japanese flow repair system; for example, it was announced that the Dzerzhinsky locomotive repair plant at Voronezh had adopted a new method of locomotive repair 'which is a combination of American and Japanese methods.'[28]

THE BEGINNING OF RAILROAD ELECTRIFICATION

The Suram Pass section of the Transcaucasian Railroad was selected for the initial installation of a 3000-volt d.c. electrified railroad system. The initial project was a 40-mile stretch with a maximum grade of 3 percent—not only the most difficult on the Baku-Batum railroad but possibly in all of the Soviet Union. A little over one-half the mileage consists of curved track, with a 2½ mile tunnel at the summit.

Both General Electric Company and Westinghouse drew up plans for electrification of this section.[29] General Electric obtained the contract. Three substations were installed and the 1500-kilowatt motor-generator sets were manufactured by Italian General Electric of Milan, which also built the high-

[24] Gosplan, *op. cit.*, I, pp. 579–80.

[25] *The Engineer*, CLVI, October 1933, pp. 331–4. This article describes the technical characteristics of the equipment supplied.

[26] *Ibid.*

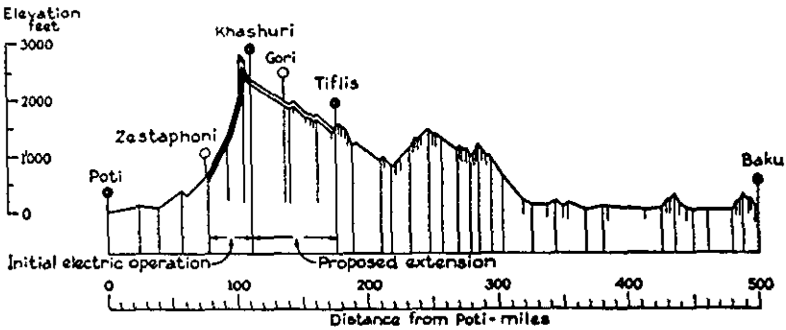
[27] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.*, p. 20.

[28] Amtorg, *op. cit.*, VI, No. 7 (April 1, 1931), p. 165.

[29] U.S. State Dept. Decimal File, 861.64/4.

speed circuit breakers and d.c. lightning arrester. Auxiliary apparatus and secondary distribution material was manufactured in the U.S.S.R.[30]

Figure 12–1 PROFILE OF THE TRANSCAUCASIAN RAILWAY, GIVING ELEVATIONS AND GRADE OF THE ELECTRIFIED ZONE, 1930



At about the same time, a Soviet commission visited most of the 3000-volt electrification systems in the U.S. and Mexico and selected the General Electric C-C locomotive weighing 133 tons for Suram Pass operations. Eight of these were supplied by the company.[31] Erection and placing in service were under supervision of two General Electric engineers, who also trained operative and maintenance personnel. For the next stage of Suram Pass electrification (the easy downward gradient towards Tiflis), the Soviets utilized their own resources.

THE MOSCOW SUBWAY

The lavish Moscow subway was originally intended as a foreign concession. In early 1929 the Rosoff Subway Construction Company of New York concluded an agreement for construction of a 12-mile belt subway and a 120-million-gallon waterworks in Moscow. It was suggested in the *Engineering News Record* that the agreement would not be ratified by the Soviets until 'the company [had] succeeded in negotiations to obtain the required capital from outside sources.'[32] This concessionary arrangement was not implemented.

Construction was begun, therefore, in 1932, with Soviet material resources and advisers from the London, New York, Paris, and Berlin subway systems and utilized layout plans originally drafted by the Russians in 1908.[33] John Morgan, an American, acted as consultant to Mosstroi (Moscow State

[30] *General Electric Review*, XXXVIII, May 1935, p. 220.

[31] *Ibid.*

[32] *Engineering News Record*, CII, June 13, 1929, p. 967–8.

[33] U.S. State Dept. Decimal File, 861.5017—Living Conditions/780.

Table 12–2 PRODUCTION AND ORIGIN OF LOCOMOTIVES IN THE U.S.S.R., 1938

Type (Model)	*Diesel Locomotives*	*Electric Locomotives* *VL-22*	*SO*	*E*	*Steam Locomotives* *FD*	*SU*	*Armored Locomotives*	*All Types*
Western Influence	*Krupp Design Mann A-G Motor Lomonosoff*	*General Electric Design*	*U.S. 2–10–0 Design*	*German, Swedish Design*	*Soviet 2–10–2 Design Plus U.S. 2–10–2 Design Features*	*Tsarist Russian Design (1910)*	*None*	
Plant								
Komintern works (Kharkov)	—	—	6	112	87	—	36	241
October Revolution (Voroshilovgrad, ex-Lugansk works)	—	57	—	—	215	128	77	477
Novocherkast works	—	—	—	4	—	—	14	18
Sormovo (Gorki)	—	—	32	—	86	96	—	214
Kolomna (Moscow)	Production abandoned 1937	80	—	200	86	105	52	523
Stalin (Orsk)	—	—	—	—	134	98	—	232
Ulan Ude works	—	—	16	84	—	—	—	100
Total	—	137	54	400	608	427	179	1,805

Source: Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, March 1941, National Archives Microcopy T 84–122.

Construction and Installation Trust).[34] A German engineer, M. Schmidt, who had been with the Berlin subway, worked on the plans of the Moscow system.[35] An extensive study of foreign systems was made in both the United States and Europe.[36] A Soviet subway commission visited Berlin, and Amtorg commented that:

> . . . Berlin authorities have given the commission every facility for studying the trolleys and subways, street lighting, sewage systems, etc., of Berlin. The commission is authorized to order machinery and equipment for public utilities.[37]

Skilled workers were drawn from all over Europe. Skilled underground laborers came from Vienna.[38] Underground workers and technicians were hired in Great Britain, Germany, France, and the United States.[39] In addition, all known tunneling methods were tried before the British shield method was chosen. Amtorg noted that 'practically all known construction methods were tried out.' They included the British shield system, the French caisson system, the Belgian double passage, artificial freezing (a German method) and the American 'flying arch.'[40]

As finally built, the Moscow system was very much like that of the London Underground, and Westwood points out that 'Soviet engineers made a careful study of the Underground before embarking on their own project, which to some extent represents a significant improvement on the London system.'[41] The escalators, however, were probably of Otis design.[42]

The first section, Sokolniki-Gorki Park, 7½ miles in length, was opened in May 1935.[43]

THE INSTALLATION OF AUTOMATIC BLOCK SIGNALS[44]

The installation of automatic block signals is a good example of the Soviet approach to foreign technology: buying as little as necessary and then duplicating without regard to patent rights.

[34] *Izvestia*, January 14, 1935.
[35] Amtorg, *op. cit.*, VI, No. 24 (December 15, 1931), p. 575.
[36] *Ibid.*, IX, No. 4 (April 1934), p. 92.
[37] *Ibid.*, VII, No. 1 (January 1, 1932), p. 22.
[38] *Ibid.*, V, No. 20 (October 15, 1932), p. 417.
[39] *Ibid.*, X, No. 3 (March–April 1935), p. 92.
[40] *Ibid.*
[41] Westwood, *Soviet Railways Today*, p. 65.
[42] See chapter 16 for the adventures of an Otis Company engineer who attempted to take Otis company blueprints out of the U.S.S.R.
[43] *Izvestia*, January 14, 1935.
[44] Based on U.S. State Dept. Decimal File, 861.5017—Living Conditions/409, Report No. 8424, January 22, 1932, Riga Consulate.

In 1930 there was only one automatic-signal railroad section in the Soviet Union: it was on the Northern Railroad for 30 kilometers north and east of Moscow. This was installed by German engineers in the late 1920s and comprised all-German equipment.

In 1928 the Union Switch and Signal Company, a division of Westinghouse Electric, sold the Soviet Government about $500,000 worth of apparatus for automatic block signals. This order was on five-year-credit terms and at a 25-percent discount from Union Switch's previous lowest prices. This discount was apparently in anticipation of further large orders.

The equipment was shipped late in 1928 and intended for a section of the Moscow-Sebesh Railroad. Soviet engineers attempted to install the equipment, were unsuccessful, and requested assistance from Union Switch. The company sent an engineer—John M. Pelikan—who was placed in charge of the 17 Russian engineers and 450 workers making the installation. While supervising this installation, Pelikan was approached by the Soviet authorities, who, according to a contemporary Riga Consulate report,

> . . . offered him $100 per month more than he receives from his company if he will resign from it and enter into a personal contract with them for five years. His work would be the same—that of superintending the installation of signal equipment anywhere in the Soviet Union.[45]

This is in itself, of course, both usual and quite acceptable, but the report added that Pelikan 'had seen exact duplicates of the American apparatus which have been manufactured by hand in Soviet Russia. This apparatus, he believes, will operate as efficiently as the American originals.'[46] The apparatus was covered by patents which the Soviets ignored and infringed upon without compensation to Union Switch.

This *modus operandi* was also found, for example, in the field of excavating machinery. The Soviets duplicated without license agreement, company permission, or patent rights, and then approached company engineers in the Soviet Union installing *imported* equipment, offering them a higher rate of pay to supervise installation of the Soviet-duplicated equipment.[47]

Lend-Lease provided automatic signal-operating equipment, also supplied by Union Switch, for a further 3,000 kilometers of railroad track in 1944 and 1945 in a project valued at $10.9 million and designed to increase capacity of existing rail facilities without increasing the amount of rolling stock.[48]

[45] *Ibid.*
[46] *Ibid.*, p. 5.
[47] *Ibid.*
[48] U.S. State Dept., *Report on War Aid* . . . , p. 17.

CHAPTER THIRTEEN

Technical Assistance to the Shipbuilding Industry and the Red Fleet

THE TSARIST SHIPBUILDING LEGACY

ALMOST all of the Imperial Russian Navy, which included comparatively large warships, was built in Russian shipyards. Just before World War I four battleships of 23,000 tons' displacement were launched: the *Petropavlovsk*, *Sevastopol*, *Gangout*, and *Poltava*, built in the Baltic and the Admiralty yards in St. Petersburg.[1] In addition to construction of such large battleships, there was also a remarkable Russian submarine-development program before and during World War I.[2]

These same yards were utilized by the Soviets to build the Red Fleet; once again the concentration was on submarine construction. The Soviet merchant marine, on the other hand, was mainly built in foreign shipyards. As of 1941 only one Soviet destroyer—the *Tashkent*—had been built abroad, while three-quarters of the Soviet merchant marine had been built in foreign shipyards. In general, however, the Soviets had not reached even by 1940 a level of shipbuilding activity equal to that of the private Russian yards in the first decade of the twentieth century.

Analysis of the Red Fleet at the beginning of World War II indicates that one-quarter consisted of ex-tsarist warships and the other three-quarters had been built in modernized tsarist shipyards. By 1939 the largest warships completed under the Soviets were in the 8,000-ton *Kirov* class, very much smaller than the 23,000-ton battleships built in 1910–3 in the same shipyards under the tsar. Consequently the naval assistance forthcoming to the Soviet Union under the Nazi-Soviet pact of 1939 and from American and British

[1] H. P. Kennard, *Russian Year Book for 1912* (London: Macmillan, 1912), pp. 63–7.

[2] E. M. Penova, *Podvodnoe korablestroennie v Rossii (1900–1917)* (Leningrad: Sudostroennie, 1965).

Lend-Lease was very welcome and formed, from the Soviet viewpoint, the key component of each agreement.

In 1941 the Soviet merchant fleet, unlike the Red Fleet, had very few tsarist-era vessels. Only 11 ships, all below 5,000 gross tonnage, have been traced.[3] Most of these had been built at the Nevsky yards or at the long-established Sormovo works. One incidental feature is worth noting; the *Yalta*, a small 600-tonner built at Kolomensky, had an Italian hull coupled with a *Russian* engine, reflecting the early start in diesel-engine manufacture in tsarist Russia. Since 1917 it has been more common to import engines rather than hulls.

These tsarist-era yards then, their names suitably proletarianized, formed the basic structure of the Soviet shipbuilding industry.

Table 13–1 MAJOR RUSSIAN SHIPBUILDING YARDS, 1930–45

Tsarist Name	*Soviet Name*	*Employment (1937–40)*
Leningrad Yards		
Putilov	Severny yard, Zhdanov (part of Kirov Works)	1938: 40,000 in three shifts
Baltic	Ordzhonikidze	1940: 10,000 in one shift
Société Franco-Russe	Andre Marti	1938: 11,000 in three shifts
Admiralty	Sudomekh	1938: 7,000 in three shifts
Black Sea Yards		
Nikolaev Works Co.	Andre Marti, at Nikolaev	1938: 20,000
	Kolomna, at Kuibyshev	1938: 20,000
	Yard 61	1938: 7,000
	Andre Marti, at Odessa	1940: 1,200
Sommer	Sevastopol	1940: 12,000 in three shifts
Inland Yards		
Sormovo	Krasnoye Sormovo (Yard 92)	1937: 27,000 in three shifts
	Komsomolsk, at Khabarovsk	1938: 5,000
Far East		
—	Voroshilovsk, Vladivostok	1938: 5,000

Sources: Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi) March 1941. Miscellaneous German Records, National Archives Microcopy T 84–122.
M. G. Saunders, ed., *The Soviet Navy* (London: Weidenfeld and Nicolson, 1958)

[3] Calculated from data in *Lloyd's Register of Shipping, 1941* (London, 1942). This chapter is based in the main on three sources: *Lloyd's Register of Shipping, Jane's Fighting Ships* (New York: Macmillan, 1942), and the Oberkommando der Wehrmacht archives. *Lloyd's Register* for 1941 reported a Soviet mercantile fleet of 716 ships (gross tonnage 1.3 million tons) in 1939 and include construction details of most ships built to this date.

SHIPBUILDING TECHNOLOGY

Shipbuilding consists of two distinct technologies: design and construction of the hull, and design and construction of the propulsive units. A third supporting category is shipbuilding yard equipment: gantries, welding facilities, and machine shops ancillary to construction slips.

There were several technical-assistance agreements and extensive transfers in each category of shipbuilding technology. Veritas Cie., a French company, supervised construction of tankers at the Odessa Marti yards and the Nikolaev yards in the early 1930s; M. Richard was the French engineer in charge of this work.[4]

Persistent efforts were made in 1937–9 to purchase a 45,000-ton battleship, two destroyers, submarines, and other naval equipment in the United States. These efforts, including the construction of a 45,000-ton battleship (which would have been above current international size and weight standards) had the support of President Roosevelt, the Department of State and Admiral Leahy. However, little came of the effort; it is surmised that officers in the Navy Department may have been at least partly responsible.[5] Assistance to the Leningrad yards was forthcoming from Germany under the Nazi-Soviet pact of 1939. Lend-Lease provided American and British skills and techniques, including vast amounts of shipbuilding equipment.[6]

THE SOVIET MERCANTILE FLEET IN 1941

About three-fourths of the Soviet mercantile fleet of the 1930–45 period was built in foreign yards.[7] The United Kingdom was by far the most important foreign supplier. More than 28 percent of Soviet hulls and almost 32 percent of Soviet merchant marine engines added between 1917 and 1941 were built in British shipyards. Germany was next, represented by almost 20 percent of the tonnage and 12 percent of the engine capacity. Holland was third, with almost 10 percent of the tonnage and more than 6 percent of the engine horsepower. The United States contributed 8 percent of both tonnage and engine capacity. In sum, between 1917 and 1941, 72 percent of Soviet merchant marine hulls and 77 percent of marine engine capacity were built in foreign shipyards and engine plants.

Construction of diesel marine engines inside the U.S.S.R. was concentrated on two systems (MAN and Sulzer) built in eight prerevolutionary plants. The

[4] Amtorg, *op. cit.*, V, No. 16–17 (September 1, 1930), p. 360.

[5] For further details, see U.S. State Dept. Decimal File, 711.00111, Armament Control.

[6] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.*, p. 21.

[7] Calculated from *Lloyd's Register of Shipping, 1941.*

Russky diesel works, an expanded tsarist plant and the largest supplier of marine diesels, supplied the Severney yards with 13 four- and six-cylinder marine diesels of between 500 and 750 horsepower and supplied another dozen four- and twelve-cylinder marine engines to the Baltic and Andre Marti yards in Leningrad and the Nikolaev Yard 61 on the Black Sea.

The Kharkov locomotive works, a tsarist plant, built four types of marine diesel engines of between 350 and 475 horsepower in both six- and eight-cylinder versions for the Sevastopol yards. The Kolomensky engine works in Moscow concentrated on 12-cylinder diesels for the Black Sea yards (Sevastopol and Odessa). Six MAN-type 200-horsepower 12-cylinder marine diesels were built for Sevastopol, and five of the same type and two MAN-type 100-horsepower diesels for Odessa.

The Leningrad engine works supplied 237 standard 62-horsepower four-cylinder diesels for use in the Severney yard fishing-boat construction program. In addition to receiving marine engines from engine plants, the shipyards themselves produced a range of engines; for example, the Severney yard produced three standard 62-horsepower units for fishing boats.

SOVIET NAVAL CONSTRUCTION[8]

Soviet-built naval ships were heavily influenced by foreign design and technology.

Only one new battleship was built before World War II—the *Tretii International (Third International)*, laid down on July 15, 1939 in the Leningrad yards. This was a 35,000-ton battleship; the guns, turrets, armor, and boilers were purchased in the United States and Germany, but the ship was probably not completed by 1947.[9] The other Soviet battleships—the *Marat*, *Kommuna*, and *Oktyabrskaya Revolutsia*—were ex-tsarist vessels reconditioned and refitted. Attempts to build three battleships of the Italian *Vittorio Venuto* class came to nothing. One, the *Krasnaya Ukraina*, was 'captured half-completed by the Germans at Nicolaiev in 1941.' The machinery had been ordered in Switzerland, but was bought by the British Government as a pre-emptive purchase in case the Germans tried to complete the vessel 'and it remains in packing cases in Switzerland to this day,' according to a 1965 report.[10] The other two were not started.

Three aircraft carriers were undergoing construction by the end of the 1930s; the *Stalin* (formerly called the *Admiral Kornilov*) was a 9,000-ton ship built in 1914, redesigned in 1929 and completed in 1939 as an aircraft carrier.

[8] Based on *Jane's Fighting Ships, 1941*, and M. G. Saunders, *op. cit.*, pp. 57–8.

[9] Saunders, *op. cit.*, pp. 57–8.

[10] David Woodward, *The Russians at Sea* (London: William Kimber, 1965), p. 205.

Two other carriers of 12,000 tons each were built 'on the basis of American blueprints':[11] the *Krasnoye Znamye* and the *Voroshilov*, both laid down at Leningrad in 1939 and 1940.

Several cruisers were refitted tsarist-era vessels, including the *Krasni Kavkaz* (formerly the *Admiral Lazarov*, built in 1916 at Nikolaev), the *Profintern* (formerly the *Svetlana*, built in 1915 at Reval and refitted in 1937), and the *Chevonagy Ukraina* (formerly the *Admiral Nakhimov*, built in 1915). The first Soviet attempt at cruiser construction was the *Kirov* class of 8,800 tons. Three ships were laid down in 1934–5. These ships had engines made by Tosi in Italy and were built according to Italian drawings at Putilovets (the *Kirov* and *Maxim Gorki*) and at the Marti at Nikolaev (the *Kuibyshev*) under the technical direction of Ansaldo.[12]

There were three categories of destroyers. First, there were 14 tsarist vessels —four in the *Petrovski* class (built in 1917–8), nine in the *Uritski* class (built in 1914–5), and one ex-*Novik* (built in 1911). Secondly, new classes of destroyers were built under the Soviets, to French and Italian designs.[13] Between 1935 and 1939, 15 destroyers (based on French drawings) of 2,900 tons each were built in the *Leningrad* class: six in the Leningrad yards, eight on the Black Sea, and one at Vladivostok. The first units, supervised by French engineers, were quite similar to the French contretorpilleurs (motor torpedo boats).

The *Stemitelnie* was the largest class; 35 were built between 1936 and 1939. These were 1,800-ton ships mostly built in Leningrad and Black Sea yards to an Italian Odero-Terni-Orlando design, under Italian supervision with some British machinery; most engines were Tosi 50,000-shaft-horsepower geared turbines.[14] In addition, the *Tashkent*, another Odero-Terni-Orlando design, was built in Italy—the only Soviet naval surface vessel ordered abroad in the 1930s.[15]

In January 1939 the firm of Gibbs and Cox, naval architects, was approached with a request to design two destroyers in addition to the 45,000-ton battleship already under design for the Soviet Union.[16] In July of the same year General

[11] Saunders, *op. cit.*, pp. 57–8.

[12] However, according to Woodward, *op. cit.*, p. 205, some machinery was built in the United Kingdom, 'the manufacturers being supplied with blank plans of the ships, showing only the dimensions of the machinery spaces and a 'torpedo compartment.'

[13] Saunders, *op. cit.*, pp. 57–8.

[14] Woodward, *op. cit.*, p. 203.

[15] *Ibid.* Woodward comments: 'The fact that the Communist and Fascist regimes were working hand in hand on this project is, to this day, somewhat piquant, as is the fact that when the Italian-built Soviet destroyer Tashkent was launched at Livorno in 1938 she was blessed by a Catholic priest and flew the Italian flag.' (P. 205.)

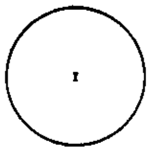
[16] U.S. State Dept. Decimal File, 711.00111 Armament Control/1470, January 3, 1939.

Electric and Westinghouse signified their intention to quote on the propulsive units for these destroyers.[17] After a few months of correspondence, the Navy Department indicated to interested manufacturers that such construction would tax U.S. capability which might be required for domestic purposes,[18] and the proposal was not implemented.

Figure 13–1 ORIGIN OF SOVIET NAVAL VESSELS, 1941 (IN TONNAGE)

Total Tonnage 119,500

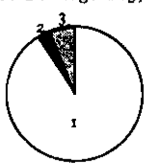
Submarines



(1) 119,500 gross tons, mostly with German and British technical-assistance

Total Tonnage 115,650

Destroyers



(1) 106,500 gross tons, Soviet-built to French and Italian designs
(2) 2,800 gross tons, built in Italy
(3) 6,350 gross tons, tsarist ships

Total Tonnage 104,000

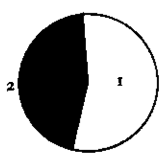
Battleships



(1) 69,000 gross tons, tsarist ships
(2) 35,000 gross tons, Soviet-built with German and American technical-assistance

Total Tonnage 47,964

Cruisers



(1) 26,400 gross tons, Soviet-built to Italian design
(2) 21,564 gross tons, tsarist ships

Sources: See text.

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[17] *Ibid.*, 711.00111, Armament Control/2024, July 27, 1939.

[18] *Ibid.*, 711.00111, Armament Control/2158, October 3, 1939.

A large number of small torpedo boats ranging in size from 6 to 35 tons were built in the 1930s to Italian design. These were the Italian MAS type, with Italian-designed machinery and built under license in the Soviet Union. Twelve were built at the Marti yards in Leningrad and the remainder in Black Sea yards. These were supplemented by 23 other unknown types and seven converted tsarist gunboats.

SUBMARINE CONSTRUCTION BEFORE WORLD WAR II

Submarines have always occupied a primary place in Russian naval policy. Extensive tsarist work[19] was adapted by the Soviets at the end of the 1920s, although few tsarist-model submarines survived to become part of the Red Fleet—only the Metallist class (Electric Boat design) and three Russian submarines of the Bolshevik class made by Nobel and Lessner in 1915–6 were still operating in 1940.

Soviet construction began in 1928 with the L and M classes. The L class was based on a British L 55 sunk off Kronstadt and raised by the Soviets; 23 of the L class and one L Special were built to this model by 1938.

The largest class in numbers was the M, a small 200-ton coastal submarine of limited performance, built inland at the Krasnoye Sormovo works in Gorki and transported in sections to the sea. Saunders[20] suggests that such prefabrication was possible only because of the introduction of electric welding, which had been achieved under the General Electric technical assistance contract. The Malodki class appears to have been a Soviet design; there is no trace of direct Western antecedents.

There is evidence, however, that all other Soviet submarine development was heavily influenced by German U-boat design. In 1926 a German naval mission under Admiral Spindler visited the U.S.S.R. and, according to Woodward,[21] the Germans were asked to provide plans of the most successful German submarines, details of operational experience, and the services of German submarine experts. At the same time the Russians requested assistance in the design and building of motor torpedo boats and aircraft launching catapults. Thus the Russians 'obtained various sets of U-boat plans, the most important of which were those of the B-III type, one of the most successful designs for a conventional submarine ever produced.'[22] The B-III was developed by the German Navy into the Type VII, the backbone of the German U-boat fleet in World War II (some 600 were built). Woodward adds: 'In the

[19] E. M. Penova, *op. cit.*
[20] Saunders, *op. cit.*
[21] Woodward, *op. cit.*, p. 202.
[22] *Ibid.*

Table 13–2 ORIGIN OF SOVIET SUBMARINES IN WORLD WAR II

Class	*Weight (Tons)*	*Number Built*	*Year Built*	*Western Design Source*
Bolshevik	650	3	1915–16	Nobel and Lessner, Reval
Metallist	400	4	1916–24	Electric Boat
L 55	1100	1	1918	Ex-British made in Fairfield, Glasgow
L	896 and 1300	23	1929–35	Based on British L 55
L Special	1100	3	1933	Based on British L 55
Malodki	200	50	1928–30	Probably Soviet design
Garibaldietz	1200	8	1933–35	Italian Adriatico design
Pravda	1200 and 1800	17	1936	Italian Adriatico design
Chuka	650	46	1935–38	German B-III design
S (enlarged Chuka)	780	16	1937	German type VII U-boat
Kaler, Lembit	600 and 820	2	1936	Vickers-Armstrongs (Barrow)
V	—	—	1944	British Lend-Lease, Vickers-Armstrongs design

Sources: Jane's Fighting Ships, 1941 (New York: MacMillan, 1941).
D. Woodward, *The Russians at Sea* (London: Kimber, 1965), p. 202.

meantime a variant of the design was built in Russia—first known as the N class, and nicknamed "Nemka" ("German girl") and later as the "S" class.'[23] The Chuka class was based on the German B-III plans, and the S class (an enlarged Chuka) approximated the German Type VII U-boat.

Italian influence came in two submarine classes. The eight vessels in the Garibaldi class were of Adriatico design and the 17 Pravda-class submarines were a development from the Garibaldi.[24]

In addition, two submarines were bought from Vickers-Armstrongs in the United Kingdom in 1936.[25] The Soviet V class comprised Vickers-Armstrongs submarines built in the United Kingdom in 1944 and transferred to the U.S.S.R. under Lend-Lease.[26]

German naval instructors were provided to the U.S.S.R. in the 1920s and also under the 1939 Nazi-Soviet pact. Later British officers were supplied under Lend-Lease to provide training in methods of submarine attack.[27]

Attitudes of the U.S. Executive Branch toward the sale of submarine equipment to the Soviet Union changed in the first five or six years of the 1930s. A proposal received by the Electric Boat Company of Groton, Connecticut

[23] *Ibid.*
[24] *Jane's Fighting Ships, 1946–47.*
[25] *Ibid.*
[26] *Ibid.*
[27] Saunders, *op. cit.*, p. 78.

in January 1930 for the construction of submarines and submarine ordnance equipment for shipment to the U.S.S.R. was the subject of a company enquiry to the U.S. Navy. The latter, in a letter to the Secretary of State, argued that there was 'no objection' to the construction of submarines, etc., for such 'friendly foreign powers,' and further said that this was to the interest of the Navy as it kept domestic shipbuilders at work. The State Department, after noting the Navy position, pointed out that, although there was no legal restriction on shipments of munitions to the Soviet Union, the matter was 'viewed with disfavor by the Department. Consequently the Department views with disfavor the construction of periscopes, submarines and ordnance equipment for shipment to Russia.'[28]

Thus in 1930 the Navy Department was for shipment of munitions to the Soviet Union and the State Department against such shipment. By 1937 the Navy position was reversed. Another enquiry to the Electric Boat Company was referred to Washington. This time the Navy Department took detailed exception and the proposal remained dormant.[29]

There was a flow of American technology, however, under the Sperry Gyroscope technical-assistance contract for marine instruments, and a large number of Soviet engineers were trained by the company in the United States,[30] although attempts in 1937–8 to buy fire-control equipment were thwarted by Navy Department officers.[31]

ASSISTANCE UNDER THE NAZI-SOVIET PACT OF AUGUST 11, 1939

In exchange for raw materials, the Soviets received some German technical and military assistance. The Nazis handed over the partly finished cruiser Lützow, laid down at Bremen in 1937, and in May 1941 the latest available report was that the 'construction of the cruiser "L" in Leningrad is proceeding according to plan, with German supplies coming in as scheduled. Approximately seventy German engineers and fitters are working on the cruisers in Leningrad under the direction of Admiral Feige.'[32]

[28] U.S. Dept. of State Decimal File, EE861.34/66, Letter, Navy Department to Secretary of State, January 29, 1930; and letter, Department of State to Electric Boat Company, February 5, 1930.

[29] *Ibid.*, Letter, Secretary of Navy to Electric Boat Company, January 18, 1937. See also U.S. State Dept. Decimal File, 711.00111, Armament Control/547, March 26, 1937, in which Cordell Hull refers to an agreement by Electric Boat for construction of Soviet submarines.

[30] U.S. Congress, *Investigation of Communist Propaganda.*

[31] U.S. State Dept. Decimal File, 711.00111, Armament Control/1018, February 25, 1938.

[32] A. Rossi, *Russo-German Alliance 1939–41* (Boston: Beacon Press, 1951), p. 96, quoting a German report.

Table 13–3 ORIGINS OF THE RED FLEET IN 1945

Type of Warship	*Renamed Tsarist Vessels*[1]	*Foreign Purchases*[1]	*Supplied under Nazi-Soviet Agreement (1939)*[2]	*Supplied under U.S. Lend-Lease*[*3]	*Foreign Design, Foreign Machinery, Soviet Construction*[1]	*Soviet Design, Soviet Machinery, Soviet Construction*[1]
			(In units)			
Battleship	3	—	—	—	2	—
Aircraft carrier	1	—	—	—	2	—
Cruiser	3	—	1 (Lützow)	—	4	—
Destroyer	14	1 (Tashkent)	—	105	50	—
Torpedo boat	7	—	—	221	153	—
Other vessel	—	—	—	165	—	—
Total	28	1	1	491	211	0

Sources: [1] *Jane's Fighting Ships, 1941.*
[2] *Hauptarchiv*, Boxes 1137 and 1138, at Hoover Institution, Stanford University.
[3] U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 21.

* Excludes 137 merchant ships and 2,398 pneumatic floats.

In the Leningrad yards German technicians took over construction and repair of several big Soviet ships. This cooperation lasted about 18 months, from late 1939 until May 1941, and, although the Soviets made great efforts to obtain German advanced technical data, there is no evidence that they succeeded to any great extent.

The benefit of this cooperation in the naval field is in some doubt. Admiral Miles of the British Naval Mission in Moscow sums the position in 1942 as follows:

> Although they [the Russians] had been in close touch with the Germans for nearly two years of war, their technical ignorance was surprising . . . they had only inefficient hydrophone submarine detecting gear, no magnetic mines, no concept of degaussing, no radar, and . . . no idea how to sweep magnetic or acoustic mines.[33]

LEND-LEASE ASSISTANCE TO THE SOVIET FLEET, 1941–5

The Soviet Fleet in 1941 comprised three battleships, eight cruisers, 85 destroyers and torpedo boats, 24 minelayers, 75 minesweepers, 300 motor torpedo boats and gunboats, and 250 submarines.[34] Lend-Lease added 491 ships to this total, comprising 46 submarine chasers (110-foot) and 59 submarine chasers (65-foot), 221 torpedo boats (24 of them from the United Kingdom), 77 minesweepers, 28 frigates, 52 small landing craft, two large landing craft from the United Kingdom, and six cargo barges. These were combat vessels, and quite distinct from the Lend-Lease merchant vessels, marine engines, and other maritime material.[35]

In tonnage terms, Lend-Lease probably doubled the Soviet Navy. Only a small number of ships have been returned, although the Lend-Lease master agreement required return of all vessels.

A certain amount of British Lend-Lease went to Russia, and Admiral Miles has left a pertinent comment on Soviet use of this assistance:

> Through either an inferiority complex or a completely misplaced confidence in their own technical ability they felt that as long as they were supplied with blueprints or instruments they had no more to worry about. All our advice was ignored on details as for example, the best position for fitting the asdic transmitter into a ship, or the necessity for training operators to work the gear. They refused to give us drawings of their destroyers and submarines wherewith to calculate the best position. The result was that they fitted the asdic dome in the wrong place and then accused us of sending them faulty equipment.[36]

33 Saunders, *op. cit.*, p. 76.

34 *Ibid.*, p. 75.

35 U.S. State Dept. *Report on War Aid Furnished by the United States to the U.S.S.R.*

36 Saunders, *op. cit.*, p. 76. This is similar to comments made by American engineers throughout the 1930s.

Despite this flow of assistance, the Soviet Fleet, according to German, French, British, and American observers, was most ineffective during World War II. After initial operating problems, such as when submarines broke surface after firing torpedoes, the naval forces appeared to keep to home waters. British naval opinion suggested that the Soviet Fleet spent its sea time patrolling at high speed in order to use up fuel and return to port for 'welcome home' parties.[37]

[37] *Ibid.*

CHAPTER FOURTEEN

Technical Assistance in Aircraft and Aircraft Engine Production

TECHNICAL-ASSISTANCE AGREEMENTS IN THE AIRCRAFT INDUSTRY

AIRCRAFT development and manufacture in the 1920s rested heavily on foreign aircraft and engine imports[1] and Junkers design and manufacturing techniques, even after Junkers personnel left the Fili plant in 1925. (See table 14-1.) Although there was considerable Soviet design activity,[2] this was not converted into a usable aircraft technology. From about 1932 onward, and particularly after 1936, there was extensive acquisition of Western aeronautical advances. This, fortuitously for the Soviet Union, coincided with an increase in competition among Western aircraft manufacturers, enabling the U.S.S.R. to acquire without much difficulty the latest Western developments. In several cases military aircraft were designed on Soviet account. Thus the heavy, slow, underpowered designs of the early 1930s were replaced by efficient Western designs.

Further, as N. M. Kharlamov, Director of TsAGI (Central Aero-Hydrodynamic Institute im. Zhukovski) informed the U.S. Moscow Embassy in 1937:

> . . . the Soviet Government had become convinced that the American manner of building aircraft was best suited to Soviet conditions since the American system of construction could more easily be adapted to mass production than any of the European systems.[3]

The United States thus became the main source of Soviet aircraft technology; between 1932 and 1940 more than 20 companies supplied either aircraft

[1] See Sutton, *Western Technology . . . , 1917 to 1930*, pp. 256-7, 259-62.

[2] R. A. Kilmarx, *A History of Soviet Air Power* (New York: Praeger, 1962), p. 107.

[3] U.S. State Dept. Decimal File, 711.00111 Armament Control/607, March 25, 1937.

or accessories. Technical-assistance agreements were made for Vultee attack bombers, the Consolidated Catalina, Martin Ocean flying boat and bombers, Republic and Sikorsky amphibians, Seversky amphibians and bombers, Douglas DC-2 and DC-3 transports, and the Douglas flying boat. Even smaller aircraft companies were not overlooked; for example, the entire Fairbanks Aviation Corporation and one of its managers—George Crandall—went to the U.S.S.R. to supervise their assembly and utilization.[4]

Italy was also an important supplier, with Savoia and Macchi technical assistance for flying boats and Isacco assistance for helicopters. French manufacturers supplied the Potez design. British manufacturers supplied the Fairey model and flying boats. Czech manufacturers supplied bombers. German assistance was forthcoming in the form of Heinkel and Dornier designs in the early 1930s and also under the Nazi-Soviet pact of 1939.

Finally, Lend-Lease provided an unprecedented technical bonanza, so that by 1945 the Soviets were on a par with the United States in aeronautical

Table 14–1 ORIGIN OF MILITARY AIRCRAFT IN THE SOVIET UNION, 1932

Plant	*Number Produced*	*Type of Aircraft Produced*
Aircraft Plants		
Plant No. 1 (formerly Dux, Moscow)	260	160 de Havilland Type 9a 100 Heinkel H.D. 43 fighters
Moscow plant	80+	80 Avro 504k training biplanes Moraine-Saulnier monoplanes
Plant No. 22 (Fili)	414	52 R3 biplanes (TsAGI design) 20 R6 reconnaissance (TsAGI design) 242 I4 Jupiter engine planes 80 Ju30 and ANT 6 (Junkers and TsAGI design) 20 ANT 6 bomber seaplanes
Plant No. 23 (Leningrad)	58	18 Avro 504L seaplanes 40 Savoia S.62 Scouting flying boats
Plant No. 31	251	150 Heinkel H.D. 55 scouting flying boats 46 MR-5 (Savoia S62 license) flying boats 12 T.B. 1 (TsAGI design) 45 Ju 30 and ANT 6 naval bombers
Engine Plants		
Plant No. 24 (Moscow)	400	280 M5 (Liberty) 120 Mono-Gnome rotary engines
Plant No. 26 (Rybinsk)	600	600 B.M.W. VI type for Heinkel H.D. 45 fighters
Plant No. 29 (Zaporozhe)	330	260 Bristol Jupiters 70 Hispano-Suiza

Source: C. G. Grey and Leonard Bridgman, eds., *Jane's All the World's Aircraft,* (London: Sampson Low, Marston and Co., Ltd., 1933), pp. 243c–244c.

[4] *Ibid.*, 861.5017—Living Conditions/538, Helsingfors, September 22, 1932.

design and probably in aircraft production techniques, with only a comparatively small deficiency in engine technology and electronic equipment.[5]

THE GLENN L. MARTIN COMPANY TECHNICAL-ASSISTANCE AGREEMENT

In late 1937 the Soviets acquired the world's largest plane—the first commercial plane able to cross the Atlantic nonstop with a payload of 7,500 pounds: more than any other aircraft of the time. This was a definite improvement in design over any plane then built.

Known as the Martin Ocean Transport, Model 156, the plane was built by the Glenn L. Martin Company of Baltimore with four 1,000-horsepower Wright Cyclone engines.[6] It was reported to have cost the Soviet Union $1 million.[7] Although capable of being flown to the Soviet Union, it was flown only to New York, dismantled, and shipped to the U.S.S.R. by boat.[8]

Also in 1937 the Glenn L. Martin Company made an agreement for the design of a Soviet bomber. There is some conflict over the details of this contract, summarized by Loy Henderson, the U.S. Chargé in the Soviet Union, in a letter to the State Department. In reference to a conversation with Kharlamov, director of TsAGI, Henderson says:

> . . . he [Kharlamov] made no mention to the effect that the Glenn L. Martin Company would also send engineers to this country. In this connection it may be of interest to note that since January 1, 1937, the Embassy granted visas to fourteen Soviet engineers and specialists who are proceeding to Baltimore to the Glenn L. Martin factory. This information would appear to be significant in view of the statements made by Mr. Dormoy . . . relative to the difference between the contract signed by the Soviet authorities with the Consolidated Aircraft Corpora-

[5] Kilmarx, *op. cit.*, p. 163, has the following excellent summary of this assistance, which is consistent with the data presented in this study:

> The objectives of the Soviet Union were more straightforward than its methods. By monitoring aeronautical progress and taking advantage of commercial practices and lax security standards in the West, the Russians sought to acquire advanced equipment, designs, and processes on a selective basis. Emphasis was placed on the legitimate procurement of aircraft, engines (including superchargers), propellers, navigational equipment, and armament; specifications and performance data; design, production and test information and methods; machine tools; jigs and dies; semi-fabricates and critical raw materials. Licenses were obtained to manufacture certain modern military aircraft and engines in the U.S.S.R. At the same time, a number of Soviet scientists and engineers were educated at the best technical institutes in the West. Soviet techniques also included assigning purchasing missions abroad, placing inspectors and trainees in foreign factories, and contracting for the services of foreign engineers, technicians and consultants in Soviet plants.

[6] *New York Times*, October 18, 1936.

[7] *Time*, December 6, 1937.

[8] *Ibid.*

> tion and the Glenn L. Martin Company, in which he points out that he understands that the Martin Company is to design and develop a new type of large plane for the Soviet air force instead of selling somewhat obsolete models which may have been released for export by the American military authorities. . . .[9]

Thus the Soviet DB-3, which many observers have noted as quite similar to the Martin 10 and 12 bombers, was probably designed in the Baltimore plant of the company by American engineers. The Soviet engineers were trained at the Martin Company in more advanced techniques, and took credit for its design.

SEVERSKY AIRCRAFT CORPORATION DESIGN CONTRACTS

The *New York Times* reported in May 1937[10] a $780,000 contract with Seversky Aircraft Corporation involving construction of, and manufacturing rights for, Seversky amphibians, which held the current amphibian world speed record of 230.4 m.p.h. The contract included an order for two complete aircraft with manufacturing rights for a total of $370,000. The balance of the order comprised a 60-day option for two additional aircraft and tooling for production of the aircraft. Under a technical-assistance clause, the company provided assistance for manufacture of these planes at the rate of 10 per day in the Soviet Union.

Late in the following year, Alexander P. de Seversky, President of the company, informed the State Department that the Soviets 'had contracted to purchase from the Company a large number of bombing planes of a new type to be designed by him. . . .'[11] A fee of $100,000 had been paid for design services, and de Seversky wanted to know whether any difficulty would be made in obtaining an export license. After being informed that a license would be granted if the planes involved no military secrets, de Seversky indicated that although the plane did not involve military secrets he 'feared that the War and Navy Departments might object to its exportation merely on the ground that it would be superior to any bombing plane now in existence.'[12] He quoted his recent difficulties in exporting internal bomb racks to the Soviet Union and cited a letter from the War Department stating that any license would have to come either from the Chief of the Air Corps or the Bureau of Aeronautics.[13] Finally, de Seversky indicated that he intended to address his request for an

[9] U.S. State Dept. Decimal File, 711.00111 Lic. Consolidated Aircraft Corp./1.
[10] *New York Times*, May 26, 1937, p. 27, col. 3.
[11] U.S. State Dept. Decimal File, 711.00111 Armament Control/1384, November 4, 1938.
[12] *Ibid.* From memorandum by Green, Chief Office of Arms and Munitions Control.
[13] *Ibid.*

export license to the State Department, 'in hope that this Department might expedite action in this matter.'[14]

THE UTILIZATION OF BOEING AND VULTEE AIRCRAFT DESIGNS AND U.S. EQUIPMENT

The Soviet Chatos used in the Spanish Civil War was 'almost an exact duplicate' of the Boeing P-26.[15]

The Boeing Aircraft Company four-engine bomber design, far more advanced than the heavy, slow six- and eight-engine Soviet designs, also attracted the Soviets. In 1939 the Boeing Company was approached 'with a view to the purchase of four engine bombing planes and manufacturing rights for the same. . . .'[16] It is probable, however, that the Boeing Aircraft Company was informally dissuaded from pursuing the agreement in light of the November Soviet attack on Finland. On the other hand, there is evidence that the Soviets were producing copies of the Boeing four-engine bombers during World War II. This could have been done only with American knowledge and assistance.[17]

Finally, in March 1937 production engineers from the Vultee Aircraft Division of the Aviation Manufacturing Corporation of Downey, California began arriving in Moscow 'in order to assist the Soviet Government in building in Moscow a factory which [could] turn out light combat planes.'[18]

Efficient specialized tools were also developed by American aircraft manufacturers and their equipment suppliers for aircraft production and purchased by the Soviets. For example, in 1938 the Lake Erie Engineering Corporation received a Soviet order for six hydraulic presses for forming metal aircraft sections.[19] In the same year Birdsboro Steel Foundry and Machine Company of Birdsboro, Pennsylvania filled a half-million-dollar order for hydraulic presses for aircraft manufacture.[20] Similarly, in 1938 the Wallace Supplies Manufacturing Company of Chicago, Illinois sold seven bending machines 'specially designed to bend tubing for aircraft and parts of motors' for $34,000.[21]

[14] *Ibid.*

[15] *New York Times*, April 21, 1937, 4:1.

[16] U.S. State Dept. Decimal File, 711.00111 Armament Control/2424.

[17] Luftwaffe Files, B-17 Project, National Archives Microcopy T 77–642–1837712.

[18] U.S. State Dept. Decimal File, 711.00111 Armament Control/607, March 25, 1937. Six or seven production engineers remained about one year. The use of Vultee engineers was confirmed by N. M. Kharlamov, Director of TsAGI. (U.S. State Dept. Decimal File, 711.00111 Lic. Consolidated Aircraft Corporation/1.)

[19] *Aero Digest*, February 1938, p. 100.

[20] U.S. State Dept. Decimal File, 861.60/315, East European Division Memorandum, August 16, 1938.

[21] U.S. State Dept. Decimal File, 861.60/310, Report No. 1542, Moscow Embassy, August 9, 1938. The Soviets deducted $1,600 for late delivery.

Most, if not all, aircraft accessories were straight copies of foreign products. When biplanes were used, 'the streamline wires [were] of English pattern, landing wheels of Palmer type, bomb-releases . . . of their own design, and the duralumin machine-gun rings . . . of French pattern.'[22] Aircraft fuel pumps were the French A.M. type and mobile starters were the Hucks type.[23]

A number of government-financed aviation developments—and U.S. Government records on these developments—were released to the Soviet Union. In 1931 at the request of the State Department and the Buckeye Pattern Works of Dayton, Ohio, the Secretary of War granted 'release of Records of Tests made of certain aluminum exhaust stacks at the Aviation Depot at Wright Field, Dayton, Ohio, for benefit of the Russian Soviet Government.'[24] No military objections were made to production of Wright aeronautical engines in Russia,[25] or to the application by Sperry Gyroscope to sell bomb sights.[26] Neither was objection made to export of Type D-1 and D-2 oil bypass relief valves in 1935[27] by the Fulton Sylphon Company of Knoxville.

Such purchases were, however, subject to interruption. According to Guy Vaughn, President of Curtiss-Wright, he broke off negotiations for sale of the manufacturing license for one of the company's propellers. Although the sale involved only two or three sample propellers 'he was so enraged by the behavior of the Soviet Government in its attack on Finland that he was going to call off the whole deal.' This termination involved some $1.5 million.[28]

THE DERIVATION OF SOVIET AIRCRAFT DESIGN

Until about 1934 Soviet aircraft design was characterized by heavy, slow, ungainly aircraft whose only possible advantage was payload. Beginning in the mid-1930s we find a succession of cleanly designed, fast, and probably efficient aircraft.

The clue to the sudden transformation lies in the technical-assistance agreements and specialized purchases described in the preceding sections. From these came a flow of modern aircraft heavily dependent on Western ideas and particularly production methods. Space prohibits complete description of origin; the Douglas Aircraft Company is therefore taken as a case

[22] C. G. Grey and Leonard Bridgman, eds., *Jane's All the World's Aircraft* (London: Sampson Low, Marston and Co., Ltd., 1933), p. 243c.

[23] *Flight*, October 23, 1941, p. 274.

[24] U.S. War Dept. File, 452.8 Aluminum Exhaust Stacks and 400.112.

[25] *Ibid.*, 452.8 Wright engines.

[26] *Ibid.*, 471.6 Sperry Bomb Sights.

[27] *Ibid.*, 400.3295 Sales Abroad.

[28] U.S. State Dept. Decimal File, 711.00111 Armament Control/2389, December 4, 1939.

study and presented, with the DC-3 as a model, in more detail. In addition, table 14–2 lists major Soviet aircraft by type at 1943 and refers to some brief statements in Western sources concerning their origin.

Table 14–2 WESTERN DESIGN INFLUENCE ON SELECTED SOVIET FIGHTER AND BOMBER AIRCRAFT

Soviet Model	*Normal Range (Miles)*	*High Speed (M.P.H.)*	*Suggested Western Design Influence*	*Reference to Citation*
Fighters				
I-15			Boeing P-12	Kilmarx, p. 163
I-16	450	280	'Developed from old Boeing P-26'	*Aviation*, Feb. 1943, p. 16
I-17	600	300	'Patterned on the Submarine Spitfire'	*Engineer*, Nov. 7, 1941
I-18 (MIG-3)	—	375	Origin derived 'to a considerable extent from the British Hurricane'	*Engineer*, Nov. 7, 1941
I-26 (YAK-1)	—	400	'Resembles the Hurricane'	Stroud, p. 32
SU-2	—	275	Possibly developed from Brewster B2A Bermuda	*Aviation*, XLII, No. 2 (Feb. 1943), p. 221
Bombers				
SB-3	550	250	'Was developed to a considerable extent from Martin bombers (B-10 and B-12 series)'	Kilmarx, p. 227
CKB-26	2,500	240	'Many features of Douglas DC-2'	Kilmarx, p. 229
DB-3F	1,500	270		
ZKB-26	—	310	'A considerable resemblance to the American Martin 139'	*Engineer*, Nov. 1941, p. 134
PE-2	—	342	'Based on the French Potez 63'	Stroud, p. 36
YAK-4	—	315	'Appears . . . to have been based on the French Potez 63'	*Aviation*, Feb. 1943, p. 225: Stroud, p. 38
IL-2 Sormovik	—	250	'Similar . . . to . . . Fairey Battle'	Stroud, p. 36
Tu-4	—		Copy of Boeing B-29	Hooftman, p. 154

Sources: R. A. Kilmarx, *A History of Soviet Air Power* (New York: Praeger, 1962).
John Stroud, *The Red Air Force* (London: Pilot Press, 1943).
H. Hooftman, *Russian Aircraft* (Fallbrook: Aero Publishers, 1965).
Aviation, XLII, No. 2 (February 1943).
Engineer (November 7, 1941).

Although the Soviets produced more than 30 transport aircraft designs after 1934, their indigenous development work was severely limited. During the twenties the Russian designer Tupolov had produced, with Junkers technical assistance and in the Junkers concession plants,[29] the ANT-9 all-metal aircraft. This was followed in 1931 by the less successful ANT-14. With a top speed of 130 to 150 miles per hour, these were slow, gigantic aircraft and were abandoned after several crashes.[30] This left the Soviets without a modern transport aircraft, and in 1936, rather than pursue further development work, they made a technical-assistance agreement with the Douglas Aircraft Company of Santa Monica for production of the DC-3, renamed the PS-84 and then the LI-2.[31] This plane had more than double the range and more than twice the speed of the Soviet ANT series. However, it took until 1940 to get the first Soviet DC-3 off an assembly line, even with extensive assistance from Douglas Aircraft.[32]

The first flying boats built under the Soviets were constructed at Leningrad and Taganrog. In 1932 Plant No. 23 in Leningrad produced 18 Avro 504L seaplanes and 40 Savoia S-62 scouting flying boats, the latter under a license from the Società Idrovolanti Alta Italia of Milan—an outstanding designer of high-performance flying boats.[33] Also in 1932 the Taganrog Plant No. 31 on the Sea of Azov produced 251 planes, of which 196 were flying boats: 150 scouting H.D. 55s, built under the Heinkel license, and 46 MR-5s, built under the Savoia license.[34] The Soviets also acquired a license from the Macchi Company of Italy to produce the MBR series of flying boats, typical of Soviet flying boat design until 1945.[35] In 1937 an agreement was made with the Consolidated Aircraft Company of San Diego for technical assistance in the design and supervision (under Etienne Dormoy) of sea plane construction in the Soviet Union at Taganrog on the Sea of Azov.[36]

Meanwhile, tsarist work in the aviation field was being further developed. Several autogiro and helicopter designs were produced in the late 1920s and early 1930s: the KASKR-1, the TsAGI in various versions, and the Kamov A7 are examples of this early Russian design work. It is unlikely that these

[29] For material on Junkers, see Sutton, *Western Technology . . ., 1917 to 1930*, pp. 256–63; see also Auswartigen amts., *Akten zur Deutschen Auswärtigen politik, 1918–1945* (Göttingen: Vandenheock und Ruprecht, 1967).

[30] Kilmarx, *op. cit.*, p. 161.

[31] See p. 232.

[32] See p. 234.

[33] Grey, *op. cit.*, p. 244c.

[34] *Ibid.*, p. 246c.

[35] *Aviation*, September 1942, p. 286.

[36] U.S. State Dept. Decimal File, 711.00111 Armament Control/607, March 25, 1937. See also 711.00111 Lic. Consolidated Aircraft Corporation/1.

were successful,[37] although they had Western power plants; for example, the K-17 one-place coaxial rotor helicopter had a modified 17-horsepower Aubier-Dunne engine.

The Italian designer Vittorio Isacco worked in Russia in the early 1930s and developed a helicopter with blade tip power plants (the 120-horsepower de Havilland Gypsy 3) with a 300-horsepower Wright radial nose engine. *Aviation Week* commented that, 'In 1935 [Isacco] was given what in the U.S. would be known as the 'bum's rush' and he left the U.S.S.R. To this day the designer does not know the fate of his machine.'[38]

The first successful Soviet-designed helicopter, powered by two M-11 engines and produced at Tushino, was flown in 1941. In general, Soviet success with helicopters came after World War II; efforts between 1939 and 1945 were halting, dependent on Western engines, and could hardly be called successful.

In the field of airship design, the Italian general, Umberto Nobile, worked in the Soviet Union providing assistance in construction of Soviet airships.[39]

TECHNOLOGICAL ORIGINS OF SOVIET AIRCRAFT ENGINES, 1945

The bottleneck in tsarist aircraft production was engines; during World War I, owing to limited domestic capacity, three-quarters of Russian aircraft were equipped with imported engines; the only aircraft engine plants were the Tushino and the Russo-Baltic. The Soviets also imported aircraft engines during the 1920s. Then, by acquiring rights to manufacture foreign engines under license and with Western technical assistance, the Soviets were able to acquire rapidly a sizable engine-producing capacity.

Plants No. 24 and 25 were built in Moscow; No. 24 made Wright Cyclone engines under license and No. 25 made parts for Wright engines. Production was about 250 engines per month in 1938; some 12,000 workers were employed on three-shifts. Models produced were the M-25, M-34, M-63, and M-64, all based on Curtiss-Wright developments.

Although between 1939 and 1941 the Soviet Union had to depend on its own technical resources 'because so many foreign engineers at work in the U.S.S.R. were recalled to their own countries,'[40] after 1941 Lend-Lease played a role in providing a flow of designs and manufacturing equipment. The

[37] H. Hooftman, *Russian Aircraft* (Fallbrook: Aero Publishers, 1965), p. 79.

[38] March 5, 1956.

[39] See Zara Witkin papers, Hoover Institution Special Collection, p. 82. Nobile's book [Umberto Nobile, *My Polar Flights; An Account of the Voyages of the Airships Italia and Norge* (London: F. Muller, 1961)] contains no mention of this work.

[40] Kilmarx, *op. cit.*, p. 162.

Soviets standardized on a few successful types developed from Western designs and installed these into a large number of planes.

Prototypes of every Western aircraft engine were acquired. These were minutely examined, and composite 'Soviet' designs were built incorporating the best features of each. A report by Bruce Leighton describes one of these models at the Engine Research Institute in 1931:

> They've taken Packard, Conqueror, Rolls-Royce, Kestral, Hispano-Suiza, Fiat, Isetta-Franchini—tested them all, analyzed them down to the minutest details, including microphotographs of piston rings, flow lines in crank shafts, etc., taken good features of all, added some ideas of their own (particularly regards valve cooling) and built-up [*sic*] an engine which we're going to hear more of or I miss my guess.[41]

These early Soviet conglomerate designs were not successful; 'copying' is not always the outright gift it might at first sight appear to be. Neither is the process of taking the best features from several models always advantageous. There is a unity in good engineering design, and this unity can be sacrificed in the copying process without gaining compensating advantages.

In the entire world in 1944, about 130 basic types and 275 variations of aircraft engines, excluding German diesel engines, were either in production or had recently been in production. Of the 130 basic types, 48 were produced in the United States, 28 in Great Britain, 20 in Germany, 17 in Italy and 3 in the Soviet Union. Each of the three Soviet types was an adaptation of a foreign engine built under a licensing agreement. The M-38 liquid-cooled 12-cylinder V model was developed from the 1936 M-34, in turn developed from the Wright Cyclone. The M-88 was a 14-cylinder air-cooled radial engine based on the French Gnome-Rhône 14 N. The third engine type was the M-105, a 12-cylinder liquid-cooled V type based on the Hispano-Suiza 12Y engine.

PRODUCTION OF THE WRIGHT CYCLONE ENGINE UNDER LICENSE

Bruce G. Leighton, of the Curtiss-Wright Corporation, was given a seven-day reception and tour of Soviet aircraft plants in 1931.[42] At this time the Curtiss-Wright liquid-cooled engine was the only liquid-cooled American engine still in production. The U.S. Army initially supported development but, dissatisfied with the basic design, cut off funds in 1932. Development support for two other liquid-cooled engines, one of them the Curtiss-Wright H-2120, was continued by the U.S. Navy. Testing and development continued

[41] U.S. State Dept. Decimal File, 360.02, Bruce G. Leighton Report, December 10, 1931, p. 5.

[42] *Ibid.*

from 1933 to 1936, when the Navy withdrew support and reverted to air-cooled engines. The company, convinced that the design was mechanically poor, did not press further development. The second Navy-supported Curtiss-Wright project was a 12-cylinder V engine known as the V-1800. This was intended to replace the Curtiss-Wright Conqueror, and successfully completed its testing in 1934:

> Shortly after this test was completed, however, the Navy was forced by lack of funds to abandon most of its high-speed program and to cease support of the V-1800. The Army refused any appreciable support and the company did not wish to do further development at its own expense.[43]

As a result of the Leighton visit, the V-1800 engine was licensed to the Soviet Union, which funded further research work to raise the engine rating to 900 horsepower from the Navy test rating of 800 horsepower. This work was centered at Aircraft Engine Plant No. 24 (the Frunze) in Moscow, with parts manufactured at Works No. 25. By 1938 these plants employed about 12,000, producing about 250 Wright Cyclones (Soviet M-25) per month.[44]

A plant for manufacturing Cyclone engines was also built at Perm. This was about twice the size of the Wright plant in the United States, and by 1937 this facility was producing Wright Cyclone engines in quantity, although quality left something to be desired.[45]

LICENSING OF THE GNOME-RHÔNE (JUPITER) ENGINE

At the start of World War I, French builders were the leaders in air-cooled engines. The British and United States Air Forces both used French engines built in France or under license in the United Kingdom and the United States. The Gnome rotary, manufactured by the Société des Moteurs Gnome et Rhône, was one of the best of these early engines. After the war the Gnome Company purchased the license of the British Bristol Jupiter II; during the decade of the 1920s the Gnome-Rhône engineering department was dominated by English engineers from the Bristol Aeroplane Company. The only major innovation of Gnome-Rhône at this time was the Farman reduction gear, licensed back to the Bristol Company in 1926. After producing the Bristol Jupiter engine for some years, the Gnome Company came up with an improved engine of its own design, using American lined cylinders.[46] This cross-fertiliza-

[43] R. Schlaifer and S. D. Heron, *Development of Aircraft Engines and Fuels* (Boston: Harvard University, 1950), p. 267.

[44] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, VIII 7b, National Archives Microcopy T 84–122.

[45] Arthur Nutt, 'European Aviation Engines,' *S.A.E. Journal*, XLI, No. 1 (July 1937), pp. 14–5.

[46] Schlaifer, *op. cit.*, pp. 138, 142, 146, 148.

tion of ideas led to the exceptional Gnome rotary engines of the 1930s; these were adopted by the Soviets.

The Jupiter, or Gnome-Rhône 114, was built at the Kharkov engine-building plant (Plant No. 29). Without question there were initial difficulties. Leighton reported:

> They are not happy about the Jupiter and have been having indifferent success with it. Too much skilled hand work I suspect. . . . In Paris a Gnome-Rhône man later told me they are now building 40 of their latest Jupiters for Russia. . . .[47]

Kharkov Plant No. 29 persisted and the Jupiter became Soviet Models M-85, M-87B, and M-88, of the last of which about 1,500 a year were produced by 1940.[48]

In the same manner the Hispano-Suiza engine was produced in Moscow at an enormous plant twice the size of either the Pratt & Whitney or the Wright factories in the United States. This engine became the Soviet M-105. A western observer noted that although the engine was 'somewhat heavy,' they were doing a good job and quality had noticeably improved between 1934 and 1937.[49]

THE PRATT & WHITNEY AIRCRAFT ENGINE LICENSING AGREEMENT

In July 1939, in a discussion between State Department and three representatives of the United Aircraft Corporation, the corporation attempted to ascertain the view of the U.S. Government toward a licensing agreement with the Soviet Union for the Pratt & Whitney Twin Wasp 1830 and the Twin Hornet 2180 aircraft engines. The State Department official did not reply directly but suggested that the sale of naval vessels should offer a guideline. United Aircraft then stated that in this case they would probably 'seriously consider' entering into a contract. To avoid the perennial problem of overly inquisitive Soviet inspectors in their plant, they proposed to insert a number of restrictive clauses.[50] No further data has been traced concerning this agreement.

[47] U.S. State Dept. Decimal File, 360.02, Bruce G. Leighton Report, December 10, 1931, p. 7.

[48] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, National Archives T 84–122.

[49] Nutt, *op. cit.*, pp. 14–5.

[50] U.S. State Dept. Decimal File, 711.00111 Armament Control/1982, July 20, 1939. There was probably an earlier agreement, as the Soviet M-26 was based on the Pratt & Whitney Hornet. See Kilmarx, *op. cit.*, p. 112.

EARLY DOUGLAS DC-2 SALES TO THE SOVIET UNION[51]

The Douglas Company files on sales to the Soviet Union open in December 1933 with a letter from G. A. Gertmenian, a Los Angeles oriental-rug dealer, proposing a three-way deal under which Douglas would take payment for its aircraft 'in a credit with the Amtorg in rugs,' to be sold by Gertmenian. The latter suggested that Amtorg had a surplus of oriental Russian and Persian rugs accumulated in barter deals and was anxious to dispose of this stock. Indeed, added Gertmenian, they were more interested in 'arrangements for paying than . . . with the prices which they pay.'[52] Douglas Aircraft was understandably cool about tying aircraft sales to the rug market.

This initial approach was followed in early 1934 by a letter from Amtorg asking for details of the Douglas plant and its products, and whether a delegation of Soviet engineers could be received. Simultaneously, letters came from the International Seed Service (Internatsionalinii semenoi trest) suggesting 'publicity' for Douglas in the Soviet Union.

A Russian mission was sent to Santa Monica. This mission subsequently requested a quotation on the civilian DC-2 and data on the U.S. Army method of heating air-cooled engines on the ground in sub-zero weather. Then followed a request for detailed specifications of the new Northrop Gamma long-range bomber. The next day caviar and vodka were delivered to the home of G. W. Stratton, Vice-President of Douglas.

In June 1935 Amtorg ordered one DC-2 and one Northrop Gamma bomber and requested that Soviet engineers be allowed to enter both the Douglas and the Northrop plants for observation. Amtorg was promptly informed that the U.S. Government would not permit any representatives into the Northrop plant although permission might be granted for temporary entry to the Douglas plant. Then came an Amtorg request for four engineers of the Tupolov Commission, currently touring the United States, to visit the plant. This was followed by another wire two days later: 'TWO OUR ENGINEERS LEAVING FOR DOUGLAS FACTORY . . . AWAITING YOUR WIRE REGARDING THEIR WORK AT THE NORTHROP FACTORY.'

Douglas promptly reminded Amtorg that the U.S. Army had tagged the Northrop plant as 'absolutely closed,' but on July 5, 1935 Sokoloff, President of Amtorg, sent a telegram to Stratton: 'PLEASE AIR MAIL IMMEDIATELY COPIES YOUR COMMUNICATIONS TO AUTHORITIES REQUESTING PERMISSION OUR ENGINEER TO BE AT NORTHROP FACTORY FOR OUR GUIDANCE ENDEAVORING ASSIST IN THIS STOP.'[53]

[51] Based on Douglas Aircraft Co. files. The cooperation of the Douglas Aircraft Co. is gratefully acknowledged.

[52] Douglas Aircraft Co. files, *Russia—1934*.

[53] *Ibid.*

This was followed by a letter from Sokoloff expressing regret that negotiations 'had not been developing as smoothly and pleasantly as I hope,' and stating that the Douglas Company had agreed 'to obtain permission for our inspection on the parts and the complete airplanes. . . .'[54] A request for copies of the Douglas-War Department correspondence was repeated with the reasoning that unless Amtorg knew whom Douglas has contacted in the U.S. Army they would be unable to enlist the assistance of the Soviet Embassy.

On July 12, 1935 Donald Douglas ended the exchange by pointing out that application for permission had been made to the U.S. Army immediately upon receipt of the order, and that he personally had instructed his assistant not to furnish copies of the letters, as the U.S. Government would 'resent our turning over correspondence to you that they might regard as confidential.' Douglas concluded:

> Really Mr. Sokoloff, from Mr. Wetzel's talk of several hours with your two engineers, it is apparent that they are not so much interested in inspecting the parts of your airplane as they are in getting information on our building methods and equipment. . . . I must beg to point out to you that you have bought an airplane but not the right to our shop processes. . . .[55]

A CASE STUDY: THE DOUGLAS AIRCRAFT TECHNICAL-ASSISTANCE AGREEMENT FOR THE DC-3 TRANSPORT

Donald Douglas produced his first DC-3 in March 1935; within one year the Soviets decided this was to be the basic transport plane for the U.S.S.R. and concluded a technical-assistance agreement with the Douglas Aircraft Company, signed on July 15, 1936, for three years.

Within 30 days of contract signature, Douglas delivered the blueprint materials required to fulfill the assistance contract. The following were provided: three sets of manufacturing drawings and descriptions and specifications of materials; four sets of photographs (250 to a set); four copies of the *DC-3 Maintenance and Instructions Manual* and the *Pilots Operations Manual;* four sets of specifications 'in accordance with which Douglas purchases finished products, such as extrusions and forgings from third parties, including . . . source of supply and one set of sample pieces of extrusions'; three sets of static tests and laboratory reports; three sets of strength calculations; three reports of wind tunnel tests and the aerodynamic and stability calculations; three copies of the specifications for 'purchasing devices and other equipment'; three copies of descriptions of machines used in manufacturing (mainly bending machines, power brakes, and cutting tools), including names and

[54] *Ibid.*
[55] *Ibid.*

addresses of manufacturers; three copies of *Machinery and Equipment Used by the Douglas Company in Production of DC-3 Transports;* data pertaining to the technical conditions for producing important parts (such as process specifications; welding-flux, welding-rod, welding-torch tips; and tube-bending methods); three copies of methods of testing parts and special accessories; descriptions and/or drawings of necessary jigs, fixtures, and instruments for servicing; and a list of recommended spare parts.[56]

There are numerous detailed internal company memoranda still in the files which leave no question that instructions were to fulfill the agreement in a detailed and precise manner. The Soviet Union had no cause for complaint concerning the manner in which the company fulfilled its requirements under the agreement; the assistance was prompt, accurate, and such that any competent engineering organization could move into production of DC-3 transports in short order, as did other countries, such as Japan, with similar agreements.

In October 1937 the Soviet aircraft industry placed a $1.15 million order with Douglas for additional parts, tools, assemblies, and materials. The order included one complete DC-3 in subassembly and another in 'first-stage' production; both were minus engines, propellers, and automatic pilots. In addition, aluminum extrusions were ordered for another 50 aircraft, together with two complete sets of raw materials and 25 sets of finishing materials ranging from ash trays to zippers. Construction facilities, ordered at the same time, included one complete set of 6,485 templates, a set of 350 lead and zinc drop hammer dies, three sets of hydraulic mechanisms, all the necessary wood and plaster patterns, drill and assembly fixtures, a complete set of drop-hammer stamps, hydraulic-press parts, two crowning machines, and a set of 125 special tools. These were supplemented by information on the hydraulic-press process and the training of engineers in its operation.

Almost half of this second order consisted of 50 complete sets of raw materials, including aluminum castings, aluminum-alloy castings, forgings, extrusions, sheets and plates, bearings, stainless steel sheets, C.M. sheets, and Alclad sheet and strip.[57] It was rather like supplying 50 toy construction sets; the Russian plant engineers needed only to follow the drawings and put the pieces together.

In February 1938, however, another order was placed for nine more Douglas-made DC-3s, and in November 1938 (a year after the parts order)

[56] Copies of these items are in the Douglas Aircraft Co. files. The writer attests to their completeness; it took a day just to scan the material.

[57] The Douglas Co. threw in a set of special loft tools at no charge. The gift was criticized by the GUAP Commission because a straightedge and a spare part were missing.

yet another six complete transports were purchased.[58] It was not until 1940, four years after the agreement, that the Soviets got any domestic DC-3s, renamed the PS-84 or the LI-2, off a Soviet assembly line.

By early 1938, then, the Soviet DC-3 program was behind schedule. Even with 50 sets of 'first-stage' material, tools, specifications, materials lists, and other assistance, they were unable to get into production. One source of trouble may have been welding sections; the October 1937 materials and parts order contained a very large quantity of welding materials: too much, thought Douglas, for only fifty DC-3s. Yet on January 17, 1938 Amtorg came back to Douglas for still more welding rods and other welding materials (more than $7,000 worth, in all). These (Purox 1, Alcoa No. 1 and No. 2, etc.) were not made by Douglas, and as Alcoa was exchanging aluminum for Soviet oil, the use of Douglas as a purchasing agent is, in this instance, a mystery.[59] Another source of trouble was the hydraulic press for shearing and forming panels; events in early 1938 indicated pressure upon Amtorg in New York to obtain equipment and information. Douglas, however, did not make the hydraulic press, and only the provision of operating methods was included in the agreement.

The Amtorg order of October 1937 called for the supply of technical information on the Douglas method of hydraulic-press forming of sheet metal. The Soviets obviously recognized the central importance of this process and, it appears, were unable to get either a press or the requisite technical knowledge from the American manufacturer. The order to Douglas called not only for technical information and calculations relevant to the Douglas use of the press, but also for information obtainable only from Hydraulic Press Manufacturing Company, as the Douglas files reveal ('all erection and assembly drawings . . . drawings for spare parts . . . drawings of the dies'). Obviously Douglas did not agree to supply these, but on the Amtorg 'confirmation of order' these items are listed and then crossed out by someone at Douglas. This rather crude attempt to get the Hydraulic Press data was followed in March 1938 by an exclusive license granted by Douglas to Narkomvneshtorg (People's Commissariat for Foreign Trade) for the Guerin process (Douglas Patent No. 2,055,077 and others) 'whereby sheet metal may be mechanically cut to form a blank which may thereafter be formed into a part of objects and unique methods and apparatus of forming metal blanks. . . .'[60]

The Soviets then withheld payment for the manual and the list of parts for the Birdsboro press (required and supplied by Douglas under the agreement).

[58] Douglas Aircraft Co. files. Data taken from letter of V. K. Bogdan to Stratton, October 1, 1937.

[59] Douglas Aircraft Company files, 'Amtorg—Misc. Orders,' January 18, 1938.

[60] *Ibid*

In turn, Douglas withheld permission for Soviet engineers to visit the press until Amtorg paid. On March 28 Amtorg wired Douglas Aircraft that the check in settlement of the manual and parts had been mailed. The check did not arrive. On April 15 Amtorg wired that the check had been withheld because of Item 10, Paragraph K of 25-80/70143. The Douglas Company reply was very much to the point:

> The only part of this item upon which you have received no information is that, desired by you, from the Hydraulic Press Manufacturing Company. . . . It seems very strange to us, Mr. Bogdan, that you would withhold payment to us of some $30,000 in an effort to force us to get from the Hydraulic Press Manufacturing Company what they don't want to give us. If you have purchased Birdsboro Presses . . . and if you are so entitled to get the information you desire, it would seem much more reasonable to get it from Birdsboro who can get it from Hydraulic Press Manufacturing Company. We have made it very clear to you from the first that we are not selling you the design of the press, but that we would *endeavor* to get such information as the Hydraulic Manufacturing Company was willing to give you. . . .[61]

On April 19, the Soviet engineers came back once again about the Birdsboro press. A rubber change on the hydraulic mechanism had taken place without a Soviet engineer being present (the foreman who normally informed the Soviet engineers was absent and the shop men decided to go ahead with the change on their own), so that the change was made without Soviet knowledge. The Soviets immediately protested and Stratton took this opportunity to remind the GUAP (Main Administration of the Aircraft Industry) Commission of the terms of the agreement: 'I can assure you that we have no objection to your men observing our overhaul operations on the press. The only restrictions we have placed on your men is that they do not make sketches of anything in the plant.'[62]

Like other American companies and individual engineers, the Douglas management developed pragmatic rules for dealing with the peculiar Soviet outlook. Threats and bluff were met by firmness, and objection by counter objection.

[61] *Ibid.*
[62] *Ibid.*

CHAPTER FIFTEEN

Technical Assistance to Military Industries: Tanks, Guns, and Explosives[1]

ALTHOUGH this study is concerned with economic development, a section on military development is included for completeness. The Soviet Union has concentrated significant resources in this field and this, of course, has diverted resources both from capital expenditure and the standard of living. Further, although it appears unlikely that Western governments supporting free-enterprise systems could also rationally have supported the long-run military endeavours of the Soviet Union in the years before the Nazi invasion, such support, indeed, seems to have been the case.

In the 1920s it had been the U.S. State Department that had objected to shipments of armaments to the U.S.S.R.; the War and Navy Departments, however, found such shipments acceptable on the grounds that they maintained military suppliers in business. These positions were later reversed, and after the early 1930s we find the State Department encouraging shipment of military assistance[2] and the War Department expressing greater reluctance. This executive schizophrenia was carried to a point suggesting that Navy officers were unofficially sabotaging military sales already approved by Admiral Leahy, President Roosevelt, and the State Department.[3] A quotation from a State Department memorandum recommending approval to A. W. Hahn, a consulting engineer, to design and operate an aluminum-powder plant in the U.S.S.R. suggests, however, that the Department itself was somewhat self-conscious about its position. On January 3, 1931 Senator Smoot had inquired about the Hahn plant, and the Department handled the Senator's inquiry as follows:

[1] For information on searchlights see chap. 10, for aviation see chap. 14, and for shipbuilding see chap. 13.

[2] U.S. State Dept. Decimal File, 711.00111, Armament Control/583.

[3] *Ibid.*, 711.00111, Armament Control/1127 and /1841.

> No reply was made to Senator Smoot by the Department, as the Secretary did not desire to indicate that the Department had no objection to the rendering by Mr. Hahn of technical-assistance to the Soviet authorities in the production of aluminum powder, in view of the possibility of its use as war material, and preferred to take no position at the time in regard to the matter.[4]

The same memorandum reviews the State Department position on sale of armaments to the Soviet Union. Previously, according to the memorandum, the Department had refused permission for export to the Soviet Union of guns, rifles, ammunition, periscopes, submarines, naval planes, and machinery for the manufacture of smokeless powder. On the other hand, the Department had made no objection to the sale of blasting caps and fuses, commercial airplanes and engines, and helium gas. On the question of technical services for military end-use, the Department had viewed with disfavor the sale of a method 'for causing mustard gas to be indefinitely persistent' but had not objected to the sale, construction, or operation of a system of aerial survey, and assistance for production of nitrocellulose and purification of cotton linters.[5]

This distinction made between civilian and military products is hardly clear. The State Department had disapproved the sale of naval bombers by the Glenn L. Martin Company but had approved the sale of aircraft engines and technical assistance for the production of aircraft engines by Curtiss-Wright on the grounds these were for civilian use. The Curtiss-Wright engines had both civilian and military uses and certainly were used for military planes and tanks by the Soviets. Disapproval was voiced over the sale of submarine periscopes on the grounds that this was war material, but approval was given to the Hercules Powder Company to offer technical assistance for a large plant 'in the production of nitrocellulose,'[6] in the face of a letter from the War Department specifically stating that the assistance would be 'a very material military asset.'[7]

By 1938 the State Department had approved ammunition and battleships. In reply to a letter from the E. W. Bliss Company concerning a proposal to supply the U.S.S.R. with 'a complete plant for the manufacture of small arms ammunition, including the necessary machinery and full information concerning the operation thereof,' it was asserted on April 27, 1938 that this would not

[4] U.S. State Dept. Decimal File, 861.659—DUPONT DE NEMOURS & CO./5. Aluminum powder is used, as an additive, to raise the explosive force of ammunition.

[5] *Ibid.*

[6] U.S. State Dept. Decimal File, 861.659—Nitrocellulose/5: '. . . this Department does not desire to interpose objection to your Company rendering technical-assistance to the Soviet authorities in the production of nitrocellulose and the purification of cotton linters, along the lines outlined in your communication.'

[7] *Ibid.*, 861.659—Nitrocellulose/1 through/5.

contravene any existing treaty provided there were no military secrets involved.[8] President Roosevelt personally instructed the State Department to 'give all help' to the Soviet Union to have a 45,000-ton battleship built in the U.S.[9]

In brief, the grant of permission to export or not to the Soviet Union was obviously not always based on the question of the military end-use of the products.

European governments were even more active than the United States in approving the supply of armaments and providing technical assistance for their production. Germany supplied organizational assistance and later extensive military supplies under the Nazi-Soviet pact.[10] France supplied military assistance after the detente of 1933. Italy built the destroyer Tashkent, and the Fiat and Ansaldo companies were major suppliers of weapons.[11] Another major supplier was Vickers, which had a close relationship with the British Government and which supplied tank designs and models which became the basis for the standard Soviet tanks of World War II.

NEW TRACTOR PLANTS AND TANK PRODUCTION

A plant for the erection of tractors is well suited to the production of tanks and self-propelled guns. The tractor plants at Stalingrad, Kharkov, and Chelyabinsk, erected with Western assistance and equipment, were used from the start to produce tanks, armored cars, and self-propelled guns. The enthusiasm with which this tank program was pursued and the diversion of the best Russian engineers and material priorities to this end were responsible for at least part of the problem of lagging tractor production.

As early as 1931 the Chain Belt Company representative at Stalingrad reported that the newly opened tractor plant was making 'small tanks.'[12] In 1932 A. A. Wishnewsky, an American whose specialty—production methods—took him into many Soviet plants, reported that the principal emphasis in these plants was on production of munitions and military supplies. In all factories, he stated, at least one department was closed, and he would from time to time run across 'parts, materials, shells and acids' having no relation to normal production.

> He stated that it was particularly true of Tractorostroy [*sic*] where emphasis is being placed on the production of tanks rather than tractors.

[8] U.S. State Dept. Decimal File, 711.00111 Armament Control/1076.

[9] *Ibid.*, 711.0011 Armament Control/1154. See marginal notations by the President.

[10] See *Hauptarchiv*, Hoover Institution.

[11] A. Barmine, *op. cit.*, p. 189.

[12] U.S. State Dept. Decimal File, 861.5017—Living Conditions/248, Report No. 608, Interview with E. T. Riesing, May 8, 1931.

> In his opinion, a least for the time being, the development of tractor production there has been designed to lead up to the production of tanks for military purposes.[13]

Such reports were confirmed a few years later by German intelligence, which concluded that in 1937–8 the Stalingrad Tractor Plant was producing a small three-ton armored car and a self-propelled gun at a rate of one per week, and the T-37 tank, patterned on the British A 4 E11, at the rate of one every four days. The 1937 Soviet War Mobilization Plan, of which the German Wehrmacht apparently had a copy, planned to double this output in case of war.[14]

A similar report was made in late 1932 from the Kharkov Tractor Plant by Ingram D. Calhoun, an engineer for the Oilgear Company of Milwaukee who was servicing hydraulic presses and boring machines for cylinder blocks. The Kharkov Tractor Plant, Calhoun stated, was turning out 8 to 10 tanks a day which had a maximum speed of 30 kilometers per hour. Tank production took precedence over tractor production and operators for these were being trained 'night and day.'[15] Calhoun added that 'they can fool the tourists but not the foreign engineers.'[16]

According to the Wehrmacht, the Kharkov tractor plant (the Ordzhonikidze) was producing in 1938 a self-propelled gun at a rate of slightly less than one a week and an armored car at a rate of one every four days. Kharkov also produced the T-26 tank, patterned after the British Vickers-Armstrongs six-tonner. The Soviet War Mobilization Plan envisaged a wartime output tripling the self-propelled gun rate and doubling that of armored cars, but maintaining the same tank production rate.[17]

In 1937 the Chelyabinsk Tractor Plant, known as the Stalin, was producing tanks of the BT series, patterned after the American Christie. Output in 1938 consisted of 32 of the 12-tonners and 100 of the BT-38, a 16-tonner. Mobilization Plan output was double these figures.[18]

Thus not only were all three of the new tractor plants producing tanks throughout the 1930s from the date of opening but they were by far the most important industrial units producing this type of weapon. As the projected War Mobilization output was only double the existant output, it can be

[13] U.S. State Dept. Decimal File, 861.5017—Living Conditions/420, February 8, 1932.

[14] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), *Kampf-und Panzerkraftwagen-Werke*, List VII6, March 1941, p. 3, National Archives Microcopy T 84–122.

[15] U.S. State Dept. Decimal File, 861.5017—Living Conditions/576, December 28, 1932.

[16] *Ibid.*

[17] OKW *op. cit.*, p. 2.

[18] *Ibid.*, p. 5.

reasonably inferred that about one-half the productive capacity of these 'tractor' plants was being used for tank and armored car production from 1931 onwards. Thus the armaments program obviously reduced tractor production and adversely affected the agricultural program.

There are also, in the State Department files and elsewhere, numerous reports confirming the adaptability of Soviet general-equipment plants for war use. For example: 'The heavy industry plants are fitted with special attachments and equipment held in reserve which in a few hours will convert the plants into munitions factories. . . .'[19]

THE DEVELOPMENT OF SOVIET TANK DESIGN PRIOR TO WORLD WAR II

Soviet tanks before World War II owed much to American, British, and, to a lesser extent, French and Italian design work. Little German design influence can be traced in the period before 1939, except through the German tank center at Kazan, although there were other Soviet-German military links.

During the 1920s and 1930s the Soviets acquired prototype tanks from all producing countries and based their own development upon the most suitable of these foreign models. The 1932 Soviet tank stock is summarized in table 15–1.

Table 15–1 SOVIET TANK STOCK AND ITS ORIGINS, 1932

Tanks Available	*Origin*
20 Carden-Lloyd Mark VI	Made in United Kingdom by Vickers-Armstrongs, Ltd.
1 Fiat Type 3000	Made in Italy
20 Renault	Made in France, captured in Civil War
16 'Russian-Renaults'	Made in France, modified in U.S.S.R.
70 light tanks	Vickers 6-ton, Alternate A
40 Vickers Mark II	Made in United Kingdom by Vickers-Armstrongs, Ltd.
2 Christie M 1931	Made in United States by U.S. Wheel Track Layer Corp.
8 Medium Mark A	Probably Vickers-Armstrongs
25 Mark V	Captured from White armies in Civil War
8 eighty-ton	Not known; possibly Soviet manufacture based on Vickers designs, Mark V, (i.e., U.K. Flying Elephant of 1916)

Sources: R. E. Jones *et al. The Fighting Tanks Since 1916* (Washington: National Service Publishing Co., 1933), p. 173.
R. M. Ogorkiewicz, 'Soviet Tanks,' in B. H. Liddell Hart, ed., *The Red Army* (New York: Harcourt, Brace and Co., 1956).

[19] Horace N. Gilbert, *The Russian Industrialization Program* (unpublished manuscript in the Hoover Institution at Stanford University), p. 3.

From this early stock of Western models, together with technical-assistance agreements and the continuing purchase of foreign prototypes, we can trace the origins of Soviet tank models of the 1940s.

The Carden-Lloyd was a 1.69-ton machine-gun carrier (predecessor of the British Bren gun carrier of World War II) first produced by Vickers-Armstrongs, Ltd., in 1929. The Mark VI model sold to the Soviets had a Ford Model T 4-cylinder 22.5-horsepower water-cooled engine and a Ford planetary transmission.[20] This became the Soviet T-27 light reconnaissance tank produced at the Bolshevik plant in Leningrad.[21]

The Ordzhonikidze Tractor Plant at Kharkov started work on the T-26, based on the British Vickers-Armstrongs six-tonner (probably Alternative A), at about the same time. There were three versions—A, B, and C—of which B and C became the Soviet standard models produced until 1941.[22] Similarly the Soviet T-37 and T-38 amphibious vehicles were based on the Carden-Lloyd Amphibian, known as the Model A4 E 11 in the British Army.[23]

Walter Christie, well-known American inventor with numerous automotive and tank inventions to his credit, developed the Christie tank—the basis of World War II American tanks. Numerous versions of Christie tanks and armored vehicles were produced in the late 1920s and 1930s. Two chassis of the Christie M 1931 model medium tank (MB) were purchased by the Soviet Union in 1932 from the U.S. Wheel Track Layer Corporation.[24] After further development work this became not only the Soviet T-32 (the basic Soviet tank of World War II) but also several other development models in the U.S.S.R.: first the BT (12 tons), followed by the BT5 and the BT28, of which 100 were produced at the Chelyabinsk tractor 'school'[25] in 1938. They were standard equipment until 1941.

The Soviet T-34 and the American M3, both based on the Christie, had the same 12-cylinder aero engine: a V-type Liberty of 338 horsepower. Ogorkiewicz comments on the Christie model series as follows:

[20] R. E. Jones *et al.*, *The Fighting Tanks since 1916* (Washington, D.C., National Service Publishing Company, 1933), p. 122. See also Sutton, *Western Technology . . ., 1917 to 1930*, p. 245–8, for Ford Motor Company technical-assistance agreement for the production of Ford engines; and R. M. Ogorkiewicz, 'Soviet Tanks,' in *The Red Army*, ed. B. H. Liddell Hart (New York: Harcourt, Brace and Company, 1956), p. 297.

[21] *Genie Civil*, CXVI, No. 9 (March 2, 1940), pp. 154–5.

[22] *Ibid.*

[23] R. E. Jones, *op. cit.*, p. 304. Ogorkiewicz points out that Vickers-Armstrongs was the 'undisputed leader in tank design' in the 1920s. The Vickers six-tonner influenced the development of the American M3 and M5 Stuarts and was also adopted in the U.S.S.R. as the prototype of the T-26.

[24] *Ibid.*, pp. 168–9.

[25] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

> The power-weight ratio was actually higher than could be efficiently used, but the Russians copied it all and confined their development largely to armament, which increased from a 37-mm gun on the original models of 1931–32, to 45-mm guns on BT5 of 1935 and eventually to short 76.2-mm guns on some of the final models of the series.[26]

Both the Soviet T-28 medium 29-ton tank and the T-35 heavy 45-ton tank resembled British models—the A6 medium tank and the A-1 Vickers Independent, respectively. However, Ogorkiewicz suggests that, although the layout 'closely resembles' the British models, these tanks were actually a sign of 'growing Soviet independence in the design field.'[27]

Imported French Renault designs were not developed, although they no doubt contributed to Russian tank knowledge. During the 1933 entente between France and the Soviet Union, the Renault Company delivered $11 million worth of 'small fast tanks and artillery tractors'[28] to the Soviet Union and supplied experts from the Schneider works and Panhard Levasseur, both skilled in the armored-car and tank field. Renault FTs or T-18s were not, however, produced in Russia.

SOVIET MACHINE GUNS AND AIRCRAFT WEAPONS[29]

Machine-gun development in tsarist Russia was limited to small-lot production of the Maxim machine gun at the Tula armory. The Soviet regime placed great emphasis on the development and production of this type of weapon, particularly for aircraft use. In 1944, for example, they produced:

Maxim machine gun	270,000	
Degtyarev infantry machine gun	120,000	
Degtyarev tank machine gun	40,000	
Degtyarev Shpagin heavy machine gun	50,000	(for anti-aircraft use)
Goryunov machine gun	10,000	
Shkas aircraft gun	40,000	
Beresin aircraft gun	60,000	
Total	590,000	

[26] Ogorkiewicz, *op. cit.*, p. 298.

[27] *Ibid.*, p. 299. The reader is referred to Ogorkiewicz's excellent short paper (see fn. 20), which contains more detail on these Soviet tanks and a balanced assessment of their capabilities.

[28] Philip Noel-Baker, *The Private Manufacture of Armaments* (London: Gollancz, 1937), p. 188.

[29] Based on G. M. Chinn, *The Machine Gun* (Washington, D.C., U.S. Department of the Navy, Bureau of Ordnance, 1952), Vol. II, Part VII. This is an excellent declassified description of Soviet weapons in this class.

Table 15–2 SOVIET TANKS AND THEIR WESTERN ORIGINS, 1930–45

Soviet Tank Model Number	Based on:	1938 Production	Produced at:	Employment (1937–8)
T-18	Renault (F.T.)		Not produced	
T-26 (8-ton) A, B, C versions	Vickers-Armstrongs 6-ton A, B	Not known	Bolshevik works (Leningrad)	25,000 (1938)
			Ordzhonikidze (Kharkov)	About 20,000 (1937)
T-27 (1.7-ton)	Vickers-Armstrongs (Carden-Lloyd) Mark VI	Not known	Bolshevik works (Leningrad)	25,000 (1938)
T-37 (3-ton)	British Army Model A 4 E 11 (Carden-Lloyd Amphibian)	At least 90	Lenin machine works (Omsk)	About 5,000 (1937)
			Stalingrad tractor works	About 20,000 (1938)
			Chelyabinsk tractor technical school	About 25,000 (1938)
T-32 (34-ton)	U.S. Christie, which became the B.T.; then T-29 experimental	14	Kirov works (Leningrad)	40,000 (1938) in 3 shifts
		19	Stalin works (Kramatorsky)	32,000 (1937)
		15 (1937)		
			Uralmash	60,000 (1937)
BT (12-ton)		8 (motors only) (1937)	Polytechnic Institute (Kiev)	About 1,500 (1937)
		32	Chelyabinsk tractor technical school	
BT-28 (16-ton)	U.S. Christie	100	Chelyabinsk tractor technical school	About 25,000 (1938)
T-35 (45-ton)	Vickers A 1 of mid-1920s	About 5 (1939)	Probably Uralmash	60,000 (1937)

Source: Oberkommando der Wehrmacht, *Kampf and Panzerkraftwagen-Werke*, List VII6, March 1941, National Archives Microcopy T 84–122.

These weapons were characterized by extreme simplicity of design and rough exterior finish. They were, however, quite effective, and some Soviet weapons were probably the best in their class in World War II. Chinn commented in 1952 that because of the lack of skilled labor, 'weapons are designed to require a minimum of moving parts and fine finishes.'[30]

The Soviets borrowed heavily, but not completely, from the West in machine-gun technology. The Maxim, a famous Western gun, underwent various modifications by Soviet designers: i.e., the Maxim-Tokarev, the Maxim-Koleshnikov, and the Maxim-Esivnin. Thus the Maxim model 1910 became the basis of almost one-half of Soviet 1944 machine-gun production.

The Soviets, however, did introduce some innovations. The first of these innovations was the Goryunov (SG-43) machine gun, hailed as an entirely new weapon; as Chinn points out, some of its features were indeed new to Russian weapons, although 'they remind gun connoisseurs of principles and patents orginated earlier by designers in other countries.'[31] For example, the operating principle of the Goryunov gun was patented by John M. Browning 'but he never saw fit to put it into use.'[32] Certain other U.S. features were found in the weapon. It had, for example, a Mauser-type extractor and ejector. On the other hand, Chinn comments:

> Doing away with all unnecessary springs is one of the greatest accomplishments of Gurynev; in fact, the driving spring and its telescoping guide which is also spring loaded, are about all the springs employed for the gun's operation.[33]

During the 1920s the Soviets conducted an aircraft machine-gun development program 'with utmost secrecy.'[34] The result was the Shkas class of aircraft machine guns. The first production model appeared in 1933, followed by the standard version (KM-35), in steady production after 1935. The gun was capable of 1,800 rounds per minute and believed by the Soviets to be the best in existence. Chinn points out that:

> The Russians demonstrated great skill in adapting at low cost the best of time-proved principles to their particular needs. Construction was in two phases: a quick, coarse machining operation on all parts followed by final fitting and assembly on the work bench. Maximum use was made of semi-skilled labor with a minimum of fine gauged machine tool work. . . .[35]

Once again, however, we find some dependence on foreign ideas. Chinn describes the Shkas class: 'Thus the Shkas is an innovation based on the

[30] *Ibid.*, p. 20. It has been argued that extreme simplicity impaired their field use.
[31] *Ibid.*, p. 57.
[32] U.S. Patent No. 544657 of August 20, 1895.
[33] Chinn, *op. cit.*, p. 63.
[34] *Ibid.*, p. 72.
[35] *Ibid.*, p. 74–5.

Table 15–3 SOVIET MACHINE GUNS AND WESTERN DESIGN INFLUENCE, 1930–45

Soviet Model	*Year First Produced*	*Western Influence*
Maxim-Tokarev Maxim-Koleshnikov Maxim-Esivnin	1928	Maxim model 1910
SG-43 (Goryunov)	1928	Browning Patent No. 544657 Mauser-type extractor, ejector
Degtyarev	1926	Mauser locking; Vickers feed
Shkas aircraft gun	1932	Maxim ejection and buffer, Szakats (rotating feed), Berthier (piston actuated, propped breech, locking)
Shvak aircraft cannon	About 1944	Berthier action
Beresin aircraft gun	1940	Finnish Lahti 20 mm
V Ya aircraft cannon	1941	Scaled-up version of the Lahti

Source: G. M. Chinn, *The Machine Gun* (Washington D.C.: U.S. Dept. of the Navy, Bureau of Ordnance, 1951), Vol. II, Part VII.

features of the Maxim (ejection and buffer), the Szakats (rotating feed) and the Berthier (piston actuated, propped breech, locking).'[36]

By the same token the Shvak, a very light and extremely compact automatic aircraft gun with a range comparable to that of the U.S. M 3 cannon, was based on Berthier operating principles.[37] During the 1933 French-Soviet entente, the French sent experts on machine guns to the Soviet Union and their work can be recognized in the Shvak weapons and in the Shkas class.[38] The Shkas was replaced in 1940 with the 12.7-millimeter Beresin, deliberately constructed to be thrown away after a short period of use. Beresin design was 'greatly influenced' by a captured Finnish Lahti 20-millimeter machine cannon. The VYa 23-millimeter aircraft cannon was a scaled-up version of the Beresin.[39]

In general, machine-gun development was reasonably successful and might be described as a blend of skilled adaptation of foreign ideas with indigenous innovation. Soviet small arms were plagued with faults; 85 percent of the malfunctions were reported, however, to be due to bad cartridges rather than mechanical failures.[40]

[36] *Ibid.*, p. 79.

[37] *Ibid.*, p. 82.

[38] Noel-Baker, *op. cit.*, p. 188.

[39] Chinn, *op. cit.*, p. 94.

[40] *Ibid.*, p. 96. Ammunition also shows Western influence. The 12.7-mm cartridge was 'influenced' by the German T.u.F. 13-mm of World War I. The 20-mm had

THE HERCULES POWDER COMPANY AGREEMENT FOR MANUFACTURE OF COTTON LINTERS AND NITROCELLULOSE

In mid-1930 an agreement was concluded between Vsekhimprom and the Hercules Powder Company of Wilmington, Delaware for technical assistance in the production of nitrocellulose and cotton linters for explosives manufacture. Under the agreement the Hercules firm was to 'communicate the secrets of production and indicate all the production methods of bleaching common as well as oily linter, first and second cut of any viscosity. . . .'[41] for a number of grades—MVL 5, 10, 30, 50, 150, 250, and 500—with specified viscosity ranges and according to a stated specification. This had to be done in existing Soviet plants using existing equipment, and for this purpose Hercules sent an engineer to the U.S.S.R. and received three Soviet engineers annually into its U.S. plants for periods ranging from three to six months.

For nitrocellulose, more extensive assistance was agreed upon. The Hercules Powder Company was to

> . . . prepare a complete design of a nitrocellulose plant for the production of 5,000 tons yearly, arranged so as to enable the Vsekhimprom to double production in the future. The design shall be according to the method used in the plants of the Hercules Powder Co. and shall include all the mechanical appliances of production and all the technical improvements of the present time.[42]

The complete detailed design had to include cost estimates, description of the technological process involved, description of equipment, and dimensions of the building, in addition to 'working drawings of the apparatus and dimensions of the buildings, foundations for the apparatus, [and] calculations of the loads on the walls' which would enable Vsekhimprom to design the buildings. Also required were diagrammatical designs for the heating, ventilation, and refuse removal systems (with indications for steam pipes, water pipes and airconductors) and designs for raw material storage facilities, finished and semi-finished products, and mechanical appliances used in connection with loading and unloading.

The agreement also required disclosing processes for production of artificial leather, airplanes, medical colloids, cement for leather and Herculoid nitrocellulose for plastics (celluloid). Hercules guaranteed that quality would not be below its own production; supervised installation of equipment, construction

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a very strong physical resemblance to the nineteenth-century Gatling cartridge. The 23-mm, however, was distinctly different and according to Chinn had 'features of refinement' (p. 180). The reader is referred to Chinn's excellent study for further details.

[41] U.S. State Dept. Decimal File, 861.659 Nitrocellulose/1.

[42] *Ibid.*

and start-up; and sent its engineers to the U.S.S.R. for this purpose. Further, 10 Soviet engineers were admitted to Hercules plants in the United States for periods of three to six months to study nitrocellulose production methods.[43]

THE DRIVE TO PURCHASE ARMAMENTS IN THE UNITED STATES AND GERMANY AFTER 1936

Foreign purchases of armaments and technical-assistance agreements were expanded after 1936 and a determined effort was made to purchase new, advanced armaments systems and plants to manufacture these systems.

The United States was a prime focus of this drive. For this purpose the Carp Export and Import Corporation was established on Fifth Avenue in New York as a Soviet-front company. The President was Sam Carp, whose sister was married to V. M. Molotov, President of Council of People's Commissars of the U.S.S.R. The staff was American, including some retired officers of the U.S. Army and Navy.[44] This corporation had considerable influence in the United States.

In November 1936 the Soviet Embassy requested the State Department to intercede with the Navy Department for permission necessary to purchase heavy armor for battleships and cruisers from several steel companies.[45] This request was followed by a visit to the State Department by a group of Carp officials, who were assured by the Department that the proposed purchase of unassembled battleships would not be illegal or contrary to U.S. policy.[46] In a subsequent letter the State Department indicated it would not be possible, however, to supply 'designs, plans, working drawings and specifications of such vessels as the U.S.S. *Lexington*, *Colorado*, and *Mississippi*,' although there was nothing to prevent U.S. naval architects from preparing such designs on behalf of the Soviet Union.[47]

Purchases of war materials were, therefore, made directly from American manufacturers. Thus in 1938 the William Sellers Company of Philadelphia was reported negotiating a contract for the sale of heavy machinery for the manufacture of 12-inch steel plate known as 'stacked plate' for multiples for

[43] *Ibid.* This transfer had a favorable impact on the Soviet rocket program. Zaihringer points out that Soviet World War II rockets used 'Russian Cordite' with a composition of 56·5 percent nitrocellulose, similar to British and American propellants. 'Thus United States and U.S.S.R. propellant compositions were close by experimental coincidence and similar technology.' [A. J. Zaehringer, *Soviet Space Technology* (New York: Harper and Row, 1961), pp. 11–2.]

[44] U.S. State Dept. Decimal File, 711.00111 Armament Control/431.

[45] *Ibid.*, 861.6511/39, April 16, 1938.

[46] *Ibid.*, 711.00111 Armament Control/1153a.

[47] *Ibid.*, 711.00111 Armament Control/455, January 13, 1937.

armor-plate manufacture.[48] In March 1939 the State Department approved a proposal (already approved in the Navy Department) under which the Electric Boat Company of Groton, Connecticut would furnish plans, specifications, and construction services in the Soviet Union for a submarine.[49]

Both the Russians and the Germans initially expected benefits from the Soviet-Nazi military alliance of 1939, but the evidence is that the Soviet Union, at least, did not receive anything near its expectations. Rossi concludes from his study of the Fuehrer Conferences on Naval Affairs:

> From all the available evidence . . . the military collaboration between Germany and Russia does not seem to have gone very far in the technical field. Stalin asked for a great deal and was ready to give the necessary quid pro quo, but notwithstanding his eagerness to get hold of prototypes and the secret manufacturing processes of certain German weapons, he was to some extent restrained by the need not to endanger the profits he hoped to make out of his policy of neutrality. Over and above all this there was Hitler's deep distrust of Soviet Russia, once he had sobered down after his early successes. . . .[50]

This weapons-acquisition process culminated in the Lend-Lease program, under which large quantities of war materials were transferred to the Soviet Union.[51] However, about one-third of early shipments, and almost all shipments after 1944, were of industrial equipment, and not military end-use goods.

CONCLUSIONS

Although Soviet tanks and some guns were directly descended from Western models, a much greater degree of innovative effort was utilized on military products than in other sectors, so that the Soviets, in effect, had an indigenous military technology by 1941. Further, weapons were produced in large quantities over a full decade by using productive equipment and facilities built in 1930–2. This prudent, far-sighted policy accounts for Soviet ability to turn back the Nazi invasion before Lend-Lease goods flowed in in any great quantity.

In appears, although all the evidence is not yet available, that most Western governments (particularly the United States, Britain, France, and Italy) were willing to supply armaments and design assistance to produce armaments in the period before 1941, and that Germany also provided military assistance up until the eve of her 1941 'drang nach osten.'

[48] *Ibid.*, 861.6511/39.

[49] *Ibid.*, 711.00111 Armament Control/540, March 9, 1937.

[50] A. Rossi, *The Russo-German Alliance 1939–1941* (Boston: Beacon, 1951), p. 97. For details of 1930–40 Krupp shipments, see *NIK 11625, Krupp—Report of the Department for War Material 1939–1940*, at Hoover Institution.

[51] See U.S. State Dept., *Report on War Aid Furnished by the United States to the U.S.S.R.*

CHAPTER SIXTEEN

Technical Assistance to Planning and Construction Projects

THE DESIGN OF INDUSTRIAL PLANTS BY ALBERT KAHN, INC., OF DETROIT

ONE of the truly great surprises in researching this study was the discovery that the architectural design and supervision of construction of industrial units as well as the supply of equipment and similar assistance was very much an American responsibility. In the words of the Albert Kahn Co., Inc., the foremost industrial architects in the United States:

> It was in 1928 . . . that the most extraordinary commission ever given an architect came in the door unannounced. In that year a group of engineers from the U.S.S.R. came to the Kahn office with an order for a $40,000,000 tractor plant, and an outline of a program for an additional two billion dollars' worth of buildings. About a dozen of these factories were done in Detroit; the rest were handled in a special office with 1,500 draftsmen in Moscow.[1]

The 'outline of a program' presented to the Kahn organization in 1928 was nothing less than the First and Second Five-Year Plans of 'socialist construction.' Gosplan had decided upon those sectors it wanted developed and their approximate capacities.[2] No foreign influence has been found at the Gosplan level. These plans were then turned over to the Albert Kahn Company for conversion into production units.

Albert Kahn, Inc., probably unknown to even well-informed readers, is the most famous of U.S. industrial architects. In 1938 the company handled 19 percent of all architect-designed industrial building in the United States,

[1] G. Nelson, *Industrial Architecture of Albert Kahn Co., Inc.* (New York: Architectural Book Publishing Company, Inc., 1939), pp. 18–9.

[2] Planned capacities of some units, notably the automobile and tractor plants, were increased after consultation with U.S. firms.

in addition to projects in most major countries elsewhere in the world. Prior to 1939 the company designed and supervised construction of about \$800,000,000 worth of industrial buildings in the United States alone.[3] This included the famous River Rouge plant of Henry Ford, plants for the Chevrolet, Packard, Hudson, General Motors, Oldsmobile, Cadillac, Chrysler, and De Soto automobile companies, Kelvinator, United Air Lines, Burroughs Adding Machine, Pratt & Whitney Aircraft, the Glenn L. Martin Company, and dozens of similar firms. For one customer alone, General Motors, the Kahn Company designed 127 major structures prior to 1939.

The \$2-billion Soviet design project was two and a half times greater than all the U.S. business handled by the company between its foundation date, 1903, and 1939. As Kahn described the contract:

> Probably no organization has ever had a more severe test of its flexibility, speed, and competence. Not only did the plants have to be designed, but machinery had to be selected and ordered, process layouts had to be prepared and the very tools needed to build the plants had to be ordered here and shipped over.[4]

The formal agreement between Albert Kahn, Inc., and Vesenkha, under which the Kahn Company became consulting architects to the Soviet Union, was concluded in early 1930; upon signing the agreement Moritz Kahn (one of the three Kahn brothers) commented:

> In a short time I shall proceed to Moscow with a staff of twenty-five specialist assistants. We shall then help the Soviet Government to organize a designing bureau which will comprise about forty-five hundred architectural and engineering designers, selected principally from Soviet Russia, but also from America and other foreign countries. The bureau will be directed by the head of the Building Commission of the Supreme Economic Council.[5]

This bureau became Gosproektstroi (State Project Construction Trust) the major Soviet design and construction organization. Chief of Gosproektstroi and Chairman of the Vesenkha Building Commission was G. K. Scrymgeour, a Kahn engineer and the only American on the National Technical Soviet.[6] Scrymgeour outlined the Kahn unit functions as follows:

> The Albert Kahn unit was engaged to control, teach and design all light and heavy industry. . . . By the end of the second year we controlled in Moscow, and from Moscow branches in Leningrad, Kharkov, Kiev,

[3] Nelson, *op. cit.*, p. 18.

[4] *Ibid.*

[5] Amtorg, *op. cit.*, No. 3–4 (February 15, 1930), p. 55.

[6] *American Engineers in Russia*, Folder 3, Letter from Scrymgoeur; and Folder 4, letter from G. Growcott, Kahn engineer in Gosproektstroi.

> Dniepretrovsk, Odessa, Sverdlovsk and Novo-Sibirsk 3,000 designers, and completed the design of buildings costing (these are Soviet figures) 417 million rubles.[7]

The 3,000 designers in Gosproektstroi can be compared to the small size of the Kahn Company in the U.S. The company handled the immense volume of work outlined above, and then absorbed the Soviet design contract, with the following staff:

> In normal times the firm . . . employs about 400 men and women; among them some 40 secretaries, stenographers, typists and file clerks; about 15 accountants; 80–90 mechanical and electrical engineers; 40–50 field superintendents; some 30 specification writers, estimators, expeditors etc., 175 architectural designers and draftsmen.[8]

The problem, according to Kahn, was that 'a large percentage of Soviet draftsmen . . . had apparently never seen a pencil before and Kahn representatives not only had to run it by day, but hold classes at night.'[9]

Albert Kahn attributed further major advantages to the Soviet Union in its relationship with the Kahn Company. For example, said Kahn, there was only one client: 'this permits standardization of building construction; all factory buildings for any one type of construction can be built on standardized principles. The result will be a great saving in time and in cost in the preparation of plans and the cost of buildings.'[10] Moreover, added Kahn, this would enable revision of the Soviet building code with a 'saving of millions of dollars per annum because of the ultra-conservative character of that code.'[11]

There is in the State Department files an interesting report of an interview with nine engineers from the Albert Kahn unit who called at the U.S. Riga consulate in late 1930 for renewal of entry permits.[12] The report confirms that Kahn was undertaking supply of 'engineering and architectural talent' and that 27 American structural engineers, architects, sanitary engineers, and draftsmen were working in one large building in Moscow with 300 Russian engineers.[13] They reported that the Soviet planners indicated the nature of the plant required and the Kahn unit made the designs and drawings. Albert Kahn also maintained its own representatives at larger projects under construc-

[7] *Ibid.*, letter from Scrymgoeur.

[8] Nelson, *op. cit.*, p. 19.

[9] *Ibid.*, p. 18.

[10] Amtorg, *op. cit.*, February 15, 1930, p. 55.

[11] *Ibid.* For a detailed description of Kahn-designed industrial buildings in the U.S.S.R. see 'Sowjetrussische Notkonstruktionen' Ing. Schauder, in *Beton und Eisen*, July 20, 1933, pp. 213–6.

[12] U.S. State Dept. Decimal File, 861.641/9.

[13] *Ibid.* However, the concensus was that only four or five of the Russians were engineers; the rest, with the exception of 20 girl tracers, were 'worse than useless.'

tion; for example a Mr. Drabkin was the Kahn representative at the Stalingrad Tractor Plant.[14]

MANAGEMENT ASSISTANCE AT THE PLANT LEVEL

Vesenkha had responsibility for implementation of the Five-Year Plans; this it passed onto designated construction trusts, although the responsibility for policy remained with Vesenkha. The decision was to utilize U.S. methods not only in construction but also in production planning.

A technical-assistance agreement was therefore concluded with W. N. Polakov, a management-consultant firm based in New York. Polakov became Chief Consulting Engineer to Vesenkha for the period December 1929 to May 1931. In a plant selected for the purpose, the firm demonstrated and tested the possibilities of scientific management applied to Sovietized plants. The plant selected manufactured machine tools, cutters, taps, dies, and a full line of standard metal-cutting tools; employed about 5,000; and was well equipped with modern American and German machine tools. Polakov estimated that the number of parts entering main production was about 200 and the number of consecutive operations varied from 10 to 70. Planning, scheduling, and dispatching of these operations and products were his most valuable contributions.

Polakov reorganized all departments, starting with the grinding and polishing shop. His basic innovation was the introduction of a layout chart representing jobs for each machine and progress made on each job.[15] The plant director issued an order requiring conformity to the Polakov proposals, and it was estimated that the annual cost saving by using Gantt Charts was in excess of one million rubles for this one plant, while production increased by 400 percent.

The Gantt Chart had been translated into Russian as early as 1924[16] and by 1934 was in its twenty-first Russian edition, with 100,000 copies in circulation. The problem tackled by the Polakov firm was translation of paper diagrams to shop-floor practice, a problem pointed out by many foreign delegations to the U.S.S.R. Soviet industry was swamped with paper calculations and diagrams unrelated to practice. Polakov's contribution was to translate Gantt methods into action in one model plant.

[14] *American Engineers in Russia*, Fisher material, Folder 1.

[15] W. N. Polakov, 'The Gantt Chart in Russia,' *American Machinist*, LXXV, No. 7, August 13, 1931, pp. 261–4.

[16] W. Clark, *Grafiki Ganta* (Moscow: 1931). Permission was granted by Wallace Clark & Co. to translate and publish in the U.S.S.R. without royalties. Another publication, *Shops and Office Forms*, had been translated and published in the Soviet Union without permission. Clark said he had never received a copy. *American Engineers in Russia*, Letter from Wallace Clark & Co., March 9, 1934.

Vesenkha also negotiated with Wallace Clark & Company, American distributor of Gantt methods in 1934; but the company 'came to the conclusion that they [the Russians] were not yet ready to accept our advice and follow it out in a way which would ensure successful results.'[17]

Other bureaus for design and construction received similar assistance, many under contracts with individual consultants. C. Butterworth, for example, was a consultant metallurgical engineer to Orgametal[18] (Institute for Organization of Production in Machinery and Metalworking Industries).

Butterworth specialized in organization of the heat-treating and working of steel and was made responsible for training graduate Soviet engineers in these processes. Butterworth's program included eight months organizing production in the Putilovets plant in Leningrad, two months in Moscow to select equipment and to design the plant layout for a forge shop, followed by five months in Rostov at Selmashstroi to establish process organization and control. Two months were then spent at Dnieprstroi designing plant layouts and finally eight months at the Nizhni-Novgorod plant planning and erecting forge equipment. Butterworth's last job was as consulting engineer on a project for building heavy railroad equipment.[19] It may readily be seen therefore that a single highly skilled and resourceful engineer could have an impact in a short space of time on a number of different projects.

F. A. Hannah was a similar specialist in reorganization for the NKRKI (People's Commissariat of Workers' and Peasants' Inspection).[20] B. E. Torpen was attached to Vsekomvodgosplan (All-Union Committee for Planning of Water Projects)[21] to provide technical assistance to Steklostroi (Glass and Ceramic Trust).[22] Many such individual consultants were attached to project-design and inspection organizations. For example, in a single Amtorg announcement in August 1930, the following 39 U.S. consulting engineers were listed as having been hired:

27 for the Commissariat of Transportation
3 for Grozneft (Georgian Oil Field Administration)
2 for Dnieprstroi
2 for Stalingrad Tractor Plant (33 had already left)
2 for the United Machine Building Trust
1 for Burtsvetmet (Non-Ferrous Drilling Trust)

17 *Ibid.*
18 Amtorg, *op. cit.*, February 15, 1930, p. 57.
19 *American Engineers in Russia*, File 1, Letter of Charles Butterworth.
20 Amtorg, *op. cit.*, February 15, 1930, p. 57.
21 *Ibid.*
22 *Ibid.*

1 for Dalles (Far East Lumber Trust)

1 for NKRKI (People's Commissariat for Workers' and Peasants' Inspection)[23]

The valuta crisis brought an end to this assistance and such contracts were not renewed after 1932. The First Five-Year Plan was hastily telescoped into a four-year plan to prepare the way for another propaganda assault: the Second Five-Year Plan. Vesenkha, the control for the Kahn unit, was dissolved and replaced by the ministries structure in January 1932.

SOYUZSTROI (ALL-UNION CONSTRUCTION TRUST) AND OTHER CONSTRUCTION UNITS

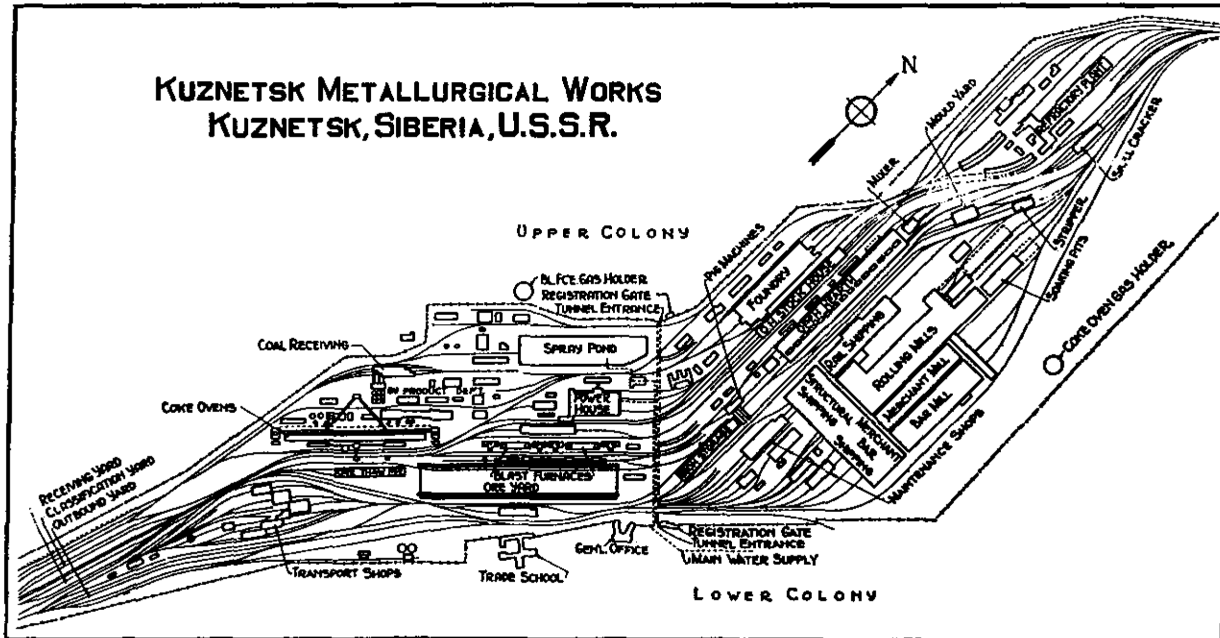
Soyuzstroi had responsibility for about one-quarter of new construction until 1933 when it was broken into smaller units attached to individual combinats. The Director of Soyuzstroi was Sergei Nemets, formerly an engineer with the Philadelphia construction company of Stone and Webster, Inc. The Chief Engineer of Soyuzstroi was Zara Witkin, whose early projects included the Hollywood Bowl and several large Los Angeles hotels. Initially

Table 16–1 SELECTED EXAMPLES OF TECHNICAL ASSISTANCE AT THE PLANNING AND DESIGN LEVEL

Function	*Soviet Organization*	*Foreign Assistance*
Long-term planning (to Jan. 5, 1932)	Gosplan	None identified
	Vesenkha	W. Polakov and Co.
Design and planning	Vesenkha	Albert Kahn, Inc.
	Gosproektstroi	Faudewag A-G
		Individual consultants
'Stroi' units	Magnitostroi	McKee Corp.
	Soyuzstroi	Zara Witkin
	Chemstroi	Alcan Hirsh
	Vsekhimstroi	Nitrogen Engineering Corp.
	Gosstroi	Longacre Construction Co.
Control and inspection	OGPU	Individual engineers, usually
Military construction	NKRKI	members of Western Communist parties.
Design units	Gipromez (State Institute for Design of Metallurgical Works)	Freyn Engineering Corp.
	Giproshakht (State Institute for Design of Coal Mines)	Allen and Garcia, Inc.

[23] *Ibid.*, August 1, 1930, p. 328.

Figure 16–1 LAYOUT OF KUZNETSK IRON AND STEEL PLANT PREPARED BY FREYN ENGINEERING COMPANY UNDER TECHNICAL-ASSISTANCE CONTRACT OF 1930



Source: Freyn Design, No. 10, October 1932, p. 2.

offered a position as Consulting Engineer in construction of the Palace of Soviets, Witkin supervised construction, in Moscow and elsewhere, of apartment houses, industrial units, and a number of the 'secret industry' units; these Witkin defined as 'having to do with the production or storage of war material or military equipment.'[24] There was no question in Witkin's mind when he was interviewed by the U.S. Consul in Poland at the end of 1933 that every tractor plant 'is of course a tank factory and an automobile plant a factory which may at any time produce mobile artillery.'[25] According to Witkin the best construction work was that done under the supervision of the OGPU, which handled all military work, confirming the evidence that the OGPU has built itself up into a major construction force in the Soviet economy.

Zara Witkin was also employed by Soyuzstroi to undertake a program of organization for the Second Five-Year Plan. According to Nemets, Director of Soyuzstroi, there had been no co-ordination in the First Five-Year Plan between new plants and older established plants. In order to avoid a repetition of this problem, Witkin was instructed to formulate a 'rationalization program' —in effect a program to integrate new construction projects for 1933–7 with existing plants. In order to do this, Witkin requested, and received, material to calculate the actual volume of construction achieved between 1928 and 1932.

Witkin's analytical summary includes his methodology and conclusions, including a series of charts relating actual accomplishments to plan variants between 1928 and 1932 and projections for 1932 to 1937. The most meaningful indicator of Soviet progress is Witkin's comparison of actual construction volumes in the United States and the Soviet Union, in which he concludes:

> In the decade 1923–1932 the average annual total volume of construction in the United States was slightly less than nine billion dollars. The entire five-year plan in construction . . . generally understood to compress 30 to 50 years of industrial development into 5 years, actually amounts to two-thirds of the average annual American construction in the last decade (1923–1932) including three years of unparalleled depression. That the far-famed Soviet Union five year plan was equivalent to less than one average year of American construction has a profound economic significance for both countries.[26]

[24] U.S. State Dept. Decimal File, 861.50–Five Year Plan/276, December 27, 1933.

[25] August 9, 16, and 30, 1934. See also unpublished manuscript in the Special Collections of the Hoover Institution at Stanford University. Unfortunately other papers and reports were destroyed after Witkin's death in 1948. Reports containing military information from Witkin and made to State Department officials were stamped 'No distribution' and filed. Eugene Lyons calls Witkin's task 'the most important assignment given to any single foreign specialist.' [*Assignment in Utopia* (New York: Harcourt, Brace and Co., 1937), p. 529.]

[26] *Engineering News Record*, August 16, 1934, p. 211. This conclusion is preceded by four pages of small print—a carefully structured analysis of construction volume.

In his final article Witkin related this fact to construction possibilities in the period 1932–7 and concluded: 'It furnishes the quantitative proof that the second five year plan is slightly smaller than the first.'[27]

The reader will recall the increasing censorship of information in the Soviet Union throughout the 1930s, culminating in the purge trials of 1937 and recurrent accusations of wrecking. Soviet trade journals abroad ceased publication after 1933 or so. The usual explanation has been Stalinist paranoia. A more likely factor may have been a dawning awareness of the inherent weakness of the socialist form of construction.

Although the exact construction volume achieved is not an integral part of the argument of this study, it is important to note that the actual volume of construction between 1928 and 1941 was probably less than has been generally accepted, and that this was achieved with extensive absorption of Western technology. By integrating these two key observations, we begin to get close to the reality of Soviet industrial development.

Thus the growth-rate figures originating in Soviet sources are maximal. Further, they include an unknown proportion of defective, low-quality output and probably double-counting. These qualifications do not, however, alter our conclusions concerning the relationship between rates of growth in specific sectors and assimilation of foreign technology.

The Fourth Gosstroi (State Construction) Trust in Leningrad provides another example of the extensive penetration of Americans and foreigners into actual construction work even at the lower levels. In 1930 the trust, handling construction in Leningrad, employed about 30 Americans and an unknown number of foreigners; in 1932 there were 141 aliens working for the trust, including 60 to 70 Americans.[28] Their purpose was to introduce the use of reinforced concrete in industrial buildings.[29]

The number of foreign workers in various construction trusts varied greatly. At the one extreme the Stalmost (Steel Bridge Construction) Trust in Moscow had, so far as we know, only one foreigner, Kaare Salberg,[30] a draftsman employed on checking specifications for bridges, plants, and buildings. At the other extreme there is a report that 200 new buildings were under construction at Petrozavodsk—all by American-Finns, of whom there were about 4,000 in an 'American village.'[31] This last example is unusual, although it was common for Finns and American-Finns to seek work in that part of Russia.

[27] *Ibid.*, August 30, 1934, p. 275.

[28] U.S. State Dept. Decimal File, 861.5017—Living Conditions/501 and /508.

[29] *Ibid.*, 861.5017—Living Conditions/508. There may be an element of exaggeration in this report; the interviewee says that an American bricklayer will lay 2,500 bricks per day versus 350 for a Russian.

[30] *Ibid.*, 861.5017—Living Conditions/696.

[31] *Ibid.*, 861.5017—Living Conditions/689.

It can be argued that in some cases American construction assistance, particularly in the housing sector, was not useful; i.e., the transfer was ineffective. The Longacre Construction Company had a contract to supply technical services and supervision on about $10 million worth of apartment buildings in Moscow and other large cities. The company also assisted in financing, so that there was a minimal valuta problem for the Soviets. In the first year all the $2-million construction was Soviet-financed, but in the second year $3-million worth of construction financing was shared 50–50, and in the third year the $5-million worth of construction work was 100 percent Longacre-financed. Longacre supplied an architect, an engineer, and 14 construction superintendents under the contract. A company member commented:

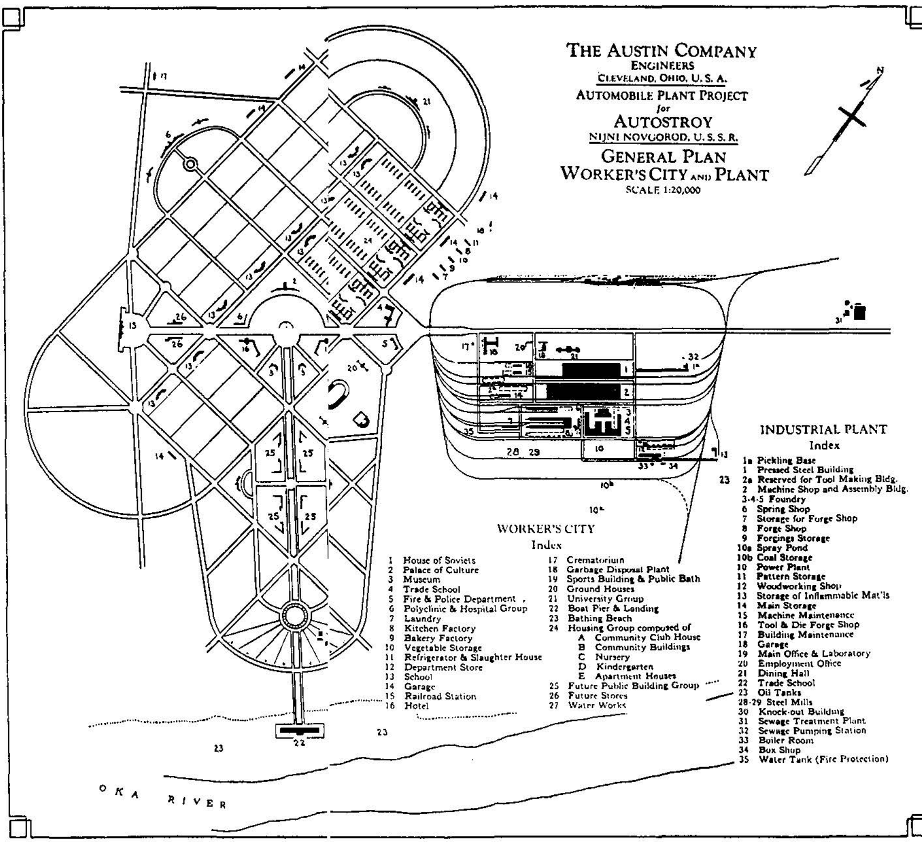
> We soon found that they did not want American apartments at all as the living conditions were such that three or four families had to occupy each apartment and they stated that this overcrowding was likely to obtain for some years to come in spite of the new apartments contemplated and under construction. They objected to providing a bathroom with each apartment; they did not want any hot water supply; they did not like the joist floor construction; they wanted brick walls 30 in. thick; they had no kiln-dried lumber; they wanted to use a cement mortar of 1–9 mixture instead of 1–3 in order to economize in cement; they had no check valves, no thermostatic traps, no automatic air valves so that hot water was the only method of heating that could be installed. When we got all through instead of having an apartment built in the American style we had plain Russian apartments the same as they were building themselves.[32]

Soviet architects during the 1930s had the responsibility of reflecting both Marxist ideology and modern technology (preferably American), and consequently had to strain after dual objectives.[33] Thus the principle of collectivization has influenced architectural development in housing, so that housing and cultural facilities reflect communal life rather than the individual. The large blocks of apartments constructed by Longacre achieved this objective. Factory kitchens, public bathing facilities, and communal clinics reflect the same objectives, and were also included in assistance agreements. Design had to reflect the dynamic features of a revolutionary society; therefore the advantages of standardization and simplification were consistent with this ideological objective. Some of the work of Le Corbusier, Wright, and modern European architects was consequently acceptable and referred to as the Soviet style, not because it was Russian but because it conformed to ideological prerequisites.

[32] *American Engineers in Russia*, Fisher material, anonymity of writer requested.

[33] See Arthur Voyce, *Russian Architecture* (New York: 1948), for an excellent summary of the philosophy of prerevolutionary and Soviet architecture.

Figure 16–2 LAYOUT OF NIZHNI-NOVGOD (GORKI) CITY AND AUTOMOBILE PLANT, PREPARED BY THE AUSTIN COMPANY IDER TECHNICAL-ASSISTANCE CONTRACT OF AUGUST 1929



Source: The Austin Co.

This argument does not conflict with the Longacre experience; the commentator felt he had been hired to build 'American style.' In fact, Longacre was hired to build the standard Soviet multistory communal apartment buildings but with American methods. These did not 'take' because the specialized materials and equipment required were not available, so that the Longacre Company and other foreign construction firms were forced to 'make do.'

DUPLICATION OF AMERICAN EXCAVATION EQUIPMENT

In return for equipment orders, American manufacturers often supplied the Russians with construction superintendents. When the Western equipment was later duplicated by the Russians, the superintendents were often asked to stay on and break in the Soviet-made duplicates.

One of these American superintendents was John E. Cook of the Ohio Locomotive Crane Company, sent to the U.S.S.R. by his company to erect, operate, and service cranes at the Dniepr Dam, Nizhni-Novgorod, and Kuznetsk.[34] Another was Gustav S. Bell, an engineer employed by Sauerman Brothers, Inc., of Chicago, who was in the Soviet Union for 20 months supervising the operation of equipment bought from Sauerman for construction of the canal and locks at Svirstroi.[35] Another superintendent at Svirstroi was Gustav A. Johnson, an engineer for Bucyrus Erie Company, employed to erect and start operation of Bucyrus steam shovels and grading machinery. Johnson also worked at the Magnitogorsk Iron and Steel Plant supervising excavation of the foundations and on a drainage project in Krasnodar.[36] The Thew Shovel Company of Lorain, Ohio supplied W. R. Parker to supervise excavation with its shovels at the Bobriki chemical combine.[37] Parker made the interesting comment that the work he supervised was continued day and night and that it was 'common knowledge' that the work was rushed so that the plant could produce poison gas.

The extensive use of foreign companies and their equipment in excavation work is exemplified in the Magnitogorsk iron and steel project—probably the largest single project undertaken in the U.S.S.R. in the period 1930–45. Table 16–2 gives a full list of excavating equipment used at Magnitogorsk; all

[34] U.S. State Dept. Decimal File, 861.5017—Living Conditions/240, Report No. 7623, Riga, April 10, 1931.

[35] *Ibid.*, 861.5017—Living Conditions/314, Report No. 7939, Riga, August 11, 1931. See chap. 19 for copying of Sauerman equipment.

[36] *Ibid.*, 861.5017—Living Conditions/200, Report No. 214, Riga, November 28, 1930. For other engineers and conditions at Svirstroi see /283, Report No. 7830, Riga, June 30, 1931.

[37] *Ibid.*, 861.5017—Living Conditions/349, Riga, October 16, 1931.

units are of either American or German manufacture. It was not until 1933 that early Soviet copies of this equipment began to appear in excavation work, and Lend-Lease import figures suggest that there was still a strong demand for excavation equipment in the 1940s.[38]

The extensive field tests of foreign equipment under Russian working conditions generated accurate data for evaluation and choice of models for duplication. American engineers themselves played a role in the selection process. Gorton, Chief Engineer for the Vaksh project in Central Asia, was assigned the task of preparing a mechanization plan for Glavklopkom. His main recommendation was that single units of American agricultural and construction equipment be 'purchased for study,'[39] as these had been thoroughly tested under 'practical conditions' in the United States and found to be successful.[40]

Table 16–2 ORIGIN OF ALL EXCAVATION EQUIPMENT USED IN MAGNITOGORSK CONSTRUCTION

Name of Firm and Type of Excavator	*Bucket capacity (Cubic Meters)*	*Number of Units*
Electric		
Bucyrus 50-B	1.5	2
Oren-Koppel multi-bucket	—	1
Steam		
Bucyrus 3-B	0.5	1
Bucyrus 41-B	0.95	2
Marion 450	0.75	5
Marion 32	1.00	1
Oren-Koppel	1.00	1
Oren-Koppel (with grab bucket)	—	2
Meck and Gambrok-C	1.5	1
Meck and Gambrok M-U	1.5	1
Meck and Gambrok	0.75	1
With Internal Combustion Engine		
Oren-Koppel Type 6	0.75	1
Parson	—	1
Lubeck	—	1

Source: Magnitostroi, *Informatsionnyi Biulleten'* (Magnitogorsk: 1930) p. 64.

[38] U.S. State Dept. *Report on War Aid Furnished by the United States to the U.S.S.R.*, p. 23.

[39] W. L. Gorton, *The Mechanization of Excavation Work on Irrigation Canals and Drainage* (Tashkent, July 2, 1931), p. 36.

[40] *Ibid.*

Gorton also investigated possible manufacturing facilities and for this purpose visited Rostov on the Don. He estimated that the new Selmashstroi plant could, after installation of the new equipment expected, manufacture Fresnos, wheel scrapers, Miami-type scrapers, Chattin-V-type diggers, and plows. Investigation of two smaller plants in Rostov, on Ilych and Pushkin streets, led to the conclusion these plants were not in a position to make even the simplest equipment. The Trust construction department shop was also not in a position to manufacture new equipment, although it could undertake repairs.[41]

So we find that American engineers were not only responsible for implementation of the First Five-Year Plan in such positions as Chairman of the Building Committee of Vesenkha, but that they also superintended such jobs as the operation of excavation equipment on site and the selection of construction equipment models for duplication in the new Soviet plants.

[41] *Ibid.*, p. 36.

CHAPTER SEVENTEEN

The Process of Technical Transfer: Firms, Engineers, and Institutions

FOREIGN FIRMS IN THE SOVIET UNION[1]

MOST leading American corporations and many smaller firms have had trade or technical-assistance agreements with the Soviet Union, although these have generally not been made public. Documentation has survived in the State Department files, and it appears that many corporations either informed the Department of their intentions or worked very closely with the Department. No case has been found in the files, after about 1919, in which a U.S. company acted contrary to the expressed wishes of the Department. There is some evidence, not conclusive, that some companies, rather hesitant about negotiating a contract with the Soviet Union, were tacitly encouraged to do so by the Department.[2]

Insofar as Germany is concerned there was until 1941 a unified approach to Soviet trade, with the German Foreign Office playing a dominant role over individual German firms. It is surmised, but without archival evidence, that links between British firms and the British Government were also close; there is no question, for example, that compensation for the Lena Goldfields expropriation was achieved only by the refusal of the British Government to conclude a new trade agreement until the Lena question had been settled with some semblance of equity.

One generalization can be made: throughout the 1917–45 period, transfers of technology to the Soviet Union were made not only with the acquiescence of Western governments but with their approval and often encouragement. There is no question about the fact that the slightest sign of disapproval by

[1] This section is based primarily on the recorded experience of American firms. Experience of foreign firms (for example, Metropolitan-Vickers of the United Kingdom) was not significantly different.

[2] See Sutton, *Western Technology . . . , 1917 to 1930*, p. 347.

any Western government would have choked off such an agreement. Any credit or blame for these transfers must in the final analysis be placed with Western political circles and government administrators and not with private corporations.

BREACHES OF CONTRACT WITH FOREIGN FIRMS BY THE SOVIET UNION

The widely held assumption that the Soviet Government has not defaulted on commercial agreements with individual firms is inconsistent with evidence in the Decimal File and elsewhere. Almost all known concessions provide examples of gross breach of contract on the part of the Soviet Government;[3] there is a strong probability that other concessions did not publish their experiences for fear of ridicule. Expropriation utilized economic pressure; physical violence has been identified in very few cases. The Soviets were careful to cover expropriation with a façade of legality, and to this end numerous newspaper articles, a few books, comments by sympathetic businessmen, and court 'trials' were developed to weave a fabric of legality. Concession expropriations were, however, not the only examples of Soviet commercial default. Nonpayment of salaries, consultant's fees, and debts to private Western firms —and expropriation of patents, designs, drawings, prototypes, and equipment without payment—are also recorded in the Decimal File.[4]

One of the largest contracts concluded with an American firm was the McKee Corporation contract for construction of seven blast furnaces, some steel mills, and a town at Magnitogorsk. McKee maintained 80 American engineers on the project for one year and then cut the contract back to 'one unit':

> This happened because the Soviet Government was too inaccurate in the payments provided for in the contract. The McKee Company was compelled to draw up supplementary provisions according to which the Soviet Government was to make payments three months in advance. However, when the Government failed to comply with this provision, the firm of McKee stated that it would take advantage of its right to annul the contract and would recall all its personnel from Magnitogorsk within one month.[5]

The J. G. White Engineering Corporation of New York suffered monetary losses in two separate contracts with the U.S.S.R. The first breach involved

[3] See chap. 2.

[4] The writer has had access to *complete* corporate papers or documents based on corporate resources in only two instances. In both cases there was clear evidence of Soviet default.

[5] U.S. State Dept. Decimal File, 861.5017—Living Conditions/452, March 19, 1932, quoting *Zarya* (Harbin, China).

the comparatively small amount of $7,000 in nonpayment of expenses for railroad men whom the White Company had sent to the Soviet Union. This was similar to numerous other cases of nonpayment of expenses.[6] The second case was a more significant breach of contract. The Soviets requested the White Corporation to make a proposal for supervision of construction at Svirstroi Dam. The proposal submitted required a total payment of $975,000 with an advance retainer of $100,000 to protect White against contracts made with U.S. engineers hired for the project. The proposal was accepted by cable from Moscow and orally by Amtorg in New York, and, said White, 'Amtorg pressed us very hard to start designing work and get our men off before the retainer was received, which [delay] they explained on the basis of red tape. . . .'[7]

The White Corporation therefore, at Amtorg insistence, hired the engineers and started design work. As the White Corporation reported it, sometime later the Soviets 'advised us they had changed their plans and had decided not to engage us. . . .'[8] The Company claimed $400,000, comprising White's costs for 'the designing and organization work we had been prevailed upon by Amtorg to start here, notwithstanding we had not received our $100,000 retainer.'[9]

Amtorg offered $10,000; this was refused. Amtorg then raised its offer to $20,000; this was accepted by White Engineering 'because of our belief that Russian credit was insecure. . . .' The amount was promptly paid.

Thus on a claim of $400,000, of which $50,000 was out-of-pocket costs, White Engineering suffered a loss of $30,000 out-of-pocket expenses due to breach of contract by the Soviet Union, in addition to loss of the contracted work.

Treatment of foreign firms was clearly unethical in yet another way. Firms were played off one against another in an attempt to get free technical data and drawings in a manner usually amounting to fraud. The case of E. B. Badger & Sons and Alco Products is a good example. Both firms were negotiating with Mashinoimport for construction of a large oil refinery and had submitted bids in 1934 on construction and equipment.[10] Amtorg in New York invited both firms to send representatives to the Soviet Union for further negotiations with the declared intent of letting a construction contract. E. B. Badger said that Amtorg indicated that another firm would also be sending representatives, but Alexander M. Hamilton, Export Sales Manager of Alco Products, said he was told by Amtorg that Alco Products alone would be

[6] U.S. State Dept. Decimal File, 861.602/252, December 31, 1930. See also chap. 3.

[7] *Ibid.*

[8] *Ibid.*

[9] *Ibid.*

[10] U.S. State Dept. Decimal File, 861.602/263.

sending representatives. Both principals brought two engineers to the U.S.S.R. and started separate negotiations with Mashinoimport in Moscow. The State Department report claims that:

> Mashinoimport took advantage of the competitive spirit between the two firms in order to obtain unusually detailed information regarding their manner of arriving at estimates and regarding the various processes and types of machinery which they proposed to employ.[11]

As neither firm wanted to prejudice its negotiating position, the information was freely provided by both companies. The Badger bid was $1.8 million, 25 percent to be paid in cash and the balance over four years; the Alco bid is not known. After some three weeks of negotiations in Moscow, each party was informed *independently, without knowledge of the other*, that if its bid was reduced by approximately 40 percent Mashinoimport would consider giving it the contract, paying for both the equipment and the work in cash. Both firms refused the offer and went to the U.S. Embassy on account of the attempted 40-percent reduction—not because they were then aware of unethical practices.

The U.S. Embassy reported both firms as indicating the lower prices would have meant a loss. Badger, for example, said 'his firm had prepared the estimates in the same manner as it would have prepared them for an American firm.'[12] Both Badger and Hamilton, reads the Embassy report, expressed indignation that when Amtorg had invited their respective firms to send representatives to Moscow it had not intimated that there was such a wide difference between the bid and the price the Soviet Government was prepared to pay. Hamilton said that the cost of the trip alone to Alco Products was $50,000 and that if Alco had known the Soviets could only pay such a small amount they would have dropped the matter.

As in other cases, the Soviets then demanded all drawings, documents, blueprints, technical descriptions, and similar material brought into the Soviet Union and viewed as confidential by both firms. Mr. Badger was informed that 'before departing from the Soviet Union he should leave these documents with Mashinoimport which would see that they were inspected by the customs authorities and sealed.'[13] Badger did not hand over his blueprints, no doubt having been forewarned of past Soviet appropriations. Some he burned and some handed over to the Embassy with a request that they be sent out in the diplomatic pouch or burned. Hamilton, on the other hand, handed over his documents to Charles H. Smith in Moscow.[14] The Soviet authorities

[11] *Ibid.*

[12] *Ibid.*

[13] *Ibid.*

[14] For the background of Charles H. Smith, of the American-Russian Chamber of Commerce, see Sutton, *Western Technology. . . , 1917 to 1930*, pp. 119, 284–5, and 289–90.

refused to allow Badger's assistant to be present during the 'customs' examination of the other documents, which lasted one and one half hours, 'during which period,' according to Badger, '. . . it would have been possible for most of the important documents to have been photographed.'[15]

The Embassy report concludes:

> The Embassy is of the opinion that when Mashinoimport issued through Amtorg invitations to the two firms to send representatives to Moscow it believed that by offering to pay cash and by playing one bidder against the other it could obtain the plant at costs greatly below those set forth in the original estimates.[16]

The Embassy further comments that:

> . . . the type of questions put to Mr. Badger and [one of the engineers] by various Soviet engineers with regard to the machinery and processes which his firm proposed to employ led him to believe that the Soviet Government was considering, in case it could not obtain the desired reduction in price, the possibility of using Soviet engineers to build the plant and of purchasing abroad only those machines which could not possibly be manufactured in the Soviet Union.[17]

This question of Soviet expropriation of drawings and technical data occurred many times; indeed, one has the impression there was an almost compulsive intent to collect such material, although drawings by themselves, without material specifications and extensive backup data, would have had only limited usefulness.

The Radio Corporation of America had similar problems with drawings, even after the State Department obtained a promise from the Soviets to desist. In 1937 RCA engineers in Moscow were being searched and their documents and drawings retained for examination.[18] This was coupled with a refusal to let the engineers be present while the drawings were being examined.[19] A 1938 memorandum by George F. Kennan summarized Soviet intent; after pointing out that some Soviet practices aroused resentment, Kennan added:

> An example of these practices is provided by the efforts which are frequently made by Soviet officials to utilize business connections in order to get possession of foreign plans, charts and diagrams, by the use of which Soviet factories can themselves undertake production of commodities previously purchased abroad.[20]

[15] U.S. State Dept. Decimal File, 861.602/263.
[16] *Ibid.*
[17] *Ibid.*
[18] U.S. State Dept. Decimal File, 861.602/267 and 361.11—Employees/349.
[19] U.S. State Dept. Decimal File, 36.11—Employees/349.
[20] U.S. State Dept. Decimal File, 124.61/119.

Kennan pointed out that written assurances were given in 1937 that American nationals would be permitted to remain during examination of their possessions. He continued:

> Nevertheless in the current year [1938] we have witnessed the violation of these assurances in the case of engineers of the Radio Corporation of America working in the Soviet Union and the retention by Soviet authorities of drawings, plans, et cetera for periods long enough to permit copies to be made. There is good reason to believe that papers taken by Soviet authorities from American citizens have led to infringement of important American patents.[21]

The State Department did not protest in the RCA case, as the company did not want to alienate further orders from the Soviet Union.[22]

Another case of expropriation of drawings and patents was that of Joe Lavelle, a case which occupied the U.S. Embassy in Moscow from 1936 to 1939. Joe Lavelle, an inventor living in Montana, patented a railroad frog[23] in April 1931. Drawings and technical data were given to a Soviet representative, Ulanov, to consider use of the patent in the Soviet Union. That was the last Lavelle heard of his drawings and patent. Successive inquiries by the State Department over three years, through the Moscow Embassy, yielded only the response that the drawings could not be found.[24]

The common thread in these cases—White Engineering, E. B. Badger, Alco Products, RCA, and Joe Lavelle—and many others not here described is that the Soviets obtained technical information (particularly drawings) unethically and at the expense of the originator.[25]

DEFAULTS ON SALARY PAYMENTS TO FOREIGN ENGINEERS

There is considerable evidence that the Soviets defaulted extensively on payments to foreign engineers. This assertion, however, is modified by a clause in many individual contracts granting the Soviets a right to cancel the

[21] *Ibid.*

[22] U.S. State Dept. Decimal File, 124.61/134.

[23] U.S. Patent No. 1,802,057.

[24] U.S. State Dept. Decimal File, 861.542 Lavelle, Joe. ***Subject: Protection in U.S.S.R. of Patent Right of Joe Lavelle, American Citizen, in a Railroad Frog.***

[25] For a few of numerous similar cases see U.S. State Dept. Decimal File, 861.541/1 (seizure of papers on manufacture of aluminum foil); 861.542/62 (copying Central Railway Signal Co. devices); 861.602/264 (Otis Elevator); 861.42761/65 (IBM); 861.42761/71 (National Cash Register); 861.544/5 (Universal Picture Corp. accuses Soviets of stealing story of *Once in a Lifetime*); and 124.61/134 (U.S. Embassy protest re engineer Wood in which Soviets retained his drawings and plans. Also see 361.11—Employees/349 and 124.61/118 and 119.

Such behavior is, of course, ethical under Communist philosophy as it advances world revolution; indeed, it would be grossly unethical for a Communist *not* to undertake such acquisitions if there were any chance they would advance the cause of Communism.

contract freely.[26] Those contracts examined by the writer are worthless from the viewpoint of protection of the foreign engineer; it is presumed that potential employees were so anxious to obtain business that insufficient care was taken to have contracts examined by competent lawyers in the United States or Germany before signature.[27]

During July and August 1931 a large number of such contracts were cancelled outright due to the valuta shortage. The exact number is not known 'but it is thought that it affected a very large number of persons employed in Russia, particularly Germans.'[28] Many contracts were broken unjustly but, so far as German workers were concerned, little was made public, as the German Government had a policy of not making trouble for the Soviets 'on behalf of these little people, [and] little was done in their behalf.'[29]

Many similar American cases were reported to the State Department; they include August Tross (a drilling superintendent in the Baku oil fields),[30] Mitchell N. Jordan,[31] George F. Hardy,[32] Balog,[33] Willard Gorton,[34] E. G. Puttmann,[35] Olson,[36] and others.

Also in the Departmental file are letters from legal firms in the United States on behalf of clients. For example, the New York lawyers Murphy and Fultz made inquiry in 1937 on behalf of a client engineer who was paid no

[26] See U.S. State Dept. Decimal File, 861.602/248.

[27] See Appendix A. See also U.S. State Department Decimal File, 861.5017—Living Conditions/537 and /771 for an example of an individual work contract. The Gorton contract (Appendix A) is one of the better contracts, yet Clause 13 give the Soviets the right to cancel 'at any time.'

[28] U.S. State Dept. Decimal File, 861.5017—Living Conditions/248.

[29] *Ibid.*

[30] U.S. State Dept. Decimal File, 861.5017—Living Conditions/771. Soviets 'did not keep conditions on payment.'

[31] *Ibid.*, 861.5017—Living Conditions/518. Jordan deposited $3,800 in Soviet bank but was not allowed to withdraw it.

[32] *Ibid.*, 861.5017—Living Conditions/458. 'After he had been working for five months the Soviet official in charge of employing foreign specialists sent for him and told him that his contract was broken and that they would no longer pay him in American dollars. He was offered a new contract in rubles. . . ." He had no funds to return to the U.S. and therefore had to accept.

[33] *Ibid.*, 361.11—Employees/291. The Soviets broke his contract. 'It is apparent from the statements made and the evidence submitted by Mr. Balog that the contracts offered by the Russian representatives in New York to American engineers etc. are tricky instruments which are not worth the paper upon which they are written, and that Americans who venture to Russia having faith in such contracts are bound to be very much disillusioned and to be put to great inconveniences and expense. . . .'

[34] See p. 34.

[35] *Ibid.*, 861.602/254. Ten engineers were dismissed on 'trumped-up charges.' One month later the remaining engineers had their dollar allowances cut.

[36] *Ibid.*, 861.5017—Living Conditions/423. 'Like so many others Mr. Olson complained that the Russians failed to live up to their contract with him and sought to evade it from the outset through technicalities.'

salary at all for the second year of his service with the Soviets.[37] The widespread nature of Soviet default on individual work contracts is indicated by the inquiry of a single Detroit attorney handling no fewer than 10 claims from former employees of the Stalingrad Tractor Plant. John L. Sullivan wrote the State Department, saying: 'I have about ten claims of former employees . . . and it appears to the writer that their contracts have been violated by the above named concern [Stalingrad Tractor Plant].'[38] The State Department referred attorney Sullivan to Congressman Fish for information on Amtorg and made no further comment.

Details of a single case will illustrate the personal hardship often caused by such Soviet defaults. In 1930 Homer Trecartin was hired by Sharikopodshipnikstroi (Ball-Bearing Construction Trust) as a consultant on the construction of a gigantic ball-bearing plant.[39] The one-year contract, dated March 17, 1930, was made with Amtorg, with the right of renewal at $20,000 per year to supervise construction of the Kaganovitch plant. Although it was agreed that his salary would begin in the U.S., with 60 percent of it to be deposited in dollars at the Chase Bank in New York and the balance payable in local currencies, Trecartin received no funds before sailing from New York to England on August 16, 1930. The Soviet Embassy in London then sent him to Italy to discuss equipment for the plant. At this point, September 1, he had received neither travel nor salary funds and so cabled Amtorg. Having received no reply by September 10, Trecartin then cabled Amtorg: 'FOUR TELEGRAMS TO WISHNEVESTSKY SINCE AUGUST 30 UNANSWERED ABSOLUTELY WITHOUT FUNDS SITUATION DISGRACEFUL CABLE TWO HUNDRED DOLLARS IMMEDIATELY.'

On September 22 he sent a further cable: 'NO MONEY RECEIVED SALARY LONG OVERDUE THREATENED ARREST EVICTION YOUR TREATMENT SCANDALOUS CABLE ME DIRECT IMMEDIATELY PALACE HOTEL MONEY AND FUTURE INTENTIONS.' Amtorg's answer to this cable was 'REMITTING FUNDS TOMORROW.'

Trecartin finally received $200; he was then owed $666, plus $1,000 which should have been deposited in New York, plus travel expenses. The point to be emphasized is that Trecartin was one of a small group of top consultants, a man of wide experience and first-rank qualifications. The treatment accorded lesser-ranking engineers, without even considering the fate of specialists and skilled workers, can be readily envisaged.[40]

[37] *Ibid.*, 861.5034/59. See f.n. 40 (below) for State Department action.

[38] *Ibid.*, 861.60/231.

[39] *Ibid.*, 861.6511 Officine Villar-Perosa.

[40] Trecartin asked the State Dept. to bring this matter to the attention of other engineers and several companies. There is no indication in the files that this was done. It could have been done informally but, if so, it had no impact, as this was one of the early agreements. One copy of the material was sent to the Dept. of Commerce marked 'Strictly Confidential,' but the State file was not declassified until the writer's application on May 19, 1967.

One rather small group of engineers tried to ingratiate themselves with the Soviet regime. It is suggested (there is no evidence either way) that this group may have been trying to substitute political ardor for their own technical deficiencies. One group of 16 engineers wrote articles favorable to the Soviet regime.[41] Sixty Germans, Americans, and others—mainly technicians—supplied letters favorable to Soviet propaganda image for publication.[42] A bond issue was promoted inside the Soviet Union by a group of U.S. specialists including Guy C. Riddell, Miles W. Sherover, William C. Aitkenhead, Atherton Hastings, and others.[43]

On the whole, however, American engineers were strictly nonpolitical and hardworking, tried to do their jobs and, as their writings show, were shocked at the privations of the Russian people. It is the misery and privation, rather than criticism of the Soviet system, which is reflected in the interviews and writing.[44] Some engineers, it is true, received Soviet rewards; the Order of the Toilers of the Red Banner was received by six U.S. engineers at the Dniepr Dam, but there was nothing political about this award so far as the recipients were concerned.[45] Several received the Order of Lenin and one—F. B. Haney—did become a Soviet citizen.

In general, there was little ideological sympathy attached by individual Americans to their contribution to Soviet development. There were ideological connections in the early 1920s (the 'arm's length hypothesis' is discussed in the first volume) and certain ideological links between American firms and the Soviet Union will be traced in *Western Technology and Soviet Economic Development, 1945 to 1965*, but these are relatively minor. The years 1929–32 witnessed the Great Depression in the United States; engineers went to the Soviet Union because they could not find work in the United States. Only a fraction could even be termed sympathizers. Most were disgusted by the brutality and coercion.

George Burrell, working for Grozneft (Georgian Oil Field Administration) is typical: 'I myself am no Communist, for if the Soviet dictatorship should be

41 U.S. State Dept. Decimal File, 861.5017—Living Conditions/584 contains a translation of these articles sent to Washington, D.C.

42 *60 Letters: Foreign Workers write of their Life and Work in the U.S.S.R.* (Moscow: 1936).

43 Gorton Special Collection at Hoover Institution, Stanford University, Envelope 12.

44 The interviews filed by the State Dept. under 861.5017—Living Conditions support this point at considerable length and in great detail. This is a superlative primary source for a study of living conditions in Soviet Russia during the time of the First Five-Year Plan.

45 U.S. State Dept. Decimal File, 861.6463/62. The Order was awarded to Col. Cooper, Frank Pfeiffer, Murphy, Miles, Winter, and James Thompson. Banner recipients received a pension, free transport, rent reduction, and exemption from Soviet income tax if their income was not over 6,000 rubles per year; not a great advantage.

established here I would probably be chased down a back alley along with more affluent and wealthy people.'[46]

In the final analysis these American engineers could see what had happened to their professional confrères in Russia; they worked with 'prisoner engineers' and appreciated and even tried to lighten their burden.

Several engineers sent by firms were offered individual contracts to stay and work directly for Soviet organizations in order to copy foreign equipment. J. Urbanik, at the Stalin Auto Plant, reported that after copying several of the older Gleason machines the Soviets tried to enlist his assistance in copying a new Gleason gearmaking machine.[47] Emil Lutzweiler, employed by the Gogan Machine Company of Cleveland to install machinery for making automobile bumpers, was offered 650 rubles per month to sever his connections with Gogan and stay in the U.S.S.R.[48] In the field of automatic railroad signals, the Soviets were having trouble installing equipment copied from signal units covered by U.S. patents and offered John M. Pelikan '$100 per month more than he receives from his company if he will resign from it and enter into a personal contract with them for five years.'[49] There is nothing unethical about such offers, but they do illustrate the point that the Soviets probably had difficulties copying foreign equipment in a satisfactory manner.

There is a problem concerning reports by returning workers on Soviet conditions. One can find detailed reports from workers in the same industry—even in the same plant—at the same time, reporting quite opposite events and conditions. There is no question that this has led to confusion concerning the nature of Soviet technological development. For example, a toolmaker, Walter Wells, wrote an article for *American Machinist* in 1931 concerning his professional experiences in Moscow. All in all he produces three pages of favorable impressions, with hardly a single criticism of the Soviet way of life. His impressions are sufficiently detailed to indicate that, unless he were a complete liar, he was not at all unhappy and left for reason beyond his control.[50] On the other hand, most foreign engineers' reports in the State Department

[46] G. A. Burrell, 'Life in a Soviet Town' (unpublished manuscript in the Hoover Institution, Stanford University). It is worthy of note that it was the smaller companies and individual engineers that contributed to the Fisher data *(American Engineers in Russia)*. No large company made a contribution.

[47] U.S. State Dept. Decimal File, 861.797/37.

[48] *Ibid.*, 861.5017—Living Conditions/441.

[49] U.S. State Dept. Decimal File, 861.5017—Living Conditions/233.

[50] Walter Wells, 'An American Toolmaker in Russia,' *American Machinist*, LXXV, November 26, 1931, pp. 816–18. A careful reading of this article leads to the conclusion that it may not have been written by a tool and die maker. Although some tool and die makers are well read I find it difficult to accept such phrases as 'delicate viands' and 'stipulation is precie in the contract.' No one except Mr. Wells has ever praised Russian sanitary facilities.

files describe bad conditions and give wholly unfavorable impressions of the Soviet system and standard of living at the same time as Wells.

These conflicting reports can, however, be reconciled. For example, in the Wells article, as in numerous books written in the 1930s favorable to the 'Soviet experiment,' attention is focused *only* on the favorable or that which can be interpreted favorably. This is the essence of Soviet censorship: only the favorable is reported. Objectivity reflects both good and bad aspects, and these must be blended for an accurate picture.

There is evidence that the Soviets tried to ensure that only favorable aspects would be reported by returning workers. However, in talking with State Department officials most—but not all—such workers felt they were safe enough to tell the truth as they saw it, so that the State Department files are understandably much closer to the truth than published material. There *was* an incentive, however, to present the Soviet line after return to the U.S.—the possibility of further employment: not a small consideration in the 1930's. A number of engineers, however, said they had been threatened by the OGPU, and there is evidence of OGPU activities inside the United States against American engineers who spoke too freely.[51]

In sum, there were several incentives to continue the Soviet line and very few incentives to tell the whole story concerning Soviet conditions. This interpretation is supported by the requests in both the State Department files and the Fisher material at the Hoover Institution for confidence and anonymity.[52]

SUITS BY GERMAN ENGINEERS AGAINST THE SOVIET UNION FOR BREACH OF CONTRACT

German as well as American engineers endured breach of employment contracts by the Soviet Union. The State Department contains an excellent report on applicable suits filed in the Prussian Labor Courts (Preussische Arbeits-Gerichte). This report was the result of an interview by the Berlin Consul General with Judge Tuchler, head of the press department of the court system, at the end of 1932.[53] Judge Tuchler estimated that there had been about 150 such suits filed between 1930 and 1932 in the Prussian Labor Courts,

[51] See V. A. Kravchenko, *I Chose Freedom* (New York: Scribner's Sons, 1946), p. 185. Information is given on how the NKVD controlled American engineers after their return to the U.S.

[52] The writer has honored these requests where made in the Fisher investigation at the Hoover Institution. These were private requests in a private investigation. The State Department material is public property and has been officially declassified; therefore similar requests made to State Department officials in the 1930s have not been recognized (with one exception in which the Department made adverse comments on an individual), and names are incorporated into this text.

[53] U.S. State Dept. Decimal File, 861.602/249, Report No. 1075, Berlin, December 19, 1932.

and that if all German engineers with grievances had filed, the number of suits would have amounted to several thousands.

According to Judge Tuchler the contracts varied greatly in content (this was also the case with American contracts), but 'the general impression which the judges in the German courts got from the suits was that there was a general tendency upon the part of the Russians not to observe their contracts.'[54]

German suits for breach of contract were directed at the Soviet Trade Delegation in Berlin; this organization, however, claimed that it was not responsible, as the contracts were in the names of various internal Soviet organizations. The German courts held that the Delegation had power of attorney, as the contracts had been signed in Berlin. Unfortunately, most Germans overlooked a clause which said that the Trade Delegation signature alone did not put the contract into effect. Thus the Soviets were able to insert further clauses in Moscow—and did so; the German engineers had no choice but to submit to the arbitrary new terms.

The chief basis for claims in the Prussian courts was nonsupport of German families remaining behind in Germany while the breadwinners worked in the Soviet Union. The contracts agreed that part of the salary, averaging about 150 marks per month, should be paid in Germany. Because of the valuta shortage, this arrangement was not welcome in Moscow, and ways were found to circumvent part-payment in foreign currencies. A common circumvention was to submit the contract to Vesenkha, where it was cancelled and an all-ruble contract arbitrarily substituted. These unilateral contracts placed German workers in an impossible position; they could not support their families, had no way of converting ruble salaries into marks in order to transfer funds back to Germany, and when they tried to return home the Soviets refused to pay return fares on the ground that the *Germans* were breaking the contract.

There was another less-common type of suit, in which German workers sued for the return of funds deducted from wage payments as 'voluntary' subscriptions to Soviet loans. When the German courts found evidence of pressure or breach of contract, they decided in favor of the German workers. The report concludes that 'most of these cases were settled amicably, the Russians agreeing to pay.' However, it is estimated that only about 10 percent of such breaches came to court; the greater number did not, therefore, receive compensation.[55]

INSTITUTIONAL INFLUENCES ON THE TRANSFERS

The influence of political forces and Western foreign offices on the transfer, and particularly its major vehicle—trade—is an important topic which can only be touched upon here.

[54] *Ibid.*

[55] *Ibid.*

No evidence exists in State Department or the German Foreign Office files to show an awareness of the links between trade, the transfer of technology, and ultimate Soviet objectives. Politicians and foreign office officials were apparently unaware of such links. Certainly German Foreign Office and U.S. State Department policy statements support the argument that the links were not recognized. The only evidence of such recognition is in the subsequent reluctance of Goering and Hitler to send weapons under development to the U.S.S.R. U.S. Navy officers also actively opposed Roosevelt's approval of battleships and destroyers for the Soviet Union; and the State Department did act in 1940 to stop transmission of technical data and aviation gasoline equipment after the Soviet invasion of Finland. These objections, however, were in reference to outright military goods. Nowhere, with two minor exceptions, does the evidence show recognition of the connection between ultimate Soviet objectives and the necessity for an industrial structure to fulfill these objectives.[56]

This has possibly been the result of a superficial definition of a strategic good: i.e., in terms of immediate military use rather than in terms of economic principle. A State Department memorandum argued that the Hercules Powder contract to supply nitrocellulose technology should be approved on the grounds that 'no munitions are involved but merely services.'[57] In 1934 Henry Morgenthau removed restrictions on trade with Russia (which had been imposed as a result of the dumping of goods in the United States) although the U.S. Government had evidence concerning forced-labor camps in the Soviet Union. If forced labor was used, then production costs would be artificially lowered. The general objective of all Western governments up to 1945, including Nazi Germany, was to encourage or at least not to hinder trade and its embodied technical transfers. The writer does not accept the argument that 'times were different' and that criticism of this view is hindsight. Soviet objectives were as plain in 1917 as they are today. The Communist Party has never been coy or reluctant to expand on its intentions regarding the capitalist world. Immediate operational or tactical aspects may be obscure, but never the long-term objectives. Neither have foreign Communist parties nor the Soviet Union denied the link between trade and military-strategic objectives; they are intimately linked in the dogma. On the other hand, we have seen since 1918 in major Western countries a pervasive mythology that the Soviets do not really mean what they say, or if they do, their objectives have no relationship to economic or industrial factors—particularly trade.

[56] Military Intelligence in the U.S. War Department hinted at such a link, as did a German Foreign Office memorandum in 1928. See Sutton, *Western Technology . . . 1917 to 1930, p. 11.*

[57] U.S. State Dept. Decimal File, 861.659 Nitrocellulose/4, reply from W. R. Castle.

In brief, the policies of all Western governments in regard to technological transfers between 1917 and 1945 were inconsistent with declared Soviet intentions regarding the Western world.

THE ROLE OF SOVIET NATIONALS IN THE UNITED STATES

While American engineers designed and supervised projects in the Soviet Union and American and European firms manufactured equipment for Russian plants, there was a counterpart flow of Soviet nationals to the United States and, to a lesser extent, to European countries. There were legal and illegal elements in this flow; only the legal elements are considered here.[58] Soviet nationals were sent abroad in large numbers to be trained; to acquire information, drawings and designs as part of study commissions; and to conduct negotiations for purchase of complete plants, equipment, and technical assistance.

The flow of Soviet nationals to the United States between 1929 and 1945 falls into three time periods. Between 1929 and 1931 there was heavy traffic to fulfill numerous technical-assistance agreements in force and to negotiate the purchase of equipment. This flow tapered off as Soviet supplies of hard currency declined. The second stage extends from 1934 to the Nazi-Soviet pact of 1939; Soviet engineers visited the U.S. for lengthy training but in more specialized activities: oil-refining, aviation, and military industries. The third stage came under the Lend-Lease program and included the training of Soviet personnel and the grant of engineering and technical information. An illegal acquisition known as Super-Lend-Lease may have been as important but is not here considered.[59]

In the 18 months between January 1, 1929 and June 15, 1930, just over 1,000 Soviet nationals arrived in the United States (see table 17–1); only four (Soviet wives joining their husbands) came for personal reasons. Eighty-one percent (or 842) came for training courses under technical-assistance contracts with American firms or for purposes related to such contracts. Just over 13

[58] The illegal flow of information has been extraordinarily large. See David J. Dallin, *Soviet Espionage* (New Haven: Yale University Press, 1956), pp. 103–2. The history of this aspect remains largely unwritten. It may be inferred from an official F.B.I. statement, 'The facts are that Soviet agents for three decades have engaged in extensive espionage against this country, and through the years have procured a volume of information which would stagger the imagination' and '[a] large group of Soviet-bloc officials stationed in the United States has systematically over the years developed a most important part of the modern intelligence machine which was referred to by one Soviet official as the best industrial spying system in the world. Volumes could be written as to the techniques used. . . .' [U.S. Senate Judiciary Committee, *Exposé of Soviet Espionage*, 86th Congress, 2nd session, May 1960 (Washington, D.C.: 1960), pp. 1 and 5.]

[59] See Jordan, *op. cit.*, p. 265.

percent had business in relation to the purchase of U.S. equipment, and only an insignificant 1.2 percent (or 12 individuals) came in connection with sale of Soviet products in the United States. It is clear that about 99 percent of the Soviet nationals came in relation to some phase of the transfer of U.S. technology to the Soviet Union.

This group has been further examined in regard to declared interests: i.e., the industrial sector they visited while in the United States. It was found that more than 46 percent were interested in automobiles, tractors, and aviation equipment, about 13 percent were in the machinery sector, 7 percent were in mining, and the remainder were scattered over the whole range of U.S. industry. It is interesting to note that some Soviet entrants gave rather unimaginative false reasons for their visits; this suggests that the percentages may not be wholly accurate. For example, Petr Kushnarev declared to immigration officials that he came to study agricultural equipment, although his destination was Pratt & Whitney, manufacturers of aircraft engines.[60] Anatoli Bariantinsky similarly gave study of agricultural machinery as his reason for a visit to the Ex-Cell-O Aircraft Corporation.[61]

On the whole, Soviet visits to American plants in 1929–30 did not occasion too much concern. Large groups of Soviet workers and foremen came for training—particularly to Ford Motor Company in Detroit and General Electric in Schenectedy. Smaller groups of Soviet engineers went to other companies for specialized training. Of these, 24 Soviets went to Sperry Gyroscope Company for training in searchlight manufacture; 10 went to the A. J. Brandt Company in connection with reconstruction of the Yaroslavl truck plant; another 10 went to Roberts and Schaefer, the coal-mine consultants; and smaller groups went to the Seabrook Company for training in road construction, the Du Pont Company in connection with nitric acid manufacture, American Locomotive and Car Works for locomotive construction, Newport News for turbine construction, and the Powers Company concerning office equipment. The largest group in the 1929–30 period was probably at Ford Motor Company; 81 Soviet engineers and technicians have so far been identified as resident at the Ford Detroit plant.

Concern grew after 1936–7, when Soviet emphasis in technical acquisitions shifted more overtly to military-related industries: oil refineries, aviation engines, aircraft, and radio communications equipment. At the same time, pressure grew to acquire far more data in these fields than had been agreed upon; indeed, sometimes such data could not be supplied at all. From about

[60] U.S. Congress, *Investigation of Communist Propaganda*, 71st Congress, 2nd session, Special Committee to Investigate Communist Activities in the United States. Part 3, Vol. 3 (Washington, D.C.: 1930), p. 194.

[61] *Ibid.*, p. 184.

1936 to 1941 there was a continuing battle between individual American firms, the Navy and War Departments, and Soviet engineers attempting to gain access to off-limits areas of plants, to send more engineers and observers than agreed, or to obtain information beyond that contractually stipulated.

Table 17-1 DECLARED PURPOSE OF SOVIET NATIONALS ARRIVING IN U.S., JANUARY 1, 1929 TO JUNE 15, 1930

Purpose	*Jan. 1 to Dec. 31, 1929 (12 Months)*	*Jan. 1 to June 15, 1930 (6 Months)*	*Total Number*	*Percent of Total Number Arriving*
Visiting U.S. firms under technical-assistance contracts	157	268	425	40.9
Taking training courses in U.S. plants or studying U.S. industries	302	115	417	40.1
Purchasing equipment in U.S.	65	74	139	13.4
Other (including Amtorg personnel)*	19	27	46	4.4
Selling Soviet products in U.S.	8	4	12	1.2
Totals	551	488	1,039	100.0

Source: Based on data submitted by P. Bogdanoff (President of Amtorg Trading Company) to the Special Committee to Investigate Communist Activities in the United States. U.S. Congress, *Investigation of Communist Propaganda*, Part 3, Vol. 3 (Washington, D.C.: 1930).

* No personal travel, except four Soviet wives joining their husbands in the U.S.; balance are Amtorg and Vesenkha personnel.

The Douglas Aircraft Company provides a good example of these disputes. Its experience was typical and repeated wherever the writer has been able to discover information concerning activities of Soviet engineers. The Douglas 1936 technical-assistance and sales agreement allowed five (later eight) Soviet engineers to observe in the Douglas plant. These engineers were defined as production men, but it was understood that a group of Soviet inspectors would also be sent to check out DC-3s under construction on Soviet account. Five production men were indeed sent—but also 13 unannounced Soviet design engineers. This latter group contained some interesting names. One was M. Gurevich: probably the mathematician and designer of the MIG fighter (the 'G' in MIG). Another was Miasishchev: a seaplane designer. Lisunov, another design engineer, later gave his name to the Douglas DC-3 in the U.S.S.R.—first called the PS-84 and later the LI-2 and LI-24. Later in 1937, a group of three visitors at Douglas included a P. I. Baranov, introduced to Douglas as a chief engineer; a P. I. Baranov was also director of the aviation industry in the U.S.S.R.

In sum, although the five inspectors remained one year, numerous other permit applications by Amtorg were granted, so that there were no fewer than 77 Soviet engineers (excluding interpreters) in the Douglas plant: at least 20 at one time.

Douglas also had major problems with the Soviet inspectors. In March 1938 Stratton complained to Rosoff, President of Amtorg, that no parts were getting through inspection and that unusually rigid requirements were holding up shipment; in fact the inspectors demanded something for which they had not contracted. Stratton pointed out that Douglas had been led to believe that the parts were to be used in the Soviet Union in the manufacture of airplanes; but the inspectors argued that they were for instruction purposes in those Soviet plants where the DC-3 was to be built, and therefore had to be of a higher standard, and were in fact special parts.[62]

In February, Conant, Douglas's Production Chief, wrote an ironic letter to the GUAP Commission protesting such arbitrary inspection and pointing out that scratches occurred on aluminum panels because 'airplane parts are made by man on machinery and not laid like eggs by an Easter Rabbit.'[63] Added Conant, 'I still believe that somebody must have been in earnest when you bought these planes. . . . That wasn't stage money you gave us . . . we don't make these parts for our amusement, we actually use these contemptible pieces of metal to build damned good airplanes that actually fly. . . .'[64]

Conant's letter had little effect. In August, Douglas routinely informed Amtorg that two DC's had scratches in the aluminum center section corrugation but that these, according to standard practice, had been 'doubled' and passed inspection. Promptly, and predictably, Amtorg came back demanding a 'substantial discount.' The affair was settled only when Douglas gave a lifetime guarantee for the planes.[65]

There was a major problem with the attempt to gain unauthorized access to other U.S. plants.[66] The Soviets tried to gain access to the Consolidated Aircraft plant at San Diego under their technical-assistance agreement, although this was not, and could not be, included in the contract. Ambassador Troyanovsky wrote to Kelley, Chief of the East European Division of the State Department, asking him to expedite such permission and suggesting that it would do no harm, 'particularly since we can build similar airplanes only in the distant future.'[67] Troyanovsky also asked for the blueprints to be

[62] Douglas Company Files, *Amtorg Outgoing Prior to 1939*, March 7, 1938.
[63] *Ibid.*, February 1938.
[64] *Ibid.*
[65] *Ibid.*, Telegram, August 9, 1938.
[66] As Kilmarx summarized this problem, 'Wherever controls existed the Soviet Government attempted to circumvent them. . . .' [R. A. Kilmarx, *op. cit.*, p. 86.]
[67] U.S. State Dept. Decimal File, 711.00111, Armament Control/584, March 23, 1937.

delivered *with* the PBY-1 under construction and not later. Access was denied to the plant on grounds that 'particular equipment cannot be effectively isolated' and that a group of seven Soviet engineers had recently been conducted through the plant.[68]

In 1940 RCA queried the State Department concerning termination of that part of its agreement allowing training of Soviet engineers at the RCA Camden (New Jersey) plant, 'in view of the rise of anti-Soviet feeling.'[69] This suggestion was supported by Mr. Fly, Chairman of the Federal Communications Commission, who expressed doubts concerning the wisdom of allowing Soviet engineers to continue at the Camden plant.[70] A memorandum in the State Department European Affairs Division concluded, however, that it would be 'unfortunate' to request RCA to cancel.[71]

Another aspect of the Fish Committee data on Soviet nationals visiting the United States in 1930 is worth special mention. In a number of cases visits were made to U.S. firms where there was no other record of a technical-assistance agreement or large sale of equipment. For example, in the first six months of 1930, Soviet nationals are reported to have visited Richard Brothers in Detroit; the Accounting and Tabulating Machine Company; Oliver Farm Equipment; Kalitt Products, Inc.; Arthur Nickel Company of Cleveland; Yukon Fur Farms, Inc., of Petersburg, Alaska; Burd Piston Ring Company of Rockford, Illinois; Pontiac Engineering Company; John Deere Company; Bethlehem Shipbuilding; American Can Company, and the Pennsylvania Railroad. No source states that these companies had any form of technical-assistance agreement with the Soviet Union. It is obvious that the visits in question were important as they were cited by the Soviet nationals as the reason for entering the United States. In some cases, a group of Soviets were received; five went to the Pennsylvania Railroad, four to John Deere, three to Burd Piston Ring, five to the Arthur Nickel Company, and so on.[72] As this data covers only a six-month period, the proposition is suggested that many technical-assistance agreements are still to be revealed and that this three-volume study may well only scratch the surface.[73]

68 *Ibid.*

69 U.S. State Dept. Decimal File, 861.74 RCA/33, December 4, 1940.

70 *Ibid.* Also see 861.74 RCA/30–39 concerning entry of Soviet nationals into the Camden plant and the problems created. (Item /30½ is missing; item /31 is still classified). This was similar to attempts to gain entry to the Douglas plant at Santa Monica.

71 U.S. State Dept. Decimal File, 861.74 RCA/30.

72 U.S. Congress, *Investigation of Communist Propaganda*, p. 183.

73 *Ibid.* Another aspect worth noting is the existence of a Chelyabinsk Tractor Plant office in the Union Trust Building in Detroit. In the first six months of 1930 alone, no less than 33 Soviet nationals stated this office was the objective of their visit.

The length of stay in the United States generally varied between three and twelve months. Few cases were found in which the stay extended beyond one year. A 10-percent sample was taken (by the writer) of all arrivals in 1929, and six to twelve months was found to be the average duration in the United States. Short stays of one to three months' duration involved sales of Soviet products and purchase of equipment.

HIGH-LEVEL TECHNICAL ACQUISITION VIA DIPLOMATIC CHANNELS

One avenue of technical acquisition, obviously reserved for processes difficult to obtain by other means, was to appeal directly to the U.S. Department of State. For example, in February 1939, Umansky, Chargé d'Affaires in the U.S., indicated a desire to have

> . . . blueprints, specifications and photographs of certain machinery employed by the United States Army Corps of Engineers in the construction of Fort Peck and Sardis dams, and . . . the manufacture by the General Electric Company of exhaust driven turbo superchargers. . . .[74]

In response Secretary of State Hull forwarded drawings, photographs, and specifications used in construction of the dams but indicated that both the Navy and War Departments objected

> on the grounds of military secrecy . . . to the acceptance by the General Electric Company of any order from a foreign source involving the development and manufacture of an exhaust driven turbo supercharger for use on an internal combustion engine.[75]

Another example of a high-level approach to technical-data collection resulted from the successful use of new rescue equipment by the U.S. Navy to save 33 members of the U.S. Submarine *Squalus*, sunk on May 23, 1939 off Portsmouth, N. H. Within two months Chargé d'Affaires Chuvakhin informed the Secretary of State that the U.S.S.R. was 'impressed by the effectiveness of the rescue equipment developed by the United States Navy . . . which may be looked upon as a humanitarian rather than a military development,' was desirous of obtaining 'as much information as is available' conerning the use and construction of the Rescue Bell and Momsen Lung and training of personnel in use of the equipment,[76] and was prepared to purchase these items. On October 26, 1939, the Secretary of State forwarded a pamphlet

[74] U.S. State Dept. Decimal File, 711.00111, Armament Control/1525. The writer conjectures that the Soviets really wanted only the G. E. supercharger design, were unable to get it, and included it in a 'package request' to the State Department, hoping that this would receive more favorable attention.

[75] *Ibid.*

[76] U.S. State Dept. Decimal File, 711.00111, Armament Control/2053, August 24, 1939.

entitled *Submarine Safety-Respiration and Rescue Devices*, which the U.S. Navy said contained the required information.[77]

RUSSIAN SCIENCE AND WESTERN TECHNOLOGY

After the Revolution, numerous Russian engineers found their way to the United States and started life anew, finally becoming American citizens. Although one would expect these Russians to have little sympathy for the Soviet regime it appears that considerable assistance was given to the Soviets by some of the more successful of these exiles.

It was argued in the previous volume[78] that Russia had a group of highly talented aircraft designers before the Revolution; most of them later came to the U.S. Igor Sikorsky became a leading designer of flying boats in the United States: his chief engineer was Michael Gluhareff, and Serge Gluhareff was his structural designer. The Sikorsky amphibian was sold to the Soviet Union.[79] Alexander de Seversky headed another group of prominent Russian aircraft designers, including M. Gregor, A. Kartvelli, A. Toochokoff, A. Pishvanov, S. Tchemesoff, and P. A. Samoilo. In 1937 Seversky received from the Russians a $370,000 contract for manufacturing rights and two model Seversky amphibians.[80]

Vladimir N. Ipatieff was equally prominent as a chemist. His personal history suggests that although the Soviet system is certainly well-designed to absorb Western technology it has weaknesses in the application of Russian scientific research to practical production.

Ipatieff was a great chemist by any standard. His work in catalysis and promoters and particularly in their application to petroleum technology ranks among the very finest of scientific achievements. Ipatieff was also a general in tsarist Russia. During World War I, while in charge of the Russian chemical industry, he built it up to the point of independence from Germany. Under the Soviet Government he continued his work toward the development of a chemical industry and, as laboratory facilities were lacking, he was allowed the extraordinary privilege of working several months of each year in Germany. Ipatieff had more than 300 publications to his credit, in addition to dozens of prizes, and was the only individual ever to hold membership in both the Russian National Academy of Sciences and the National Academy of Sciences in the United States.[81]

77 *Ibid.*
78 Sutton, *Western Technology . . . 1917 to 1930*, p. 259.
79 *Time*, June 14, 1937.
80 *Ibid.*
81 American Institute of Chemists, *Vladimir N. Ipatieff, Testimonial in Honor of Three Milestones in His Career*, November, 1942. See also V. N. Ipatieff, *op. cit.*

In 1930 Ipatieff left the Soviet Union and came to the United States, where he worked first for Universal Oil Products, which built parts of the Ufa refinery, and then at Northwestern University. When he refused to return to the U.S.S.R. the Soviet Government withdrew his Russian citizenship, expelled him from the Academy of Sciences, and had him publicly denounced as 'an enemy of the people.'[82]

The history of Ipatieff and others such as Sikorsky, Ostrimilenski, and de Seversky must be kept in mind in any study of Western technology in relation to Russia. It is *not* that Russian talent is lacking;[83] indeed there appears to be an affinity between Russian scientists and certain theoretical and research areas in mathematics and physics. The heart of the problem is the great weakness of totalitarian systems in the application of scientific advance to the industrial structure in any rational manner. No chemist, nor indeed any scientist, of Ipatieff's stature has emerged during the 50 years after the Bolshevik Revolution, despite the enormous funds poured into science and the comparatively comfortable conditions in which scientists live and work.

The experience of Ipatieff and his fellow emigrés in the United States then suggests that the weakness is not in Russian scientific talent, but in a coercive system which stifles scientific achievement and provides no means for the rational application of technical progress.

[82] It is a tribute to the courage of Russian scientists that only 62 of the 100 members of the Russian Academy came to vote and six dared even to vote against Ipatieff's dismissal.

[83] As suggested by Werner Keller, *Ost minus west=null* (Munich: Droemersche Verlagsanstalt, 1960).

CHAPTER EIGHTEEN

The Process of Technical Transfer: Propaganda, Standardization and Duplication

THE 'INABILITY HYPOTHESIS' AND THE REQUIREMENT FOR PROPAGANDA

ABSENCE of detailed Soviet or foreign writing concerning ***implementation*** of construction work, except generalities on 'socialist construction,' leads to an examination of motives for this gap and a survey of the available evidence on the implementation process.

There are numerous Soviet publications with construction photographs published before 1934. Some 17 books in Western languages originated within the Soviet Union, together with various illustrated descriptions of construction during the First Five-Year Plan. A large multi-volume series[1] published between 1930 and 1934 has numerous pictures of construction, although few details are given. It is interesting to note, and explainable in terms of our study, that such publications were not issued after 1934.

When these publicized projects are identified and compared with data contained in this study, two ideas become evident: first, that each major project described in the Soviet publications utilized foreign assistance, equipment, and technology; and second, that actual construction generally took place between 1929 and 1934. Although the plan started in 1928 and was announced in mid-1929, contracts for construction were not let until 1929–30. Foreign engineers arrived on site a few months later. They noted only a small amount of ineffective preliminary work. For example, even Amtorg comments on the Stalingrad Tractor Plant:

> While preliminary work on the site of the Stalingrad Tractor Plant had been conducted for some time, the actual work on the construction of the principal departments started only in June when the plans arrived from the United States. . . .[2]

[1] *U.S.S.R. in Construction.*

[2] Amtorg, *op. cit.*, V, No. 7 (April 1, 1930), pp. 134–5.

This was three years after work at Stalingrad had started.

The backward nature of early Soviet efforts may be illustrated by several examples. These support an 'inability hypothesis': the Soviets were unable to implement construction of the First Five-Year Plan until foreign engineers arrived.

The Svir Dam was started in 1922—the first large Soviet power project. Although it was designed and intended to be built by Russian engineers, work was continually delayed from 1922 until the early 1930s due to the inexperience of Soviet designers. It was ultimately patterned on the Keokok Dam on the Upper Mississippi River in Iowa and was built with extensive Western technical assistance. As such, it is an excellent example of the 'inability hypothesis.'[3] There is no question that the Soviets reduced Western assistance on the Svir project as much as possible, that it took 10 years to get Svir into operation, and that the project ultimately required Western help.

Again at the Baku hydroelectric project we find a similar situation. The problem was well summarized by a Badger Company engineer working at Baku:

> After working four years, spending in the neighborhood of four million dollars building the concrete flume to by-pass the river, all the auxiliary pump houses, the main pump house and installing all the machinery it was found they had no rock bottom on which to build the dam. . . .[4]

The 1926 Ford Delegation visited a proposed factory near Rostov and suggested it was nearer realization than Stalingrad, as 'a field office had been built and the buildings had been staked out.'[5] Several groups of engineers were working out details of various departments. These men all worked with American technical magazines and books as guides. The pressed-steel work specialist whose drawings were examined had not much practical experience, judging from the design of a blanking and perforating die which was faulty in several respects.[6]

A Stalingrad tractor plant to produce 10,000 tractors a year was also begun in 1926. The Ford Delegation said it was offered to them as a concession, but the Soviets were very vague about details. The Delegation was shown a picture of the plant, but when questions were raised about a number of tall chimneys the Soviets backed off and dropped the question.[7]

[3] U.S. State Dept. Decimal File, 861.5017—Living Conditions/283. See also Sutton, *Western Technology . . . , 1917 to 1930*, p. 201–2.

[4] *American Engineers in Russia*, Folder 3, Item 27.

[5] *Report of the Ford Delegation to Russia and the U.S.S.R.*, p. 53.

[6] *Ibid.*

[7] *Ibid.*, p. 52. A tractor plant in popular imagination might be thought of as having tall chimneys. In practice such chimneys are associated with smelting operations, which are not usually associated with tractor assembly. The reception of the Ford Delegation is reminiscent of the legendary Potemkin villages in the time of Catherine the Great.

Similar evidence of technical inability may be found in reports in the Soviet press. It was reported in 1929,[8] some 12 years after the Revolution, that 10 sugar plants in the Ukraine were still in a state of 'technical preservation,' i.e., capable of being operated but without the necessary managerial and engineering talent. Other examples will be found throughout this volume; an excellent instance is the Chelyabinsk Tractor Plant, which was started as a copy of the packaged Stalingrad plant but ran into such extraordinary problems that American engineers were called in to provide solutions.[9]

Moreover, the official review of the first year of construction, before Western companies entered the U.S.S.R., indicates a miserable picture. Gosplan, in reviewing the first year, 1928–9, entered the vague conclusion that '1928–9 was a year of increased creative revolutionary activity of the masses in town and country, the most important manifestation of which was socialist emulation.'[10]

Table 18–1 summarizes selected evidence concerning construction start dates and the introduction of Western skills.

Table 18–1 PREMATURE CONSTRUCTION STARTS ON SELECTED PROJECTS

Project	*Construction Start*	*Source of Information*
Turkmenistan irrigation	Davis arrived September 1929; work had earlier been started at four locations and stopped at three.	Gorton Special Collection, Hoover Institution, letter from Davis.
Selmashstroi (Agricultural Equipment Plant) Stalingrad Tractor Plant	Ford Delegation of 1926 noted attempts to start each of these projects.	*Ford Delegation Report (1926)*, pp. 49, 52–53.
AMO Truck Plant	Ground was marked out for the first two, and new equipment was idle for AMO truck plant.	
Krivoi Rog Iron and Steel Plants	Project established about 1927 by Gipromez; described as 'inadequate' by U.S. consultants (Perin and Marshall).	Farquhar Papers, Box 4, Folder 3.
Dniepr Dam	Work started on site in 1926.	
Uralmash	Announced start February 1, 1927; actual start 1930.	*U.S.S.R. in Construction*, No. 9, p. 18.
Kuznetstroi	Plans ready 1928. Site still covered with grass in mid-June 1930.	Frankfurt, *op. cit.*, p. 26.

[8] *Pravda*, No. 98, April 28, 1929.

[9] See p. 188.

[10] *Izvestia*, No. 195, August 25, 1929.

It is therefore concluded that the Soviet Union actually started to work on projects of the First Five-Year Plan as early as 1926, but cautiously, doubting its own ability, and very wisely without publicity. The utter lack of internal technical resources for such a gigantic move forward became apparent about early 1929 and is well-described by Rykov:

> Money alone is insufficient for new construction work . . . we now have to make great efforts to assimilate West European and American technique . . . the utilization of foreign scientific technical experience in the course of the five year period is bound to attain immeasurable larger dimensions. It is not very often realized to what extent the utilization of foreign technique is needed . . . when our own new cadres have matured . . . the need for foreign specialists will decrease. But now . . . such measures as engaging only a few hundred foreign specialists will not solve the problem.'[11]

Rykov presents the example of artificial silk:

> . . . for instance . . . the production of artificial silk. . . . Here we are struggling no end with the thing, but are still unable to design and draw up a proper plan or form a sensible idea of a plan. Whereas abroad this branch of industry, notwithstanding all the obstacles resulting from the private ownership, is developing very rapidly. With us this branch might develop with immeasurably greater rapidity, but nevertheless we have shown ourselves as weak as children.[12]

This problem, a fundamental one, as suggested by Rykov, is therefore dubbed the 'inability hypothesis'; i.e., without assistance from capitalist countries the Soviet Union would not have had the technical resources to make any economic progress during the 1930s and 1940s.[13]

Realization of inability coincided with economic censorship. Increasingly tight censorship and increasing propaganda from 1927 onwards are directly related to this fundamental problem. In other words, the raison d'être for Soviet propaganda and censorship in the economic field was to conceal the prime role of capitalist technology in Soviet economic progress.[14]

[11] *Pravda*, No. 94, April 24, 1929.

[12] *Ibid.*

[13] Similar arguments were made by contemporary engineers; for example, John R. Westgarth, a British engineer employed by the Soviets as an inspector on the work of other foreign engineers, said: 'The ultimate objective of the Five Year Plan was to compass by economic warfare the destruction of the capitalist world. This became clear to anyone taking part in the working of the plan, but one of the things man had to learn was that the Communists simply had not the brains to carry out the gigantic task to which they had set their hands.' [John R. Westgarth, *Russian Engineer* (London: Denis Archer, 1934).] A careful reading of Westgarth's book suggests that the Soviets skillfully utilized his luke-warm attitude towards things non-British as a means to check on the work of other foreign engineers.

[14] For a fascinating explanation of other factors involved see Leon Herman, *Varieties of Economic Secrecy in the Soviet Union* (Santa Monica: The RAND Corporation, December 1963) (Report No. P-2840).

The problem of inability was compounded by the lack of technically trained men who were at the same time members of the Communist Party. To retain Party control it was essential that at least the directors of combinats should be Party members. To overcome the problem of technical inadequacy, the Party was forced to appoint to responsible technical positions Party members with no technical training whatsoever, irrespective of the consequences for efficiency and production. As noted in the previous volume, when there was a conflict between economic efficiency and Communist Party control, the Party always, without exception, took precedence.

Thus, most directors of combinats and large construction projects in the early 1930s were nontechnical party men, replaced only gradually with hastily-trained Party members. The director of the Karsak Pai copper mines had been a schoolteacher immediately prior to his appointment.[15] The director of the Stalingrad Construction Trust had been a barber immediately prior to his appointment to Stalingrad.[16] The backgrounds of the construction chiefs at Magnitostroi and Kuznetstroi, both top-priority projects, suggest the technical limitations facing the Soviets. Frankfurt, appointed Chief of Construction for Kuznetstroi on May 30, 1930, was a textile man, and by his own admission he 'had only a most perfunctory notion of metallurgy and particularly of Kuznetstroi. . . .'[17] At the same time J. P. Schmidt, also from the textile industry, was appointed Chief of Construction at Magnitogorsk. Both were Party members. These men could not make any contribution whatsoever to construction[18] but had impeccable Party credentials.

The cost of these nontechnical Communist Party functionaries to Soviet economic development was great. Time after time technical decisions were made on the basis of dogma; economic and engineering rationality were abandoned. Ideological solutions to technical problems sometimes had disastrous consequences. Geologist Ussov, in charge of exploration of Siberian iron ores in the late 1920s and early 1930s, was insistent that the projected Kuznetsk iron and steel complex could not be maintained on existing ore deposits. This conclusion was ridiculed by the Party. Frankfurt, the ex-textile-mill operator and Director of Kuznetstroi, stated:

> He [Ussov] was requested to come to Kuznetsk. Swamping us with geological terminology, references to world practice and science, Professor

[15] U.S. State Dept. Decimal File, 861.5017—Living Conditions/323.

[16] Lyons, *op. cit.*, p. 353.

[17] Frankfurt, *op. cit.*

[18] The author has had the opportunity to spend some six months in and around iron and steel plants combined with some metallurgical training, but would consider himself totally unable to contribute anything to the planning of such a plant; it would be problem enough to read the blueprints. Obviously an ex-textile operator would have less capability.

> Ussov persistently tried to persuade Bardin and me that the deposits at Telbiss and Temir-Tau were not and could not be greater than the twelve to fifteen million tons that were already known. In his opinion prospecting for more ore in that region was a stupid waste of time and money.[19]

Poor Ussov was probably accused of being a 'wrecker' and a 'counter-revolutionary,' but in 1939 nature and Professor Ussov had the final word: Telbiss ran out of ore. The Temir-Tau deposits were more trouble than they were worth; they had .03 percent zinc content—treacherous to furnace linings.

It is therefore understandable that Party propagandists responsible for publicizing socialist progress were not always technically very sophisticated. One photograph, with the caption 'Testing an Airplane Motor,' shows a worker about to swing the propeller of an aircraft engine, obviously with the intention of starting the engine.[20] Unfortunately, the engine is mounted on a steel trolley, with four wheels; if the engine *had* started—worker, propeller, engine, and four-wheeled trolley would have gone on an eventful trip. Again, it was claimed that the turbo-generators of the Shatura generating plant were 'made in the U.S.S.R';[21] a picture of the generator casing showed prominently displayed the well-known symbol § of the Siemens-Schukert firm in Germany. Similarly the Berezniki chemical combine claimed that its 'girders were manufactured on the spot in a special factory . . . the tempo of the shock brigades allowed the building operations to proceed at a dizzy rate of speed.'[22] Examination of the photograph, however, reveals in large letters along the length of the girders the inscription, 'POWER-GAS CORP. LTD. STOCKTON-ON-TEES ENGLAND.'

The impatient propagandists could hardly wait for the motors to start and the paint to dry on the walls of newly built plants before claiming a victory for socialism. The previous volume of this study indicated how the development of the Soviet oil industry up to 1930 (and indeed after this date as well) was completely a product of Western technology skills and equipment. This remarkable construction program was, on completion, immediately claimed by T. Gonta in a little booklet, *The Heroes of Grozny, How the Soviet Oil Industry Fulfilled the Five Year Plan in Two and a Half Years*, published in Moscow in 1932.

In the pulp and paper industry, experiments were carried on to manufacture paper from peat to help solve the problems caused by the acute shortage of wood pulp. These were reportedly carried on at the Barkhat peat factory by Remmer, an engineer who produced a paper comprising 10 percent rag stock,

[19] Frankfurt, *op. cit.*, p. 28.
[20] Amtorg, *op. cit.*, VI, No. 12 (June 15, 1931), p. 275.
[21] *La Vie Economique*, No. 115 (May 5, 1930), p. 4.
[22] *U.S.S.R. in Construction*, No. 5, 1932.

20 percent waste paper, and 70 percent peat moss. This was publicized in the Moscow *Pravda* of April 20, 1932 together with the claim that the newspaper itself had been printed on the new peat paper. Samples of *Pravda* were forwarded to the U.S. Department of Commerce in Washington, D.C., for analysis, with this result: 'It is actually similar to the ordinary newsprint paper, being composed entirely of wood fiber in the proportion of sixty percent ground wood and forty percent sulphite wood fiber.'[23]

In brief, although the Communist Party accurately recognized technology and specifically Western technology as the engine of Marxist progress, its initial views of this technology were almost childlike. This should not obscure the fact that the Party was willing to learn from mistakes and that by 1940 and certainly after the Nazi invasion of 1941 the most extreme forms of ideological control of engineering functions had been dropped. As the reality of economic development dawned, propaganda became the means to hide the weaknesses of 'socialist construction' from the West, and probably from rank-and-file members of the Russian Communist Party itself.

Thus censorship and propaganda have played an essential role in the transfer process by obscuring technical backwardness and ineptitude from the outside world.

AMERICAN BUSINESSMEN AND SOVIET PROPAGANDA OBJECTIVES

There is no question that American businessmen, and to a lesser extent engineers, were utilized to further Soviet propaganda objectives and disguise Soviet technical inabilities. One must be careful to distinguish between the motivations of different groups of businessmen and engineers. There was one group, quite small, that knowingly promoted Soviet objectives and were sympathetic to the Communist cause. A second group denied the existence of such Soviet practices as forced labor but did so out of honest conviction and belief. A third group at first denied or excused Soviet brutality and then, as the facts came to light, revised its opinions. A fourth group, including most, but not all, of the engineers on site, was clear-sighted from the first.

The issue of forced labor is a good example to demonstrate the point. There was ample evidence in the early 1930s of forced labor in the Soviet Union. The State Department had a great deal of accurate information. Further, nine out of ten engineers interviewed by the Department mentioned this practice and provided evidence of it.

[23] U.S. State Dept. Decimal File, 861.656/4, Department of Commerce, letter dated July 7, 1932.

On the other hand, the American-Russian Chamber of Commerce was used as a forum for Soviet denials of the use of forced labor. A speech by Colonel Cooper, Chief Consultant to the Dniepr Dam, to the American-Russian Chamber of Commerce at the Bankers Club in New York on January 28, 1932[24] illustrates the point. After referring to the serious interference since 1922 with the flow of trade with the Soviet Union, Colonel Cooper said:

> . . . a hue and cry was raised against these limited Russian exports by politicians and propagandists and, I regret to say, some businessmen who because of their selfish interests are ready to injure the interests of our country as a whole. Last year they tried to convince the country that all Russian products that came into this country were manufactured by convict labor. . . . The Chamber has made a real study of these charges. It has obtained signed statements from many leading American businessmen, who have actually been to Russia and have personally observed labor conditions there, and I am glad to say that not one of these men think that labor in Russia is forced.

Colonel Cooper then points to the great turnover of labor on Russian construction sites as 'undeniable proof' of absence of forced labor. The interesting point is the reason why Colonel Cooper was so strongly convinced that forced labor did not exist, when hundreds of reports in the State Department files from returning engineers or those renewing passports indicated that it did exist. The explanation is roughly as follows: the Soviets valued Colonel Cooper highly as a businessman and as an engineer, and made great efforts to conceal conditions from him. We know this because of a detailed report by one of his assistants, Emegass, on this precise point: the devices utilized by the Soviets to keep Colonel Cooper in relative ignorance of conditions.[25]

Secondly, there are logical fallacies in Cooper's statement. One cannot argue that because forced labor is absent in one location it does not exist elsewhere. Nor can one infer from high turnover that forced labor does not exist. Nor can one prove a negative, as Colonel Cooper was attempting to do. There is ample evidence of forced labor on all major construction sites, and this is indeed admitted in the 1941 plan, which includes NKVD plan objectives and mentions the existence for example, of NKVD-Koppers coke-oven designs.

A few engineers knowingly made erroneous pro-Soviet statements to ingratiate themselves with the Soviets. For example:

> One of the American engineers who had been to the States brought back with him clippings of a speech he had made before an Engineering Society in the U.S. about Russia and conditions there. We congratulated him on

[24] Amtorg, *op. cit.*, VII/VIII (1932–3) bound in rear (Hoover Institution, Stanford University).

[25] U.S. State Dept. Decimal File, 861.50/FIVE YEAR PLAN.

> being such a liar and he replied that was what the Russians wanted and what he was being payed [*sic*] for. . . .[26]

Others were apparently paid or threatened not to complain.[27]

Thus propaganda and the use of foreign firms and individuals to develop Soviet propaganda objectives are intimately related to the inability hypothesis and subsequent Western assistance. In the face of technical inability, propaganda became necessary. One of the most useful outlets was the vehicle of assistance itself—the Western firm and individual businessmen and engineers.[28]

THE STANDARDIZATION AND DUPLICATION OF WESTERN TECHNOLOGY

The operational key to the development and utilization of technology within the U.S.S.R. is contained in the two words 'standardization' and 'duplication.' Strategic objectives, such as world revolution, are disguised by evasion while technical inability is disguised by propaganda, technical extravaganzas, and censorship. The actual process of technical acquisition, apart from the semantic disguise, involves several phases: consideration of all Western processes, selection of a single standard process, and then multiplication of the single selected process.

The first stage required widespread acquisition of knowledge concerning technical processes, economic structures, and organizational techniques throughout the Western world. This technical dragnet was unbelievably thorough and complete. It is doubtful if any technical or economic development of consequence has escaped examination by the Soviets. When information could not be acquired overtly, it was acquired covertly, by espionage, from governments, companies, and individuals. Such information was translated, summarized, and distributed to planning, design, research, engineering, and economic bodies.

Prototypes of promising processes were acquired. These prototypes were examined, dissected, cataloged, and analyzed in the most minute detail. The process most suitable for Soviet conditions was then selected and became the standard. If the process was a leading or key activity, foreign engineers were

[26] *American Engineers in Russia*, Dickinson papers, Folder 4.

[27] Kravchenko, *op. cit.*, p. 185.

[28] After 1958 the Soviets developed a much more effective means of disguising their objectives. The Sputnik dramatically demonstrated Soviet rocket and space achievements, and made their missile capability credible. From this it was deduced, erroneously, that the Soviets had made technical progress along a broad front. From this erroneous assumption came decline of export control laws at precisely that time when Western technology was needed by the Soviets and when technology along a broad front was slipping well behind the West. This is the fallacy of composition in assessing Soviet technology—a predilection to assume broad Soviet technical progress where in fact it does not exist.

hired to carry out or assist in the selection process. When the standard had been identified, it was prepared for duplication and standard drawings were prepared.[29] *This process of identification of standards and subsequent duplication is found in all major Soviet industries for the period under examination.* In aircraft engines, the standard designs were the Gnome rotary air-cooled and the Hispano-Suiza liquid-cooled models. In aircraft the standard designs were by de Havilland, Junkers, Heinkel, Savoia, Douglas, Potez, Martin, Vultee, Sikorsky, Seversky, Consolidated, and Isacco. Tractors were standardized on the Caterpillar 15/30 and the International Harvester and the Farmall row-crop tractor. Combines used the Holt model, light trucks and automobiles were standardized on the Ford Model A, trucks were based on Fiat models and the Hercules, sintering plants were based on Dwight Lloyd designs, and ore crushers on Simons. Standard lathes were the German DIN and the Warner & Swasey turret lathe, and diesel engines were Sulzer, Deutz and MAN.

One question presents itself: why were the Soviet engineers and planners so successful in choosing the best foreign technologies? Given 25 or so competing Western transport planes, by what process did Soviet engineers choose the Douglas DC-3, the most prolific transport model in the history of aviation, within two years of its initial production? Why the Ford Model A, and not General Motors, Dodge, Studebaker, Fiat, Renault, or any one of a hundred other possible automobile model choices? Why Curtiss-Wright aircraft engines, RCA radio stations, General Electric electrical equipment, and Koppers coke ovens? In almost every case the Soviets made an excellent choice. They invariably chose a more successful, lowcost process. In the light of the history of technical transfers, the Soviet choice of Western techniques has been superb.

One explanation might be the highly detailed comparative technical studies conducted in the Soviet Union on Western technological processes. A recent example is N. N. Kalmykov, *Burovaya Tekhnika i Tekhnologiya za Rubezhom* (Moscow: Nedra, 1968). This study compares precise technical details of different makes of rock drills and other equipment; it includes diagrams and charts obviously not supplied by the Western manufacturer. It is clear then that the Soviet system has institutional procedures enabling the rapid, usually successful transfer of Western technology at low cost and in a relatively efficient manner.[30]

[29] *Vestnik Standardizatsii* (Komiteta po standartizatsii: Moscow) for 1928–32 has details for part of this standardization process.

[30] Transfer is not always successful. See pp. 312–4 on the single-tower sulfuric-acid process; an argument will be made in the next volume that the Soviets moved too quickly on cotton-pickers; they made the right choice (the Rust spindle principle, subsequently used by four American manufacturers), but underestimated the technical problems. Hence they had 800 cotton pickers in 1940 (the U.S. had none), and only 100 left in 1945. John Rust subsequently ironed out the design problems and production got under way in both the U.S. and Soviet Union on the Rust machine in the late 1940s.

First, since about 1920 the Soviets have conducted a thorough and continuing world-wide dragnet of technical advances. They have probably acquired or tried to acquire one of every article made in the West.

Second, specialized institutes, such as VINITI (All-Union Institute of Scientific Information), have been established with overseas branches to institutionalize this acquisition process.

Third, this dragnet has been aided by local Communist parties and sympathizers, particularly where industries have maintained secrecy over methods or where Western governments have maintained industrial security precautions. The relaxed nature of Western security precautions has been a major asset enabling Western Communists to acquire this technology.[31]

Fourth, co-operative Western manufacturers have provided data and samples in anticipation of large orders. The monopolistic nature of Soviet trade organizations has been utilized to extract more data than would usually be made available to a potential Western customer.

Fifth, the market system has already pointed the way to the most successful among competing Western methods, although the information may be obscured to Western buyers by advertising and sales pressures. Choice can be more objective and more knowledgeable under the Soviet system, which can derive the advantages of the market system without succumbing to its emotional pressures.

Finally, Western engineers have been hired as independent consultants to prepare reports and advise on the most suitable process or equipment.

These constitute a formidable package of advantages which the Soviet Union has used with great skill. In addition Soviet buyers have insisted without fail on the most advanced processes that can be supplied by Western companies. On numerous occasions special development work has been undertaken to advance the frontier of the technology to be transferred. For example, in the electrical equipment industry, Metropolitan-Vickers Company has commented:

> The Russians . . . have always been eager to have the very latest plant and a turbine now building for Moscow will have the highest combined pressure and temperature of any turbine in the world, this having been made possible by the metallurgical researches of the Metropolitan-Vickers Company. . . .[32]

[31] Whittaker Chambers comments on the role of the American Communist Party: '. . . one of the periodic rituals at Gay Street was known as "filling the box." Every so often, Charlie, Maria and I would fill it with hundreds of thin leaflets in white paper covers. These were patents which anybody could then buy for a small fee from the United States Patent Office. . . .' [*Witness* (New York, Random House, 1952), p. 305.]

[32] *The Times* (London), May 22, 1933.

The British Thomson Houston Company made a similar observation in regard to a large Soviet order for special transformers in 1945:

> . . . [These are] the first transformers to be built in Great Britain for use on a 3-phase, 50 cycle system transmitting power at 242,000 volts between lines. The input voltage rating is 15,750. The transformers comprise three single phase units forming a 120,000 kvA bank. This was the largest bank rating for power supply yet made in Great Britain. . . .[33]

In Switzerland, the Brown-Boveri Company, also manufacturers of electrical equipment for industrial purposes, made a similar observation:

> In this field a whole series of exceedingly interesting new designs is to be reported,which we had an opportunity of developing in connection with the order we received for equipping the large aluminum works at Zwetmetsoloto in Russia with a large number of electric annealing and hardening furnaces.The large output required from this plant, the exceedingly large dimensions of the pieces to be treated and the resulting high power requirements made necessary designs which considerably exceeded in dimensions and type of construction the scope of our furnace design as used up to date. . . .[34]

With reference to aluminum plants, the International General Electric Company commented on the Stupino Aluminum Plant:

> For this plant, General Electric designed and furnished special electric furnaces, unusual in size, for aluminum ingot heating, aluminum coil annealing etc. as well as special heating elements and accessories for hardening large-size finished aluminum sheets in salt baths.[35]

In brief, the Soviets have demanded and been supplied with the frontier work of capitalist systems, *often before it is utilized in the country of origin* and sometimes to special order with the recipient firm working out the technical problems. This policy requires extensive information, assimilation of foreign techniques, and a great deal of skill to avoid mistaken choices. Such choices were the work of numerous specialized research institutes established by the Soviet Union in the 1920s and 1930s.

The years 1932–4 were critical for Soviet engineering and development. This was the period of change from all-imported equipment to absorption of the output of the new imported giant plants and the expanded and re-equipped tsarist plants.

Fortunately, we have a copy of the Glavkhlopkom plan, *Mechanization in 1932*, prepared by Willard Gorton, an American engineer, which illustrates the change in one sector.

[33] H. A. Price-Hughes, *B.T.H. Reminiscences: Sixty Years of Progress* (B.T.H., Ltd., 1946), p. 112.

[34] *Brown-Boveri Review*, January 1932, p. 24.

[35] *The Monogram*, November 1943, p. 17.

The report describes new equipment for 1932 by origin and suggests how this change to standardized equipment based on Western models took place. This material is summarized in table 18–2.

In brief, the relatively simple equipment—horsedrawn dumpers, scrapers, ditchers, and plows—making up about one-quarter of the total capital expenditure for Glavkhlopkom—was to be produced by old tsarist plants. All the tractors were scheduled to be supplied by the new plants at Stalingrad and Kharkov, built with U.S. and German equipment and with technical assistance as outlined in the text.[36] This comprised about 40 percent of total expenditure. One-third of the expenditure was to be used for imported equipment, including 24 draglines, 10 elevator graders, and 20 Ruth machines. Thus it was the more complex, specialized equipment that had to be imported. From this and similar data from other sources, we can deduce the principle that

Table 18–2 1932 GORTON MECHANIZATION PLAN SUMMARY

	Imported from U.S.		*Produced by New Plants*		*Produced by expanded Tsarist Plants*	
	Units	*Million Rubles*	*Units*	*Million Rubles*	*Units*	*Million Rubles*
Group I: Heavy Equipment						
Draglines	24	2.40				
Dumpers					48	.14
Tractors (60 hp.)			48	.43		
Group II: Light Equipment						
Horse scrapers					—	—
Tractor scrapers					180	.36
Ditchers					140	.42
Elevator graders	10	.10				
Plows					239	.05
Tractors (30 hp.)			559	2.80		
Tractors (60 hp.)			10	.09		
Group III: Operating Equipment						
Ruth machines	20	.60				
Plows					60	.60
Dredges					20	.80
Tractors (60 hp.)			60	.54		
Total	54	3.10	677	3.86	687	2.37
Percentage imported from U.S.				33.2		
Percentage from U.S.-built tractor plants				41.4		
Percentage from rebuilt tsarist plants				25.4		
				100.0		

[36] P. 185–8.

substitution of domestic for foreign equipment started with that which was simple and easy to produce, and extended to that which was more complex and difficult to manufacture only as experience was gained.

This was a step-by-step procedure, but with its own problems. Louis Ernst suggests one, and his description is worth quoting in detail:

> The Russian usually has machines and equipment from the most widely separated sources, and no spare parts at all. In Voroshilovsk, for example, in the by-products department, we had pumps from Skoda, run by motors from Germany's A.E.G., some on Italian ball bearings and some on Swedish S.K.F. bearings. The steam pumps came from Worthington, in the U.S., while some small turbine pumps came from Britain's Metro-Vickers. Some relays came from G.E., and the motor controllers from Cutler-Hammer. No catalogues were available and, even if we had been able to select the necessary replacement or spare parts, currency was obtainable only under the most extreme circumstances. Therefore, the engineer in Voroshilovsk had to begin from the very beginning, by having drawings made of all parts. Then he had to plan changes to accommodate his machines to Russian parts if this should become necessary. In other cases he had to cast around for Soviet organizations capable of fabricating those parts that he knew might wear out or break. He had to be farsighted indeed, under these conditions, to avoid shutdowns because of machine failures.[37]

DUPLICATION OF THE SELECTED STANDARD DESIGN

Standardization was the prelude to production. The distinguishing feature of Soviet production has been gigantic runs of a standard model. Whereas the usual practice in Western systems is to have models appealing to different demand segments and relatively short production runs followed by a model change, the Soviet practice has been to utilize its giant plants to produce simplified models with no changes for long periods. This gives not only large quantities, but provides an excellent training ground for unskilled workers. Numerous model changes in the early stages of developing a modern technique may inhibit efficiency or at least the development of a 'learning curve.'

The tractor industry provides an excellent example of standardization practices. Three large plants were built by 1933; these comprised the Soviet tractor industry until 1943. Each of these plants turned out, apart from its military quota, a standardized tractor model based on a Western example. Large capacity, with only one model change in 1937, enabled gigantic production runs. Table 18–3 illustrates the capacity and production of these key Soviet tractor plants, as calculated by Dodge, compared to Western plants making the same model tractor.

[37] Louis Ernst, 'Inside a Soviet Industry,' *Fortune*, October 1949, p. 172.

Table 18–3 PRODUCTION CAPACITY IN SOVIET UNION AND UNITED STATES FOR SELECTED TRACTOR MODELS

	United States	*Soviet Union*
	(In Drawbar Horsepower)	
Caterpillar 60 crawler	550,000 (Peoria)	1,500,000 (Chelyabinsk)
Fordson 10/20 wheel	1,000,000 (Dearborn)	200,000 (Krasnyi Putilovets)
International 15/30 wheel	600,000 (Milwaukee)	1,200,000 (Stalingrad and Kharkov)

Source: Adapted from Norton T. Dodge, 'Trends in Labor Productivity in the Soviet Tractor Industry' (Harvard University, Economics Department, Ph.D. Dissertation, February 1960).

In 1935 Soviet turbo-generators were standardized on 12,000 kilowatt and 24,000 to 25,000 kilowatt model sizes, produced with G.E. technical assistance at KHEMZ.[38] This standardization is reflected in the 1935 annual plan for the People's Commissariat of Heavy Industry.[39] All power-station turbo-generators scheduled for production in 1935 were multiples of these standard sizes and none were scheduled for import.

In sum, 12,000 kilowatt units were scheduled for Kuibyshev GRES No. 3 and Krimskaya GRES No. 1; 24,000–25,000 kilowatt units were scheduled for All Union Heat Institute No. 3, Stalinsky No. 1 and No. 2, Kisel GRES No. 3, Sverdlovsk No. 1, Chelyabinsk GRES II No. 5, Novosibirsk GRES, and Kiev II No. 1, and 50,000 kilowatt units were scheduled for Stalinogorsk No. 2 and No. 3, Sredne-Uralsk GRES No. 1, and Zuevka II No. 4.

This comprises the complete annual plan for 1935. The plan used no imported turbo-generators and only three models of domestic standard KHEMZ turbo-generators.

The same principle may be seen in coke ovens. At first they were imported in Koppers, Disticoque, and Otto variants. Soviet oven production was based on the Koppers design. These were produced in quantity at Kramatorsk[40] and became the standard coke oven; by 1940 even the NKVD was able to build Soviet-Koppers coke-oven batteries in distant areas using forced unskilled labor. (See table 18–4.) As Soviet organizations succeeded in adopting the Koppers design, imports were cut off entirely.

[38] For G. E. technical assistance, see chap. X. For data on standards see John P. Hardt, *Dispersal of the Soviet Electric Power Industry* (Alabama: Maxwell Air Force Base, 1957), p. 39. The standard size for steam-condensing stations was changed in 1939 to either 6,000, 8,000, or 12,000 kilowatts.

[39] Smolensk Archives, WKP 444 1935, National Archives Microcopy T 87–49.

[40] See p. 131.

Table 18–4 THE DUPLICATION PROCESS IN COKE OVEN CONSTRUCTION, 1930 TO 1945

Plant Location	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
ALCHEVSK			KOPPERS A. G. (Germany)															
GORLOVKA I			DISTICOQUE S.A. (France)															
KERCH				KOPPERS COMPANY Inc (United States)														
MAGNITOGORSK I				KOPPERS COMPANY Inc (United States)														
RUCHENKOVO					'SOVIET' KOPPERS													
GORLOVKA II					'SOVIET' KOPPERS													
MAKEEVKA					'SOVIET' KOPPERS													
STALINO					'SOVIET' KOPPERS													
ZAPOROZHE					'SOVIET' KOPPERS													
KAMENSKOE						'SOVIET' KOPPERS												
KUZNETSK						'SOVIET' KOPPERS												
MAGNITOGORSK II						'SOVIET' KOPPERS												
MARIUPOL						'SOVIET' KOPPERS												
KRIVOI ROG						'SOVIET' KOPPERS												
GUBAKHA						DISTICOQUE S.A. (France)												
TAGIL											'SOVIET' KOPPERS							
CHELYABINSK											'SOVIET' KOPPERS							
KOMSOMOLSK											'SOVIET' KOPPERS							
MAGNITOGORSK III												'SOVIET' KOPPERS						
ORSK												'NKVD' KOPPERS						
IGARKA														'NKVD' KOPPERS				
PECHORA														'NKVD' KOPPERS				
MAGNITOGORSK IV															'SOVIET' KOPPERS			

CONCLUSIONS

The Soviets attempted to industrialize about the mid-1920s; this was not successful, and the evidence suggests an 'inability hypothesis.' This problem was overcome by contracting with foreign firms in the period from late 1929 to 1931 to fulfill the First Five-Year Plan.

It was most important, for political reasons, to disguise both local inability and the sources of industrial progress. This disguise was only partially successful; some information had to be publicized to allay apprehensions of Western companies. Some data were therefore made available by Soviet trade delegations. This information, coupled with reports from returning engineers, provides a means of penetrating the propaganda shield.

Western assistance was focused by the Soviets upon simple, clearcut objectives; to build new, gigantic, mass-production units to manufacture large quantities of simplified standard models based on proven Western designs without design changes over a long period. Thus after the transfer of Western technology, simplification, standardization, and duplication became the operational aspects of Soviet industrial strategy.

CHAPTER NINETEEN

Copying as a Development Mechanism

THERE has been a great deal of discussion, but without detailed empirical support, of 'copying' by Soviet engineers: i.e., the reproduction of processes and equipment already in use abroad without the permission or even knowledge of the foreign owner. This is, of course, both ethical and legal under a Communist system. It is ethical because no absolute industrial property rights can exist for individuals under Communism; it is legal because Soviet patent law, in reflecting this philosophical base, offers no meaningful protection. Protection is given to individual Soviet citizens only to protect the interests of the Soviet state, and not because the Soviet citizen has any economic rights.

In research for this study, an extraordinary amount of what is generally known as copying, was unearthed.[1] There is no question that the large number of single-sample items ordered or requested by Soviet trade organizations from the 1920s until the present day have been used as prototypes. From the Soviet viewpoint the foreign capitalist, inventor, or artist has no inherent property rights, and so this practice has extended from hand-tools and scientific books (for unauthorized translation) to industrial equipment.

Western economists suggest that socialist or planned systems have major innovative problems. Hirschman, for example, argues astutely that 'a planned economy is likely to behave much like the guild system; the process of 'creative destruction' is constitutionally alien to it because destruction here means self-destruction rather than destruction of somebody else.'[2]

[1] To a Communist copying is a moral act as it promotes Communism. Under Western law and ethics the same practice may be, if protected by patents, industrial theft. Copying and theft may therefore be synonymous in Western but not in Soviet ideology.

[2] A. O. Hirschman, *The Strategy of Economic Development* (Yale University Press: 1958), p. 59.

It follows, therefore, that, as innovation is the means to technical progress, a socialist system, if it cannot generate rational innovation internally, must assimilate innovation from outside: from capitalist systems. This transfer is precisely what the Soviet Union has achieved.

A preliminary stage and a common practice is to request literature, drawings, and samples from individual foreign companies. When attempts to copy on the basis of such freely-supplied data are inadequate or faulty, the next move is to acquire technical assistance or minor products without payment as part of another major contract. A case involving both technical assistance for a non-contracted product and acquisition of minor prototype items was the Amtorg technical-assistance contract with the Douglas Aircraft Company of Santa Monica for production of the DC-3 transport plane. As the author worked through files of orders placed by Amtorg with the Douglas Company, it became obvious that Amtorg had used Douglas facilities to purchase items (always one of each) made by other companies. For example, the Special Tool List in the October 1937 order[3] contains the following items chosen by the author at random:

Item	*Quantity*
Boyer air hammer UUB-63033	1
Utica pump nut pliers No. 517	1
Kennedy steel tool kit	1
Chromalox electrical welding pot, Model P-50, 230-volt, 1138 W, Serial No. P-39	1
Weston electric welding pot, 664 capacity model	1
Purox cutting torch	1
Buck bar, TB 1171	1

Examination of lists of special tools bought by Douglas Aircraft on behalf of Amtorg reveals that these were small tools manufactured by many different concerns and that the quantity ordered was *always one* only. This, unknown to Douglas, was part of the massive technical acquisition program carried out by the Soviets. A sample of every Western product and copies of patents, journals and other publications of possible technical value were shipped to the Soviet Union for analysis and reproduction, if possible.[4] Use of innocent 'front companies' was necessary to obscure the nature of this vast acquisition program. The manufacturer of the Boyer air hammer, for example, would be reluctant to fill an Amtorg order for one hammer, but would fill a Douglas

[3] Douglas Aircraft Company Files.

[4] Foreign Communist parties were enlisted in this dragnet. See p. 293.

Aircraft order without question. Only when outright copying on the basis of this type of indirect acquisition was impracticable was an agreement made to purchase technical assistance. Thus the many agreements which make up the bulk of this study tell only a part of the story; it may be presumed that far more technology was acquired without benefit of formal agreement.

By 1936 Soviet commentators began to claim indigenous Soviet designs, while admitting earlier copying. For example, E. Satel wrote:

> If during the first years of work our plants did copy foreign models, they are now successfully solving even more complicated problems of technique and design. Examples of these may be seen in aviation construction, as demonstrated by the flight of the ANT-25, the heavy diesel tractor, and the all-purpose caterpillar tractor. . . . Such complicated machines as slabbing and intermediate sheet-rolling mills for the sheet-rolling department of Zaprozhstal are our own Soviet design, the former created by the designers of the Krammatorsk Machine-Building Plant and the latter by those of the Urals Machine-Building Plant.[5]

None of these claims of Soviet design stand up to rigorous examination. Each of Satel's examples of Soviet design has been traced in this study to foreign origin, except the ANT-25, which was replaced by foreign designs.[6] Further, in the period under examination (1930–45), we have found no major Soviet industrial design to have been retained in preference to a foreign design.

THE EMPIRICAL EVIDENCE FOR SOVIET INDUSTRIAL COPYING

The evidence for extremely widespread copying of foreign equipment is overwhelming. Nearly every engineer interviewed by the State Department made some comment on the question, and many gave precise details concerning the uninhibited copying of Western equipment. Examples from some widely varying fields will suggest the extent of this practice.

In October 1931 the U.S. Warsaw Embassy reported an interview with an American engineer, C. E. Wildman, returning from a sales trip in the U.S.S.R., where he represented the Buckeye Incubator Company of Springfield, Ohio.[7] Wildman commented, 'The incubators used on the poultry farms are copies of American makes with steam and hot water systems of heating. . . .' Wildman

[5] *Za Industrializatsiiu*, No. 199, August 27, 1936.

[6] The ANT-25 was replaced by foreign aircraft designs between 1937 and 1941; the heavy diesel tractor was the Stalinetz 65, based on the Caterpillar 60; the 'all-purpose caterpillar tractor' was the Farmall; the slabbing mills were based on a Demag mill; and the sheet mills were developed under the United Engineering and Foundry contract.

[7] U.S. State Dept. Decimal File, 861.5017—Living Conditions/359.

offered his products to the Soviet organization, and when the Soviets had obtained from him the lowest wholesale prices, they offered to purchase a few units for exhibition and trial. The informant stated that this was a well-known Soviet method of obtaining American models for later duplication.[8]

The Embassy report continues:

> [Wildman] saw much evidence . . . that the Soviets have no respect whatsoever for patent rights. They consider patent rights as a part of organized capitalism and an institution from which laboring classes obtain no benefits. If the Soviets cannot buy models directly from modern countries they purchase them in the open market for shipment to Soviet Russia where they are later copied. . . .[9]

The Geary feeder[10] and Geary-Jennings sampler,[11] used in ore-treatment plants, are well-documented examples of Soviet copying. The Geary feeder was placed on the market in the United States in June 1927 and the Geary-Jennings sampler in December 1928. They came quickly into use throughout the world. J. F. Geary requested the State Department to obtain some protection in the Soviet Union.[12]

Numerous inquiries had been received by Geary from organizations and individuals in the U.S.S.R.; these Russian inquirers had been furnished catalogs, drawings, photographs, and other information on the same basis as inquirers from all other countries. As J. F. Geary himself said, ' . . . in spite of all the sales material sent into Russia, and in spite of the fact that similar material sent into other countries brought results in the form of orders, no orders whatever have ever been received from anyone in the Soviet Union.'[13]

At first Geary and his associates ascribed this to adverse business conditions. Then 'a succession of friends' brought back the same information: that Geary feeders were in use in the Soviet Union. This was emphatically confirmed when a group of Soviet engineers from Mekhanobr (State Institute for Planning Ore-Treatment Plants), touring local mines and mining plants in the Utah area, visited Geary:

> These men together with a Mr. Rundquist, came to this country to study American methods. They showed interest in the construction of the Geary feeders, but when solicited for an order remarked: 'Oh no, we built them over there ourselves!'[14]

[8] *Ibid.*

[9] *Ibid.*

[10] U.S. Patent No. 1,766,625, June 24, 1930.

[11] U.S. Patent No. 1,937,473, November 28, 1933.

[12] U.S. State Dept. Decimal File, 861.542—GEARY, J. F./2.

[13] *Ibid.*, 861.542—GEARY, J. F./3–6.

[14] *Ibid.*

The extent of copying within a single industrial sector—oil-well drilling—may be illustrated from the statements of August Tross, an American drilling superintendent in the Baku oil fields in the early and middle 1930s. According to Tross, who assisted in making up lists of equipment to be purchased in the United States, only a small part of the equipment was actually imported; the Soviets tried to make the rest domestically. 'In copying foreign equipment,' he said, 'there is a total disregard of patent rights.'[15] Tross added that German firms were at first utilized to produce American patented equipment, and cited the example of the Schaffer blowout preventer. In the same report, Tross provided a list of 'some types' in process of reproduction at the end of 1934 in the oil-drilling industry:

Equipment Copied	*U.S. Firms Holding Patents*
Rock bits	Hughes Rock Bit Co. (Texas)
Roller bits	Reed Roller Bit Co. (Texas)
Drilling bits	Zublin Drilling Bits Co. (Los Angeles)
Dunn tongs and elevators	Bryan Jacobson Co.
Blowout preventers	Schaffer Co. (Los Angeles)
Rotary rigs	Emsco Rotary Draw Works (Los Angeles)
Rotary rigs	National Oil Well Supply Co.(Los Angeles)
Butler elevators	Oil Well Supply Co. (Pittsburgh)

Insofar as copying of oil-field equipment is concerned, it was Tross's opinion that the Soviet copies, although almost identical to their prototypes in appearance, were poorer in quality.[16]

This flow of technical information was, of course, all in one direction. The Tross agreement[17] included the following clause: '11. The Employee [i.e., Tross] shall not disclose any business secrets which shall have become

[15] U.S. State Dept. Decimal File, 861.5017—Living Conditions/771, Moscow Legation Report No. 240, November 3, 1934. Tross was a drilling superintendent and had daily contact with the equipment listed over a period of some years, so that his evidence is more compelling than that of a sales engineer's, for instance, who visits the U.S.S.R. on a business trip and gets only a quick look at 'Soviet-made' equipment.

[16] For a later example of Soviet practice, N. N. Kalmykov, *op. cit.*, provides a detailed comparison of current (1968) American oil tool products (i.e., roller bits, spiders, rotary rigs, etc.) on a company-by-company basis. This type of comparative study has only one use: to enable Soviet engineers to reproduce foreign technology. Such detailed company-by-company comparisons of competitive products would hardly find a market in the United States. Examination of drawings in the book suggests that the focus is on reproduction of U.S. equipment. See, for example, the drawings on pp. 58 and 70, the temperature gradients diagram on p. 216, and the illustrations on pp. 230 and 234.

[17] U.S. State Dept. Decimal File, 861.5017—Living Conditions/771.

known to him during his employment. . . .'[18] On the other hand the Soviets made every effort to acquire business secrets from the United States and other countries. For example, Tross comments, 'Officials of Azneft . . . have to my knowledge requested American firms to send them free of cost samples of certain lighter types of machinery and have used the samples as models.'[19] The one-way nature of the flow is further illustrated by the quite different definitions of 'industrial secrets' used in the U.S. and the U.S.S.R. In the Soviet Union *any* information of an economic or technical nature is classified as secret.

There are several well-documented cases of the copying of excavation equipment. Kostiszak, resident construction superintendent in the Soviet Union for the Thew Shovel Company, was asked the circumstances under which duplication of Thew shovels took place. The interviewer's report is as follows:

> . . . without previous notice . . . two drag-line buckets of 2½ cubic yards capacity, exact duplicates of the American equipment but manufactured in the mechanical shops of SVIRSTROY, were delivered to him on the job. Requesting an explanation he was informed by the Soviet engineer in charge of the excavating machinery that buckets and other repair and replacement parts would in the future be manufactured in Soviet shops. . . .[20]

Kostiszak later visited the Svirstroi shops and found other buckets similar to Thew equipment in process of manufacture: 'They were exact duplicates of the American buckets; American replacement teeth were fitted to the Soviet buckets but the rest of the material was Russian.'[21] The 'Soviet Thews' proved equal on the job to the American equipment.[22]

Kostiszak recounted a similar episode with drag-line cables. Each imported American machine came supplied with two replacement cables. Two feet was cut from several replacement cables and shipped to the Svirstroi laboratories in Leningrad. A few months later four cables of Soviet manufacture were supplied—of inferior wire—but Kostiszak believed that with the right grade of wire the Russians could supply a high-quality cable. In general he noted that 'Soviet mechanics are continually dismantling, measuring and reassembling machinery on the job'—possibly to acquaint themselves with it, but Kostiszak

[18] *Ibid.*

[19] *Ibid.*

[20] U.S. State Dept Decimal File, 861.5017—Living Conditions/283, pp. 13–4 of attached report.

[21] *Ibid.* Bucket teeth on drag lines wear out more quickly than any other part.

[22] U.S. State Dept. Decimal File, 861.5017—Living Conditions/283, pp. 13–4 of attached report.

believed that these activities had some connection with copying.[23]

The Rust cotton-picking machine offers an example of an assistance agreement which, although superficially beneficial to the Western company, was impossible to enforce and provided the same end result to the Soviets as copying. J. D. Rust, co-inventor, with his brother, of the Rust cotton-picking machine, came to the Soviet Union in 1936 at the invitation of the Soviet Government to demonstrate his machine. Two machines were bought by Amtorg, and Rust stayed with a mechanic for one month to demonstrate their operation.[24]

While in the Soviet Union, Rust negotiated a contract granting manufacturing rights for the machine under which the Rust brothers supplied detailed drawings. The circumstances making this move desirable were described as follows:

> Mr. Rust and his associates felt that it was advisable to reach an agreement with the Soviet Government by which they would obtain some compensation for the manufacturing rights of the machine, since they felt that if they refused to cooperate the Soviet Government could easily purchase one of the machines from an individual in the United States or elsewhere once they are in general use, and with this model they could manufacture their own units, without the necessity of compensating the Rust brothers for the rights. . . .[25]

The report continues:

> The Rust brothers made careful studies of the Soviet patent laws and realized that it would be extremely difficult for them to protect their interests in this country unless they reached an amicable agreement with the Soviet authorities. . . .[26]

The contract provided for a single lump-sum payment of $20,000 to Rust and his associates in the event that the machine was adopted and at least 10 units per year were manufactured, but there was to be no payment if fewer than 10 units were manufactured in any one year. Rust suggested to the U.S. Moscow Embassy that if Soviet engineers were unable to copy they would have to buy machines in the United States and in that case Rust would receive more than $20,000. In any event the Rust brothers felt that nothing had been lost.

[23] *Ibid.* Gustav S. Bell, a superintendent for Sauerman Brothers, Inc., in the Soviet Union, similarly reported that Sauerman excavators were copied and that he was offered a position to supervise erection and installation of 'Soviet Sauermans.' (See U.S. State Dept. Decimal File, 861.5017—Living Conditions/314.)

[24] U.S. State Dept. Decimal File, 861.61321/68, Report No. 1879, Moscow Embassy, September 14, 1936.

[25] *Ibid.*

[26] *Ibid.*

There is, of course, an obvious and major loophole. Rust was not to receive payment until 10 machines per year had been manufactured to his drawings. How was he to know whether 10, 20, 50, or *no* machines had been manufactured? Soviet plants are, with the exception of a few show plants, closed to outsiders. In brief, his protection was completely illusory.[27]

Another indication of the wide range of copying activities may be noted quite simply by examining domestic Soviet price lists of industrial equipment. The whole range of such equipment was based on Western models. For example, blast-furnace equipment produced by Uralmash and described in its 1934 price list included:

Otis winch (with drum, no spares)
Brosius tap gun (with attachments)
McKee throat system
Freyn burners (with dampers)
Orr locks (stoppers)
Theisen stack gas cleaner
Demag stripping crane
Simplex butterfly valve

All these, and numerous other items of foreign derivation, were priced in rubles in Decree No. 277, of May 10, 1934, issued by the People's Commissarist of Heavy Industry.

The U.S. Embassy in 1934 produced a short list of Soviet imitations of American products and reported that it was a 'well-known fact' that samples were purchased in the United States and copied. Among these copies were,

Morgenthaler linotype machines[28]
Pressed Steel Company dumping cars
Black & Decker electric power tools, including drills, bench grinders, drill stands, rock drills of the jack-hammer type and bronze stokers

[27] The subsequent history of this case is not known; the State Dept. files close at this point. Soviet cotton-picking machines are very similar to American models, as will be shown in the next volume. Given the history of Soviet-American economic relations, it is unlikely that any payment was ever made to the Rust brothers. They probably lost their investment in travel expenses to Moscow and the drawings supplied under the contract.

[28] This was copied at the Max Holz works in Leningrad, an ex-tsarist plant considerably expanded with imported equipment in 1932–3. The manufacture of Morgenthaler linotypes was started in 1932 'on the model of a typesetter imported from Germany.' Only two had been built by fall of 1932 and they could not be used 'owing to great errors of construction and to poor quality of the metal employed.' Approximately 6 to 7 percent of the 1,000 workers were German. (U.S. State Dept. Decimal File, 861.60/267.)

Hamilton Press Company presses
Cincinnati Milling Machine milling machines
American Tool Company lathes
Sullivan Machinery underground coal cutters
Buick automobile (copied at the Amo plant)[29]

Many similar examples could be quoted and, indeed, are found throughout the whole range of Soviet industry.

A number of cases in the State Department files demonstrate outright fraud on the part of the Soviets. The Cardox case shows the inability of Western companies to do anything in the face of such fraudulent practices. In 1925 the Safety Mining Company of Chicago developed a method and apparatus known as Cardox for use in lieu of explosives for blasting or breaking down coal underground. The great advantage of Cardox lay in its safety feature: it could be used in gassy mines. The company took out fundamental patents in the United States and major foreign countries. By 1930 the method was used with success in the United States and the United Kingdom and was being developed in France.

In 1935 the Safety Mining Company wrote the State Department: 'Several years ago our entire knowledge of the method was placed before responsible representatives of the Soviet Government with a view to laying the groundwork for future negotiations.'[30] The company learned that the information provided in confidence had been utilized, tested, and in 1934 published in a Soviet trade journal.[31] 'The trade journal admits that they have duplicated the best features of CARDOX as developed in the United States and Great Britain and that for 1934 the Government allocated about 350,000 rubles for this work.'[32]

The letter concluded by asking for State Department assistance and commented, 'We understand that the Soviet Government has been involved in a great many instances of this kind, to the immeasurable detriment of the creative and industrial interests of this country.'[33]

Although one could infer from the Safety Mining Company letter that knowledge of such appropriation was widespread, there is mixed evidence on this score. There is no evidence that the State Department warned businessmen of this practice (this could, however, have been done verbally). By the 1930s all larger corporations were probably aware of the problem; for example,

[29] U.S. State Dept. Decimal File, 861.797/35, Report No. 165, Moscow Embassy, September 7, 1934.
[30] *Ibid.*, 861.542—CARDOX/1.
[31] *Ugol'*, No. 105, June 1934.
[32] *Ibid.*
[33] U.S. State Dept. Decimal File, 861.542—CARDOX/1.

Du Pont de Nemours was approached by a Mr. Boston, who desired to make purchases on behalf of Carp Export and Import Corporation, the Soviet munitions-purchasing front in the United States. After company officers had been requested to accept orders for 'small sample quantities of very recent development,'[34] it was reported to the State Department that 'since it was clear that the object of the Corporation was merely to attempt to copy the trade secrets of du Pont [*sic*], Major Casey said that Mr. Boston's proposals had not been accepted.'[35]

On the other hand, in a case similar to that of the Safety Mining Company, we find a comparatively small company at the beginning of the 1930s under the impression that diplomatic recognition of the U.S.S.R. would overcome lack of patent protection and copying. The Sharples Specialty Company, centrifugal engineers of Philadelphia, were owners of a process used in the petroleum-refining industry. They made a single installation in the U.S.S.R and were well aware that this was only 25 percent of the needed capacity. The Soviets had no other way of getting the first installation, which they could then copy. Sharples had no protection,[36] and suggested recognition of the U.S.S.R. would overcome the problem.

PATENT PROTECTION IN THE SOVIET UNION[37]

There was agreement in the United States that Soviet patents were worthless.[38] The Safety Mining Company, in writing about Cardox, stated:

> Every effort was made to obtain effective patents in Russia but this eventually proved to be impossible. The single patent which we did obtain was, in the opinion of competent counsel, utterly worthless and on advice of counsel, further efforts in this direction were abandoned.[39]

It is difficult, but not completely impossible, to present evidence concerning Soviet expropriation of foreign patents filed in the Soviet Union. It is difficult because mere collection of evidence of infringement in Soviet Russia would constitute espionage and lead to prompt arrest. For this reason there are no court cases involving infringement of foreign patents in the Soviet Union. However, the concessions provide evidence of patent expropriation because

[34] *Ibid.*, 711.00111/Lic. Carp Export and Import Corp/6, June 10, 1937.

[35] *Ibid.*

[36] U.S. State Dept. Decimal File, 861.6363/278, January 31, 1930.

[37] See Sutton, *Western Technology . . . , 1917 to 1930*, pp. 299–303.

[38] There were a few exceptions. (See U.S. State Dept. Decimal File, 861.542/31 and /32.) In the light of Whittaker Chambers's comments, one presumes the advice given by Lee Pressman to the Rust brothers (above, p. 306) was favorable to the U.S.S.R.

[39] U.S. State Dept. Decimal File, 861.542—CARDOX/1, May 22, 1935.

some concessionaires filed patents inside the U.S.S.R. on processes introduced under the concession agreement. The Richard Kablitz concession, one of the largest and most important, supplies a prime example.

Kablitz was the only U.S.S.R. manufacturer of economizers, stoking devices, and furnaces. Operating six plants in the U.S.S.R., Kablitz equipped more than 400 Soviet plants in the 1920s.[40] An advertisement in *Izvestia Teplotekhnicheskogo Instituta*[41] was used by the Kablitz concession to stress patenting of its devices in the U.S.S.R.,[42] and indeed the company habitually referred to its economizer as 'Pat. Kablitz' rather than just 'Kablitz.' The company obviously strove to publicize the claim of patent protection to inhibit Soviet organizations anxious to produce similar devices.[43]

When the Kablitz concession was expropriated,[44] the patented devices were also expropriated and taken over by the Soviets, notwithstanding Soviet patent protection. Kablitz finally limited its suit in the German courts to compensation for these expropriated patents and dropped the concession property claim.[45] The only reason, therefore, that evidence is available in this case is that Kablitz operated a concession inside the U.S.S.R. and had evidence in company files. Such evidence of infringement could not be collected by other foreign patentees suspecting patent infringement; indeed the thought of attempting to gain entry to the files of a Soviet organization is somewhat amusing.[46]

The practical difficulty of collecting such information, even officially, is illustrated in the Geary case discussed above. The Moscow Embassy was instructed by the State Department to investigate the case, and after so doing, reported 'that after careful investigation by the Embassy, no information can be secured in regard to the reported reproduction and use in the Soviet Union of machines developed and patented by Mr. J. F. Geary in the United States. . . .'[47] The report then added that such copying was a 'well-known fact.'

[40] Sutton, *Western Technology . . . , 1917 to 1930*, pp. 180, 302, 329, 333, 346.

[41] No. 7 (9) 1925.

[42] See *Vestnik Komiteta po Delam Izobretenii*, No. 4–5, April 8, 1925.

[43] See p. 21. The advertisement mentions the fact of a 'patent' in no less than 16 places.

[44] See pp. 21–2.

[45] *Ibid.* There is no evidence of compensation for either the patents or the concession.

[46] Consequently, the prevalent impression (even in 1968, by the U.S. Patent Office) that Soviet patents may offer some protection is wholly erroneous. There can be no meaningful protection of private industrial property under a socialist system of the Russian type.

[47] U.S. State Dept. Decimal File, 861.797/35, Report No. 165, Moscow Embassy, September 7, 1934, p. 2 of attachment.

However, as noted above, the Geary machines *had* been reproduced (although the Embassy had not been able to so determine). Soviet visitors to the United States in search of further information admitted as much to Geary, quite apart from the reports brought back by associates and friends of Geary and by Soviet visitors.[48]

Some firms, without any clear notion of the disadvantages, have been anxious to patent their devices in the Soviet Union. For example, the Globe Steel Tubes Company of Milwaukee filed applications in the United States and 15 foreign countries on an entirely new method of manufacturing steel tubing and wrote to the State Department, 'Although we have spent more money in the prosecution of our patent application in Russia than in any other country, very little headway had been made. . . .'[49] The Soviets rejected the initial Globe application on the grounds of 'prior art' and quoted an old textbook article. This, according to Globe, 'really has no bearing whatsoever on the new invention.'[50] Globe appealed through Senator Follette to the State Department, which in turn instructed the Moscow Embassy to investigate. The Soviets quickly obliged by granting a patent. The Commissariat of Foreign Affairs is quoted by Ambassador Bullitt:

> On September 21, 1931 an application for the granting of a patent for a method and appliance for the production of seamless tubes was received from the foreign firm Globe Steel Tubes Company. On May 7, 1932 the Section refused to grant a patent. On October 9, 1932 the firm appealed to the Council for the Consideration of Complaints. By the decision of the Council of May 20, 1934 the decision of the Section was set aside and patent was granted.[51]

The basic problem facing these foreign equipment manufacturers and accounting for their anxiety was that no meaningful protection could be acquired against Soviet expropriation of industrial property. Russian law offered no protection, and the expensive exercise of filing a foreign patent in the Soviet Union was a waste of time.[52] On the other hand, Western manufacturers needed protection, as equipment was being openly copied with no regard at all for property rights.

Larger companies, such as General Electric and Westinghouse, have made agreements concerning patented devices and probably the Soviets have lived by such agreements, not because they thought such agreements were legal, ethical, or ultimately desirable, but because they temporarily needed G.E.

[48] See p. 303.
[49] U.S. State Dept. Decimal File, 861.542—GLOBE STEEL TUBES CO. /1–9.
[50] *Ibid.*
[51] *Ibid.*
[52] The Dorr Company had taken out a number of Soviet patents and found payment of the annual patent fee 'a considerable burden,' but continued to pay it as long as there were prospects of doing business there. (See U.S. State Dept. Decimal File, 861.542/31.)

more than G.E. and comparable firms needed the Soviet Union. It was the medium-sized manufacturers (like Richard Kablitz), the individual consulting engineers, and the individual foreign inventors who suffered—they had no bargaining power, and this weakness was ruthlessly exploited by the Soviets. Neither did these firms carry much weight in the State Department or in Western political circles: officials did take up such matters on request, and extensive reports were developed, but in all cases the end result was inaction.

Thus foreign manufacturers, except those companies with technological bargaining power, were faced with the problem that on the one hand a Soviet patent was worthless and on the other hand that their innovations were being expropriated without consideration for property rights. The only possible recourse, and a weak one, was to attempt to negotiate a formal agreement for use of patents, even in the face of monopolistic trade organizations and known expropriation. Colonel Pope of Nitrogen Engineering tried to do this in his second agreement[53] by formalizing the copying process. Similarly a smaller company, Dewey and Almy Chemical Company of Cambridge, Massachussetts found that Soviet canned crab meat sold in the United States was packaged in containers which made unauthorized utilization of the company's patents. To formalize this infringement, Dewey and Almy attempted to negotiate a technical-assistance agreement and obtain some compensation.[54]

The writer has found no evidence to suggest that these attempts were successful, and indeed has found no evidence that payment has been made for such use except when patents were transferred by agreement with large corporations whose technology was unique or desirable. Briefly, the Soviet Union has taken care not to disturb certain corporations—General Electric, RCA, Food Machinery Corporation, and IBM—for a pragmatic reason: these firms provide laboratories for Soviet technical advance, and have done so for some 50 years. On the other hand, size is by itself no protection. Ford Motor Company, Du Pont, and Sullivan Machinery, have all been faced with breaches of contract.

The next task is to examine technical transfers in more detail, and for this purpose three examples are considered: one unsuccessful transfer and two highly successful transfers.

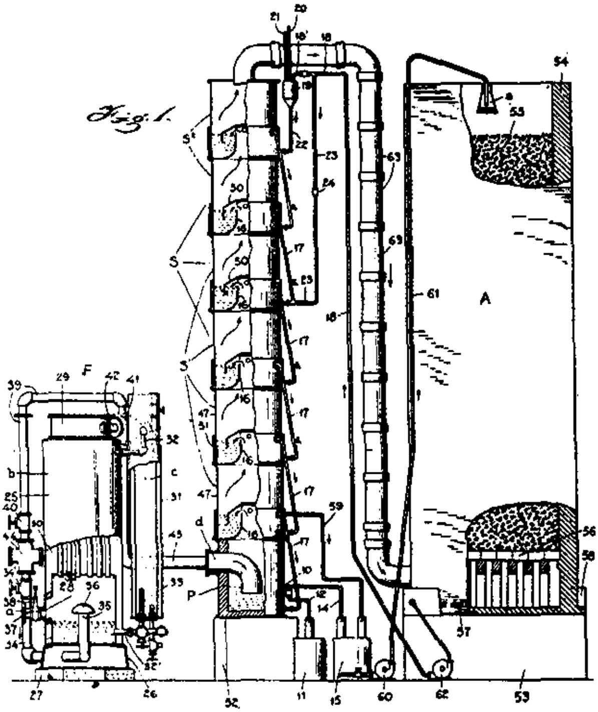
AN UNSUCCESSFUL TRANSFER: THE SOVIET DESIGN FOR A ONE-TOWER CHAMBER SYSTEM FOR SULFURIC ACID

Interest was aroused in the United States in 1934 when two Soviet scientists announced in *Zhurnal Industrialnoi Khimii* (November 1933) a new process for

53 See p. 98.

54 U.S. State Dept. Decimal File, 861.602/293, East European Division memorandum, January 27, 1938.

Figure 19–1 SINGLE-TOWER METHOD OF PRODUCING SULFURIC ACID: ORIGINAL U.S. DESIGN



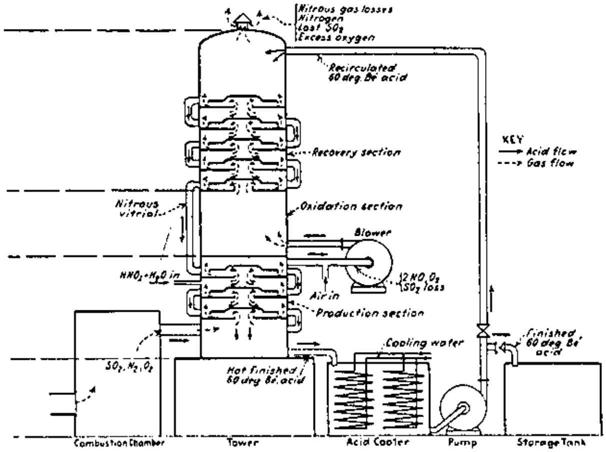
Source: U.S. Patent No. 1,513,903 of November 4, 1924.

manufacturing sulfuric acid, claimed to be of considerable significance. Sulfuric acid is normally made in a series of six towers; P. V. Samarski and E. K. Ziberlich proposed to substitute a one-tower design with a capacity about 18 times that of the standard Peterson six-tower process.

The article was translated and a summary appeared in the December 1934 issue of *Chemical and Metallurgical Engineering*. The editor of the American journal appeared somewhat skeptical over the proposal and commented that the theoretical aspects were not clear and that there were gaps 'in the details of applying the process.'[55] An editorial note in the January 1935 issue made yet another point: 'Furthermore, the one-tower type bears considerable

[55] *Chemical and Metallurgical Engineering*, December 1934.

Figure 19–2 SINGLE-TOWER METHOD OF PRODUCING SULFURIC ACID: SOVIET VERSION



Source: P. V. Samarski and E. K. Ziberlich, *Zhurnal Industrialnoi Khimii,* November 1933, reproduced in *Chemical and Metallurgical Engineering,* XLI, No. 12 (December 1934), p. 643.

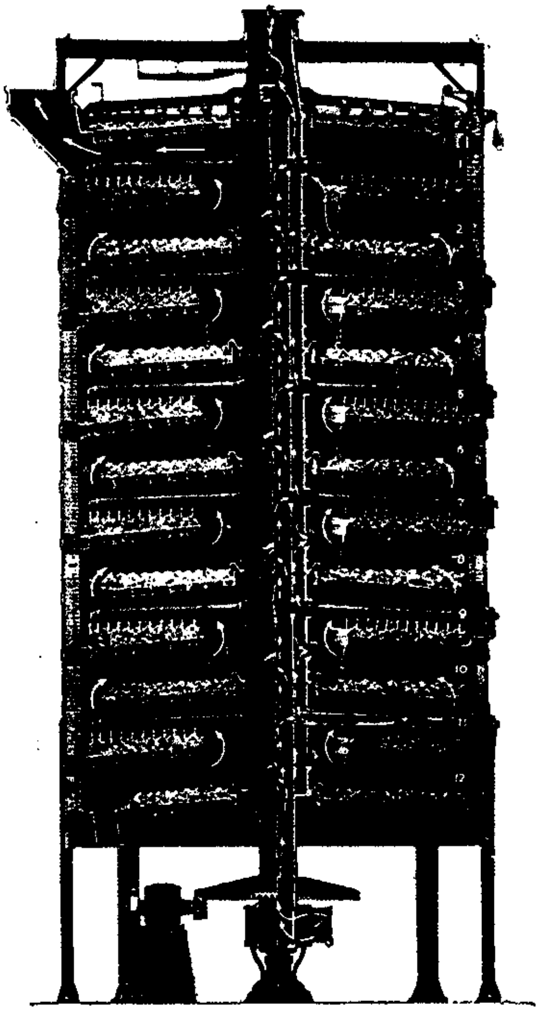
resemblance to a one-tower chamber system disclosed in U.S. Patent 1,513,903 of 1924, which, as has been pointed out by its owners, has never been successful.'[56]

The Soviet article avoided discussion of how to dissipate the enormous heat reaction inherent in the single-tower design. It is notable (see figure 19–2) that the Soviet design repeats the basic fault in the American patent and ignores the heat problem entirely.

Examination of the flows and mechanical arrangements in the tower in both the original 1924 U.S. patent and the Soviet version shows that these fall in the same positions and perform the same functions, particularly in the cases of the combustion chamber, the pumps, the acid cooler, and the storage tank. The only difference between the two versions is in the greater detail of the original design. There is no improvement nor distinguishing feature at all in the Soviet version; it is a much-simplified and rather crude copy of the U.S. patent. Nothing more has been heard of the single-tower design and Soviet manufacture of sulfuric acid continues to be based on multi-tower Western processes.

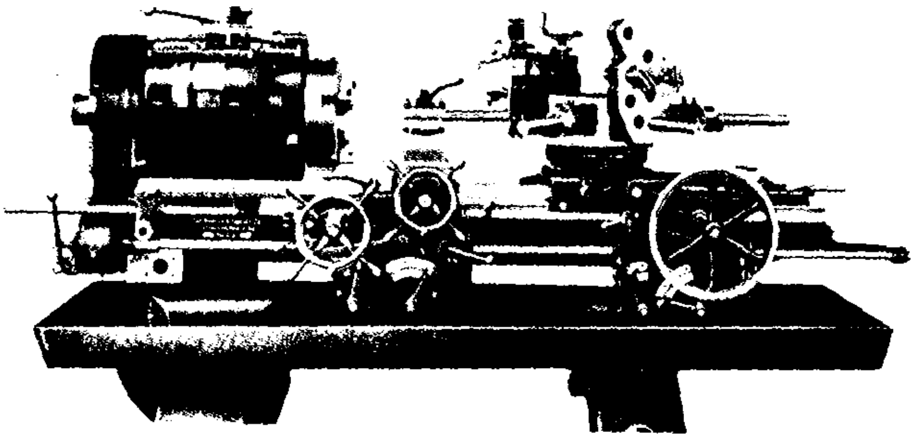
[56] *Ibid.,* January 1935.

Figure 19–5 NICHOLS-HERRESHOFF 12-HEARTH ROASTER FOR PYRITE FINES



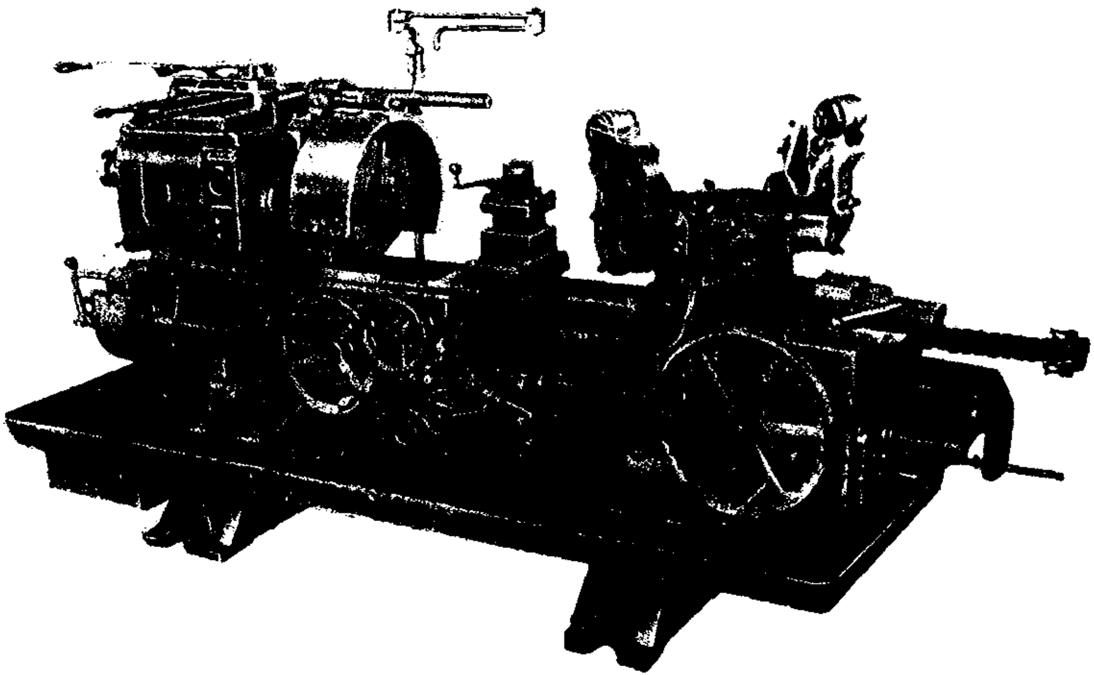
Source: A. M. Fairlie, *Sulfuric Acid Manufacture* (New York: Reinhold, 1936), p. 103.

Figure 19–3 THE WARNER & SWASEY COMPANY NO. 2-A UNIVERSAL HOLLOW HEXAGON TURRET LATHE (1929)



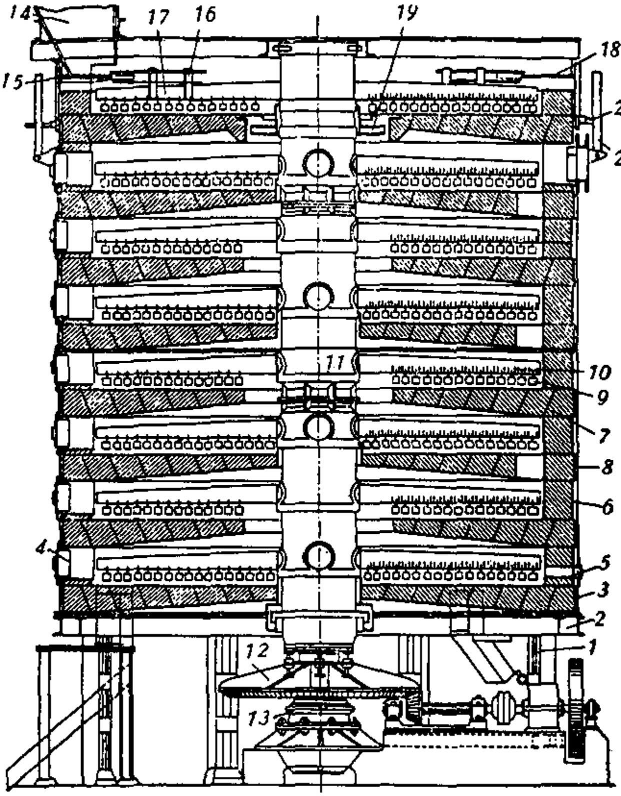
Source: Warner & Swasey Co. Cleveland, Ohio.

Figure 19–4 MODEL 1 K 36 TURRET LATHE PRODUCED BY THE IM. ORDZHONIKIDZE TURRET LATHE PLANT, MOSCOW (1932–50)



Source: Warner & Swasey Co., Cleveland, Ohio.

Figure 19-6 TYPE VKhZ 8-HEARTH ROASTER FOR PYRITE FINES



Legend:

1. Column
2. Ring
3. Jacket
4. Inspection door
5. Discharge
6. Insulation
7. Brick base of roof
8. Concrete (red brick normally used)
9. Rabble blade
10. Rabble arm
11. Shaft
12. Gear drive mechanism
13. Bearing
14. Hopper
15. Feed plate and apron
16. Feed arm
17. Feed scraper
18. Feed raceway
19. Iron plate
20. Lever
21. Outlet

Source: Bolshaya Sovetskaya Entsiklopediya, 1945 ed., LI, col. 14.

A SUCCESSFUL TRANSFER: THE WARNER & SWASEY TURRET LATHE[57]

In 1932 the Ordzhonikidze, or Works No. 28, was opened in Moscow for production of machine tools. By 1940 the plant employed 5,000 people working in three shifts.[58] Some 35 million rubles were invested in the plant, which was planned to produce 3,400 machines annually, specializing in turret lathes.

Production started in 1932 with a 65-millimeter bar capacity turret lathe: a direct copy of the Warner & Swasey 65-millimeter turret lathe model No. 2-A of 1929. The degree of similarity between the two machines is remarkable; it appears the Soviet engineers did not try to 'improve' the American model (as they did in other cases) but faithfully reproduced the complete machine.

A SUCCESSFUL TRANSFER: MECHANICAL FURNACES FOR ROASTING PYRITES

The Nichols-Herreshoff pyrites-roasting furnace was developed by the Nichols Copper Company of New York (later called the Nichols Engineering and Research Corporation) and over the years modified and improved, until by the mid-1930s it had the form indicated in figure 19–5. The furnace was a cylindrical structure with from four to twelve hearths containing detachable rabble arms allowing replacement while the furnace was in operation.[59]

This design was adopted in the Soviet Union. It is widely used under the name 'VKhZ mechanical furnace,' after the Voskressensk Chemical Plant, where it was first utilized. The model shown in figure 19–6 is an eight-hearth VKhZ model.[60] Further, the summary article on sulfuric acid manufacture in *Bolshaya Sovietskaya Entsiklopediya* is little more than a discussion of foreign equipment types: Lurgi and Wedge furnaces, Cottrell-type electro-filters (called the XK-30) and the standard Gay Lussacs and Glover towers, among others.

CONCLUSIONS: THE ADVANTAGES AND DISADVANTAGES OF COPYING

To a developing latecomer such as the Soviet Union, the obvious advantage of copying is that investment in research and development for a desired process can be avoided. There is, in addition, a less obvious and more important

[57] The assistance of the Warner & Swasey Co., Cleveland, Ohio is gratefully acknowledged.

[58] Oberkommando der Wehrmacht (OKW/Wi Rü Amt/Wi), March 1941, Miscellaneous German Records, National Archives Microcopy T 84–122.

[59] A. M. Fairlie, *Sulfuric Acid Manufacture* (New York: Reinhold, 1936), p. 103.

[60] *Bolshaya Sovietskaya Entsiklopediya* (Moscow, 1945) LI, Col. 14.

advantage; there is no necessity to invest in processes and experimentation that may prove fruitless. To achieve a single successful process, dozens (sometimes hundreds) of somewhat similar processes may have to be researched and partially developed. Most of these never pass beyond the research stage. Avoidance of the cost of unsuccessful but necessary product development, often called 'waste' by socialist ideologues, or the 'wastes of competition' in some textbooks, is the greatest gain for the latecomer. The latecomer also gains time as well as avoiding monetary investment. The gain in time by the Soviets has been extraordinary. The wide-strip mill—a fundamental development in iron and steel rolling—was installed in the Soviet Union within a few years of its development in the United States and before installation in Europe. The Warner & Swasey turret lathe copied in 1932 was the company's 1929 model. In chemical engineering, the processes acquired were ahead of those installed elsewhere in the world: a 1,000-ton-per-day nitric acid plant is large even today. The Douglas DC-3 contract was concluded within one year of the first flight. Although the tractor models (International Harvester and Caterpillar) were soon discontinued by their makers, any tractor is an advance over a yoke of oxen. It is not an exaggeration to say that the Soviets acquired 30 years of foreign technical development in three years, although it took 10 to 15 years to absorb the acquisition. Scarce resources may therefore be spread further by copying, either for the benefit of the consumer or—as in the Soviet example—to build a massive military complex and provide assistance for world revolution.

There are, however, disadvantages. The original expensive winnowing-out process of invention and the selection of desirable innovations were undertaken under circumstances differing from those in Russia. A process suitable for Pittsburg, Pennsylvania or Dortmund, Germany may not be suitable for Omsk, Siberia. Climate, natural resources, labor skills, and even topography may have an adverse influence. The Soviets are well aware of this problem, and plants have been specially designed or adapted by foreign firms for Soviet conditions. The onus of performance has often been placed upon the Western contractor by the insertion of penalty clauses in the contract.[61]

[61] For example, the 1937 E. B. Badger contract for supply and installation of three continuous alcohol and distillation and refining units. Pages 17–9 of the contract set forth the penalties payable by Badger in the event that the equipment does not meet guarantees. One formula among half a dozen provides for liquidating damages in the event the concentration of alcohol produced falls below guarantee and reads: 'Formula: Guaranteed strength (99.8 by Volume) minus the actual strength (percentage by Volume) × 1/3 contract price ($123,333.33) × .3 = Liquidated damage for one unit. The maximum liability of the COMPANY under this guarantee for liquidating damages shall be $7,333.32 per unit.'
This type of precise guarantee was typical.

A more subtle, very important, and long-range disadvantage is the loss of technical experience and initiative. It is unlikely that an imported technology can be efficiently operated, particularly when foreign advice and influence are shut off immediately after installation, as in the Soviet Union. Soviet claims demand cautious examination. For example, the Soviets claim that they have operated U.S.-installed steel mills at a rate far in excess of 100 percent capacity. This, however, is no great feat. Steel mills can be operated temporarily in excess of 100 percent capacity; the point missed by the Soviets is that continual operation in this high capacity range will lead to breakdowns and rapid obsolescence. This kind of operating experience, and the exchange of advice necessary between equipment manufacturer and user, is lost to a closed society.

Another definite disadvantage is that the Soviets have no way of being certain whether any specific foreign process is indeed the most advanced. How does one judge technical advance or the state of an art without oneself developing the frontiers of technology? This comes out clearly in the single-tower sulfuric acid example above. Superficially an attractive proposition, it is technically impracticable. Thus the Soviet engineer and planner, by virtue of lack of development experience, is led into technological traps—gigantomania, over-design, and the inability to distinguish between theoretical and practical solutions.

Above all, the basic flaws of centrally planned systems are obscured. Such systems are static. They do not have innate ability for rational self-generated technical advance. As Hirschman points out, in socialist societies the process of 'creative destruction' means 'self-destruction' rather than 'destruction of somebody else.' Centrally planned systems are permanently doomed—without capitalist help—to the era of gaslight and buggies, or Model Ts and crystal radios, or IBM 7090s and Fiat 124s, depending on the date of the final overthrow of capitalism. This is the Achilles' heel of socialism. Without capitalism, or some variant of a market system, centrally planned systems are doomed to technical stagnation. This is why copying is pervasive and has persisted for 50 years. It explains the perennial trumpeting of 'Soviet technical advance,' the ever-continuing flow of propaganda, and the abject fear of foreign political ideas.

CHAPTER TWENTY

Problems of Technical Assimilation

THE Soviet economy in the last half of the 1930s suffered from massive technical indigestion; it had absorbed at one gulp the most advanced of Western techniques. On the other hand—and this cannot be lightly dismissed —the Soviets did achieve their political goals; and this, from the Communist viewpoint, justified any sacrifices and problems. Some of the major problems, as they relate to the technical transfer, are briefly summarized below.

THE PROBLEM OF BACKWARDNESS

It is true that Russia in 1930 was backward, but not quite in the sense generally accepted. Tsarist Russia had a relatively advanced industrial structure with definite signs of indigenous Russian development.[1] Growth rates in the late nineteenth century were at least equal to, if not better than, anything achieved under the Soviets, and without the terrible cost incurred by the Soviet 'experiment.' However, Soviet Russia was backward in the sense that the Revolution had stripped Russia of technical, managerial, and certainly innovative skills; at the end of the 1920s the regime was in no condition even to maintain current operations without foreign help, and certainly in no position to consider the gigantic technical steps contemplated. The loss of skills had resulted from Revolution-induced emigration and from the backward nature of the Russian peasant, now more or less forcibly moved into new factories. There is no question that this ignorance in the working force led to massive spoilage of new equipment and gross inefficiency; *Za Industrializatsiiu*, for example, asked the rhetorical question, 'How is it possible that a factory built according to the last word in American technique and equipped with

[1] Sutton, *Western Technology . . . , 1917 to 1930*, pp. 183–4.

first-class foreign lathes and automatic machines cannot for 10 months emerge from its disorganized state?'[2]

There are numerous reports from foreign engineers supporting this charge of the improper use of equipment. For example, a State Department report of an interview with Paul Lauer, an electrical engineer formerly with Brown-Boveri and at the time of interview with I. G. Farbenindustrie, noted that 'although a great deal of the industrial equipment with which he came into contact was first class, machines would be operated day and night in an attempt to force production and . . . when they finally broke down no one was able to repair them.'[3]

Such reports of gross inefficiency, related to the low level of worker skills, are commonplace; what is noteworthy is the wide variety of sources generating such comments. An open letter to *Za Industrializatsiiu*[4] from 35 Russian engineers at Chelyabinsk said that the plant was on the verge of total collapse. An American engineer at Stalingrad, Ellwood T. Riesing, pointed out massive spoilage of new equipment and laid it to ignorance and perhaps 'a little sabotage.'[5] A German tool designer at Stalingrad said he had never worked under such inefficient conditions.[6] *Ekonomicheskaya Zhizn*[7] had numerous articles on 'technical illiteracy.'

By 1945 the factory worker had become somewhat more efficient, but a different form of backwardness remained. This might be called innovative backwardness. When compared to Japan, another country exemplifying development via foreign borrowing, the extent of this backwardness is surprising. The Russians have emphatically shown ability to absorb and adapt foreign methods and equipment; what is obviously missing—propaganda to the contrary—is clear-cut indigenous self-generated innovation. There is none that can compare in any way to outside development. If we compare Soviet Russia to Japan in 1945, ignoring tsarist development for a moment, we find that the Japanese were beginning to make successful self-generated efforts (in machine tools and optical equipment, for example), whereas similar efforts in the U.S.S.R. (synthetic rubber is an excellent example) were not successful. The Soviets *did* make advances in military production, which is amenable to central, bureaucratic direction.

[2] *Za Industrializatsiiu*, No. 123, May 6, 1931.
[3] U.S. State Dept. Decimal File, 861.50—FIVE YEAR PLAN/246.
[4] March 19, 1931.
[5] U.S. State Dept. Decimal File, 861.659—TRACTORS/2.
[6] *Ibid.*, 869.659—TRACTORS/3.
[7] For example, in the issue of April 3, 1931.

THE THEORETICAL VIEWPOINT OF SOVIET ENGINEERS

An argument can be made that the Soviet technological transfer was ineffective, or at least grossly wasteful, on the basis of charges by American engineers that the Soviet engineers were 'too theoretical' and that practice and theory differed.[8] While willing to teach the practical aspect as developed by years of experience, Americans found Soviet engineers distrustful and too willing to revert to theoretical discussion of why a specific American practice would not work. There is no question that this led to wasted time and effort and was partly responsible for ineffective transfers.

The Soviet attitude stemmed to some extent from a European and prerevolutionary view of the place of an engineer; in this view an engineer wore white gloves and only gave instructions. The American engineer (and this accounts in some measure for the success of American practice) rolls up his sleeves and gets his hands dirty. The prerevolutionary attitude was encouraged in the Soviet era because there was safety in being able to point to theory if something went wrong and the OGPU made unwelcome inquiries. Possibly (and the importance of this should not be underestimated) the Russian engineer was thinking ahead to the time when he might have to 'prove' the correctness of personal actions before a commission of inquiry. The basic point is that the American engineer was well aware that theory applies to certain idealized conditions and that in practice events are not always covered by theory. For example, in the 1930s there was nothing in Western literature, and certainly not in Soviet literature, about the cause of local deformation of steels without wear or abrasion, although new gages had been reported as worn out within the first day of use. Theory, as known at that time, did not explain such a phenomenon; but experience provided a rudimentary safeguard against unwelcome results.

On the other hand, Russian engineers displayed great resourcefulness in keeping plants operating without spare parts, usually denied by the planners, and with widely varying types of equipment. In other words, the Russian engineer had technical adaptability when he needed it. Placing this observation alongside the 'too much theory' argument leads to the conclusion that the problem may stem mainly from ideological factors. Although capitalist

[8] In almost every case in which the State Dept. interviewing officer touched on this problem, the American engineer made a comment to this effect. The criticism also appeared in official reports by American companies to the Soviet Union; for an example, see the report on the coal industry made by Stuart, James & Cooke, Inc., reported in the *Moscow Daily News*, June 3, 1931, p. 1.

It is interesting to note a current Soviet preoccupation with theory. At a time when the great need of Soviet industry is practical efficiency, we find, for example, an article on technical progress in the economy cast to a very great extent in terms of theoretical, not practical achievements. (See 'V avangarde tekhnicheskogo progressa,' by Academician M. Keldysh, in *Pravda*, No. 314, November 9, 1968.)

technology is held up as a model to be copied, the individual Western engineer has been, it is explained by the Party ideologue, held back by his capitalist masters and therefore does not appreciate new concepts and new methods; these can be achieved by Russian engineers under the guidance of the Party. In general, therefore, the writer is not willing to condemn individual Russian engineers. Part of the explanation for their theoretical attitude lies in the need for self-protection, part in ideologically tinted engineering decisions made by the Party, and part in training. In other words, if a Russian engineer is placed in a non-Soviet operating environment, he will probably act like a Western practitioner of the art.

The reason underlying the Soviet need for extensive Western assistance relates to the 'inability hypothesis'; Soviet engineers were unable to master the art of designing modern equipment within the Soviet environment. This statement is exemplified by the half-dozen Soviet attempts in the 1920s to produce a tractor.[9] The Karlick and similar designs were quickly abandoned as heavy, underpowered, and unworkable, and were replaced with the Fordson, Caterpillar, and International Harvester. In aircraft the slow, heavy ANT designs were replaced with cleanly designed, fast, and more powerful Western designs.[10]

It was recognized that these problems could be overcome. For example T. W. Jenkins, Chief Engineer for United Engineering at Zaporozhe, commented:

> Despite the many difficulties I have experienced in Zaporozhe and in other plants I feel that the enthusiasm displayed by the engineers and workers will eventually permit them to achieve a considerable amount of success in the operations of their plants. This undoubtedly will take a number of years, but in the end I feel that they will master the technique and eliminate most of the bureaucratic hindrances that prevent them from carrying out their work at the present time in a logical, orderly and efficient manner.[11]

In practice the problem was not overcome by 1945. Many of the copies in the early and mid-1930s suffered as a result of Soviet attempts to incorporate 'improvements' into the original Western designs. This was followed by a Party instruction not to incorporate changes; the result is that by 1940 or so we find *exact* copies of Western models in metric measurements. This is in itself quite an achievement; the Stalinets 80 tractor, for example, is a metric-system copy—very precise—of the Caterpillar D-7.[12]

[9] See Sutton, *Western Technology . . . , 1917 to 1930*, pp. 133–5: 'Attempts to Develop a Soviet Tractor, 1922 to 1926.' Also see V. A. Korobov, *Traktory avtomobili i sel'skokhozyaistvennye dvigateli* (Moscow: 1950). Compare pp. 6–7, the Mamin designs, with pp. 8–15, Western designs.

[10] See chap. 11.

[11] U.S. State Dept. Decimal File, 861.6511/34.

[12] The methods of copying the Caterpillar D-7 will be covered in Volume III.

THE PROBLEM OF IDEOLOGY VS. TECHNOLOGY

A major problem was created by the conflict between engineering logic and ideological objectives. At the outset it must be clearly stated that the Communist Party correctly recognized technology as the heart of economic development and since the beginning has placed continued emphasis on technology and technical progress; the power and discipline of the Party has remained solidly behind absorption and infusion of foreign technology. The analysis made by the Party is correct.

However, Party ideology is also responsible for the idea that the machine is in some way more productive under socialism than under capitalism. A machine is completely impervious to ideology; it must be operated within limits, it must be maintained, and it must have skilled operators; neglecting any one of these is perilous: the teachings of Lenin are no substitute for oil, maintenance, and skill. In the 1930s the Party injected itself into day-to-day operating procedures, and the efficiency of the machine suffered.

Ideology conflicted with efficient technical development in another way. Soviet purchasing and technical missions had a quota of Party members, whose contribution was repressive. In 1928, for example, a Soviet purchasing commission visited the Arthur G. McKee Company in Cleveland, Ohio; the chairman of the commission was a party member with no knowledge of metallurgy, but 'his father had been a worker in the South Urals steel plants and a great revolutionist and that made his son eligible.'[13] Three Russian engineers on the commission provided the technical experience necessary.

SABOTAGE OR INEFFICIENCY?

We are here concerned only with the possibility of sabotage insofar as it may have affected the transfer of technology. Possibly 20 percent of the interview reports in the State Department files refer to alleged incidents of sabotage in industrial plants. There is a distinction between overt sabotage and neglect, and certainly a difference between sabotage and inefficiency, although the end results may appear to be the same.

There was clearly sabotage before 1930 but probably less between 1930 and 1945. The question of how much cannot be answered. Whether the *real* sabotage was instigated by those on trial for *alleged* sabotage cannot be determined either. However, it is reasonably certain that there was some expression of opposition to the Soviet regime.

One report from the State Department files has been selected and summarized as an example. In 1932 the Riga Legation interviewed Edward Boyle, who had been in Russia from 1922 until 1932. Before 1921 he had been

[13] *American Engineers in Russia*, Stuck MS, p. 21.

superintendent of the foundry in the Panama Canal Zone and was then utilized by the Soviets as a trouble-shooter on foundry problems.[14] The 14-page report suggests that Mr. Boyle was a stable individual (this was also the impression of the interviewing officer) who had had a lengthy uninterrupted stay in the U.S.S.R. Further, although he was a valuable employee he did not receive valuta payments and did not request payment in dollars. The report also suggests that he had adapted well to Russian life, had very few complaints, and in general was a well-balanced individual who asked only for work and enough to support himself. In brief, there is no evidence that Boyle was biasing his answers. Where his information can be checked, it checks out well with other reports.

Boyle stated he had encountered 'innumerable' acts of sabotage in the foundry industry, particularly in the years 1922–9:

> It was a simple matter for him to distinguish between lack of technical knowledge and a deliberate policy of sabotage. . . . Ignorant and inexperienced men whom force of circumstances had placed in charge of foundries were willing, and even anxious, to obtain the benefit of his knowledge and cooperation, while master mechanics and engineers of the former regime usually made it impossible for him to accomplish anything constructive in their plants.[15]

Boyle cited his first assignment at Mariupol, where two cupolas had not worked well since installation two years previously; he was told the assignment might be dangerous. The cupolas were perfectly designed. These were the first cupolas designed under the Soviets but 'minor obstructions and failures, obviously deliberately installed or caused, had prevented the cupolas from producing for two years.'

On the other hand, Boyle cited the case of blowholes in cylinder castings for locomotives being produced in Leningrad; these he quickly deduced as the result of poor pouring methods due to lack of experience.[16] This last example points up an abysmal lack of technical experience. Many problems blamed on sabotage may have been the result of sheer ignorance.

Although the evidence is fragmentary, there unquestionably was sabotage; how much will never be known. This, as Boyle stated, tapered off about 1930 for the simple reason that the penalties were too harsh. Sabotage or 'wrecking' became the excuse adopted by the Party after 1930 for the inefficiencies of a socialist system. It is suggested, again with fragmentary evidence, that after 1930 the sabotage claimed was not sabotage at all, but merely the result of inefficiency.

[14] U.S. State Dept. Decimal File, 861.5017—Living Conditions/486.

[15] *Ibid.*, p. 7.

[16] *Ibid.*, p. 9.

THE PURGE TRIALS OF 1936–7

Reports of the American Embassy in Moscow also supported the view that the purge trials were not the primary cause of existing industrial problems.[17] The problems were due to more basic factors: 'the inability of Soviet engineers and workers to master fully the intricacies of modern industrial technique'; the refusal of workers to increase productivity without further compensation; and the periodic breakdown of production machinery and lack of proper repair and maintenance. The Stakhanovite (shock worker) movement was singled out for special mention as a factor in causing machinery breakdown.

A 1937 report[18] established four basic reasons for the current industrial setback. First was the inexperience and carelessness of Soviet engineers and workers 'and their present inability to fully appreciate and master the more complicated technique of modern industry.' This deficiency was explained on the ground that Russian workers were technologically backward, and that many if not most Russian workers with skills had been either driven out of Russia or liquidated at the time of the Revolution. Thus the 1937 labor force did not have the 'feel of the machine' and retained 'too much of the proverbial Russian spirit of "Nitchevo" . . . to have a real understanding of the care and accuracy needed to master fully modern industrial technique.'

The report pointed out (and this is supported by the findings of this study) that:

> . . . one of the principal complaints of foreign engineers who have worked for any time in the Soviet Union is the failure of Soviet workers and engineers to appreciate the necessity for doing painstaking and precise work. The foreign technician soon learns that generally speaking the Soviet worker is apparently incapable of, or at least does not understand the necessity for, observing the limited tolerances called for under modern engineering technique.

Another common complaint by foreign engineers with regard to Soviet engineers was that they very often endeavored to improve upon the design of foreign equipment without realizing that such efforts might throw the entire machine out of balance or cause other complications. These shortcomings caused the percentage of rejects to be very high. The model changeover in the Gorki Automobile Plant in 1935 is an example; the new model was essentially a copy of the 1934 Ford but Soviet engineers attempted to introduce changes

> which apparently led them eventually into difficulties. In any event, over a year and a half after production was started on the new car they have failed to attain the daily production figures for the old model, which

[17] These conclusions are based on interviews with U.S. businessmen and engineers and on Soviet sources.

[18] U.S. State Dept. Decimal File, 861.60/288.

was an exact copy of the 1930 American FORD and which they learned to build with the full assistance of a large number of American engineers and specialists.[19]

Second, was the failure of the Stakhanovite movement to increase productivity, under this plan, workers were sometimes encouraged to increase the capacity of their machines beyond that which they were built to stand. Boastful articles appeared in the Soviet press stating that machines were producing more under socialism than under capitalism; repair work was neglected and the wear and tear led to breakdowns. Third, the Soviet copies of foreign machines were the first to break down 'and it was not so very long before many foreign machines followed suit.'[20] The arrest or dismissal of members of commissariats and plant directors removed many of the more capable members of Russian industry. The report concluded that Russian youth were beginning to appreciate the intricacies of modern machinery and that although there was a 'definite crisis' in Soviet industry this did not presage a complete breakdown in industrial development.

There is also other evidence to suggest that inadequate technical knowledge was much more to blame than wrecking or carelessness. One example is the erection of three continuous alcohol distillation and refining units by E. B. Badger. These were linked up to fermentation tanks constructed by Soviet organizations to drawings supplied by the Badger Company. The first of three such units was brought into production in 1936, but by 1937 the Soviets were requesting Badger to return two American engineers to solve problems which had arisen in operation and 'alleging that the Company's equipment did not produce satisfactory results.'[21]

Two Badger engineers made the trip from the United States, briefly investigated, and found that the difficulty caused only by the lack, in the Soviet-constructed tanks, of an agitator from which the raw product was supposed to be taken before treatment by the American-installed equipment. Lack of an agitator gave the raw liquid a nonuniform consistency which affected the quality of the final product. An agitator had been included in the original design, but 'the Soviet engineers had for some reason failed to install this device.'[22] An agitator was then installed by the Badger engineers and the unit worked satisfactorily. Two rather obvious points may be made: first, to understand the necessity for uniform raw materials requires only elementary knowledge of chemical engineering—indeed little more than common sense, and second (this is common to other cases), the original American drawings and designs were not followed by the Soviet engineers.

19 *Ibid.*
20 *Ibid.*
21 U.S. State Dept. Decimal File, 861.602/284. See also Chap. 8, p. 116.
22 *Ibid.*

THE PROBLEM OF CENTRAL PLANNING

From the Western viewpoint, certain major elements in the Soviet economy are not quite what they seem. Above all the concept of central planning devolves into little more than a means of political control. In the period examined there was no case in which central planning achieved an end which could not have been achieved in some more efficient manner; given this observation, it is suggested that the objective of central planning is political, not economic.

The traditional objective of central control is reputed to be a balanced move forward on an integrated industrial front. The theory is that such a giant step forward achieves more than piecemeal efforts brought about by operation of the market system. The first observation is that over the last 50 years the Soviets have more or less utilized a system of central control and the United States has not. In terms of addition to the Gross National Product, general living standards, and overall technical progress, the United States is far ahead today, suggesting that over the long haul the enterprise system, or an approximation of it, is far more effective. Such a system also has certain human advantages.

Second, if we examine a lesser time period of Soviet development, such as the years 1930 to 1945, in more detail, the advantage of central planning is at best not clear. It took several years of statistical work to get ready for the First Five-Year Plan, and then the figures were revised (upwards) at the last minute as American companies indicated they could build units much larger than those requested. Construction starts did not coincide as they should have, the First Five-Year Plan was not integrated with the existing industrial structure, and construction finishes were even less well integrated.

The term 'Five-Year Plan' had no empirical significance whatsoever. A little thought will indicate why this is so. Even under conditions of perfect supply, abundant labor and technical skills, and a flexible transportation system, it would be difficult to start a large number of major projects at one time; it would be patently absurd to hope, or want, to finish them at the same point, because of the widely differing gestation periods of sophisticated industrial systems.

An attempt to match the actual start and finish dates with those indicated by the Plan reveals no correlation whatsoever. What actually happened is summarized in the following paragraphs.

Specific units were begun as soon as foreign contractors could supply the skills and the equipment. There were varying delays in installation because of unskilled labor, theoretically trained or entirely untrained Soviet engineers, and a basic apathy, whipped into action only periodically by udarnik cam-

paigns. When the engineering time horizon more nearly matched the 'political planning' time objective, the engineering factors were disgracefully sacrificed to meet a propaganda deadline. In an efficient system, the start-up of blooming mills and blowing-in of blast furnaces should follow a precise timetable determined ONLY by engineering factors. When construction schedules were rearranged to build the most conspicuous plant features (i.e., smoke stacks) first, or mills were started up before all installations were complete and not in accordance with manufacturers instructions, then in truth the lunatics were running the asylum. This was well stated by the Chief Engineer of United Engineering:

> One of the principal weaknesses I have noted during my stay is that the directors of the plants and the engineers invariably send in optimistic reports to Moscow regarding performance and invariably make promises which they realize cannot be fulfilled. For example, the directors of the plants promised Moscow that the Soviet-made rolling mill would be in operation in October 1936. The mill was not completed as scheduled and the Soviet engineers sent a full explanation to the authorities, blaming the delay on the lack of materials and giving other excuses. Finally during the month of November and the first part of December strenuous efforts were made to complete the rolling mill before the end of the year. The Soviet engineers explained to me that it was absolutely necessary for them to operate the rolling mill before the end of the year in order to be in a position to request additional funds for the construction of the mill in 1937. They explained that larger credits were granted to Soviet mills which were in a position to show that they had more or less lived up to schedule. During the above-mentioned period I estimate that approximately 2,000 working hours were wasted in the effort to operate the mill before the end of the year. The equipment was installed in a temporary manner and finally on December 24 the rolling mill was operated for five hours and then shut down. The directors of the factory, however, were able to send telegram to Moscow on that date announcing that the rolling mill was in operation.[23]

Although much equipment was especially made to fit Soviet factor proportions and labor skills, problems arose with used equipment—for example, with the Ford automobile tire plant transferred to the U.S.S.R. in 1944. This was a two-story operation in the United States and the opinion of U.S. engineers was that 'it could not function properly unless it was housed in precisely the same type of building in which it had been housed in Michigan. . . .'[24] The

[23] U.S. State Dept. Decimal File, 861.6511/34. T. W. Jenkins, United Engineering Chief Engineer at Zaporozhe. For an excellent summary of start-up problems in the tractor plants see Dodge, *op. cit.*, pp. 281–7. A certain proportion of problems was created, of course, by general engineering factors normally connected with the establishment and start-up of new plants.

[24] U.S. State Dept. 861.645/17, Memorandum of Conversation, April 1, 1943.

Soviets could not provide such a building and the Ford plant was eventually housed in a one-story operation with consequent loss of efficiency.

Thus it may be concluded that the Soviets had numerous problems in technical assimilation. Many of these were problems associated with unskilled labor and normal technical assimilation procedures. Two factors, however, complicated the transition: the intervention of ideology into the technical sphere, and rigid central planning. Thus the transfer was far more difficult than that of Japan, for example, which absorbed Western technology and by 1945 was starting to forge ahead on her own.

CHAPTER TWENTY-ONE

Western Technology and Sectoral Rates of Growth, 1930-45

DURING the period from 1930 to 1945, Soviet technology was almost completely a transfer from Western countries; only two major Soviet innovations have been identified: SKB synthetic rubber and the Ramzin once-through boiler; both were supplemented with Western methods by 1945.[1] One significant Soviet achievement was the conversion of U.S. and British equipment to the metric system, with subsequent duplication of a metric copy rather than the imported original. Such conversion should not by any means be underestimated; it requires a great deal of technical ingenuity and engineering skill.

Thus the conclusion is that for the period from 1930 to 1945 Soviet technology was in effect Western technology converted to the metric system.

It was suggested earlier that the modus operandi during this period required Gosplan to estimate the desired capacity for each industrial sector while leaving the initial implementation process to Albert Kahn Company and the supply of initial engineering talent and equipment to other Western companies. At the same time, arrangements were made to duplicate this equipment in newly built plants. Gosplan objectives should logically have been related to the amount of Western assistance procured. This proposition may now be

[1] The almost complete absence of Soviet innovation was, so far as the writer is concerned, a surprise. Time after time a particular process or piece of equipment was assumed to be of Soviet origin (in accord with the bias noted on page 8), but in all cases except those few mentioned in the text a Western precursor was found. The explanation is simply that it was cheaper to borrow rather than develop internally; however, this explanation is limited to the period 1917 to 1945.

If any reader has specific examples of Soviet innovation for 1917 to 1945, information on them would indeed be welcome and certainly included in later work. It should be stressed that generalities are of little use—and indeed vague generalities account for much of the present confusion about Soviet achievements. The suggestion must be *specific:* for example, 'the Model Kh AZ-241 meat grinder is a Soviet innovation.' We are, of course, interested in innovation rather than invention or discovery.

profitably explored. There follows an examination of actual rates of growth by sector in relation to technical assistance. In sum, we first look at planning objectives and then at the fulfillment of these objectives in relation to Western assistance.

The initial problem is to measure effectively and accurately the degree of technical assistance in a quantitative manner. One method would be to compare that capacity built with the percentage of Western technical assistance received. For example, 100 percent of the Soviet automobile-manufacturing capacity was of Western origin and utilized Western equipment. However, such a measure cannot be calculated for those industries (such as flour milling and vodka manufacture) in which very little *qualitative* data exists. Neither can it be calculated in industries such as mining, in which individual Western mining engineers carried the initial burden of establishing the method by which a mine was to be developed, bringing the mine into operation, supervising initial operations while gradually introducing imported equipment (followed by Soviet equipment made to Western designs) and finally handing over operations to Soviet mining engineers. Neither does such a measure include situations in which a single piece of imported equipment (which might comprise less than one percent of the total capital expenditure) allows a new plant to operate, whereas without it production is zero. Thus while 'percent of capacity built to Western technique' is an initially attractive quantitative measure, it is not useful.

The measure used is a scale of 1 through 10, each value on the scale being determined by an assessment of the importance of technical transfers from the West. The scale takes into account not only the supply of Western designs, equipment manuals, and engineers, but operator training, quality and production guarantees, patents, and training of Soviet engineers in Western plants: in brief, the whole complex of transfers which make up technical assistance. In this system a large number of factors related to technical assistance enters into individual scale values. Where no foreign assistance at all can be identified and an indigenous process is used, then the scale value is zero: i.e., no technical assistance. At the other end of the scale, a value of 10 is assigned where, as in tire manufacture, a technical-assistance agreement provided the process, plant design, follow-up assistance, equipment, and operator training, and also provided more than 90 percent of the output in the period 1930–45.

One could argue that a value of 10 should require complete Western operation of the plant as a pure concession for the whole period 1930 to 1945 as well as other assistance factors. Under this definition there would indeed be no sectors with a value of 10, and only one or two with 9. The important point to be made is that the scale utilized does not define a value of 10 as indicating 100-percent operation by Western companies throughout the period 1930–45.

The scale ignores operation by Soviet personnel after installation. By the same token an operator of an automobile or a washing machine in the United States cannot claim or be held responsible for the design and manufacture of the product he uses.

In other words a maximum scale value of 10 includes operation by Soviet workers for the period after start-up to 1945, maintenance performed by Soviet engineers, and duplication of the equipment for use at other locations. Such duplication, of course, as in two categories of machine tools (lathes and vertical drilling machines), could account for most of Soviet productive capacity by 1945. The scale focuses then on *transfers and origin of technology* rather than composition of aggregate capacity in a sector at the end of the period.

PLANNING OBJECTIVES AND WESTERN TECHNICAL ASSISTANCE

It has been suggested in the light of preliminary evidence[2] that Gosplan decided upon those sectors it wanted developed under the plan and then contracted with foreign organizations to build large-scale units in those sectors. Capacity was then expanded by duplication of the transferred Western technology. The Gosplan estimates were, however, qualified by Western engineering advice. Cases are found in which Gosplan suggestions regarding capacity were considerably expanded when foreign companies indicated they could build much larger units than those requested. No cases were found where a company offered to build a smaller unit or refused to build that capacity established by Gosplan; modifications appear always to have been in the direction of increase.

If this assessment of Western participation is correct, there should be a relationship between planning objectives formulated in various plans and the degree of technical assistance introduced: the greater the increment in output planned then the greater (other things being equal) the foreign technical assistance. Unfortunately other things are not equal. There is a considerable difference between technological complexity and capital-output ratios, and consequently between the amount of foreign assistance required by different sectors. In blast-furnace construction, a straightforward and easily assimilated process, technical assistance was limited to the Western provision of designs. By 1937–8 Gipromez had its own design; in automobile assembly, far more complex, the Soviets had not mastered Western technology even by 1970.

With this qualification in mind, data were derived for a number of sectors in which it is possible to estimate both technical assistance and planning objectives. World War II cut short the Third Five-Year Plan; consequently

[2] See pp. 249–52.

data was derived for 1937 objectives in relation to 1932 output. This is presented for a dozen sectors in table 21–1.

Table 21–1 SOVIET PLANNING OBJECTIVES AND WESTERN TECHNICAL ASSISTANCE

Sector	*Planning Objective of 1937 in Relation to 1932 Output (Percent)*	*Technical Assistance Scale*
Zinc	608.0	9
Motor vehicle tires	543.0	10
Bicycles	447.8	10
Sulfuric acid	420.2	9
Steam locomotives	338.0	3
Sugar	302.0	4
Electric power	283.8	8
Canned food	279.3	7
Machine tools	266.7	9
Woolen fabrics	240.9	4
Boots and shoes	219.5	2
Cotton fabrics	187.5	4
Flour	142.8	2

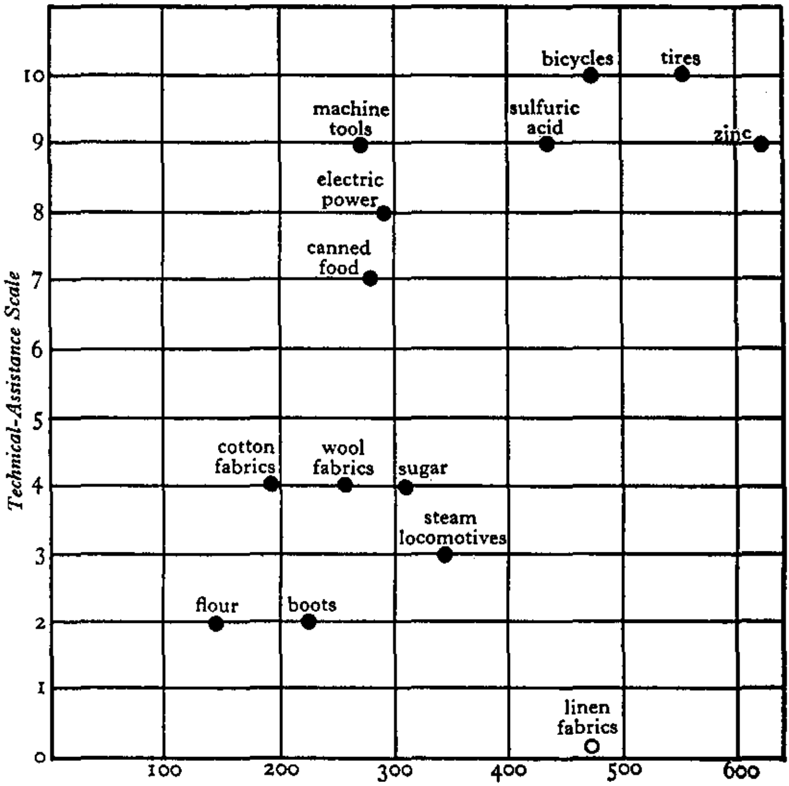
Sources: Planning objectives: Gosplan, *The Second Five-Year Plan* (London: Lawrence and Wishart, n.d.), pp. 545–55.
Technical-assistance scale: see text.

Examination of the data presented in table 21–1 and figure 21–1 suggests, although the scatter is pronounced, that planning objectives were broadly associated with technical assistance. Certainly this becomes clear if we examine both ends of the range presented. Zinc, with the most ambitious planning objective (a sixfold increase of output between 1932 and 1937), had a high technical assistance scaling of 9. Similarly bicycles and motor vehicles, the only sectors listed with scalings of 10, had very high planning objectives: increase by a factor of five. On the other hand, if we examine the other end of the range we find the flour sector had the lowest planning objective and the lowest scale of technical assistance: 2.[3]

Thus in broad terms the extent of planning objectives may be, as we would expect, related to the extent of foreign technical assistance.

[3] The listing in table 21–1, plotted in figure 21–1, comprises all sectors (except one) in which data for both planning objectives and technical assistance could be found and related. One sector not listed—linen fabrics—had a high planning objective and a rating of zero on the technical-assistance scale. This was rejected, as the lack of evidence of technical assistance for this particular sector was not convincing; the negative case is always difficult to prove.

Fig. 21–1 RELATIONSHIP OF PLANNING OBJECTIVES TO TECHNICAL ASSISTANCE, 1932–7



Planned increment in output, 1932–7 (percent)

Sources: Planning objectives: Gosplan, *The Second Five-Year Plan* (London: Lawrence and Wishart, n.d.), pp. 545–55.
Technical assistance: see text.

SECTORAL GROWTH RATES AND WESTERN TECHNICAL ASSISTANCE

If the hypothesis of this study is to be supported, those sectors of the Soviet economy with the highest growth rates should prove to be the recipients of consistent and significant foreign technical assistance. Conversely those sectors with low growth rates should *not* be recipients of foreign technical assistance.

These propositions can be examined in a reasonably precise manner by comparing rates of growth by industrial sector[4] with the amount of foreign technical aid in that sector. Tables 21–2 and 21–3 and figure 21–2 illustrate this relationship.

All sectors with rates of growth in excess of an annual average 11 percent and below 4 percent are listed in the tables and plotted in figure 21–2 and compared to technical assistance for that sector when it can be estimated.

SECTORS WITH HIGH GROWTH RATES

The sector with the highest annual average rate of growth between 1928 and 1955 was bicycle manufacture: 23 percent. This sector received the benefits of a technical-assistance agreement with the Birmingham Small Arms Company of England, manufacturers of the popular BSA bicycle. Steel tubes, a major input in bicycle manufacture, were manufactured on Western equipment using Mannesman, Pilger, Stiefel, and other German processes, possibly at the Nikopol plant installed by the Tube Reducing Company. Rubber tires for bicycles were manufactured at Yaroslavl, which received technical assistance from the Seiberling Rubber Company. Ball bearings for bicycles were manufactured at the plant erected under the Italian Villar-Perosa agreement. Thus the bicycle-manufacturing process was obtained from the West, operators were trained by Western companies, and input materials were wholly developed with Western technical-assistance agreements and equipment. This sector is therefore given a ranking of 10; it is difficult to envisage means of further assistance unless Western engineers had remained throughout the period 1930–45 to operate the Velo bicycle plant.

In lead and zinc mining and smelting (20 and 19 percent growth, respectively) development and operation of mines and construction of smelters and refineries was almost wholly American in the early 1930s. It was estimated that at the mining engineer level of skills, 90 percent of the underground engineers were American and only 10 percent Russian.[5] Americans handed over responsibility to hastily trained Soviet engineers in 1932–3; almost all Americans left by 1936. The underground equipment was initially American and German, replaced partly after 1934 with Soviet copies. Smelters and refineries were completely American-designed, equipped with British, German, American

[4] G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962), pp. 96–7. Nutter's data cover annual average rates of growth from 1928 to 1955; this volume is limited to 1928–45. This is not, however, a major qualifying factor, as the benefits of technical assistance persist after installation, and installations from the early 1930s were still operating in the 1950s and the 1960s. Further, the transfer continued in the 1950s and 1960s, as will be demonstrated in the next volume.

[5] P. 44.

equipment, and initially operated by American superintendents. A scaling of 9 is therefore applied to both lead and zinc production.

Motor vehicle tires were made only in Western-supplied plants—the Yaroslavl plant built under the Seiberling contract of 1929 and re-equipped with British machinery in the 1950s; the Ford Motor Company truck-tire plant, with a one-million-tire-per-year capacity, supplied under Lend-Lease in 1942–5; the Toyo Tire Company, Ltd., plant at Mukden and Manchu Rubber Company, Ltd., tire plant at Liaoyank, both removed from Manchuria to the U.S.S.R. in late 1945.[6] This sector is scaled at 10.

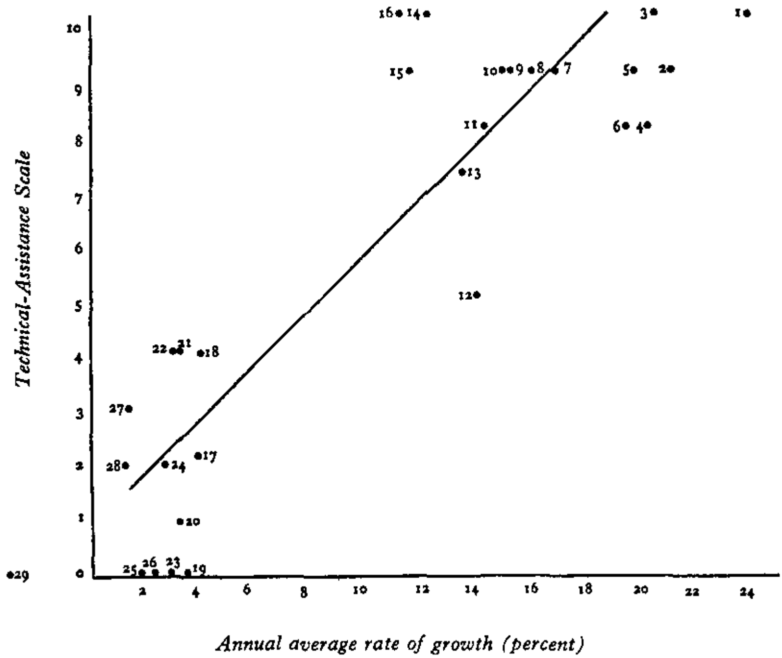
Table 21–2 INDUSTRIAL SECTORS IN U.S.S.R. WITH ANNUAL AVERAGE GROWTH RATES GREATER THAN 11 PERCENT, 1928–55

Number on Figure 21–2	*Industrial Sector*	*Annual Average Growth Rate, 1928–55*[1] *(Percent)*	*Position on Technical-Assistance Scale*[2]
1	Bicycles	23.0	10
2	Lead	20.1	9
3	Motor vehicle tires	19.4	10
4	Steam turbines	19.2	8
5	Zinc	19.0	9
6	Diesel engines	18.7	8
—	Mineral fertilizer	17.1	Not estimated
7	Machine tools	16.3	9
8	Power transformers	15.5	9
9	Rayon and mixed fabrics	14.7	9
10	Asbestos shingles	14.5	9
11	Electric power	13.9	8
12	Natural gas	13.4	5
—	Roll roofing	12.9	Not estimated
13	Canned food	12.8	7
14	Clocks and watches	11.9	10
—	Macaroni	11.8	Not estimated
15	Sulfuric acid	11.2	9
16	Silk fabrics	11.3	10

Sources: 1 G. Warren Nutter, *Growth of Production in the Soviet Union* (Princeton: Princeton University Press, 1962), p. 96.
2 Text.

[6] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington: 1946), p. 204. Reparations will be covered in Volume III.

Fig. 21–2 RELATIONSHIP OF TECHNICAL ASSISTANCE TO ANNUAL AVERAGE RATE OF GROWTH, 1928–55



The only plant making steam turbines was the Stalin at Leningrad, producing Metropolitan-Vickers models to company drawings and initially with British technical assistance.[7] The British engineers left in 1933, and from that time on the Soviet engineers were on their own; this sector is scaled at 8 as there is evidence that by World War II turbine technology had been mastered and some independent work started.

Diesel engines are scaled at 8. Three systems (Sulzer, MAN and Deutz) were used—all from Germany. The technical-assistance agreements expired in the early 1930s, and from that time on eight plants manufactured diesels to these systems. Attempts to produce locomotive diesel engines with General Electric assistance failed, and production was abandoned in 1937 and not resumed until the 1950s.

[7] P. 160.

SECTORS WITH LOW GROWTH RATES

Examination of those sectors with the lowest growth rates also provides support for our hypothesis. Table 21–3 lists those sectors for which Nutter estimates less than 4 percent average annual growth between 1928 and 1955.

Five sectors have a zero rate of growth. Of these, three are hardly candidates for technological improvement and indeed are traditional Russian peasant industries: low-grade tobacco (makhorka), vodka, and felt footwear all had growth rates of only 1 or 2 percent and utilized no foreign technology. Salt (3.4 percent) and linen fabrics (2.1 percent) similarly had low rates of growth and used no identifiable foreign technology.

The case of flour is interesting in the light of the hypothesis. The sector had a growth rate of only 1.1 percent and a low incidence of identifiable foreign technology. On the other hand, a resolution passed by the Collegium of the People's Commissariat of Foreign and Domestic Trade on November 27, 1929 decreed that contracts should be concluded with American firms for the planing of new flour mills, for the employment of six U.S. engineers to provide technical assistance for machinery construction, and for the employment of 10 U.S. engineers to establish a standard flour mill and assist in its construction.[8] In brief there was clear formal intent to supply technical assistance to this sector. There is, however, a report from one of the Americans later employed in design of flour mills which confirms, in the final analysis, the lack of technical transfers from abroad:

> Mr. Hess was employed in Kazakstan where he was designing and building flour mills, under the supervision of American engineers. These flour mills were built entirely with Russian material, except part of the machinery. Work on the flour mills has ceased on account of the lack of local material. It was agreed that the Russians would buy milling machinery and construction machinery in the United States. For this undertaking thus far no machinery has been purchased. Part of it is Russian made machinery which is very low in grade and of which there is only a meager supply.[9]

Thus the flour sector in the final analysis had *incomplete* technical assistance.

Steam locomotives had an annual average growth rate of 1.2 percent. Out of approximately 25,000 locomotives built or acquired between 1928 and 1945, about 6,500 were imported (almost all U.S. Army types or German and British prototypes). The remaining 18,500 were based on successful tsarist models and built in the expanded tsarist-era plants. The basic Russian steam locomotive (indeed, the most numerous class of locomotive in the world) was the Vladikavkaz, first built in 1910 and then adopted by the Soviet. The Su and SO classes built by the Soviets were also tsarist models. Thus only about one-

[8] U.S. State Dept. Decimal File, 861.6584/3.

[9] *Ibid.*, 861.5017—Living Conditions/239.

quarter of the 1945 locomotive stock was imported, the balance being Soviet-made to tsarist design. The scale of technical impact is given as 3 (by virtue of the import of General Electric, Brown-Boveri, U.K., and German prototypes and the use of individual consultants for wheel-making, etc.). The annual average growth rate of 1.2 percent is also low.

A group of sectors with low growth rates includes boots and shoes, raw sugar, starch and syrup, matches, cotton fabrics, woolen and worsted fabrics, and vegetable oil. The common link between these sectors is that they all relate to the consumer—consistently the lowest priority in the Soviet Union. Although these sectors used some foreign equipment and the textile industries used early technical assistance, the growth rates reflect both the low priorities given to consumer sector imports and the low percentage of foreign assistance.

Table 21–3 INDUSTRIAL SECTORS IN THE U.S.S.R. WITH ANNUAL AVERAGE GROWTH RATES LESS THAN 4 PERCENT, 1928–55

Number on Figure 21–2	*Industrial Sector*	*Annual Average Growth Rate 1928–55*[1] *(Percent)*	*Position on Technical-Assistance Scale*[2]
17	Boots and shoes	3.7	2
18	Raw sugar	3.7	4
19	Salt	3.4	0
—	Starch and syrup	3.3	Not estimated
20	Matches	3.3	1*
21	Cotton fabrics	3.0	4**
22	Woolen and worsted fabrics	2.9	4**
23	Vodka	2.8	0
24	Vegetable oil	2.4	2
25	Linen fabrics	2.1	0
26	Felt footwear	1.7	0
27	Steam locomotives	1.2	3
28	Flour	1.1	2
29	Low-grade tobacco	1.7	0

Sources: 1. G. Warren Nutter, *Growth of Production in the Soviet Union* (Princeton: Princeton University Press, 1962), p. 96.
2. Text.

* Matchmaking equipment was imported and negotiations were reported for a concession with the Swedish match-maker, Kreuger. This small sector not covered in the text.

** There was considerable assistance to the textiles industries (all sectors) in the early to middle 1920s. In the period 1930–45 assistance took the form of equipment imports only; thus the sector is scaled at 4.

In conclusion, if we examine the findings of this study concerning technical assistance in relation to annual average rates of growth we can make two points. First, those sectors with high rates of growth had high levels of technical assistance. Second, those sectors with low rates of growth had low levels of technical assistance. It is interesting to note that this relationship is only broadly in accord with planned objectives, as was pointed out at the beginning of the chapter. For example, the high growth rate of bicycles and the low growth rate of steam locomotives were certainly not in accord with planned objectives.

Consideration of the factors making for economic growth given in the text suggests that Western technical assistance was the major causal factor in Soviet economic growth for the period 1928–45.[10]

The imposition of 'domestic savings' on the Russian people is not an alternate explanation for Soviet development, but, in the Soviet scheme of things, it is a necessary prerequisite to the basic method used: transfer of Western technology.

What is 'domestic savings' in the Soviet scheme? It is the planned direction of resources into industrialization at the expense of personal consumption. This the Soviets have done ruthlessly. Agricultural products—eggs, butter, grain, flax, etc., were exported to pay for imports of Western technology. Capital construction in the consumer sector—housing, roads, hospitals, etc.,—was curtailed and resources diverted into industrial and military construction.

Forced saving of this type, however, will not by itself bring about rapid development, although it may be a necessary prerequisite for the release of resources. This road to development also requires either an outside source of technology or the diversion of resources into research and development to achieve technology internally. In the West, technology developed over a period of several hundred years during the gradual industrialization of Europe and the United States; it was this enormous pool of technology which was successfully tapped by the Soviets. They tapped it by imposing forcible saving on the Russian consumer and exchanging released resources for Western processes, plants, and equipment. Consequently, although such saving is a necessary prerequisite, it is not an alternate explanation for Soviet growth.

Therefore, the Soviet road to development will not work without cooperative capitalist neighbors with advanced technology which can be introduced into the socialist system.

[10] It is, of course, possible to make more precise statistical determinations; however, calculation of the technical-assistance scale is to some extent arbitrary and does not justify more than preliminary statistical treatment. It is the direction of the argument that is important, not precise calculation of correlations.

CHAPTER TWENTY-TWO

Conclusions

THIS study provides empirical support for the traditional argument in economic development theory that borrowed technology from advanced countries is a primary explanation for economic growth among latecomers. Although the study is based on the economic history of one country—the Soviet Union—that country is among the largest in population and resources and the most important in strategic terms.

Conclusions are acceptable only to the extent that data sources are acceptable. The official Decimal File (the central file of the U.S. State Department) and the Oberkommando der Wehrmacht Archives provided extensive and accurate detail, some of which has been previously unavailable to nonofficial researchers. The technical detail extracted from these sources constitutes the main empirical base for this volume; the abundance is fortuitous, as it coincides with significant industrial growth in the Soviet economy. It should be pointed out, however, that the conclusions presented here are quite different from—in fact, almost completely opposite to—those arrived at by State Department report writers and researchers presumably using the same source material.[1] Obviously, these differences require explanation.

The Decimal File records include texts of technical-assistance agreements between Western firms and the U.S.S.R. and reports made by departmental field officers after interviewing returning American engineers. These interview reports, although often filed under 'Living Conditions,' are an excellent source of technical detail. The Wehrmacht Archives establish the structure of Soviet

[1] See pp. 4–6. There are statements, from 1918 (Minutes of the War Trade Board) to 1968 by State Department officials from the Secretary of State downwards, to the effect that trade and the transfer mechanisms described in this and the previous volume have had no major effect on Soviet economic development. On the other hand there is a report in the State Department files that names Kuhn, Loeb & Co. (the long-established and important financial house in New York) as the financier of the First Five Year Plan. See U.S. State Dept. Decimal File, 811.51/3711 and 861.50 FIVE YEAR PLAN/236.

industry: i.e., the numbers, types, and locations of individual plants. In general, the Decimal File contains information on the nature of the technology or processes used and the Wehrmacht data provide the output, capacity, and location of each plant. Integration of both the State Department and Wehrmacht data provides a reasonably complete picture of technical transfers and their focus and effect within the Soviet Union. Soviet source material provides supplementary information.

The initial and obvious conclusion is one of significant growth in the Soviet economy between 1930 and 1945, although this growth was irregular over the course of time and between sectors. The widespread impression of smooth, regular, balanced growth, with major production increases and fulfillment or near-fulfillment of plans from year to year is not valid. If central planning is intended to provide balanced industrial development it has been, in the Soviet experience, a miserable failure. Some recent Soviet books, in fact, now characterize the period 1936 to 1940 as one of fluctuation and even decline in output—a pattern confirmed by this study.[2] During the period as a whole, there was major but fluctuating growth in the output of a wide range of products; the fluctuations provide additional support for the argument.

The increase in output came from two types of productive units: new gigantic plants, such as KHEMZ and Uralmash, with modern, sophisticated technology; and ex-tsarist plants, such as Putilovets and Dynamo, greatly expanded and re-equipped. Some new giants, such as Kramatorsk and Berezniki, were located at or near small ex-tsarist plants, no doubt to make use of existing transportation and raw materials facilities. A general observation is that in both groups of plants the technology was always the most advanced known and very commonly on a scale far beyond that previously built anywhere.

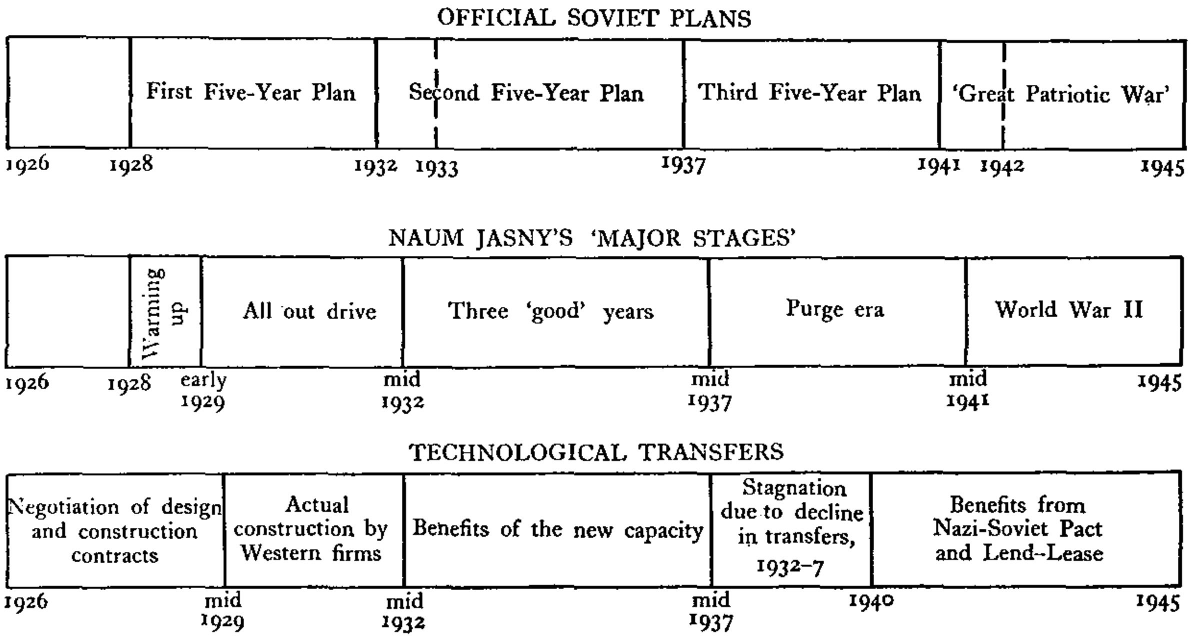
Almost all new major units, except Second Baku oil refineries and chemical, aviation, and other military plants, were begun in the years 1930 to 1932, and rarely between 1933 and 1940. From 1941 to 1945 there was an increasing amount of construction behind the Urals. Construction starts bore little relationship to the dates specified in the various Five-Year Plans, and, as is already known, construction often dragged on for years after planned completion. The plans were therefore a propaganda facade, completely misleading in the quest for an understanding of the real dynamics of Soviet growth.[3]

The actual chronology of Soviet growth between 1930 and 1945 is outlined and related to the official plans and Naum Jasny's parallel conclusions in figure 22–1.

[2] See, for example, *Tekhnicheskii progress v chernoi metallurgii SSSR* (Moscow: 1962), p. 6.

[3] Naum Jasny made a similar suggestion. See p. 342.

Fig. 22–1 CHRONOLOGICAL RELATIONSHIP BETWEEN OFFICIAL SOVIET PLANS, JASNY'S 'MAJOR STAGES,' AND TECHNOLOGICAL TRANSFERS



Sources: Official Soviet Plans. Naum Jasny, *Soviet Industrialization 1928–1952* (Chicago: University of Chicago Press, 1961), p. 13.
Note: Dotted lines in the 'Official Soviet Plans' indicate the terminal date of an original plan, later modified.

In brief, the year 1930 advanced the Soviets along a road begun 50 years earlier under the tsars.[4] There were numerous ineffective construction starts between about 1926 and mid-1929; this observation leads to the 'inability hypothesis.'[5] In the summer and fall of 1929, many wide-ranging technical assistance agreements were concluded with foreign firms. American engineers began arriving on site toward the end of the year. The fundamental construction agreement was that made in February of 1930 with Albert Kahn, Inc., of Detroit, builders of the Ford River Rouge, General Motors, Packard, and other large plants in the United States. The Kahn group undertook design, architectural, and engineering work for all heavy and light industrial units projected by Gosplan. Kahn's chief engineer in the U.S.S.R., Scrymgoeur, was chairman of the Vesenkha building committee.[6]

The units designed and started in 1929–32 were of truly gigantic size—usually far larger than units designed and built by the same construction firms in the rest of the world and, in addition, combining separate shops or plants for the manufacture of inputs and spare parts. The Urals Elmash combinat multiplied Soviet electrical equipment manufacturing capacity by a factor of seven; the KHEMZ at Kharkov, designed by the General Electric Company, had a turbine-manufacturing capacity two and one-half times greater than the main G. E. Schenectady plant; and Magnitogorsk, a replica of the U.S. Steel plant at Gary, Indiana, was the largest iron and steel plant in the world. When the Soviets claim these units are the 'largest in the world' they do not exaggerate; it would of course be impolitic of them to emphasize their Western origins.

Although design and layout during this period was American, probably one-half of the equipment installed was German. Of this, a large amount was manufactured in Germany to American design on Soviet account. In quantity, American-built equipment was probably second and British third.[7] Some sectors owed a great deal to other European countries; cement mills were largely from one firm in Denmark, ball bearings from one firm in Italy and another in Sweden, small ships from Italy, and aluminum technology from a French company.

In two years, then, there was a massive infusion of foreign technology, foreign engineers, and foreign equipment. Most of these engineers had gone by mid-1932, but they left behind standard designs based on Western models

[4] The Foss Collection at the Hoover Institution illustrates the comparatively advanced nature of tsarist industry.

[5] See pp. 284–6.

[6] See p. 250. A dozen Soviet plants were designed in Detroit in 1929 before the Kahn group went to the U.S.S.R.

[7] Before 1932–3 Soviet-made equipment was rare.

and enormous manufacturing capacity. This gigantic capacity to produce simplified standard designs was by no means fully in operation by 1933; the rest of the decade was required to master the new processes, install all the equipment, train workers, bring the subsidiary plants into phase with the main plants (a major headache), and expand operations.

First priority was given to the military departments in each of the new plants. Much of the original drive behind industrialization had been military. This goal was clearly stated in 1929 by Unashlicht, Vice President of the Revolutionary Military Soviet:

> We must try to ensure that industry can as quickly as possible be adapted to serving military needs . . . [therefore,] it is necessary to carefully structure the Five-Year Plan for maximum co-operation and interrelationship between military and civilian industry. It is necessary to plan for duplication of technological processes and absorb foreign assistance . . . such are the fundamental objectives.[8]

The requirement for interrelationship was achieved quite simply by establishing a department devoted to military products in every new works; thus every plant built in this period was producing at the same time civilian and military equipment, although the military requirements took first priority.[9] The writer has little evidence at hand, but it is possible that many of the production problems of the 1930s were caused by diversion of the best in Russian talent and materials to the military departments in each plant. It is ironic, from the Western viewpoint, that contracts viewed as serving the cause of world peace (Henry Ford, for example, elected to build the Gorki plant to advance peace) should have been utilized immediately for military end-uses.[10]

Production increases between 1933 and 1940 were not, except for petroleum refining, wood distillation, and a couple of other sectors, obtained by building new plants but by increasing the output of plants built by Western companies in 1930–3. In 1941 there were still only four large tractor plants: Putilovets Stalingrad, Kharkov, and Chelyabinsk (the Altai Tractor Plant opened in 1944, utilized equipment mostly evacuated from Kharkov); still only three major automobile-truck plants (Moscow, Yaroslavl and Gorki); and still only two giant machine-building plants (Kramatorsk and Uralmash). When units were built after 1932–3 they were subsidiary to the giants of the early 1930s. These important facts are obscured by the chronology of the Five-Year Plans.

[8] *Pravda*, No. 98, April 28, 1929.

[9] Search of the OKW files fails to reveal a single plant in 1937–8 that was not devoting part of its capacity to war purposes. The German intelligence lists of plants producing war equipment were at the same time, in fact, comprehensive lists of all Soviet plants.

[10] For a contemporary example, one might consider the intention announced by President Johnson to supply American equipment to the Togliatti automobile plant in the U.S.S.R. in 1966–8.

Those major new units built from 1936 to 1940 (except military plants) were again planned and constructed by Western companies. This second era has been much less publicized, but the State Department files do contain information on these contracts. Petroleum-cracking, particularly for avgas, was one such sector; all refineries in the Second Baku and elsewhere were built by Universal Oil Products, Badger Corporation, Lummus Company, Petroleum Engineering Corporation, Alco Products, McKee Corporation, and Kellogg Company. Advanced steel-rolling mills were supplied under the United Engineering agreement, and in 1938–9 the Tube Reducing Company installed a modern tube mill at Nikopol and supplied equipment for another. In 1937 the Vultee Corporation built an aircraft plant outside Moscow. These and similar agreements in half a dozen sectors ran from about 1936 to 1940 with few public news releases.

In 1940 as a reaction to the Nazi-Soviet agreement and the subsequent attack on Finland, assistance from the United States tapered off. The Nazi-Soviet pact replaced this assistance and gave another boost to the Soviet economy. The agreement makes specific reference to imports of German machinery; Soviet want lists emphasized modern machine tools, and the Germans, it would appear from the Hauptarchiv, had problems in designing, producing, and shipping the desired large quantities of advanced equipment. The Soviets kept well ahead on their raw-material deliveries, but German firms were consistently late in their machine-tool deliveries. German occupation of Czechoslovakia was indirectly beneficial to the Soviet Union, as large shipments of Czech machine tools were then channeled to the U.S.S.R.

The real bonanza was Lend-Lease; about one-half the equipment supplied under the master agreements had reconstruction potential; Nutter estimates it equalled one-third of Soviet pre-war industrial output.[11] These deliveries continued under the little-known 'pipeline agreement' of October 1945, so that Lend-Lease supplies actually continued through 1947. There is no question that the Soviets ended World War II with greater industrial capacity than in 1940—in spite of the war damage—and on a technical parity with the United States.[12]

Finally, another source of both increased capacity and technology was the World War II reparations agreements, in which the emphasis was on capital transfers, of which the Soviets received the lion's share. Germany (both zones), Austria, Manchuria, Finland, Rumania, Hungary, Italy, and other countries made a heavy contribution to the Soviet economy. This flow extended from

[11] G. Warren Nutter, *op. cit.*, p. 214.

[12] There are, however, State Department memoranda which minimize the technical flow under Lend-Lease.

1944 to 1955 and will be covered in the next volume.[13]

Growth between 1930 and 1945 was therefore uneven in part because it depended upon flows from the West and, indirectly, upon temporary detentes and changing political conditions. Looking at the picture as a whole, there were two massive injections of Western technology and capacity, in the periods 1930–3 and 1943–5. Even given the extensive destruction of World War II, and assuming that 25 percent of the Soviet economy was destroyed, the Soviets were far better off in terms of both capacity and technology by 1946 than before the war. Destroyed facilities were more than replaced by reparations and Lend-Lease, and, more importantly, replaced with equipment 10 to 15 years more advanced.

No major technology or major plant under construction between 1930 and 1945 has been identified as a purely Soviet effort. No usable technology originated in Soviet laboratories except in the case of synthetic rubber, and this was not up to U.S. standards in 1941. Equipment and processes transferred from the West were sufficient to fulfill *general* Soviet production claims, although their *annual* claims *are* doubtful. Acquisition of capacity and knowledge was slow and painful. There were major production and quality problems; there were problems with unskilled labor; machinery was abused; and the concept of rigid central planning in this period may itself have been contra-developmental.[14] The almost universal image of rapid development via Soviet central planning crumbles when we are confronted with the evidence. There is an obvious necessity to re-examine our assumptions concerning Soviet development in the light of the argument made in this study. On the other hand, it is to Soviet credit that they recognized the potent force of technology, identified its origins, and ruthlessly harnessed it to their own programs.

Although this requirement for assistance and technology from capitalist countries was recognized at an early date, the quantity required and the continuing nature of the demand for transfer over a long period were underestimated even by the Soviets. This is reflected in the 'inability hypothesis.' Rykov and others warned in 1929 that 'such measures as engaging only a hundred or two foreign specialists cannot solve the problem. . . .'[15] Once the

[13] See p. 138 for Manchurian machine tool reparations.

[14] If the reader doubts the assertion that central planning can be contra-developmental, the case of Japan, in relation to the U.S.S.R. and Communist China, should be examined. Using a more or less free-enterprise system, the Japanese at first copied freely and then forged ahead on their own. Today (1968) the Soviet Union is going to Japan for technical assistance, although tsarist Russia was technologically ahead of Japan in 1880–90. The comparison of Communist China and Japan is even more illuminating.

[15] *Pravda*, No. 94, April 24, 1929.

Party became convinced of the necessity for complete infusion of foreign technology and placed its weight behind the transfer, the acquisition process became extraordinarily efficient and highly effective. Indeed, Soviet engineers have from time to time admitted as much. A one-time manager of Gipromez, Zaviniagin, has stated:

> How have the Soviet engineers benefited from cooperation with Americans? It is not immodest to say that they successfully went through an American school and with the knowledge acquired they are carrying out in our metallurgy the last word in American technique which has been derived from many years of experience. . . .[16]

If our argument for technological transfer as a prime explanation for Soviet growth is accepted, then other observations on the Soviet enigma begin to fall into place. Why, for example, increasing censorship? Why the travel bans? Why a moon trip while the domestic Soviet automobile stock is less than that of the Argentine?

Prior to 1932, descriptions of Western assistance activities can be found in Soviet sources; most of this study could at least have been outlined from Soviet sources alone. Then came the enigma of increasing censorship and the claims of spectacular economic advances. After 1932 Soviet sources are of little use and other sources must be used; thus construction of the Second Baku refineries by American companies in 1937–41 is censored in Soviet literature and hardly noted in open Western sources.

Continuous Soviet industrial espionage on a world-wide scale—in itself a subject overdue for extensive treatment—is another enigma. Soviet engineers, scientists, planners, and Party members at home and abroad have an insatiable curiosity and well-developed techniques for gaining information on all aspects of Western technology. The observation may be superficial, but it sometimes appears that the Soviets are more interested in the latest American industrial processes than in the number or sizes of our missiles or tanks. From the Soviet viewpoint, the industrial vigor of the United States is as much an enigma as any Western question over Soviet tactics. Thus economic censorship, industrial espionage, the placing of Soviet industrial plants 'off limits,' the continuing objections to specific plant visits ('under repair,' 'the bridge is out,' and so on), the establishment of 'show place' farms (where the crèches are the most-inspected units): these phenomena are explainable within the context of our argument. Free access to all industrial units throughout the Soviet Union by foreign observers would reduce the Western view of a more or less vigorous socialist technical progress to that of widespread industrial backwardness

[16] A. Zaviniagin, 'U.S.S.R. Favors American Engineers and Equipment,' *Freyn Design*, No. 11, March 1934, p. 19. This statement is consistent with those of American engineers working for Gipromez; see pp. 62–4.

(despite extensive use of Western methods and equipment) with pockets of simulated efficiency provided for foreigners. This widespread backwardness is not inconsistent with high rates of growth in many sectors of Soviet industry. Foreign technological efforts have been concentrated in sectors capable of rapid expansion (iron and steel, electricity generation) by use of simplified standardized technology. Furthermore, output in quantitative terms suggests very little about industrial or economic efficiency.

The threads of our empirical examination are pulled together in chapter twenty-one and provide the general conclusion that the greater the foreign technical assistance to a specific Soviet sector, the greater its annual average rate of growth during the period between 1928 and 1945 and beyond. Turbines, bicycles, tires, and machine-tools were the manufacturing sectors with the highest growth rates. Consumer industries such as flour manufacture and mechanical sectors such as steam locomotives received less technical assistance from abroad, and these sectors had the lowest growth rates. Considerable detail in this and the previous volume suggests these relationships are causal.

The years 1944–5 form a natural break in our discussion. Technical transfers continued after this time, as the Soviets continued to struggle for indigenous innovation, but in more varied and complex forms. Whereas concessions were the prime transfer vehicles for the period 1917–30 and technical-assistance agreements from 1930 to 1945, the method of transfer changed considerably after World War II.

APPENDIX A

Technical-Assistance Agreement Between W. L. Gorton and Sredazvodhoz, February 6, 1930

AGREEMENT MADE this sixth day of February 1930, by and between SOVIET UNION MIDDLE ASIAN WATER ECONOMY SERVICE, an organization of U.S.S.R. hereinafter called 'SREDAZVODHOZ' and W. L. Gorton of Boise, Idaho, hereinafter called 'GORTON'.

WITNESSETH

WHEREAS, Sredazvodhoz is desirous of employing the services of said Gorton in capacity of a Construction Engineer for work in Turkestan, U.S.S.R. and

WHEREAS, said Gorton is desirous of rendering his services to Sredazvodhoz in the hereinbefore described capacity,

Now, THEREFORE, the parties hereto agree as follows:

1. Sredazvodhoz agrees to employ the services of said Gorton in the capacity of Construction Engineer for the period of time as hereinafter provided, at the compensation of ONE THOUSAND DOLLARS ($1000.00) per month, payable monthly, on the first day of each calendar month, it being understood that SIX HUNDRED DOLLARS ($600.00) per month, lawful money of the United States of America, that is to say, Sixty percent (60%) of said monthly compensation, shall be deposited, to the credit of said Gorton, in a bank located in the United States of America, the name and location of said bank to be designated, in writing, by said Gorton. The remaining FOUR HUNDRED DOLLARS ($400.00) per month, that is to say, Forty percent (40%) of said monthly compensation, is to be paid in U.S.S.R. currency at the official rate of exchange then prevailing.

2. Said Gorton agrees to perform necessary construction work for Sredazvodhoz in Turkestan to the best of his ability and knowledge and in accordance with instructions of Sredazvodhoz and whenever not needed for services in

Turkestan, Gorton shall be available for assignment to construction work at any point within the jurisdiction of Sredazvodhoz.

3. It is further understood and agreed that all reports, designs, drawings as well as any other information prepared by Gorton in accordance with the performance of his duties, shall be deemed the property of Sredazvodhoz, and shall not be disclosed by said Gorton directly or indirectly to any third party or parties, or published without a written consent of Sredazvodhoz expressly given therefor.

4. Said Gorton agrees to depart from Boise, Idaho for U.S.S.R. not later than March 6, 1930, and to proceed directly to Tashkent, Turkestan and to report for duty to Sredazvodhoz immediately upon arrival.

5. Sredazvodhoz agrees to pay for actual reasonable traveling expenses of said Gorton for the entire trip each way, as well as second class steamer and railroad transportation from Boise, Idaho, U.S.A. to Tashkent U.S.S.R. and return upon expiration of the term of this agreement or its termination prior thereto, it being understood that the transportation and traveling expenses each way shall not exceed the amount of Five Hundred Dollars ($500).

6. Sredazvodhoz agrees to pay actual cost of railroad tickets, hotels and a lump sum of 10 roubles (10R.) a day for living expenses in case said Gorton is traveling in U.S.S.R. in accordance with the instructions of the administration of Sredazvodhoz.

7. Sredazvodhoz agrees to furnish said Gorton, during the time of his employment as herein provided, living quarters in the city of Tashkent, without cost to Gorton, of a character similar to living quarters used by others occupying a position similar to that occupied by said Gorton.

8. It is understood that said Gorton shall pay income tax levied in U.S.S.R., it being understood that Sredazvodhoz shall pay for and on behalf of said Gorton the difference between the amount of income tax required under the laws of U.S.S.R. and the amount of income tax which would be required at the rate existing under the laws of U.S.A.

9. Said Gorton shall abide by the laws existing in U.S.S.R. as well as by all the rules and regulations issued by Sredazvodhoz.

10. The term of employment of said Gorton shall be two years beginning with the date of departure of said Gorton from Boise, Idaho, to Tashkent, U.S.S.R.

11. Said Gorton shall have vacation consisting of two weeks during each year of his employment by Sredazvodhoz, full salary to be paid to him during such vacation.

12. Said Gorton agrees that he will not, while in the employ of Sredazvodhoz accept work from or perform services for any other enterprise or organization without consent of Sredazvodhoz expressly given in writing.

13. Sredazvodhoz shall have the right to terminate this agreement at any time in case of any contingencies beyond control of Sredazvodhoz or in case of prolonged illness of said Gorton, it being understood that Sredazvodhoz shall pay the return trip of said Gorton from U.S.S.R. to U.S.A.

14. In case said Gorton proves himself to be grossly incompetent or negligent in the performance of his duties hereunder, Sredazvodhoz shall have the right to terminate this agreement, it being understood that in such case Sredazvodhoz shall not pay for the return trip of said Gorton from U.S.S.R. to U.S.A.

15. Any differences arising between the parties to this agreement shall be settled by the court of U.S.S.R.

IN WITNESS WHEREOF, Soviet Union Middle Asian Water Economy Service has caused this instrument to be executed by Amtorg Trading Corporation, 261 Fifth Avenue, New York, its duly authorized representative, and the said Gorton has hereunto set his hand the day and year first above written.

SOVIET UNION MIDDLE ASIAN WATER ECONOMY SERVICE

BY: Amtorg Trading Corporation

BY: A. C. Mamaeff

W. L. Gorton

Source: Willard L. Gorton Special Collection at Hoover Institution, Stanford University.

APPENDIX B

Technical-Assistance Agreement Between Vsekhimprom and Nitrogen Engineering Corporation

CONTRACT

BETWEEN STATE TRUST OF ALL THE UNION CHEMICAL INDUSTRIES 'VSEKHIMPROM' AND NITROGEN ENGINEERING CORPORATION, JUNE 29, 1931

ON this............day of............, 1931 we, the undersigned STATE TRUST OF ALL THE UNION CHEMICAL INDUSTRIES 'VSEKHIMPROM', the legal successor to the STATE COMPANY FOR THE CONSTRUCTION OF CHEMICAL APPARATUS 'KHIMSTROI', hereinafter referred to as VSEKHIMPROM and represented by *J. L. Piatakoff (President)* of the one part, and NITROGEN ENGINEERING CORPORATION, incorporated under the laws of the State of New York in the United States of America, hereinafter called 'NITROGEN' and represented by *Frederick Pope (President)* of the other part, hereby agree to the following:

I. THE SUBJECT MATTER OF THE AGREEMENT

PAR. 1. KHIMSTROI and NITROGEN have heretofore, on or about the 11th of November 1928, entered into a written agreement, providing, among other things, for the erection and putting into operation, under NITROGEN's technical advice and direction, of a plant or plants for producing synthetic ammonia within the territory of USSR, and the grant to KHIMSTROI by NITROGEN of the right to use within such territory the methods, principles and processes of NITROGEN for the construction and operation of such plants, on the terms and conditions set forth in said written agreement; and under said written agreement NITROGEN is now engineering for VSEKHIMPROM an initial plant for the production of synthetic ammonia, located at Berezniki in the Province of Perm.

PAR. 2. VSEKHIMPROM is contemplating the construction of additional plants for the production of synthetic ammonia, and may hereafter desire to

construct further plants, in connection with which NITROGEN, under the terms of said written agreement, is now obligated to render engineering service to VSEKHIMPROM, and Vsekhimprom is now obligated to employ and pay NITROGEN therefor.

PAR. 3. It is the desire of the parties hereto that the terms and conditions of the aforesaid written agreement of November 11, 1928, shall, so far as they relate to such additional plants and further plants, be modified in certain respects as hereinafter set forth.

II. WAIVER OF RIGHTS AND RELEASE OF OBLIGATION

PAR. 4. Except as hereinafter provided, NITROGEN waives any and all rights which it now has, or may hereafter have with respect to such additional and further plants, under said written agreement with KHIMSTROI, and KHIMSTROI and VSEKHIMPROM and NITROGEN hereby mutually release and discharge each other of any and all oblgations with respect to such additional and further plants, arising under said written agreement of November 11, 1928. Nothing herein contained, however, shall constitute a waiver or release of any rights or obligations with respect to said initial plant.

III. GRANT OF RIGHTS

PAR. 5. Subject to the payment of the fees and the performance of the conditions hereinafter provided, NITROGEN hereby grants to VSEKHIMPROM the exclusive rights in perpetuity for VSEKHIMPROM within the territory of USSR to build, extend, operate and transfer for operations in other state enterprises, chemical plants for the manufacture of synthetic ammonia, according to the methods, principles and processes of NITROGEN.

PAR. 6. For five years from effective date hereof NITROGEN shall assign to VSEKHIMPROM any and all patents or reserved rights in USSR covering methods or apparatus for the manufacture of synthetic ammonia said patents and reserved rights to be transferred to VSEKHIMPROM for the full period for which they are valid.

PAR. 7. NITROGEN and VSEKHIMPROM mutually agree to inform each other forthwith, without request, of all technical improvements and inventions achieved by them, or which they have learned and are free to disclose, relating to the manufacture of synthetic ammonia, to the end that VSEKHIMPROM in the territory of USSR and NITROGEN in other parts of the world, may be enabled to make use of such improvements in plants which they design, install and/or operate. NITROGEN and VSEKHIMPROM further mutually agree to deliver to each other detailed drawings, schemes, specifications and calculations such as may

be in their possession. This obligation to exchange information regarding technical improvements shall continue for a period of five years from the effective date of this agreement.

IV. CONSULTATION, TECHNICAL AND ENGINEERING SERVICES

PAR. 8. NITROGEN shall render to VSEKHIMPROM, as herein provided, consultation, technical and engineering services to assist VSEKHIMPROM in projecting, constructing, installing and placing in operation synthetic ammonia plants within the territory of USSR. Such consultation, technical and engineering services shall be based upon the best methods and principles which are or may be at the disposal of NITROGEN.

PAR. 9. It is understood that VSEKHIMPROM shall have in its employ or at its disposal a competent and ample staff of engineers and competent forces of skilled and ordinary workmen for carrying out the projects and that the obligation of NITROGEN shall be to supply the special technical knowledge and information relating to the design, installation and production of synthetic ammonia plants according to its methods and processes. Nitrogen shall freely render to VSEKHIMPROM advice and assistance, when requested by VSEKHIMPROM, in the selection and employment by VSEKHIMPROM of competent engineers of general technical training and of skilled workmen, so far as VSEKHIMPROM shall desire to employ persons of other than Russian nationality, but such engineers and skilled workmen shall be solely employed by and responsible to VSEKHIMPROM, and NITROGEN assumes no responsibility regarding their work or the continuance of their employment. It is intended that the consultation, technical and engineering services rendered by NITROGEN for the assistance of VSEKHIMPROM shall be sufficient to enable a competent technical organization under the direction of VSEKHIMPROM to project, construct, install and operate synthetic ammonia plants.

PAR. 10. As soon as practicable, and in any event within forty days after the effective date of this Agreement, NITROGEN shall forward by mail or by personal messenger to VSEKHIMPROM five copies each of all drawings now possessed by it indicating its latest developments in the synthesis of ammonia from water gas, coke oven gas, natural gas, electrolytic hydrogen or other sources of raw material, together with explanation as to the purpose and capacity of the apparatus or equipment shown on each drawing and the operating results which have been achieved. Similarly, NITROGEN shall deliver to VSEKHIMPROM five copies of each of all future drawings of equipment or apparatus pertaining to ammonia synthesis which shall be made by NITROGEN within a period of five years from the date of this Agreement. NITROGEN shall

deliver to VSEKHIMPROM all such technical and construction calculations as NITROGEN deems necessary and will upon the request of VSEKHIMPROM deliver to them other calculations useful for their purposes, if such calculations are then in the possession of NITROGEN, NITROGEN further will assist, as far as is reasonable, the engineers of VSEKHIMPROM in becoming familiar with such calculations. It is understood that the drawings referred to in this paragraph include only those which indicate the latest developments, and do not include obsolete or preliminary drawings and sketches or any drawings or sketches of special equipment made for other clients which are confidential and which NITROGEN has no right to disclose. It is further understood that the drawings referred to in this paragraph do not include drawings covering details which have been covered by drawings already delivered to KHIMSTROI under the terms of the aforesaid agreement entered into on or about the eleventh day of November, 1928. A list of such drawings as are now available for delivery to VSEKHIMPROM under this paragraph is attached hereto marked 'Exhibit A'.

PAR. 11. As soon as practicable, and in any event within forty days after the effective date of this Agreement, NITROGEN shall forward by mail or by personal messenger to VSEKHIMPROM a copy of its specifications for the purchase and manufacture of equipment and apparatus for use in the manufacture of synthetic ammonia, and NITROGEN shall similarly forward to VSEKHIMPROM copies of future specifications relating to such equipment and apparatus. It is understood that the specifications referred to in this paragraph do not include duplicates or specifications already furnished by NITROGEN to VSEKHIMPROM under the terms of the aforesaid agreement entered into on or about the eleventh day of November 1928, nor do they include specifications of special equipment for other clients which are confidential and which NITROGEN has no right to disclose. A list of the specifications now available to be furnished to VSEKHIMPROM is attached hereto marked 'Exhibit B'.

PAR. 12. NITROGEN shall forward by mail or by personal messenger to VSEKHIMPROM detailed drawings and/or specifications, instructions and formulae for the preparation of all solutions, catalysts, etc., necessary for the synthesis of ammonia according to the methods and processes of NITROGEN, including all improvements and changes in such instructions and formulae made by NITROGEN within the period of five years from the effective date of this Agreement that are applicable to the plants constructed by KHIMSTROI under this agreement, and VSEKHIMPROM may during this same period send engineers to visit any factory owned by NITROGEN making catalysts, when such plant is operating.

PAR. 13. NITROGEN shall forward by mail or by personal messenger to VSEKHIMPROM detailed written instructions for the use of its technical staff in

starting and operating the synthetic ammonia plants and all departments thereof constructed by VSEKHIMPROM under this Agreement, and shall inform VSEKHIMPROM of all improvements made by NITROGEN within the period of five years from the effective date of this Agreement in methods of operation of synthetic ammonia plants so far as such improvements are applicable to the plants constructed by VSEKHIMPROM under this Agreement.

PAR. 14. During the period of five years commencing with the effective date of this Agreement, NITROGEN shall, whenever requested by VSEKHIMPROM, and with reasonable promptness, prepare and deliver to VSEKHIMPROM in Moscow (or, at the option of VSEKHIMPROM, to its representative in New York or at the office of NITROGEN in Europe):

(a) Plans, specifications, and drawings of such scale and completeness as VSEKHIMPROM requests for the installation by VSEKHIMPROM of additional plants within the territory of USSR for the manufacture of synthetic ammonia according to the methods and processes of NITROGEN.

(b) Estimates and calculations of costs of such plants and costs of production of synthetic ammonia in such plants.

(c) Projects, the substance and scope of which is shown in Exhibit C. A preliminary project is to be mailed from NITROGEN's office not later than eight weeks after the acknowledgment by NITROGEN of receipt of all necessary information. A final project is to be mailed from NITROGEN's office—complete only in its major parts—not later than six months after receipt by NITROGEN of information of acceptance of corresponding preliminary project. The rest of the final project is to be mailed from NITROGEN's office thirty days after acknowledgment by NITROGEN of receipt of all necessary information therefor.

Such plans, specifications, drawings and estimates shall be in such detail and shall be accompanied by such explanatory notes as shall be requested by VSEKHIMPROM and NITROGEN is able to prepare required for the proper planning and execution of the projects. At the request of VSEKHIMPROM, NITROTEN shall send to USSR such number of engineers as in the judgment of NITROGEN shall be necessary to explain such plans, specifications, drawings and estimates, and to take part in the defence of the projects when such projects come up for consideration before the USSR Government authorities. VSEKHIMPROM may at its option and at its own expense send its own engineers to take part in the preparation of such plans, specifications, drawings and estimates, and to inform NITROGEN regarding local conditions which will affect the building and installation of the plants.

PAR. 15. During the period of five years from the effective date of this Agreement NITROGEN shall, when requested by VSEKHIMPROM, and in the

manner and to the extent in this paragraph provided, place at the disposal of VSEKHIMPROM skilled and experienced engineers for advice, competent instruction and consultation, either in the offices of NITROGEN New York or Europe, or in USSR, or elsewhere as VSEKHIMPROM may elect.

(a) VSEKHIMPROM may notify NITROGEN in writing at any time, and from time to time, of its desire to have the services of any number of Engineers of the Engineering Staff of NITROGEN up to a total of three such Engineers for any specified days in a period of twelve months commencing, so far as one Engineer is concerned, thirty days after receipt by NITROGEN at its New York office of such written notice, and so far as two other Engineers are concerned commencing three months after receipt of such written notice by NITROGEN at its New York office. Thereupon, NITROGEN shall be required to make available to VSEKHIMPROM the services of such number of engineers for such days, within the aforesaid period of twelve months, and VSEKHIMPROM shall be obliged to pay Nitrogen for the services of such engineers the remuneration provided in paragraph 17 hereof in twelve equal installments payable on the first day of each month of such period of twelve months. In giving such written notice to NITROGEN, VSEKHIMPROM shall state as definitely as possible the nature of the consultation and advice required of such engineers in order that NITROGEN may select for this purpose the engineers properly qualified to render such advice and consultation.

(b) Additional engineers may be furnished to VSEKHIMPROM by NITROGEN in accordance with agreement that may be made from time to time by the parties hereto and for remuneration as provided in paragraph 17 hereof; and regardless of any such agreement, NITROGEN shall use its best endeavours to make available its engineers to render advice and consultation to VSEKHIMPROM to the full extent desired by VSEKHIMPROM.

(c) For advice and consultation services rendered by NITROGEN to VSEKHIMPROM in the office of NITROGEN in New York or Europe or in USSR up to a total of 300 engineer days in any one year, and in addition thereto 200 engineer days in any one year, only in the offices of NITROGEN in New York or Europe, no charge shall be made by NITROGEN. It is understood, however, that for such consultation and advice in its own offices, without remuneration therefor, NITROGEN shall not be obligated to have its skilled engineers available at any particular time but shall be free to make agreements with other clients which might at various periods require the services of such engineers.

PAR. 16. During the five years from the effective date of this Agreement, NITROGEN shall, at the request of VSEKHIMPROM, send to USSR skilled engineers capable of interpreting plans, inspecting work, and advising the representatives of VSEKHIMPROM in charge of the construction, installation and operation of

such additional plants, in order to assist such representatives of VSEKHIMPROM, provided, however, that NITROGEN's obligation to have such engineers available for such purpose shall for any period be limited to and included within the number of engineers that VSEKHIMPROM shall have notified NITROGEN it requires, as provided in paragraph 15 thereof. Additional engineering service of the character provided for in this paragraph may be furnished by NITROGEN to VSEKHIMPROM in accordance with agreement that may be made from time to time by the parties hereto, and NITROGEN shall at all times use its best endeavours to supply such engineering service to VSEKHIMPROM so far as it can make its skilled engineers available for such purpose.

V. REMUNERATION

PAR. 17. VSEKHIMPROM shall pay to NITROGEN for the rights and technical services to be rendered by NITROGEN to VSEKHIMPROM as herein provided, the following sums in United States Gold Dollars in New York City:

(a) Eighty Thousand dollars ($80,000) within thirty days after the effective date of this agreement.

(b) Eighty Thousand dollars ($80,000) on January 1st, 1932, or in the event that the plant now building at Berezniki is completed before that date then this payment must be made within five (5) days of such completion.

(c) Sixty thousand dollars ($60,000) one year after the effective date of this agreement.

(d) Sixty thousand dollars ($60,000) two years after the effective date of this agreement.

(e) Sixty thousand dollars ($60,000) three years after the effective date of this agreement.

(f) Sixty thousand dollars ($60,000) four years after the effective date of this agreement.

(g) Fifty dollars ($50.00) per engineer day, this is per engineer per day, for all engineers furnished by NITROGEN to VSEKHIMPROM at the request of VSEKHIMPROM, as provided in paragraphs 14, 15 and 16 hereof, except for such engineers as are furnished at no per diem cost as specified in paragraph 15, sub paragraph (c), together with the travelling and living expenses of such engineers when their services are required away from the offices of NITROGEN. The engineer days referred to herein shall include the time occupied in travelling from the offices of NITROGEN or from such other points as may be designated by NITROGEN in case such engineers are sent to the service of VSEKHIMPROM to such other points, and shall include all the days until such engineers can return to the points from which they left to

go to the service of VSEKHIMPROM. The travel of engineers to and from the service of VSEKHIMPROM shall be by the quickest and most direct transportation, other than air transport, affording first-class accommodations.

(h) For the service, expenses and material consumed by draughtsmen of NITROGEN in preparation of plans, specifications, and drawings and for the other services provided in paragraph 14, hereof, the actual cost of draughtsmen to NITROGEN plus 100% (one hundred percent) for overhead.

(i) The remuneration provided in sub-paragraphs (g) and (h) hereof shall be payable upon rendering of bills therefor by NITROGEN, except to the extent that payment monthly in advance is provided by paragraph 15 hereof. Such bills shall be rendered by NITROGEN to VSEKHIMPROM monthly.

IV.* LIVING AND WORKING CONDITIONS OF NITROGEN EMPLOYEES

PAR. 18. VSEKHIMPROM shall be responsible to NITROGEN for furnishing to the engineers and representatives of NITROGEN when engaged in work in behalf of VSEKHIMPROM in USSR:

(a) First-class lodging and subsistence, or in Moscow only equivalent cash allowance therefor, equal to that furnished or available to the highest grade non-Russian technical men employed or residing in USSR, in addition suitable office accommodation and equipment shall be provided,—all of which shall be for the sole and exclusive use of such employees and be conveniently adjacent to the point at which the services of such engineers are required by VSEKHIMPROM; and private automotive transportation between place or lodging and place of work, as requested from time to time by such engineers.

(b) First-class medical and surgical and/or hospital services and medical supplied for any sickness, accident and/or disability suffered by such engineers and representatives from any cause whatsoever while in USSR. In case of disease acquired before entering the USSR, but developing only thereafter this paragraph shall be in full force and effect, but the entire expense thereof shall be a charge against NITROGEN.

(c) VSEKHIMPROM agrees to provide such engineers and representatives with a properly authenticated letter stating that he is visiting USSR at the request of VSEKHIMPROM and asking representatives of the Government to aid him wherever possible and to facilitate his compliance with all formalities especially those of entrance and exit to and from the USSR.

(d) VSEKHIMPROM agrees to do all possible to facilitate the importation of, and to pay all customs duties, fees, and/or other charges collected by the USSR on:

* Beginning this section, document misnumbered in original.

1) All equipment necessary to such engineers in the performance of their duties such as drawings, books, instruments, and
2) clothing, medicines and personal articles reasonable required by such engineers, and
3) amounts of food, all not exceeding the maximum specified in list B attached hereto.
4) Also additional amounts of any of the above for the personal use of such engineers, should such be necessary to retain the services of such engineers.

VSEKHIMPROM agrees also to do all possible to facilitate the export of any records and any of the above-mentioned things except food and to indemnify NITROGEN against loss or damage of such property and equipment, whether the property of NITROGEN or its Employees whilst in transit in USSR, and will at the time of export provide a letter duly authenticated to facilitate such export.

(e) The rights granted to NITROGEN in paragraph 18 and applicable to its engineers under these warranties shall constitute warranties to NITROGEN and shall extend to all representatives of NITROGEN.

PAR. 19. VSEKHIMPROM agrees to reimburse NITROGEN and/or NITROGEN's engineers, within ten days after receipt of claim for any expenses incurred by NITROGEN and/or NITROGEN's engineers due to failure of VSEKHIMPROM to supply any of the services and/or facilities specified in the preceding paragraph and specifically authorizes NITROGEN and/or NITROGEN's engineers to incur such expenses immediately and without any notification in the event of such failure on the part of VSEKHIMPROM.

PAR. 20. All engineers and/or employees sent into USSR under this agreement by NITROGEN are employees of NITROGEN and not of VSEKHIMPROM, and VSEKHIMPROM shall not pay any remuneration to said engineers.

PAR. 21. NITROGEN shall have the right at any time to withdraw any particular engineer from USSR and replace such engineer with another engineer, but only in unusual cases shall such withdrawal take place until the arrival of a substitute. But the traveling and living expenses incurred as the result of any such withdrawal and/or replacement at the instance of NITROGEN shall be borne by NITROGEN. VSEKHIMPROM may require the withdrawal and/or replacement within a reasonable time of any engineer, and NITROGEN will agree thereto, but such withdrawal and replacement shall be at VSEKHIMPROM's expense unless NITROGEN agrees, on submission by VSEKHIMPROM of a statement of reasons for such requirement, that such withdrawal and replacement is necessary for the fulfilment of NITROGEN's obligations under this Agreement.

PAR. 22. VSEKHIMPROM assumes and will pay or will reimburse NITROGEN or its engineers and/or representatives, if any of its engineers and/or representatives have paid any taxes and/or other obligatory expenditures specified by the laws of USSR of the engineers and/or other representatives of NITROGEN while in USSR.

V. PERIOD OF OPERATION OF AGREEMENT

PAR. 23. The period of operation of this Agreement is fixed at five years counting from the date of its making, provided, however, that where rights are specificially granted for a longer period, such rights shall not terminate with the expiration of the agreement.

PAR. 24. In case NITROGEN shall be dissolved or amalgamated with some other enterprise, all its rights and obligations under this agreement fully pass on to its successor. In case VSEKHIMPROM shall be dissolved or amalgamated with some other USSR Government enterprise, all such rights and obligations of VSEKHIMPROM under this Agreement pass in their entirety to the State enterprise which shall be designated by the Supreme Council of National Economy of USSR.

VI. FORCE MAJEURE

PAR. 25. If either party is prevented from carrying out the herein contained provisions by reason of any war, civil commotion, epidemic, fire, cyclone, flood, embargo, governmental or physical cause, existing or future, beyond the reasonable control of such party, and interfering with the performance of such party hereunder, the party so interfered with shall be excused from such performance to the extent of such interference during the period thereof; providing, however, that the party so interfered with shall use due diligence and take all reasonable steps to remove the cause or causes preventing it from carrying out its obligations hereunder, and to resume such obligations with all reasonable promptness.

VII. ARBITRATION

PAR. 26. All disputes arising out of the performance and interpretation of the present agreement are settled by the method indicated in the special annex with which the present agreement forms an integral part.

VIII. GENERAL STATEMENTS

PAR. 27. The legal addresses of the parties are: VSEKHIMPROM, Moscow, Diakoff pereulok 4, USSR.

NITROGEN, 535 Fifth Avenue, NEW YORK, U.S.A. Provided, however, that either party may change such legal address by notice in writing to the other party.

PAR. 28. This agreement becomes effective from the date of its sanction by the Supreme Economic Council attached to the Council of People's Commissaries of the Union of S.S.R., such date being referred to herein as 'the effective date,' but unless NITROGEN receives written notice of such sanction within sixty days of the signing of this agreement by NITROGEN, this agreement shall not be binding upon NITROGEN without its separate written assent.

PAR. 29. Taxes of all kinds in connection with the making and operation of the present agreement are to be borne by VSEKHIMPROM.

STATE TRUST OF ALL THE UNION
CHEMICAL INDUSTRIES "VSEKHIMPROM"

WITNESS: *by J. L. Piatakoff*

....

NITROGEN ENGINEERING CORPORATION

by Frederick Pope

WITNESS:

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DATED: Berlin, June 29, 1931.

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APPENDIX C

Technical-Assistance Agreements between the Soviet Union and Western Companies, 1929-45

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Accounting and Tabulating Machine Co.	United States	Power machines
Akron Rubber Reclaiming Co.	United States	Rubber-plant reclamation; training Soviet nationals
Aktiebolaget Vallenbygg-nadsbyran	Sweden	Construction of Svir Dam
Alco Products, Inc. (Div. of American Locomotive)	United States	Petroleum refineries
Allen & Garcia Inc.	United States	Coal mine development
Allgemeine Elektrizitäts Gesellschaft	Germany	Electrical machinery
American Can Co.	United States	Canning processes
Ansaldo	Italy	Shipbuilding
Ansonia Clock Co.	United States	Clocks and watches
Audio-Cinema, Inc.	United States	Sound film technology
Austin Co.	United States	Automobile plant construction; design of Gorki city
Babcock & Wilcox, Inc.	United States	Boiler design
Badger, E. B., & Sons	United States	Wood distillation, oil refineries
Bagley & Sewell Co.	United States	Newsprint manufacture
Baldwin Locomotive Works	United States	Locomotive repair shops
Baltimore & Ohio Railroad	United States	Railroad operations
Birdsboro Steel Foundry & Machine Co.	United States	Hydraulic presses

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Birmingham Small Arms Co.	England	Bicycles
Bliss, E. W., Co.	United States	Power-plant design; small arms ammunition
Blom and Kamroth	United States	Meat-packing plants
Boeing Aircraft Co.	United States	Aircraft
Borsig, A.	Germany	Refrigeration technology
Brandt, Arthur J.	United States	Reconstruction of AMO works
British Thomson-Houston Co., Ltd.	United Kingdom	Power stations
Brown-Boveri Co.	Switzerland	Gas blowers; aluminum mill equipment
Brown Instrument Co.	United States	Electrical recording instruments
Brown-Lipe Gear Co.	United States	Gear manufacture for automobile industry
Bucyrus-Erie Co.	United States	Excavating equipment
Budd Manufacturing Co.	United States	1934 auto model change (21S)
Burd Piston Ring Co.	United States	Tractors
Burrell-Mase Engineering Co.	United States	Expansion and management of Grozneft
Casale Ammonia S.A.	Italy	Nitrogen fixation; manufacture of synthetic ammonia
Caterpillar Tractor Co.	United States	Training Soviet nationals
Cellulose de Bourges	France	Chemicals
Chain Belt Co.	United States	Conveyors
Chase, Frank D., Inc.	United States	Design of foundry projects
Cheretti & Tonfani	Italy	Design and construction of conveyors
Chicago Kitchen Co.	United States	Design of community kitchens
Cie de Produits Chimiques et Electrométallurgiques Alais, Troques et Camargue	France	Aluminum
Clark, Wallace, & Co.	United States	Gantt methods
Cleveland Tractor Co.	United States	Training Soviet nationals
Cooper, H. L., & Co., Inc.	United States	Dniepr Dam
Craven Bros. (Manchester), Ltd.	United Kingdom	Special machine tools

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Curtiss-Wright Corp.	United States	Aircraft engine manufacturing license
Davy Bros., Ltd.	United Kingdom	Forging manipulators
Deere & Co.	United States	Agricultural equipment
Deilmann Bergbau	Germany	Design of mines at Solikamsk
Demag Aktiengesellschaft	Germany	Manufacture of cranes, hoisting equipment and blooming mills
Deutsche Tiefbohr A-G	Germany	Drilling deep water wells
Deutz Motorenfabrik A-G	Germany	Construction of Deutz diesel engines
Dewey & Almy Chemical Co.	United States	Crab meat containers
Diebold Safe & Lock Co. (Diebold, Inc.)	United States	Watch factory
Disticoque S.A.	France	Coke ovens
Douglas Aircraft Co., Inc.	United States	Aircraft: DC-3
Dow Chemical Co.	United States	Styrene
Dueber-Hampden Watch Co.	United States	Construction and equipment of watch plant
Du Pont, (E.I.) de Nemours & Co.	United States	Synthetic ammonia, nitric acid and fertilizer technology
Eastman Construction Engineering	United States	Construction
Electric Auto-Lite Co.	United States	Electrical equipment in autos and tractors
Elektrokemisk	Norway	Manufacture of Soderberg electrodes
Ericsson, L. M., A/B	Sweden	Telephone equipment
Ex-Cell-O Aircraft and Tool Corp.	United States	Stated by Soviets as agricultural implements
Fairbanks Aviation Corp.	United States	Aircraft manufacture
Farben, I. G.	Germany	Chemicals
Farrel-Birmingham Co., Inc.	United States	Sykes machines
Ferguson, Hardy S., & Co.	United States	Paper-mill technology
Fiat s.p.a.	Italy	Automobiles, aircraft, ships

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Ford Motor Co.	United States	Automobile plant construction and auto tire plant
Foster-Wheeler Corp.	United States	Petroleum refineries
Freyn Engineering Co.	United States	Iron and steel plants
Frolick & Knupfel	Germany	Design and construction of mines
Gaillard-Parrish	United Kingdom	Sulfuric acid
Gibbs, Harry D.	United States	Chemical processes; phthalic anhydride
Gogan Machine Co.	United States	Automobile bumpers
Goodman Manufacturing Co.	United States	Coal cutters
Graver Corp.	United States	Refineries
Great Northern Telegraph	Denmark	Telegraph operations
Grusonwerk, Friedrich Krupp	Germany	Manufacture of equipment for crushing plants
Hahn, A. W.	United States	Aluminum powder
Harburger, Eisen, and Bronzewerke, A-G	Germany	Manufacture and design of equipment for oil-crushing mills
Heinkel	Germany	Aircraft
Henshien, H. G.	United States	Meat packing plants
Hercules Motor Corp.	United States	Reconstruction of Yaroslavl truck engine plant
Hercules Powder Co.	United States	Nitrocellulose; cotton linters
Hilaturas Casablancas, S.A.	Spain	Coal cutters
Houdry Process Corp.	United States	Catalysts
Humboldt-Deutz Motoren, A-G	Germany	Diesel engines (all sizes)
Imperial Chemical Industries, Ltd.	United Kingdom	Chemical manufacture
International General Electric Co., Inc.	United States	Electrical equipment (all types)
International Harvester Co.	Canada	Agricultural implements
International Harvester Co.	United States	Training Soviet nationals
Irving Air Chute Co., Inc.	United States	Parachutes
Isacco, Vittorio	Italy	Helicopters
Jenkins Co.	United States	Petroleum refineries

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Kahn, Albert, Inc.	United States	Supervision of Five-Year Plan design and construction
Kallitt Products, Inc.	United States	Electrical equipment
Karlstad Mechaniska Verkstaden A/B	Sweden	Construction of turbines, Svirstroi
Kohorn, Oskar, and Co.	Germany	Production of artificial silk by viscose process
Koppers Construction Co.	United States	Coke ovens and by-products
Krupp, Friedrich, A.G.	Germany	Manufacture of special grades of steel, cement
Kugellager, Vereinigte	Germany	Ball bearings
La Compagnie Générale de Télégraphie	France	Radios
Lockwood, Greene & Co., Inc.	United States	Textile-plant construction
Loeffler	Czechoslovakia	High-pressure boilers
Longacre Engineering and Construction Co.	United States	Apartment buildings
Lucas & Luick	United States	Gas plants and pipelines
Lummus Co.	United States	Refinery construction
Lurgi Gesellschaft für Chemie und Hüttenwesen m.b.H.	Germany	Sulfuric acid process
Maatschappi	Holland	Saccharification of wood pulp for production of fodder and glucose
Macchi	Italy	Flying boats
Manchu Machine Works	Manchuria	Machine-tool plant
Manchurian Machine Tool	Manchuria	Machine-tool plant
Marietta Manufacturing Co.	United States	Carbon-black plant unit
Marshall & Sons, Ltd.	United Kingdom	Locomotives for lumber industry
Martin, Glenn L., Co.	United States	Bomber design
Maschinen und Bronze-Waren Fabrik A-G	Germany	Machine tools
Maschinenbau A-G	Germany	Manufacture of compressors

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Maschinenbau-Anstalt 'Humboldt'	Germany	Installation of concentrator equipment
Maschinenfabrik Augsburg-Nürnberg A-G	Germany	Construction of MAN—Diesel engines, simple 4-cycle motors, simple and double 2-cycle motors with and without compressors, and machines and equipment for cold storage plants
McClintock & Marshall Const. Co.	United States	Building erection for Stalingrad Tractor Plant
McCormick Co.	United States	Baking-plant design
McDonald Engineering Co.	United States	Industrial plants, cement, elevators
McKee, Arthur G., & Co.	United States	Magnitogorsk iron and steel plant; petroleum refineries
Mechanical Engineering (Chicago)	United States	Meat-packing plants
Merritt Engineering & Sales Co., Inc.	United States	Manufacture of rolled-steel railroad-car wheels
Messer Co. A-G	Germany	Construction of autogenous welding equipment
Metropolitan-Vickers Electrical Co., Ltd.	United Kingdom	Construction of steam turbines; power plants
Midwest Rubber Reclaiming Co.	United States	Assistance in rubber-plant construction; training Soviet nationals
Miller, Max B., and Co.	United States	Petroleum refineries
Moisseiff, Leon S.	United States	Bridge consultation
Multibestos Co.	United States	Design and technical assistance in construction of factory for asbestos products
National Rubber Machinery Co.	United States	Tire-building machines
Newport News Shipbuilding & Dry Dock Co.	United States	Turbine construction
Nickel, Arthur, Co.	United States	Iron-ore mining

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Nitrogen Engineering Corp.	United States	Ammonia-fertilizer plant construction and operation
Nobile, General Umberto	Italy	Airships
Nordberg Manufacturing Co.	United States and United Kingdom	Railroad equipment
Oglebay, Norton Co.	United States	Iron-ore mine development
Ohio Locomotive Crane Co.	United States	Operation and servicing of cranes
Oliver Farm Equipment Co.	United States	Tractor plows
Otis Elevator Co.	United States	Moscow subway elevators
Owens Bottle Co.	United States	Bottle-closing patent and machinery for silicate industries
Parke, Davis & Co.	United States	Pharmaceutical products
Passburg, Emil, and Berthold Block	Germany	Design of vacuum plants
Penick & Ford, Ltd., Inc.	United States	Construction of corn production and refining plants
Pennsylvania Railroad	United States	Railroad operating methods
Peterson, Hugo	Germany	Peterson sulfuric acid process
Petroleum Engineering Corp.	United States	Petroleum refineries
Pflanzennamme	Germany	Manufacture of peat products
Polakov, W. N.	United States	Management consultants
Pontiac Engineering Co.	United States	Smelter construction
Power-Gas Corp., Ltd.	United Kingdom	Gas generator plant
Pratt & Whitney Aircraft Co.	United States	Stated by Soviets as agricultural implements
Radio Corporation of America	United States	Exchange of patents and information, radio and TV
Radiore Co.	United States	Prospecting assistance
Remington Rand, Inc.	United States	Office equipment
Republic Aviation Corp.	United States	Aircraft
Richard Bros.	United States	Tractor manufacture

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Riedinger Maschinen- und Bronzewarenfabrik A-G	Germany	Metals manufacture
Roberts & Shaefer Co.	United States	Detailed designs and plant drawings Donetz coal trust
Rockwell, W. S., Co.	United States	Furnace technology at Stalingrad
Rosoff Subway Construction Co.	United States	Subway construction (probably not implemented)
Rust Brothers	United States	Rust cotton-picking machine
Safety Mining Co.	United States	Manufacture of CARDOX
Sauerman Bros., Inc.	United States	Equipment operation
Savoia	Italy	Flying boats
Sayer, E. Y., Engineering Corp.	United States	Steam electric plant
Scintilla A-G	Switzerland	Manufacture of magnetoes and ignition equipment
Seabrook, C. F., Co.	United States	Road construction
Seiberling Rubber Co.	United States	Sale of rubber tire plant
Seversky Aircraft Corp.	United States	Aircraft
Sharples Specialty Co.	United States	Petroleum centrifuge equipment
Siemens-Schukert	Germany	Electrical equipment
Smidth, F. L., A/S	Denmark	Cement plants
Smith, C. V., Co., Thetford	Canada	Asbestos milling
Société de Prospection Electrique Procédés, Schlumberger	France	Electrical prospecting for oil
Société Française Anonyme 'Lumière'	France	Manufacture of films
Sociétés du Duralumin	France	Duralumin
Soieries de Strasbourg S.A.	France	Production of artificial silk by viscose process
Southwestern Engineering Co.	United States	Design, construction and operation of metal plants
Sperry Gyroscope Co., Inc.	United States	Marine instruments, bomb sights
Standard Alcohol Co.	United States	Rubber technology
Standard Oil Co. of New York	United States	Operation of Batum refinery: synthetic ethyl alcohol

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Stockholms Superfosfat Fabriks Aktiebolaget	Sweden	Construction, equipment, and operation of plant with annual production of 20,000 tons calcium cyanamid and 3,000 tons carbide (Chernorechensk Plant); manufacture of yellow prussiate of potash; construction of equipment and operation of Karabliss Cyanamid and Carbide Plant
Stuart, James & Cooke, Inc.	United States	Coal industry; grain elevators
Sullivan Machinery Co.	United States	Mining equipment
Sulzer Gebruder A-G	Germany	Construction of 2-cycle Sulzer diesel engines
Swasey, Warner P.	United States	Tractor manufacture
Szepesi, Eugene	United States	Accounting systems in textile mills
Taft, Pierce Mfg. Co.	United States	Manufacturing of tools, jigs, etc.
Telefunken Gesellschaft A-G	Germany	Manufacture of long-distance receiving sets
Thew Shovel Co.	United States	Dragline operation
Timken-Detroit Axle Co.	United States	Automobile industry
Torfplattenwerke A-G	Germany	Construction of plant for manufacture of peat insulation plates
Tube Reducing Co.	United States	Tube mill installations
Union Construction Co.	United States	Drawings and specifications for dredges
Union Switch and Signal Co.	United States	Railroad automatic block signals
United Engineering & Foundry Co.	United States	Hot and cold wide-strip mills in steel and aluminum industries
Universal Oil Products Inc.	United States	Refinery construction
U.S. Wheel Track Layer Corp.	United States	Christie tanks

Western Company	*Country of Origin*	*Technical Transfer to Soviet Union*
Verband Deutscher Werkzeugmaschinfabrik Ausfuhr	Germany	Organization of joint technical office bureau in Berlin for execution of designs for equipment of metal manufacturing plants; organization of machine display room in Moscow
Vereinigte Carborundum & Elektritwerke A-G	Germany	Manufacture and design of plant for artificial abrasives
Vereinigte Kugellager Fabriken A-G	Germany	Manufacture of ball bearings
Veritas S.A.	France	Technical assistance on tanker construction
Vickers-Armstrongs, Ltd.	United Kingdom	Tanks
Villar-Perosa Officine (RIV) s.p.a.	Italy	Manufacture of ball bearings
Vom Bauer	United States	Electric furnaces
Vultee Aircraft (Div. of Aviation Mfg. Corp.)	United States	Bombers
Webber & Wells, Inc.	United States	Food processing
Westinghouse Electric and Manufacturing Co.	United States	Power plant design, aviation test equipment
Westvaco Chlorine Products Corp.	United States	Chemical industry
Wheeler, Archer E., Engineering Co.	United States	Non-ferrous metals
White, J. G., Engineering Corp.	United States	Technical assistance on Svir Dam
Wilson, M. L.	United States	
Winkler-Koch Engineering Co.	United States	Cracking technology
Yukon Fur Farms, Inc.	United States	Organization of animal farms
Zahn A-G	Germany	Carbon disulfide

Note: These are equivalent to the Type III concessions described in Volume I.

APPENDIX D

Guide to Sources of Material

THE official numbering system of the U.S. State Department Decimal File (the central file) is used in this volume. The records for 1910 to 1930 used in *Western Technology . . ., 1917 to 1930* have been published on microfilm and references in that volume are to the National Archives microfilm. Records dated after 1930 utilized in this volume have not, as yet, been published on microfilm and references therefore refer to the Decimal File number. Thus, for example, 861.5017—Living Conditions/100 may be found in the National Archives under this file number and, although unpublished, is available for special purchase under this number. Later references, after about 1945, are held in the State Department; some for 1945 have been published in the annual series *Foreign Relations of the United States*. The greater part of the microfilmed State Department records as well as privately collected material used in this volume has been deposited at the Hoover Institution, Stanford University.

German archival material, available at the National Archives, is referred to by microcopy number; for example T 84–122–1421674 refers to Microcopy T 84, Roll 122, Frame 1421674.

Most of the scarce periodical literature is available at the Hoover Institution or the Library of Congress. Soviet technical books cited are in most cases available only at the Library of Congress, although those used in this study have been, for the most part, deposited with the Hoover Institution.

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Index

Western Technology and Soviet Economic Development 1945 to 1965

Third volume of a three-volume series

By

ANTONY C. SUTTON

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The Hoover Institution on War, Revolution and Peace, founded at Stanford University in 1919 by the late President Herbert Hoover, is a center for advanced study and research on public and international affairs in the twentieth century. The views expressed in its publications are entirely those of the authors and do not necessarily reflect the views of the Hoover Institution.

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Preface

The considerable financial burden for this three-volume study has been borne by the Hoover Institution on War, Revolution and Peace established by former President Herbert Hoover at Stanford University. The Institution's extensive archival holdings, a library in excess of one million volumes, first-rate research facilities, and the unique freedom given to individual researchers make it an unparalleled center for original research. The Institution is, of course, in no way responsible for my errors and omissions, nor does it necessarily accept my argument.

Of the many at the Hoover Institution who have contributed to this study special mention should be made of Dr. W. Glenn Campbell, Director of the Hoover Institution since 1960; Mr. Alan H. Belmont, Associate Director for Administration; and Dr. Roger A. Freeman, Senior Fellow. The assistance given by the expert curators and an efficient Library staff is also gratefully acknowledged.

The Hoover Institution Press, headed by Mr. Brien Benson, handled the publication chores for the series and particular acknowledgment is due the editorial staff: Miss Michelle Hogan, former production editor; Miss Liselotte Hofmann, assistant editor; Mr. London G. Green, the editor directly responsible for the first two volumes; and Mrs. Carole Norton, who supervised the editorial work on volumes One and Two and undertook the detailed editing of this final volume. Miss Marcia Taylor compiled the bibliography and Mrs. Joan Johanson compiled the index for this volume.

To these and others who have given their assistance—thank you.

Stanford, California
June, 1970.

A. C. S.

Contents

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Introduction

This is the third volume of an analysis of the impact of Western technology and skills on the industrial development of the Soviet Union. With this volume, which covers the years 1945-1965, the original hypothesis that by far the most significant factor in the development of the Soviet economy has been its absorption of Western technology and skills[1] is substantially supported over a period of 50 years.

The reader should bear in mind the distinctions made in this analysis between science and technology and between invention and innovation. Science is here defined as theory and laboratory development of theory, while technology is the selective application of scientific findings to industrial production. Similarly, invention is the process of discovery and the prototype development of discovery, while innovation is the selective application of invention to industrial production. Usually there are many inventions available for selection in any industrial system; but in practice only a few are applied to become innovations.

No fundamental industrial innovation of Soviet origin has been identified in the Soviet Union between 1917 and 1965, and preliminary investigation suggests that this situation continued throughout the decade of the sixties.[2] Soviet innovations have consisted, in substance, in adopting those made first outside the U.S.S.R. or using those made by Western firms specifically for the Soviet Union and for Soviet industrial conditions and factor resource patterns. A comparative statement of Soviet innovation—to the limited extent that it exists—is made in chapter 25.

The question now is: Why does the Soviet Union lack major indigenous innovation? Up to about 1957 the explanation could well have been posed in terms of "catching up," i.e., it was cheaper and less time-consuming for the U.S.S.R. to adopt Western technology than to institute the innovative process herself. After about 1957 the catching-up hypothesis cannot be supported; the

[1] See A. C. Sutton, *Western Technology and Soviet Economic Development, 1917 to 1930* (Stanford: Hoover Institution, 1968). Hereafter cited as Sutton I.

[2] The cut-off date varies according to the amount of information available for each industrial sector; for chapter 21 (shipbuilding), information was available to July 1967, while for chapter 9 (non-ferrous metals) information is scarce after the early 1960s.

Soviet Union had caught up technically in the thirties and once again in the forties by "borrowing" in one form or another from the West.

In 1957 came the era of "peaceful competition between systems," when Khrushchev challenged and threatened to "bury" the United States economically. This challenge may well have been a bombastic cover for Soviet intent to increase—not reduce—the acquisition of Western technology. On the other hand, Soviet economists may have concluded that the years 1957-58 represented the zenith of technical assimilation from abroad and that Sputnik would usher in an era of Soviet innovation. Some Soviet innovation did indeed evolve in the late 1950s—in fact examples appear to be concentrated in these years—but it did not survive in the face of dynamic Western technical advances.[3]

Today it is no longer a question of "catching up." It is a question of the innate ability of the Soviet system to innovate at all. On the basis of the research findings elaborated in this three-volume series, we conclude that a society with the kind of central planning that guides the Soviet Union has virtually no capability for self-generated indigenous innovation.

Yet Soviet propaganda concerning Soviet technology has by and large been successful. In the face of the empirical evidence in these volumes, the Soviets have convinced a large proportion of the Free World, and perhaps the Communist Party of the Soviet Union itself, of their technological prowess.

Although the record of foreign technological dependence is largely expunged from Soviet writing, it is possible from time to time to find frank and open statements bearing on the issue. For example, at the Twenty-third Congress of the CPSU in 1966, the report on the directives delivered by Kosygin included the straightforward statement:

> The Soviet Union is going to buy ... over a thousand sets of equipment for enterprises and shops in the chemical, light, food and other industries. Deliveries from the fraternal countries will cover 48 percent of our needs in sea-going freighters, 40 percent of our needs in main line and industrial electric locomotives, about 36 percent of our needs in railway cars.[4]

As the Soviet definition of "sets" of equipment equals complete plant installations and the period covered by the statement was five years, the magnitude of the planned assistance may be readily seen.[5]

This Soviet dependence on foreign countries has largely escaped the attention of the Western world. For example, a survey conducted by the U.S. Information

[3] Among many examples, see chapter 15 and synthetic fibers.

[4] Novosti, *23rd Congress of the Communist Party of the Soviet Union* (Moscow, 1966), p. 256. See also A.C. Sutton, *Western Technology and Soviet Economic Development, 1930 to 1945* (Stanford: Hoover Institution, 1971; hereafter cited as Sutton II), p 3; and A.C. Sutton, "Soviet Merchant Marine", U.S. Naval Institute *Proceedings*, January 1970.

[5] These figures coincide with the material presented in chapter 21 (for ships) and chapter 20 (for locomotives).

Agency on European opinion concerning the relative success of U.S. and Soviet scientific and technical achievements[6] had extraordinary results. Accepting that the layman does not make a distinction between science and technology, then in 1961 more people in Western Europe believed the Soviet Union was technically ahead of the United States than vice versa. This opinion varied by country: in Great Britain 59 percent thought the Soviet Union was ahead and only 21 percent thought the United States was, while in West Germany one-half of the interviewees thought the United States was ahead compared with 19 percent for the Soviet Union. Where further questions were asked of those who thought the Soviet Union ahead, the answers were not in terms of Soviet use of Western technology but rather in terms of factors not supported by this study. Only about 15 percent of the German responses mentioned "captured German scientists" as a key factor in Soviet weapons and atomic energy programs. But most "Soviets-ahead" answers tended to be negative about the United States rather than positive about Soviet "success"; i.e., there were such observations as "Americans like a good time," "no coordination in America," "insufficiency of good scientists in the U.S."[7]

The paradox, or perhaps dilemma, that remains with us is that this study presents detailed and profuse evidence not only at variance with the Soviets' own interpretations of their achievements—despite their exceptional statements that hint otherwise—but also at complete variance with the beliefs of a majority of the Free World, including its academic communities. The confusion may even extend into U.S. Government departments. To illustrate this point, it may be profitable to explore the views of the U.S. State Department concerning Soviet technology and Soviet economic achievements because the State Department, as the senior U.S. executive department, has excellent sources of information and plays the paramount role in the establishment of U.S. economic policy toward the U.S.S.R.

Published State Department papers and statements made by State Department officials to Congress suggest conclusions directly opposed to those of this study. In brief, the State Department has consistently argued from 1918 to the present time—but more importantly in the years since about 1960—that Soviet industrial development has little connection with Western technology, and specifically that it has no vital connection with trade or with the other mechanisms discussed in this study as technology transfer vehicles.

In *The Battle Act Report: 1963*, submitted by the State Department to Congress, it is stated that trade with the West had made "[an] obviously limited contribution to Soviet economic and industrial growth" and that denial of trade could not affect basic Soviet military capability. The report continued to the

[6] Leo P. Crespi, "The Image of U.S. Versus Soviet Science in Western European Public Opinion," in R. L. Merritt and D. J. Puchala, eds., *Western European Perspectives on International Affairs: Public Opinion Studies and Evaluations* (New York: Praeger, 1967).

[7] *Ibid.*

effect that the Battle Act embargo program was not as extensive as in the early 1950s on the grounds that "the inevitable process of industrial and economic growth during those 12 years has meant that the Soviets have developed their own productive capability in many of the areas where a restraining impact was necessary and possible 10 years ago."[8] This State Department report was made precisely at a time when the Soviets were midway in a program to purchase complete industrial sectors in the West—concentrated fertilizers, synthetic rubbers and fibers, engines, computers, electric locomotives, and automobiles—all for industrial sectors either nonexistent or very backward in the U.S.S.R. in 1963.

A great deal of information for this study was derived from reports made by various U.S. industry delegations to the Soviet Union under the auspices of the State Department, although not all such delegation reports have been declassified. Some delegations commented adversely on the value of their visits insofar as the United States is concerned, and indeed from the technical viewpoint there has been little U.S. advantage. For example, the American Gas Industry Delegation was greeted in Leningrad by a number of prominent officials, and

> ...a major part of their presentation included a discussion of a butane regeneration plant in the city and of its use in the local gas distribution supply operations. It was with extreme difficulty that a visit to the butane regeneration plant was finally arranged. The plant had not been in operation for two years.[9]

An American petroleum industry delegation was shown four refineries in August 1960[10]— three of them (Nuovo Ufa, Novo Kuibyshev, and Syzran) Lend Lease refineries,[11] and the fourth (Novo Baku) either a Lend Lease refinery or a Soviet copy of a U.S. installation.[12] The reports made by this delegation have been of particular value to the study. A skilled observer—and members of the delegation were skilled observers—cannot be easily fooled. Although

[8] U.S. Dept. of State, *The Battle Act Report: 1963*. Mutual Defense Assistance Control Act of 1951 (Washington; 1963), p. 8. See Sutton II, pp. 3-6, for other State Department and academic statements on this topic; also see p. 211 for Assistant Secretary of Commerce Jack N. Behrman's denial of Soviet "copying" of agricultural machinery.
This writer is of course by no means the first to have raised serious doubts about the analytical performance of the State Department. A well-qualified critique which touches on some aspects of this study has been made by a former assistant chief of the Division of Research of the State Department: Bryton Barron, *Inside the State Department*, (New York: Comet Press, 1956). See p. 417 below.

[9] "U.S.S.R. Natural Gas Industry," Report of the U.S. Natural Gas Delegation, July 1961, p. 38.

[10] Robert E. Ebel, *The Petroleum Industry of the Soviet Union* (New York: American Petroleum Institute, June 1961), p. 107.

[11] U.S. Dept. of the Interior, *A History of the Petroleum Administration for War, 1941-1945* (Washington, 1946), p. 270.

[12] See p. 135.

[13] All delegations, without exception, commented favorably on the hospitality.

the delegation was given a cordial reception,[13] written information was not forthcoming in abundance[14] and plant visits were difficult to arrange. Despite such problems, however, the reports display the observers' great perspicacity and technical skill.

The restrictions imposed by U.S. Government classification of data were only partly countered by the excellence of private reports, however; sometimes an alternative and more circuitous approach had to be applied to determine process origin. The most direct alternative was to isolate exports of technology to the Soviet Union by U.S. and foreign manufacturers and trace such exports to specific locations in the Soviet Union—this was the *modus operandi* in volumes One and Two. (State Department files provided detailed information for the period 1917-1945.) It was not possible to rely entirely on the same procedures for the period 1945-1965, since for this period the U.S. Government has restricted information pertaining to such transfers.

Hence another alternative was used in preparing volume Three. In addition to starting with Western firms and tracing technology to the Soviet Union, the author examined and traced back to a possible Western origin (within reasonable limits of time and space) major processes or equipment items known to be in use in the Soviet Union. When a technical link was thus established, a search was begun for a specific Western export or contract; by this means it was found that the Soviet synthetic rubber "Narit," for example, is a chloroprene rubber that traces back to the export of Dupont technology under Lend Lease. Much work originated in U.S. military departments and required only search and collection. For example, the "Moskvich" and "Leningrad" television sets had already been traced by the U.S. Air Force to East German origins, and turbojet engines had been traced to German BMW 003 and Junkers 004 and British Rolls-Royce engines. The Stalinets S-80 was found to be the Caterpillar D-7 in an extensive study by the Caterpillar Tractor Company.

Not all technical links could be fully confirmed. For this reason, two degrees of identification accuracy have been established and are referred to throughout the text. Where positive identification has been made, i.e., where a specific process or piece of equipment is identified in acceptable sources as of Western origin, it is classified as a "positive identification." On the other hand, if identification had to be "inferred" it is so noted; inferred identification includes the category for which information has been provided on a confidential or background basis. The YaAZ truck engine of 1947, for example, is inferred to be a General Motors engine on the basis of comparisons of technical data and the knowledge that such engines were exported to the U.S.S.R. under

[14] U.S. Congress, *Hearings*, Special Committee on Atomic Energy, 79th Congress, 1st session, November 27, 28, 29, and 30, 1945, December 3, 1945; Part I (Washington: U.S. Government Printing Office, 1945).

Lend Lease. Soviet adoption of some nonferrous metals processes has been indicated to the writer on a confidential basis.[15]

Khrushchev's challenge to the West in the late 1950s for peaceful competition coincided with the beginning of a massive Soviet program to purchase complete plants from the West. The year 1957 is central to our study. Up to that time the Soviets had been duplicating technology imported in the 1930s and under Lend Lease; no indigenous progress of any magnitude had been achieved, while certain industries, such as chemicals and synthetic fibers, were perhaps 40 years out of date. Consequently, rates of growth were slipping.

In 1957 several books were published in the Soviet Union proclaiming the benefits of socialist production and the role of Lenin and the Communist Party in bringing about the wonders of socialist Russia. An examination of some of these books[16] suggests several factors germinal to our study. First, little specific information is given; Moskatov, for example, uses multiple or percentage statements rather than absolute figures. Secondly, and of more interest for our purposes, data concerning qualitative factors—somewhat more difficult to disguise—suggest there was an extremely limited product range in Soviet industry in the late 1950s; a situation confirmed by the present study. Sominskii[17] lists a number of machines by model number, and the origins of these machines are presented in the text below. Moskatov covers similar ground and in one or two cases gives a quantitative framework for the number of models actually in use; e.g., in 1957 there were six basic models of tractors. There is, of course, no mention of the origins of this tractor technology.

In brief, Soviet publications on the question of technical progress make statements that, while greatly abbreviated, are not inconsistent with the findings of this study in the sense that no statement is made concerning types of equipment not covered in this text. The technology for types not mentioned did not even exist; such is consistent with subsequent purchase abroad as outlined in this study.

Finally, in a study full of paradoxes let a supreme paradox be suggested. The Soviet Union is the dedicated enemy of the Free World—this by the admission of its own leadership. There is no question that since 1917 there has been a continuing advocacy of the overthrow of capitalist systems. Yet the technical transfers described in these volumes have been the lifeblood of the Soviet industrial process and of the Soviets' ability to back up their avowed campaign of world revolution.

[15] Many aspects of the transfer have been more adequately discussed elsewhere. For example, the transfer of a duplicate set of plates for printing currency (from the U.S. Treasury to the Soviet Union, thus giving the Soviets the ability to print unlimited quantities of currency redeemable in U.S. dollars) has been well described and documented in Vladimir Petrov, *Money and Conquest* (Baltimore: Johns Hopkins Press, 1967).

[16] V. S. Sominskii, *O tekhnicheskom progresse promyshlennosti SSSR* (Moscow, 1957), and P. G. Moskatov, *Po puti tekhnicheskogo progressa* (Moscow, 1957).

What is more, the technical transfers have not only been allowed by Western governments but have in fact been encouraged and sometimes even singled out for acclaim. For example, the builder of the first modern Soviet trawlers—Brooke-Marine, Ltd., of Lowestoft, England—was honored by Queen Elizabeth with an M.B.E. (Member of the Order of the British Empire) for Charles Ernest White, the assistant general manager in charge of production.[18] In 1946 Swedish firms were reportedly threatened by their government's ministry of industry and commerce if they refused to take Soviet orders.[19] In Germany in the 1950s and 1960s the Howaldtwerke shipyards in Kiel, owned by the German Government, was a prominent builder of ships on Soviet account. Then in the mid-sixties came President Johnson's "bridges for peace," which opened wider the floodgates of American technology for the Soviets, although, to be sure, a similar argument had been used by Edwin Gay of the War Trade Board in 1919 to initiate trade with the Bolsheviks ("trade would bring the Bolsheviks into the civilized world").

Such, then, is the confused political arena for the transactions discussed in this study.

[17] Sominskii, *op. cit.* n. 16, p. 95.
[18] *The Shipbuilder and Marine Engine Builder* (London), February 1956, p. 119.
[19] *Electrical Review* (London), vol. 139, p. 890.

PART I

The Transfer Mechanisms: 1945 to 1965

CHAPTER ONE

Lend Lease and the "Pipeline Agreement," 1941 to 1946

There are two aspects to Lend Lease transfers: (1) shipments made under the five Supply Protocols of 1941-45 and related programs and (2) shipments made under the October 1945 "pipeline agreement"—after the end of the war with Japan and covering goods in inventory or procurement on September 2, 1945.[1]

U.S.S.R. LEND LEASE PROGRAM: THE SUPPLY PROTOCOLS

Negotiations on the First Supply Protocol began on December 7, 1941, but they were postponed until December 28 due to the entry of the United States into war with Japan. A few Soviet military requests in the First Protocol could not be fulfilled or had to be scaled down, and while the War Department was able to meet most commitments it could not at first supply all requests for trucks, guns, and light bombers, antiaircraft guns, antitank guns, and mortars. The War Department did supply tanks, trucks and planes, 100,000 field telephones, 500,000 miles of field telephone wire, 20,000 tons of toluol, 12,600 tons of leather, and 1,500,000 pairs of army boots. Approximately 1,752,000 tons of supplies were made available under this protocol.

[1] Data used in this chapter are from the unpublished U.S. Dept. of State, "Report on War Aid Furnished by the United States to the U.S.S.R." (Washington: Office of Foreign Liquidation, 1945). The published Supply Protocols are not a guide to actual shipments, only to anticipated ones. The reader should also consult George R. Jordan, *From Major Jordan's Diaries* (New York: Harcourt, Brace and Company, 1952), based on Soviet copies of the delivery notes; in most categories Major Jordan's report is consistent with the State Department publication, but sometimes he includes details to be found only in the Lend Lease invoices stored at the Federal Records Center, Suitland, Maryland.
The "pipeline agreement" of October 1945 is published in *Documents on American Foreign Relations*, VIII, July 1945-December 1946 (Princeton: Princeton University Press), pp. 127-32. It should be noted that Schedules A and B to the "pipeline agreement" have not been published but are available from the Department of State; a copy of these schedules has been deposited in the Hoover Institution Library.
The reader should also consult a manuscript of unknown but clearly authoritative authorship in the Hoover Special Collections: "*U.S.S.R. Lend-Lease Program*" (1945). This has data on the virtually unknown "special programs."

The Second Supply Protocol, known as the "Washington Protocol," was signed December 6, 1942, and approximately 770,000 short tons of material were made available by the War Department and 3,274,000 tons by all U.S. agencies. The War Department delivered planes, jeeps, antiaircraft guns, explosives, toluol, tractors, radio sets, clothing, field telephones and wire signal equipment, battery charging sets, tubes, and radio components. Items requested by the Soviets but not offered by the U.S. in this protocol included tarpaulin material, field glasses, radio locators, radio beacons, stereoscopic observation instruments for artillery, radio repair trucks, and light field repair shops for tanks and trucks.

The Third Supply Protocol, known as the "London Protocol," was signed in London on October 19, 1943. The War Department made substantial offerings against all Soviet requests except in teletype apparatus and in locomotives where it offered 500 to 700 locomotives against requests of 2000 to 3000. The total supplied by the War Department was 1,466,000 tons, including substantial quantities of locomotives, railroad cars, industrial lift trucks, tractors, cranes (mobile construction and port use types), power shovels, and teletype apparatus. The United States also began production on Soviet account of 600 steam locomotives and procurement for 10,000 flatcars and 1,000 dump trucks.

The Fourth Supply Protocol, signed in February 1944, covered the last half of 1944 and 1945. It included substantial deliveries of radio locators, tractors, large radio stations, cranes, shovels, shoes, and medical supplies; the main new item under this protocol was mobile construction equipment. U.S. offerings totaled 1,700,000 tons as well as port equipment (valued at $10 million) that included floating, portal, and mobile cranes for the Black Sea ports and heavy cranes for Murmansk and Archangel. The following U.S. offers were turned down by the Soviets: nonstandard combination power supply units, mainline electric locomotives, and nitroglycerin powder.

The Fifth Supply Protocol, signed in March 1945, included motor vehicles, cranes and shovels, tractors, road construction equipment, locomotives, some signal equipment but mainly industrial equipment.

There were in addition programs subordinate to the main Lend Lease Supply Protocols. These included an Arctic program for the supply of Soviet arctic ports, the "Outpost" program for construction of ports in the Soviet Far East, and the highly important Northern Siberian Air Route Program, as well as "Project Milepost" in support of Soviet Far Eastern operations.

The Northern Siberian Air Route program to establish a trans-Siberian airways system was initially suggested to Ray Ellis, director of the Radio and Radar Division of the War Production Board, while he was on a visit to the U.S.S.R., and was handled separately from the main Supply Protocol arrangements. Equipment comprising transmitters, receivers, and range equipment for eight major and 50 minor stations, and valued at $12 million, was requested and substantially

assigned by March 30, 1945, for 7000 miles of airways with five 200-mile feeder lines.[2] The relationship of this program to Allied wartime operations is obscure.

COMPOSITION OF LEND LEASE SUPPLIES TO THE SOVIET UNION

About 98 percent of U.S. exports to the Soviet Union between June 1941 and September 1945 consisted of Lend Lease supplies. Table 1-1 shows the major categories of supplies and the approximate amounts shipped; this section describes the content of each of these supply categories in more detail.[3]

Table 1-1 MAJOR CATEGORIES OF LEND LEASE SUPPLY TO THE SOVIET UNION

Category	*Description of Category*	*Amounts (Arrived in Soviet Union)*
I	Aircraft and equipment	14,018 units
II	Vehicles (including tanks and trucks)	466,968 units
	Explosives	325,784 short tons
III	Naval and marine equipment	5,367,000 gross registered tons of shipping
		7,617 marine engines
IV	Foodstuffs	4,291,012 short tons
V	Industrial machinery and equipment	$1,095,140,000
VI	Materials and metal products	2,589,776 short tons of steel
		781,663 short tons of nonferrous metals
		1,018,855 miles of wire
		2,159,336 short tons of petroleum
		820,422 short tons of chemicals

Source: U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), pp. 20-28.

Category I included aircraft and aircraft equipment. A total of 14,018 aircraft was shipped under Lend Lease; these aircraft included pursuit planes, light bombers, medium bombers, one heavy bomber, transport planes, flying boats, observation planes, and advanced trainers. In addition, link trainers and a considerable quantity of aircraft landing mats and communications equipment were shipped.

Category II comprised military supplies of all types. Some 466,968 individual vehicle units were supplied to the Soviet Union. Combat vehicles included

[2] See anonymous manuscript, *op. cit.* n.1, in the Hoover Institution.

[3] Date from U.S. Dept. of State, *op. cit.* n.1. Figures are for "arrived," i.e., exports minus losses.

1239 light tanks, 4957 medium tanks, about 2000 self-propelled guns, 1104 half-tracks, and 2054 armored scout cars. The 2293 ordnance service vehicles included 1534 field repair trucks and 629 tank transporters. Trucks included 47,728 jeeps, 24,564 three-quarter-ton trucks, 148,664 one-and-one-half-ton trucks, 182,938 two-and-one-half-ton trucks, and smaller quantities of two-and-one-half-ton amphibian trucks, five-ton trucks, and special purpose trucks. Also shipped were 32,200 motorcycles and 7570 track-laying tractors with 3216 spare tractor engines. All equipment was provided with spare parts and ammunition in accordance with U.S.Army standards.

A total of 325,784 tons of explosives included 129,667 tons of smokeless powder and 129,138 tons of TNT.

Wireless communication equipment comprised a sizable portion of total shipments and included no less than 35,779 radio stations (one kilowatt and less). Related equipment included radio stations of higher power, radio locators, 705 radio direction finders, 528 radio altimeters, 800 radio compasses, 63 radio beacons, and large quantities of radio tubes, component parts, accessories, and measuring and testing equipment.

Construction machinery valued at over $10 million included $5,599,000 of road and aircraft construction equipment and $2,459,000 in tractor-mounted equipment, together with $2,099,000 worth of mixers and pavers and $635,000 worth of railroad construction equipment.

Railroad equipment included 1900 steam locomotives, 66 diesel-electric locomotives, 9920 flat cars, 1000 dump cars, 120 tank cars, and 35 heavy machinery cars, for a total of 13,041 railroad units.

Other military items shipped included 15 cableway bridges, five portable pipelines, 62 portable storage tanks, 100,000 flashlights with dry cells, and 13 pontoon bridges.

Category III comprised naval and marine equipment. Noncombat ships included 90 dry-cargo vessels, ten oceangoing tankers, nine Wye tankers, three icebreakers, 20 tugboats, one steam schooner, 2398 pneumatic floats, one motor launch, and two floating repair shops.

Combat ships sent to the Soviet Union included 46 submarine chasers (110 ft.), 57 submarine chasers (65 ft.), 175 torpedo boats in addition to another 24 torpedo boats supplied from the United Kingdom, 77 minesweepers, 28 frigates, 52 small landing craft, and eight tank-landing craft (and another two tank-landing craft from the United Kingdom) together with six cargo barges.

The marine propulsion machinery group included 3320 marine diesel engines, 4297 marine gasoline engines, 108 wooden gas engines, 2150 outboard motors, $254,000 worth of shafting and ship propellers, $50,000 worth of steering gear, 40 storage batteries for submarines, and parts and equipment (valued at $2,774,000) for marine propulsion machinery.

Special ship equipment included $1,047,000 worth of salvage stations and

diving gear, $109,000 worth of jetting apparatus, one submarine rescue chamber, distilling apparatus valued at $36,000 and miscellaneous special shipping equipment valued at $44,000. Also sent were trawling equipment for minesweepers valued at $3,778,000, mechanical and electrical equipment for tugboats valued at $545,000, and mechanical and electrical equipment for ferry boats valued at $1,717,000. A large quantity of naval artillery and ammunition included 1849 Oerlikon guns and $2,692,000 worth of equipment for naval guns.

Over 4.2 million tons of foodstuffs was consigned in Category IV. These supplies included 1,154,180 tons of wheat, wheat flour, grain mill products, and seed; over 672,000 tons of sugar; 782,973 tons of canned meat, including 265,569 tons of "tushonka"; 730,902 tons of sausage, fat, butter, and lard; 517,522 tons of vegetable oil; and 362,421 tons of dried milk, eggs, cheese, and dehydrated products. Also sent were 9000 tons of soap and 61,483 tons of miscellaneous food products.

The shipments most significant to this study were in Category V—machinery and equipment valued at over $1 billion.

Groups V-1/3B included general-purpose engines and turbines, compressors, and pumps to a total value of $39,287,000.

Groups V-4/7 comprised equipment valued at $50,644,000, including crushing, screening, and mixing machinery ($8,048,000); conveyers and conveying systems ($1,651,000); marine winches ($460,000); cranes, derricks, hoists, and similar equipment ($33,272,000); and industrial trucks and tractors ($7,213,000).

Groups V-8 A/11 totaled $38,791,000, including fan and blower equipment ($3,702,000), mechanical power transmission equipment ($111,000), bearings ($25,813,000), and valves and steam specialties ($8,521,000).

Groups V-12/13B3 included general-purpose industrial machinery valued at $197,820,000. These groups comprised miscellaneous machinery ($4,508,000), electric rotating equipment for marine use ($1,867,000), electric rotating equipment for other uses ($17,700,000), military generator sets ($26,803,000), marine generator sets ($12,852,000), and other types of generator sets ($134,090,000).

Groups V-14/17 included $16,685,000 worth of electrical equipment. These groups comprised primary electrical power transmission equipment ($7,107,000), power conversion equipment ($6,923,000), marine secondary distribution equipment ($1,325,000), and motor starters and controllers ($1,260,000).

Groups V-18/22, totaling $5,902,000, included electric lamps ($101,000), miscellaneous equipment ($3,722,000), food products machinery ($735,000), textile industries machinery ($977,000), and pulp and paper industry machinery ($367,000).

Groups V-23/26, valued at $33,283,000, included printing trade machinery and equipment ($52,000), a tire plant from the Ford Motor Company ($8,675,000), rubber-working machinery ($115,000), wood-working machinery

($1,233,000), and metal-melting and heating furnaces ($23,208,000).

Groups V-27/30B, totaling $53,724,000, included blast and reverberating furnaces ($5,186,000), foundry equipment ($2,132,000), special industrial furnaces, kilns, and ovens ($3,268,000), several petroleum refinery plants ($42,610,000), and petroleum refinery machinery and equipment ($528,000).

Groups V-31/34B included special machinery for the glass industry ($671,000), special machinery for chemical manufacturing ($1,460,000), gas-generating apparatus ($13,677,000), miscellaneous specialized industrial equipment ($6,550,000), and cartridge manufacturing lines ($29,855,000). The value for this group totaled $52,213,000.

Groups V-35/39 included machine tools and metal-forming machinery valued at $404,697,000. These groups comprised machine tools ($310,058,000), rolling mills and auxiliary equipment ($25,356,000), drawing machines ($2,412,000), other types of primary metal-forming machinery ($304,000), and secondary metal-forming machinery ($66,567,000).

Groups V-40A/43B included welding and metal-working machinery valued at $15,199,000, comprising various welding machinery ($9,049,000), testing and measuring machinery ($2,830,000), miscellaneous metal-working equipment ($107,000), and various types of portable metal-working machines ($3,213,000).

Groups V-44A/47 comprised a total of $50,420,000 worth of various types of cutting tools and machine tool accessories. These groups included cemented carbide-cutting tools ($5,904,000), metal cutting tools ($34,878,000), other cutting tools and forming tools ($758,000), attachments and accessories for machine tools ($3,945,000), and tool room specialties and equipment ($240,000).

Groups V-48/52 included various types of agricultural machinery and drilling equipment. The total value of these groups was $51,570,000 and included agricultural machinery ($751,000), mining and quarrying machinery ($1,763,000), earth and rock boring and drilling equipment ($8,983,000), well and blast-hole drilling equipment ($9,023,000), and excavating and dredging machinery ($31,050,000).

Groups V-53/58CI included miscellaneous equipment and machinery for a total value of $23,488,000, and comprised miscellaneous construction equipment ($797,000), office machines ($58,000), miscellaneous machinery ($1,195,000), teletype apparatus ($4,470,000), and 380,135 field telephone units ($16,968,000).

Groups V-58C2/59B, telephone and communications equipment valued at $28,630,000, included telephone and telegraph apparatus ($14,419,000), sound equipment ($543,000), automatic block and signaling system equipment ($10,880,000), industrial-type locomotives, cars, and spare parts for cars ($1,655,000), and mine-type locomotives and rail cars with appropriate spare parts ($1,133,000).

Groups V-60/63, valued at $3,885,000, included vehicle parts ($582,000), air conditioning and refrigeration equipment ($593,000), marine lighting fixtures

($1,045,000), other types of lighting fixtures ($421,000), and photographic equipment ($1,244,000). The photographic equipment group is interesting in that $393,000 of a total of only $1,244,000 for the group was en route to the Soviet Union as late as September 20, 1945; in other words, one-third of the allocated photographic equipment was en route to the Soviet Union after the end of the war with Japan.

Groups V-64A/67 included various types of scientific equipment to a total value of $12,431,000, comprising optical, indicating, recording, and control instruments ($6,902,000), navigation instruments ($727,000), professional and scientific instruments ($1,596,000), miscellaneous equipment ($396,000), and nonpowered hand tools ($2,810,000).

Groups V-68/71 consisted of miscellaneous tools and equipment valued at $22,493,000, and included mechanics' measuring tools ($3,672,000), marine power boilers ($90,000), industrial power boilers ($15,880,000), agricultural tractors ($2,773,000), and other miscellaneous equipment ($78,000).

These data show that Lend Lease supplies of industrial machinery and equipment to the Soviet Union between 1941 and 1945 were not only large in amount —i.e., in excess of one billion dollars—but also of a remarkably varied and extensive character and included equipment for all sectors of the civilian and military-industrial economy.

Category VI included materials and metal products. A total of 2,589,776 short tons of steel was shipped, and included 4857 tons of stainless steel wire, 3827 tons of special alloy wire, 56,845 tons of steel alloy tubes, 12,822 tons of stainless steel, 160,248 tons of cold-finished bars, 233,170 tons of hot-rolled aircraft steel, and large quantities of polished drill rod, armor plate, wire rope, pipe and tubing, wire nails, hot-rolled sheet and plate, railroad rails and accessories, car axles, locomotive car wheels, rolled steel car wheels, and other steel products. In addition, a total of 16,058 short tons of ferroalloys was shipped, including ferrosilicon, ferrochromium, ferrotungsten, and ferromolybdenum.

Shipments of nonferrous metals totaled 781,663 short tons, including a remarkable 339,599 short tons of base-alloy copper and large quantities of electrolytic copper and copper tubes. This group also included quantities of aluminum ingot and wire bar, and fabricated aluminum, zinc, lead, cadmium, cerium, cobalt, mercury, and nickel including 261 tons of pure nickel shapes.

Group VI-4A included a large quantity of miscellaneous metals and metal products including molybdenum concentrates, pig iron, and an incredible *one million miles* of telephone wire and submarine cable. The 2,159,336 short tons of petroleum products largely comprised aviation gas and gas-blending agents to raise the octane level of Soviet domestic gasoline. Large quantities of inorganic chemicals were shipped, including ammonium nitrate, caustic soda, potassium nitrate, soda ash, sodium cyanide, sodium dichromate, and similar basic chemicals. In the organic chemical field, shipments included quantities of acetone, butyl acetate, a large quantity of ethyl alcohol (359,555 short tons), ethylene

glycol, glycerin, hexamine, methanol, phenol, and 113,884 tons of toluol (a base for manufacture of TNT).

Group VI-10C included $67,000 worth of compressed and liquefied gas. In addition about 12,200 tons of paints, varnishes, carbon, lampblack, and other pigments were shipped. Plastic shipments included 1139 tons of resins and 593 tons of cellulose film base; miscellaneous chemicals included ammonia rubber paste, boiler compounds, reagents, and chemicals used in the photographic industry.

Textiles included 102,673,000 yards of cotton cloth, 60,138,000 yards of woolen cloth, and 53,803,000 yards of webbing. In addition, quantities of tarpaulin, cordage, twine, and fish nets were supplied. Leather shipments included 46,161 tons of leather and $362,000 worth of specialized small lots of leather products.

Rubber shipments included large quantities of rubber products, among them shock absorber cord (166,000,000 yards), about seven million tires and tubes, and $7,784,000 worth of rubber hose.

In large-lot leather goods, 14,572,000 pairs of army boots, 221,000 pairs of ski boots, and other miscellaneous boots and shoes were shipped, in addition to leather apparel including leather jackets, belts, and miscellaneous leather goods.

Abrasives totaled 17,711 short tons, and abrasive products were valued at over $15 million.

One interesting item included in Groups VI-22A/22C comprised carbon and graphite—of interest because of possible utilization in atomic energy. Shipments of graphite powder totaled 3,017 tons; graphite and carbon electrodes totaled $20,933,000; and other graphite material totaled $1,532,000.

Finally, about 14,000 tons of paper and paper products comprised Groups VI-23A/24 with $1.8 million worth of photographic material, asbestos material, button, and miscellaneous other products.

U.S. Army equipment was shipped from the Persian corridor. This equipment included two truck assembly plants, 792 ten-ton Mack cargo trucks, 21 cranes, and 1751 short tons of 75-pound railroad rails plus accessories. The U.S. Army Air Force shuttle bases in the Soviet Union were turned over to the Soviet Union, and 51 storage tanks used by the British Army in the Caspian Sea area were transferred to the Soviet Union.

THE PIPELINE AGREEMENT OF OCTOBER 15, 1945

Undelivered Lend Lease material in inventory or procurement at the end of World War II was made available to the Soviet Union under the so-called "pipeline agreement" of October 1945. Under this agreement the Soviet Union

undertook to pay the United States in dollars, with only a small amount of interest, for additional material.

The goods shipped under this agreement were valued at $222 million and comprised only industrial machinery and equipment with some spare parts. A large proportion of the equipment consisted of electrical generating stations, boilers, engines, motors, and transformers for the electric power industry. Other large shipments included machine tools—such as hydraulic presses, hammers, mechanical presses, shears, flanging machines, and bending machines. Large amounts of mining equipment included mine hoists, ball mills, jaw crushers, and hammer mills. The machine tool shipments comprised lathes of all types, including engine lathes, precision lathes, semiautomatic machines with special tools, universal machines, turret lathes, chucking machines, and large quantities of spare parts and specialized equipment ancillary to such machine tools. Spare parts for vehicles previously shipped under Lend Lease were also included in the agreement.[4]

The Soviet Union has not maintained its payments schedule under this agreement.

Table 1-2 TOTAL AMOUNT OWED AGGREGATE PAYMENTS, AND TOTAL OUTSTANDING ON SOVIET LEND LEASE "PIPELINE" ACCOUNT AS OF DECEMBER 31, 1967*

Obligation under agreement of October 15, 1945	$222,494,574.01
Interest accrued	$107,171,641.28
Total amount owed	$329,666,215.29
Principal paid through December 31, 1967	$47,023,534.57
Interest paid through December 31, 1967	$107,171,641.28
Balance to be repaid	$175,471,039.44
Past due (as of September 1968)	$ 77,024,968.00

Source: Letter from U.S. Department of State.

* This table does not include amounts due on the $11 billion Soviet Lend Lease account.

UNITED KINGDOM LEND LEASE TO THE U.S.S.R.

War material furnished by the United Kingdom to Russia—free of cost after Russia entered the war against Germany—was regularized in an agreement signed on June 27, 1942.

[4] The equipment lists were not published by the State Department, but see Schedules A and B deposited at the Hoover Institution.

By the end of May 1943, a total of 4690 complete aircraft had been sent to Russia, with appropriate supplies of spares, including engines, airframes, and other articles of equipment.[5] Other supplies shipped to Russia included material for all sections of the Soviet fighting forces: 1042 tanks, 6135 miles of cable, over two million meters of camouflage netting, and 195 guns of various calibers with 4,644,930 rounds of ammunition.

The United Kingdom also shipped the following between October 1, 1941, and March 31, 1946: 28,050 long tons of tin, 40,000 long tons of copper, 32,000 long tons of aluminum, 3300 long tons of graphite, and £1,424,000 worth of industrial diamonds.[6]

UNRRA SUPPLIES TO THE UKRAINE AND BELORUSSIA[7]

In August 1945 the United Nations agreed on a $250 million United Nations Relief and Rehabilitation Administration (UNRRA) program for Ukraine and Belorussia, and in a statement of rather twisted logic[8] promptly suspended payments for such supplies. After numerous delays, two small U.N. missions arrived

Table 1-3 UNRRA DELIVERIES TO BELORUSSIA AND THE UKRAINE

	Belorussian SSR		*Ukrainian SSR*	
Categories	*U.S. Dollar Equivalents*	*Gross Long Tons*	*U.S. Dollar Equivalents*	*Gross Long Tons*
Food	$29,591,800	101,396	$99,437,700	315,748
Clothing, textiles, and footwear	7,044,200	5,784	17,207,700	16,225
Medical and sanitation	991,100	646	2,445,500	1,037
Agricultural equipment and seeds	5,412,100	8,050	16,988,900	38,069
Industrial equipment	17,780,800	25,977	52,119,500	95,970
Total	$60,820,000	141,853	$188,199,300	467,049

Source: G. Woodbridge, *UNRRA*, II (New York: Columbia University Press, 1960), p. 250.

[5] Source: Great Britain, *Accounts and Papers*, 1942-43, XI, Command 6483 (November 1943).

[6] U.S. Bureau of Mines, *Mineral Trade Notes*, (Washington) vol. 22, no. 6 (June 1946), p. 49.

[7] This section is based on George Woodbridge, *UNRRA* (New York: Columbia Univeristy Press, 1950), vol. II, pp. 231-56.

[8] The U. N. subcommittee granting the suspension gave the following reason for suspension of payment: "Information supplied to the Subcommittee by the representatives of the Byelorussian Soviet Socialist Republic indicated that in accordance with the constitutional provisions of the Union of Soviet Socialist Republics, this constituent republic has no foreign exchange

in Russia to administer the program; the missions reported that supplies were equitably distributed, although with no indication that they originated with the United Nations, and mission reports were submitted concerning their distribution. By March 1947 the supply program was about 99.61 percent fulfilled, only $982,700 remaining of the one-quarter billion dollar allotment.

Top priority was given to fats, oils, and meats. These were followed by industrial equipment, with emphasis on equipment for restoration of public utilities and communications together with equipment for basic industries such as peat extraction equipment, a brick-making plant, an asphalt plant, and a mineral wool plant. Almost half of the industrial procurement program was devoted to "protocol goods," mainly electric power stations ordered by the U.S.S.R. in the United Kingdom under the Third Protocol of 1942 but not delivered by 1945. Industrial goods not requiring manufacture (e.g., small locomotives, raw materials, electrical systems, and military vehicles) were by and large delivered before the end of 1946.

SOVIET REQUESTS AND SOVIET RECEIPTS

The Soviet view of Lend Lease in historical perspective is highly deprecatory. A. N. Lagovskii, for example, suggests that the first deliveries arrived only in February 1942, in very insignificant quantities, and "even this delivery was far from being first class."[9] After pointing out that the United States subsequently increased its deliveries to a total of "several billions," Lagovskii suggests that very little was in the form of needed tanks and aircraft and that the U.S.S.R. was "one of the best economically developed countries in the world" on the eve of World War II.[10] Lagovskii concludes that deliveries were "very modest" and that the "Soviet Armed Forces defeated the Fascist German Armies with domestic weapons, developed by our designers, engineers, and workers at our plants."[11]

Other Soviet accounts also maintain that Lend Lease was a minor factor in defeating the German invaders, and no mention has been found in any of them of the deliveries of over $1 billion of industrial equipment.

A comparison of Soviet requests with actual U.S. deliveries does not support

assets of its own, such assets being entirely in the hands of the government of the Union of Soviet Socialist Republics. Nevertheless, in view of the great destruction in the Byelorussian Soviet Socialist Republic, the Subcommittee recommends that the government of the Byelorussian Soviet Socialist Republic be considered at this time not to be in a position to pay with suitable means of foreign exchange for relief and rehabilitation supplies which the Director General will make available." Woodbridge, *op. cit.* n.7, p. 234.

[9] A. N. Lagovskii, *Strategiia i Ekonomika*, 2d edition (Moscow, 1961), pp. 113-14.

[10] *Ibid.*, pp. 116-17.

[11] *Ibid.*, pp. 115-16.

the Soviet position in any manner whatsoever. For example, the initial Soviet request for 3000 pursuit planes was sizable; however, the combined U.S. and British offers under the First Protocol were 2700 pursuit planes, obtained by stripping every other front of its requests. Initial Soviet requests for tanks were for 9900 light and medium tanks, and combined U.S. and British supply on the First Protocol was 4700 tanks. Other items were filled, and indeed overfilled. For example, the Soviets initially requested 20,000 submachine guns—they were offered 98,220 under the First Protocol alone.[12]

We may therefore conclude that Lend Lease with its associated and supplementary postwar programs injected about $1.25 billion worth of the latest American industrial equipment into the Soviet economy. This figure does not include the value of semifabricated materials, foodstuffs, industrial supplies, and vehicles of indirect benefit. This industrial equipment comprised machines and technologies generally in advance of Soviet wartime capabilities (as will be described in later chapters), and the greater proportion was of significant value to the postwar economy.

[12] Based on data in anonymous, *op. cit.* n.1, p. 30. A comparison of the other protocols and Soviet requests could be constructed from the data given in Robert H. Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969), pp. 119, 167.

CHAPTER TWO

World War II Reparations for the Soviet Union

OBJECTIVES OF THE SOVIET REPARATIONS POLICIES

A prime objective of the Soviet Union during World War II was to exact from its enemies the maximum of reparations in kind to rebuild the war-torn and occupied areas of Russia. U.S. Secretary of State Edward J. Stettinius recalled the great importance attached to such reparations: "Stalin, on the question of German reparations, spoke with great emotion, which was in sharp contrast to his usual calm, even manner."[1]

Only those reparations acquired in the form of plants and equipment transferred to the U.S.S.R. from enemy countries come within the scope of this study.

Table 2-1 SUMMARY OF ORGANIZATIONAL FORMS USED BY THE SOVIET UNION TO TRANSFER REPARATIONS AFTER 1944

	Capital transfers (reparations in kind)	*Trophy brigades (war booty)*	*Joint stock companies (financial penetration)*
Italy	Yes	No	No
Austria	Yes	Yes	Yes
Manchuria	Yes	Yes	A few only
Finland	Yes	No	No
Korea	Probably No	No	Yes
Japan	No	No	No
Rumania	Yes	Yes	Yes
Hungary	Yes	Yes	Yes
Bulgaria	Yes	—	Yes (a few)
Germany (East)	Yes	Yes	Yes
Germany (Western zones)	Yes	No	No
Yugoslavia	—	No	Limited

Source: J. P. Nettl, *The Eastern Zone and Soviet Policy in Germany, 1945-50* (London: Oxford University Press, 1951); and N. Spulber, *The Economics of Communist Eastern Europe* (New York: The Technology Press of M.I.T., and John Wiley & Sons, 1957).

[1] E. R. Stettinius, Jr., *Roosevelt and the Russians: The Yalta Conference* (New York: Doubleday, 1949), p. 263.

Some other forms of reparations—the "trophy brigades", for example, and the operation of plants in occupied areas on Soviet account like the SAGs (Soviet companies in East Germany) and the SOVROMs (Soviet companies in Rumania)—are not fully discussed, as they do not fall directly within the scope of our examination.[2]

Capital goods and technology that were transferred to the U.S.S.R. under the reparations agreements and that contributed both industrial capacity and technology will be described on a geographic basis in this chapter. Various chapters in Part II include descriptions of the impact of reparations on individual sectors of the Russian economy.

In monetary terms, reparations claims were substantial; in fact, a figure of $20 billion in 1938 dollars is commonly cited as the Soviet objective. The claims can be approximately and more cogently summarized on a country-by-country basis as follows:[3]

Germany	$10,000 million (plus one-third of the German fleet)
Austria	400 million
Finland	300 million
Italy	100 million (plus one-third of the Italian fleet)
Rumania	300 million
Bulgaria	70 million
Hungary	300 million
Manchuria	800 million (allocated to the Chinese reparations account but arbitrarily removed by the U.S.S.R.)

The figure of $20 billion for total Allied reparations, of which about one-half was to go to the U.S.S.R., was apparently arrived at with only passing objection from the United Kingdom and none from the United States. The original Molotov submission at the Yalta conference was that the amount be fixed at $20 billion with $10 billion to go to the U.S.S.R.[4] Stettinius reported that he himself suggested 50 percent should go to the U.S.S.R.[5], but that there was no final agreement on total absolute amounts:

[2] These are discussed in two excellent books. See J. P. Nettl, *The Eastern Zone and Soviet Policy in Germany, 1945-50* (London: Oxford University Press, 1951) for Germany, and Nicolas Spulber, *The Economics of Communist Eastern Europe* (New York: The Technology Press of M.I.T. and John Wiley & Sons 1957), for excellent, very detailed material on the other East European countries.

[3] Estimates of actual, in contrast to planned, transfers suggest a total of about $10 billion. For example, the U.S. Central Intelligence Agency stated: 'The economic gains accruing to the U.S.S.R. as a result of the European bloc arrangements was greatest during the 1945-55 period when direct and indirect reparations netted the U.S.S.R. an amount estimated at roughly 10 billion dollars.' It should be noted that this excludes Manchuria and possibly Finland. U.S. Congress, *Comparisons of the United States and Soviet Economies*, Joint Economic Committee, Sub-Committee on Economic Statistics, Prepared by the Central Intelligence Agency in Cooperation with the Department of State and the Department of Defense, Supplemental Statement on Costs and Benefits to the Soviet Union of Its Bloc and Pact System: Comparisons with the Western Alliance System, 82nd Congress, 2d session (Washington, 1960).

[4] Stettinius, *op. cit.* n.1, p. 165.

[5] *Ibid.*, p. 231.

> It should be understood that there was absolutely no commitment at Yalta that the total sum of reparations should be twenty billion and that fifty percent should go to the Soviet Union. We made it clear that these figures were merely a basis for discussion.[6]

Stettinius added that Russia claimed "incorrectly" that Roosevelt agreed to the $20 billion figure.[7] It is noticeable that no one suggested a measure of relative war damages as a basis for reparations, nor were any engineering or economic studies made to support relative damage claims.[8]

According to one authority, J. P. Nettl:

> It is clear that the Soviet authorities were working on a separate plan, prepared before the long drawn-out discussions in the Allied Control Council had even begun. The plan was in operation at a time when the Western Reparations Agency had only begun to register the individual claims of participating powers and was tentatively having particular works earmarked for dismantling.[9]

The method used by the Soviets to arrive at specific country reparations demands differed according to Soviet military and political relationships with the respective countries. Reparations from Germany, Austria, and Italy were settled at discussions by the Big Three; the Soviet share was first taken out on a priority basis by the Moscow Reparations Commission and the balance transferred to an Allied Reparations Commission in Brussels for further distribution, including a second cut for the U.S.S.R. This arrangement worked well—for the Soviet Union.

Finland, Rumania, Hungary, and Bulgaria made bilateral peace agreements with the U.S.S.R. and their reparations were also determined by bilateral agreements. Manchurian industry was actually a charge against the Chinese reparations account; however, the Soviets unilaterally moved into Manchuria just before the end of war in the Far East and removed some $800 million worth of equipment before the U.S. Inspection Commission arrived.[10]

The Soviet reparations program, as pointed out by Nettl, contained definite indications of detailed long-range planning with clearcut objectives, and although each country (Finland, Hungary, Rumania, Germany, Italy, Korea, and Manchuria) was treated differently, some basic parallels can be drawn.

First, the reparations programs were designed to supply capital goods to the Soviet economy, but only modern units of technology were to be supplied.

[6] *Ibid.*, p. 266.
[7] *Ibid.*, p. 231.
[8] *Ibid.*, p. 231. The UNRRA studies of damage in the Soviet Union were not based on first-hand information, and are extremely vague.
[9] Nettl, *op. cit.* n.2.
[10] Edwin Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946).

Obsolescent plants were ignored. The intent was to gear acquisitions to the future needs of the Soviet economy.

Second, there are some unusual parallels. For example, the Finland reparations program was similar to that of Korea, while the German program was similar to that of Manchuria. There is no question that the Soviets had a plan, but scattered evidence also suggests they tried to cover their steps and obscure the plan. In Manchuria, for example, they encouraged Chinese mobs to wreck the plants after Soviet dismantling had removed desirable equipment.[11]

Third, equipment choices are interesting as they parallel deductions about weaknesses in the Soviet economy; however, such choices puzzled the Pauley Mission engineers in Manchuria, who could not understand, for example, why the Soviets left electric furnaces and cement kilns and removed ball bearings.

SALVAGE VALUE OF DISMANTLED PLANTS

It has been widely suggested that dismantling of plants and removal to the U.S.S.R. was wasteful, inefficient, and of minor economic and technical value.

Statements of a general nature can be found by American officials concerned with Soviet policy in the late 1940s. For example, Walter Bedell Smith, U.S. Ambassador in Moscow, made the following comment:

> The destructive and unskilled methods used by the Soviet Army in dismantling German industrial plants had been enormously wasteful, and it had proved difficult for the Russians to reestablish these plants in the Soviet Union.
>
> Foreigners who traveled by rail from Berlin to Moscow reported that every railroad yard and siding was jammed with German machinery, much of it deteriorating in the rain and snow.[12]

A similar statement was made by Lucius Clay, U.S. military governor in Germany:

> The Soviet Government soon found that it could not reconstruct these factories quickly, if at all. Reports verified by photographs reaching U.S. intelligence agencies in Germany showed that almost every siding in East Germany, and many in Russia, contained railway cars filled with valuable machine tools rusting into ruins.[13]

Closer observation may be gleaned from Fritz Löwenthal,[14] a former Com-

[11] *Ibid.*
[12] W. B. Smith, *My Three Years in Moscow* (Philadelphia: J. B. Lippincott, 1950), p. 224.
[13] Lucius D. Clay, *Decision in Germany* (New York: Doubleday, 1950).
[14] Fritz Löwenthal, *News from Soviet Germany* (London: Victor Gollancz, 1950), p. 207.

munist official in charge of the Control Department of the Central Legal Administration in the Soviet Zone:

> In Odessa, Kiev, Oranienbaum, Kimry, and other places, where the dismantled factories were to be reassembled, it often turned out that vital machinery was missing or had been damaged beyond repair, as the dismantling is invariably carried out by the Russians at top speed and without proper care.[15]

Vladimir Alexandrov, a Russian refugee, makes even stronger statements. For example: "The dismantling of German industry . . . was characterized mainly by the almost complete absence of any overall direction, particularly with regard to the technical questions involved in dismantling complicated industrial equipment."[16] Alexandrov adds that shortage of railroad equipment, disorganized loading, weather, and general inefficiency greatly reduced the value of the dismantled equipment.

Other writers have viewed this inefficiency as the reason for a change in Soviet policy and the establishment of the SAGs to provide current reparations for the Soviet economy in lieu of the transfer of capital equipment. For example, Almond reports the following:

> At first they believed this purpose [i.e., the transfer of capital equipment] to be served best by the removal to Russia of large quantities of industrial equipment. It soon became apparent, however, that the Russians generally lacked the skilled labor and technical know-how required to dismantle, reassemble, and operate this equipment efficiently; consequently, this method of exacting reparations proved to be even more wasteful than would normally be expected. Soviet policy then switched to reparations out of current production. Roughly one-third of the industrial capacity remaining in the zone was transferred to Soviet ownership, but left in place to be operated for Soviet account using German labor, fuel, and raw materials.[17]

Two conclusions can be drawn from the foregoing statements: (1) the Soviets were hasty and unskilled and consequently may have damaged machinery and equipment, and (2) weather, particularly rain, may have corroded machinery.[18]

On the other hand, Nettl observes: "Against this is the fact that the Soviet

[15] *Ibid.*

[16] Robert Slusser, ed., *Soviet Economic Policy in Postwar Germany* (New York: Research Program on the U.S.S.R., 1953), p. 14.

[17] Gabriel A. Almond, *The Struggle for Democracy in Germany* (Richmond: The William Byrd Press, 1949), p. 158.

[18] Rainfall in Eastern Europe tends to be less than in Western Europe and precipitation for the years 1945-48 was normal. Average rainfall at Berlin from 1938 to 1950 was 594.7 mm per year; in 1946 it was slightly below this (570.6 mm) and in 1945 and 1947 slightly above (629.8 and 626.9 mm, respectively), *World Weather Records, 1941-50*, (Washington, U.S. Weather Bureau), p. 677.

Government had great experience of removing and reassembling complete factories. Much was done during the war, but the principle goes back to Tsarist days!"[19] Examination of the evidence of installation of equipment in the Soviet Union suggests that the Soviets did indeed reerect these plants in the U.S.S.R. and that the plants in fact made a significant contribution to Soviet industrial development in the late 1940s and early 1950s.

The amount of waste, however, cannot be determined on the basis of the evidence at hand. As the physical removals were numerous, it is essential to determine accurately the possibilities of successful dismantling in order to arrive at a more accurate assessment of its potential contribution to the Soviet economy. If dismantled plants could not be reerected in the U.S.S.R., or if they were lost or heavily damaged in transit, then regardless of how many plants were dismantled and transferred, the economic impact would be insignificant.[20] Some consideration is therefore given to this question, and the arguments are summarized in the next sections.

The first factor that has to be taken into account is the condition of the plant as inherited by Soviet occupation forces, particularly whether Allied bombing—extremely heavy in the later phases of the war—had damaged factories beyond usefulness. Reports of the U.S. Strategic Bombing Survey, a series of highly detailed postwar ground examinations of 25 target plants, concluded that large tonnages of bombs had not, for several reasons, reduced these plants to a completely unusable condition. The effect of heavy bombing was to halt production temporarily, not to destroy productive capacity. For example:

> Physical damage studies point to the fact that machine tools and heavy manufacturing equipment of all kinds are very difficult to destroy or to damage beyond repair by bombing attacks. Buildings housing such equipment may be burned down and destroyed but, after clearing away the wreckage, it has been found more often than not, that heavy equipment when buried under tons of debris may be salvaged and put back into operation in a relatively short time and with comparatively little difficulty.[21]

Since the Soviets transported only less damageable items (e.g., machine tools and equipment rather than utility lines, steel-fabricated structures, and

[19] Nettl, *op. cit.* n.2, p. 205.

[20] This is a technical question. The economics of dismantling, as many commentators have suggested, are obscure. For example, John Hynd, M.P.: "I have never been able to understand the economics of putting 2000 men at work for twelve months—2000 man years— dismantling a rusty old steel factory, breaking it up, marking up the parts, packing them up into crates, and sending them to some other country, where it will probably take two or three years to rebuild the factory, and when, in four or five years' time, someone will have an out-of-date and rusty factory, whereas, if we had left it in Germany producing steel, we should probably have been able to build in the same time, and without any loss, a new modern, well equipped up-to-date factory" (Great Britain, *Parliamentary Debates*, October 27, 1949, p. 534).

[21] U.S. Strategic Bombing Survey, *Aircraft Division: Industry Report*, no. 84, January 1947.

gas holders) it may be asserted that strategic bombing had very little effect, and probably reduced the number of even the most desirable machine tools available for reparations by only about ten percent.

The next question concerns the extent of damage incurred in dismantling and removal procedures. Most Western commentators on dismantling have stated that Soviet dismantling policy was inept and wasteful, and that ultimately the Soviets were induced to switch to a policy of leaving industry in place to be operated by captive companies on Soviet account. This may be a rather superficial view.

At the end of hostilities in Europe the Russians had a great deal of experience in dismantling and the West had very little—this assertion may be highlighted by examining those categories which were subject to little dismantling. The Soviets concentrated on plants containing equipment and machines that could be safely transported. Close comparison of removals in Manchuria and East Germany indicates that almost 100 percent of removals had a high salvage value and were easily removed and transported, i.e., machine tools, precision instruments, and small items of equipment *not* made of fabricated sheet metal. On the other hand, the Western Allies in Europe appear to have concentrated their removals on plants with a relatively low salvage value. One cannot, for example, satisfactorily remove an iron and steel plant to another location, which is exactly what the Allies tried to do. In fact, the Western Allies reduced German steel capacity by 25 percent and concentrated removals in this sector.[22] Although the Soviets did try cutting up and removing cement kilns in Manchuria, the mistake was not repeated in East Germany.

Soviet proficiency in dismantling and shipping plants to Russia is exemplified by events in 1944 in Persia. There the United States used two truck assembly plants (TAP I and TAP II) to assemble U.S. trucks that had been "knocked down" before on-shipment to the U.S.S.R. under Lend Lease. Almost 200,000 trucks were finally assembled in these two plants. Apart from the vehicles assembled, the plants themselves were allocated to the Soviet Union under the Lend Lease agreement, and on December 7, 1944, orders arrived to dismantle and transfer to Russia. A Soviet Acceptance Committee arrived three days later. One plant was divided into small segments, each in charge of one U.S. officer, one Soviet officer, and one interpreter. By January 17, 1945, the entire plant had been dismantled, labeled, loaded onto 115 flatcars, and shipped by rail to the U.S.S.R. Thus in a little over four weeks what U.S. Army spokesmen described as a "considerable consignment" was handled with no trouble. The second plant followed in April on 260 flatcars and was handled with equal dispatch.[23]

[22] See n. 20, comments of Mr. Hynd, M. P.

[23] T. H. V. Motter, *The Persian Corridor and Aid To Russia* (Washington: Department of the Army, Office of the Chief of Military History, 1952).

It should be noted also that 20 years later, on the testimony of Juanita Castro Ruz (sister of Fidel Castro of Cuba), Cuban sugar mills were "dismantled and shipped to the U.S.S.R. as collateral for Cuba's imports of Soviet arms and ammunition."[24]

Therefore, we may have imputed to the Soviets the same mistakes we made ourselves due to lack of experience in dismantling and removing plants. Further, although dismantling is a very inefficient method of developing capacity, the Soviets may have partly avoided or at least offset this factor by long-range planning and greater dismantling experience gained in the 1940-42 movement of more than 1300 large industrial plants behind the Urals, including all aircraft, tank, and motor plants; 93 steel plants; 150 machine tool plants; and 40 electrical plants.[25]

Thus the change in policy in May 1946, when the Soviets announced that dismantling in the Soviet Zone was almost completed, was probably not the result of "inefficiency" but of a knowledge born of experience that remaining plants could not be removed successfully and would better serve the Soviet purpose by operation in place.

We can learn something of Soviet dismantling policy by examining those plants left in place and *not* removed to the U.S.S.R. Five dismantling patterns emerge:

1. Plants with a low salvage value were not removed *in toto*, although individual pieces of equipment and instruments from such plants were selectively removed. Thus the Soviets avoided removing iron and steel furnaces and cement kilns, for example.
2. Machines and equipment with a high salvage value and a high value-to-weight ratio were prime targets for removal. Thus machine tools of all types, textile, papermaking, and food processing machinery, instruments from all industries, and electrical equipment received first priority. Such equipment can be easily removed, easily prepared for shipment, and easily crated and loaded, and it withstands transportation relatively well.
3. The first two observations are modified in one important way: choice of removals was selective in terms of obsolescence. This came out clearly in Manchuria, where the older machines were almost always left and the more modern machines always removed.
4. Selective removals were supplemented by items in short supply in the U.S.S.R., particularly rubber conveyer belts (used for shoe repair), electric motors of all types and sizes, hand tools, laboratory equipment, and hospital equipment.

[24] U.S. House of Representatives, *Annual Report for the Year 1965*, House Committee on Un-American Activities, 89th Congress, 1st session (Washington, 1966).

[25] R. H. Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969), p. 222.

5. The planned nature of the removals is emphasized in several ways. It is particularly notable that sufficient equipment to produce the power needed for the dismantling operation was left in place; a casual program would have removed such equipment.

It has been suggested that much reparations equipment was damaged in removal or that bad packing resulted in damage in transit. Contrary evidence can be drawn from two areas, Manchuria and Germany. The Pauley Mission obtained photographs and information concerning the dismantling of Manchurian equipment. The work was undertaken by Soviet troops under the direction of officers who were presumably civilian specialists temporarily in army uniform. Photographs of these troops at work indicate that they were young, but their work appears, from the photographs, to have been methodical. The equipment was removed from its bases, placed on wood skids, and then crated. Heavy damage was done to factory walls only to remove equipment. American engineers on later inspection trips noted several points which lead to the conclusion that the dismantling was not done in great haste. Certain plants were subjected to dismantling several times at intervals of several months. (See Table 2-2.)

Table 2-2 THE SOVIET DISMANTLING SCHEDULE IN MANCHURIA (MAJOR PLANTS ONLY)

Manchurian Plant	*Reported start of dismantling*	*Reported finish of dismantling*
Mukden Main Arsenal	August 15, 1945	March 7, 1946
Manchuria Machine Tool Co.	August 20, 1945	November 14, 1945
Manchurian Gas Co.	August 20, 1945	December 1945
Mukden Refinery	August 21, 1945	February 1946
Fouhsin Power Plant	August 26, 1945	November 1945
Japanese Army 1st Fuel Depot	September 15, 1945	November 10, 1945
Fushun Power Plant	September 20, 1945	October 30, 1945
Molybdenite Mine	Two weeks in September 1945	
Manchuria Machine Tool Co.	September 1945	November 1945
Manchu Wire Rope Co.	Mid-September 1945	Mid-November 1945
Manchu Iron Co.	September 1945	February 1946
Southern Manchurian Railway Co. Repair Shops	October 12, 1945	October 25, 1945
Nippon Air Brake Co.	October 12, 1945	October 25, 1945
Manchu Rubber Co.	October 12, 1945	November 19, 1945
Manchurian Light Metal Co.	October 1945	Early November 1945
Tafengmen Power HEP	Three weeks in October 1945	
Anshan Teto Transmission Tower Co.	October 1945	November 1945
Taiping Hospital	End October 1945	End November 1945
Manchu Otani Heavy Ind. Co.	November 1945	November 1945

Source: Reconstructed from Edwin Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, D.C., 1946), Appendix 3.

Sometimes the Soviets made it more difficult for later repair work, e.g., by bending over hold-down bolts; such effort is unlikely to be expended in a hasty operation.

Photographs of the crates and the crating process in Germany suggest careful work under Soviet supervision.[26] Crates were marked for Stankoimport, an organization with extensive experience in importing foreign equipment. There is no reason to suppose these shipments would not be handled like any other Soviet imports of machinery. It also must be borne in mind that Soviet practice is to place complete responsibility on the individual in charge, with harsh penalties for failure, and there is no reason to believe that any other procedure was followed in the reparations removals. There was certainly pressure on the 70,000 or so individual German and Chinese laborers recruited to assist in removals.

Another factor to be considered is whether damaged equipment could have been restored to its former usefulness; and there is evidence that Soviet engineers have exerted great ingenuity in such efforts.[27] A practical view of the possibility of this type of recovery was seen in a 1946 German exhibition in the British sector of Berlin with the theme "Value from under the Ruins." Exhibits included lathes, stamping dies, presses, gears, and even more delicate apparatus such as electrical equipment, typewriters, sewing machines, and printing machines retrieved from under debris (where they had lain for two years or more) and returned to original working order. Acid baths and abrasives were used to remove rust, high-penetration oils freed interior working parts, and badly damaged parts were replaced. Precision bearings were brought back by electrodeposition of chromium, and sandblasting was used on larger metal parts.[28] This, then, is a practical example of recovery of *delicate* equipment subjected to far greater abuse and more adverse conditions than any equipment removed from Germany to the Soviet Union. There is no reason why Soviet technicians could not have performed as well on weatherbeaten equipment or on equipment damaged in transit.

Support for this argument may be derived from reports on German equipment moved during World War II across national frontiers and sometimes underground to avoid bombing damage. For example, in a claims letter from Bussing NAG Flugmotorenwerke to Reichsluftfahrtministerium in July 1944 the company—obviously for claims purposes putting on the worst front—stressed that moving caused a lot of wear and tear, but "this damage was done chiefly when the machines were being moved into the salt mines." Further explanations suggest that chemical action in the salt mines and operation by unskilled labor did

[26] *A Year of Potsdam* (n.p.: Office of Military Government for Germany (U.S. Zone), Economics Division, 1946).

[27] See p. 30 below.

[28] "Recovery of Machinery from Ruins," *British Zone Review* (Hamburg), April 26, 1946 p. 15.

more damage to the equipment than lowering it into the mines, although many pieces had to be up-ended for this purpose.[29]

In general, it is suggested that pessimistic interpretations of Soviet ability to make good use of reparations equipment are not founded on all the available evidence. In fact, reparations equipment was a valuable addition to the Soviet economy.

ORGANIZATIONAL STRUCTURE OF THE GERMAN REPARATIONS PROGRAM

The organization of German reparations was from start to finish favorable to the Soviet Union. The initial Soviet share was determined by the Moscow Reparations Commission, whose work was undertaken in "strict secrecy," with Dr. Isadore Lubin as the U.S. representative on the Moscow Reparations Committee.

The Allied Control Council for Germany at Potsdam, through its Coordination Committee, made allocations of reparations in the Western zones of Germany; plants and equipment in the Soviet Zone were not handled through the Allied Control Council, only by the Soviet authorities. The Coordination Committee allocated reparations from the "Western portion" between the Soviets and an Inter-Allied Reparation Agency (IARA). The Soviets then dismantled their allocations immediately, while the remaining 18 allies had to wait until further distribution had been determined by the IARA.

In this manner the Soviets, by virtue of having only to bid against IARA and not 18 individual allies, had the cream of Western zone plants as well as all plants in the Soviet Zone; even at the IARA level, bargaining was bilateral rather than multilateral (Figure 2-1).

Finally, under the program known as "Operation RAP" the Soviets were given priority in removing Western zone plants allocated under this preferential procedure, so that at the end of 1946, 94 percent of shipments from the U.S. Zone had been sent to the Soviet Union.

The formal Soviet claim in the Western zones was determined as follows (Section 4 of the allocation agreement):

> (a) 15 percent of such usable and complete industrial capital equipment, in the first place from the metallurgical, chemical and machine manufacturing industries, as is unnecessary for the German peace economy and should be removed from the Western Zones of Germany in exchange for an equiva-

[29] U.S. Strategic Bombing Survey, *Bussing-NAG Flugmotorenwerke*, Number 89, GmBH (Brunswick, Germany, January 1947), pp. 9-10.

lent value of food, coal, potash, zinc, timber, clay products, petroleum products, and such other commodities as may be agreed upon.

(b) 10 percent of such industrial equipment as is unnecessary for the German peace economy and should be removed from the Western Zones, to be transferred to the Soviet Government on reparation account without payment or exchange of any kind in return.

Removals of equipment as provided in (a) and (b) above shall be made simultaneously.[30]

Figure 2-1 ALLIED ORGANIZATIONAL STRUCTURE FOR GERMAN REPARATIONS

Moscow Reparations Committee	—	Selected 50 percent for U.S.S.R. in Eastern Europe
Allied Control Council for Germany (Coordination Committee)	—	Selected 25 percent for U.S.S.R. in West Germany
"Operation RAP"	—	Priority for Soviets

Source: Inter-Allied Reparation Agency, *Report of Secretary-General for the Year 1946* (Brussels, 1946), annex X, pp. 61-62; Germany, Office of Military Government (U.S. Zone), Economics Division, *A Year of Potsdam: The German Economy Since the Surrender* (n.p.: OMGUS, 1946).

In return for equipment dismantled under Section 4(a) the Soviets agreed to make reciprocal deliveries of raw materials valued at 60 percent of the equipment received from the Western zones. In October 1947 the U.S.S.R. presented a first list of reciprocal commodities, which was accepted, and deliveries were duly made.[31] In May 1948 the U.S.S.R. presented a second list of commodities, also accepted by the Western Allies. A dispute then arose over delivery points and the Soviets made no further deliveries.

Therefore, the Soviets delivered a total of 5,967,885 RM (1938: about $1.5 million) against a commitment of the 50 million RM which would represent 60 percent of the value of industrial equipment received by the Soviet Union under Section 4(a). In other words, the Soviets paid only 12 percent of their commitment for reparations received under Section 4(a).

REPARATIONS PLANTS SHIPPED FROM WESTERN ALLIED ZONES TO THE SOVIET UNION

A total of 25 percent of industrial plants in the Western Allied zones was allocated to the U.S.S.R. under Sections 4(a) and 4(b) of the allocation agreement,

[30] Inter-Allied Reparation Agency, *Report of Secretary-General for the Year 1949* (Brussels, 1950), p. 3.

[31] For a list of Soviet reciprocal deliveries see *ibid.*, p. 17.

and dismantling of these plants was expedited on a priority basis. The Soviet allocation status as of November 30, 1948, is given in Table 2-3.

Table 2-3 PLANTS FROM WESTERN ZONES ALLOCATED TO THE U.S.S.R. AS OF NOVEMBER 30, 1948

Zone of occupation	*War plants*	*Reparations plants*
U.S. (the RAP program)	20	4½
British	6	4½
French	3	1
	29	10

Source: Germany, Office of the Military Government (U.S. Zone), *Report of the Military Governor*, November 1948, p. 25.

Probably the most important single plant dismantled for the Soviet Union was the Bandeisenwalzwerk Dinslaken A.G. in the British Zone.[32] This plant was the largest and most efficient hot- and cold-rolled strip mill on the European continent. The effect of the removal on German productive capacity was a reduction of 15 to 30 percent in strip steel, 20 percent in sheet steel, and 50 percent in tinplate strip steel.[33] Another important steel plant removed to the Soviet Union was Hüttenwerk Essen-Borbeck; dismantling required the services of 3000 workers over a period of two years to prepare for shipment.[34]

By August 1, 1946, a total of 156 plants in the U.S.Zone had been confirmed for reparations by the economic directorate of the Allied Control Council; of these, 24 had been designated in October 1945 as "advance reparations" under the swift appraisal plan known as Operation RAP. As described officially, "this [designation] represented an attempt to make available in the shortest time possible a number of reparations plants to the Soviet Union and the Western Nations."[35] The dismantling status of these "advance reparations" plants as of September 1, 1946, suggests that the Soviet Union indeed benefited. Inasmuch

[32] Wilhelm Hasenack, *Dismantling in the Ruhr Valley* (Cologne: Westdeutscher Verlag, 1949).

[33] *Ibid.*

[34] *Ibid.*, p. 51. The Hüttenwerk Essen-Borbeck plant was still being dismantled in May 1949; see *British Zone Review*, May 20, 1949, and *Neue Zuercher Zeitung*, December 10, 1947. Note these are rolling mills, not blast furnaces with low salvage value.

[35] *A Year of Potsdam*, *op. cit.* n.26, p. 35. The *New York Times* reports on this question are not accurate. For example, see *New York Times Magazine*, December 7, 1947, p. 14: "Also there was a short period when, for technical reasons, the American zonal authorities gave priority to the shipment of a small amount of equipment to the Soviet zone, a situation that resulted in such misleading headlines as "Russia Obtains 95 percent of Reparations from U.S. Zone." This statement is, of course, inconsistent with the evidence presented here. The same issue also reports (p. 56) that U.K. and U.S. reparations shipments to the U.S.S.R. stopped in May 1946. However, shipments were continuing as late as February 1948 according to Dept. of State *Bulletin*, February 22, 1948, p. 240. In May 1949 the Borbeck plant was still being dismantled for the U.S.S.R.; *British Zone Review*, May 20, 1949.

as 95 percent of all dismantling shipments up to the end of 1946 went to the Soviet Union and the U.S.S.R. was allocated twenty-four and one-half plants, it could be argued that the RAP program existed virtually for Soviet benefit. (see Table 2-4.)

The RAP operation moved swiftly. Dismantling of the huge Kugelfischer ball bearing plant in Bavaria for the U.S.S.R. started only on March 1, 1946, but the first shipment of equipment—which was the first shipment of reparations equipment from the U.S. Zone to any destination—was made on March 31, 1946. By August 1946 a total of 11,100 tons of reparations had been made from the RAP plants allocated to the U.S.S.R.[36] Of 40,374 tons of reparations equipment shipped from the U.S.Zone in 1946, the Soviet Union received 38,977 tons, or 94.3 percent.[37] In all, nearly one-third of reparations removals from the U.S. Zone of Germany went to the Soviet Union. Between March 30, 1946, and March 31, 1947, a total of 209,655 tons of equipment (valued at RM 190,279,000, 1938 prices) was removed. Of this total, 66,981 tons (valued at RM 45,246,000) went to the U.S.S.R.[38]

Other removals from Germany during 1944-51 can be understood only in the context of the way in which occupations took place within the inter-allied zonal borders. The U.S. Army had stopped at the Elbe River while the Soviets occupied the whole of Berlin,[39] and this worked in favor of the Soviet dismantling policy.

The historic and geographic factors have been treated in great detail elsewhere and may be but briefly summarized here. In the closing days of the war the Soviet armies moved up to the Elbe River, facing the U.S. and British armies, and occupied the whole of Berlin including what were to become the U.S., British, and French sectors of the city. They then proceeded to strip Berlin of its industry, including the highly important electrical equipment factories, *and including plants in all sectors*. This removal was probably completed by June 1945 because when the Western Allies suggested moving into their Berlin zones—the Soviets in turn to occupy the whole of their zone west of the Elbe—the Soviets asked only for a few days delay, until July 1.

In the meantime, i.e., from late April to July 1, 1945, the Americans and British maintained industry in their territory, so that when the Soviets moved into the rest of their occupation zone they received yet more factories including a highly important sector of the aircraft industry and, of course, the Nordhausen

[36] *A Year of Potsdam*, *op. cit.* n. 26, p. 37.

[37] *New York Times*, January 23, 1947, p. 13.

[38] *Report of the Military Governor*, Office of the U.S. Military Governor (Germany), no. 45, March 1949.

[39] See Cornelius Ryan, *The Last Battle* (New York: Simon and Schuster, 1966), on the "drive to Berlin" controversy. The official U.S. Government account of this controversy is soon to be published under the title *The Last Offensive*.

Table 2-4 STATUS ON ADVANCE REPARATIONS PLANTS FOR THE U.S.S.R. AT THE END OF 1946

Plant No.	Name of plant	Location	Product	Dismantling started	Percent dismantled at end 1946
1	Kugelfischer Georg Schaefer	Schweinfurt, Bav.	Ball-bearings	1 Mar. 46	97*
2	Bayerische Motorenwerke No. 1	Munich, Bav.	Aircraft engines	1 Mar. 46	82
3	Deutsche Schiffs- & Maschinenbau AG (Deschimag shipyards)	Bremen (Werk Weser)	Ship-building	1 Mar. 46	27
4	Grosskraftwerk AG	Mannheim, W/B	Power plant	—	—
5	Kloeckner-Humboldt-Deutz	Oberursel, Gr. Hesse	Diesel engines	15 Nov. 45	61
6	Fritz Mueller	Oberesslingen, W/B	Machine tools	3 Oct. 45	5
7	Bohner & Koehle	Esslingen, W/B	Machine tools	8 Oct. 45	4
9	Hensoldt & Soehne	Herborn, Gr. Hesse	Fire control	10 Oct. 45	100
10	Gendorf	Gendorf, Bav.	Power plant	16 Jan. 46	40
11	Hastedt	Bremen	Power plant	17 Oct. 45	88
12	Toeging AG Innwerk	Toeging, Bav.	Power plant	11 Feb. 46	8
13	Daimler-Benz (Goldfisch) (underground)	Mosbach, W/B	Aircraft engines	1 Mar. 46	80
14	Bayerische Motorenwerke No. 2	Munich, Bav.	Aircraft engines	2 Oct. 45	100
15	Fabrik Hess. Lichtenau	Hess. Lichtenau, Gr. Hesse	Explosives	6 Feb. 46	24
16	Deutsche Schiffs- & Maschinenbau AG	Bremen-Valentin	Ship-building	1 Jan. 46	100
17	C.F. Borgeward	Bremen	Torpedoes	22 Jan. 46	62
18	Norddeutsche Huette AG	Bremen-Oslebshausen	Steel manufacturing	—	0
19	Hahn & Tessky Indexwerke	Esslingen, W/B	Automatic screw machines	25 Oct. 45	60
20	Fabrik Kaufbeuren	Kaufbeuren, Bav.	Explosives	19 Oct. 45	100
21	Fabrik Aschau	Muehldorf, Bav.	Explosives	27 Oct. 45	30
22	Fabrik Ebenhausen	Ebenhausen, Bav.	Explosives	15 Oct. 45	100
23	Wehrmacht ordnance plant	Strass, Bav.	Shell loading	1 Mar. 46	100
24	Wehrmacht ordnance plant	Geretsried-Wolfratshausen, Bav.	Shell loading	1 May 46	2
25	Wehrmacht ordnance plant	Deschnig, Bav.	Shells	1 Mar. 46	100

Source: *A Year of Potsdam*, (n.p.: Office of Military Government for Germany [U.S. Zone], Economics Division, 1947), p. 36.

* U.S.S.R. portion only.

V-1 and V-2 rocket plants. Thus the Allied drive to the Elbe gave the Soviets the opportunity, willingly taken, to acquire the extensive German electrical equipment industry in Berlin[40] and find the German aircraft industry waiting intact when the zonal frontiers were rearranged a few weeks later.[41]

PLANT REMOVALS FROM THE SOVIET ZONE OF GERMANY

At the end of 1944 a special committee was organized under the Soviet Council of Ministers and under the leadership of Malenkov. Its twin tasks were the dismantling of German industry and the expansion of Soviet industry by the use of the equipment removed.[42] The committee's central headquarters in Moscow was staffed by members of the Central Committee of the Communist Party of the Soviet Union and divided into departments with staff drawn from Soviet industry, given military ranks. As individual targets were located, instructions passed to military units for actual dismantling then were carried out by German prisoners of war and local labor under Soviet officers.[43]

Dismantling of East German industry began with the arrival of the second wave of Soviet forces, first in Berlin (all zones) and then throughout the provinces of Silesia, Brandenburg, Thuringia, and Saxony.

Although the facts of dismantling have been strictly censored by the Soviets and no Allied observers were allowed into the Soviet Zone at the time, information of reasonable accuracy has filtered through the Iron Curtain. In particular the SPD (Sozialdemokratische Partei Deutschlands) in West Germany collected dismantling information on a plant-by-plant basis and published this information in 1951.[44] Further, reports by former Soviet officials add to our knowledge, although some of these leave the impression of being more enthusiastic than accurate.

Dismantling involved several thousand plants and included the best of industry

[40] For a description see U.S. Strategic Bombing Survey, reports by A. G. P. Sanders, Capt. Nichols, and Col. Ames on electrical equipment targets in Berlin, July 1945.

[41] In the interval of two months numerous U.S. and British intelligence, army, navy, air force, and civilian teams explored the technical side of Germany industry in the Soviet Zone. This exploration was conducted in the following directions: (a) interviewing German technicians, (b) acquiring papers and materials for reports on technological and economic structure, (c) obtaining drawings, instruments, and samples, and (d) acquiring V-1 and V-2 samples and engine samples. There were no equipment removals. The plants were left intact, and some were even repaired for the Soviets. So the Soviets obtained the productive capacity *intact*, but did not obtain engineers or papers. The papers were acquired under the FIAT programs.

[42] Slusser, *op. cit.*, n. 16, p. 18.

[43] Some 10,000 local Germans were assigned to dismantle the brown coal plants at Regis-Breitingen, and another 5000 dismantled the Lauta works at Hoyersworda; 12,000 Germans were used at the Giessches Erben works; and 20,000 were used at the large plant at Brona. Löwenthal, *op. cit.* n. 14, pp. 182-85.

[44] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik*, (Bremen: F. Trüjen, 1951).

moved to East Germany during the war to avoid Allied bombing. All together, a total of about 12,000 trainloads of equipment was removed to the U.S.S.R.

Table 2-5 REDUCTION OF INDUSTRIAL CAPACITY BY DISMANTLING IN THE SOVIET ZONE OF GERMANY

Industry	*1936 Production*	*Nettl's percentage estimate of capacity reduction*	*Equivalent in tonnage terms*
Vehicles	532,706 units	65	346,259
Cement	1,687,000 tons	40	674,800
Rubber goods:			
Tires	176,000 units	70-80	123,000-140,800
Tubes	148,000 units	70-80	103,600-118,400
Paper and cardboard	1,195,000 tons	40	478,000
Cellulose	205,400 tons	40	82,160

Sources: J. P. Nettl, *The Eastern Zone and Soviet Policy in Germany, 1945-50* (London: Oxford University Press, 1951), p. 202. Wolfgang F. Stolper, *The Structure of the East German Economy* (Cambridge, Mass.: Harvard University Press, 1960), pp. 146, 180, 196, 207.

Details of this dismantling in the Soviet Zone have been included in the chapters on industrial activities (chapters 8 through 24).

DEPORTATION OF GERMAN SCIENTISTS AND TECHNICIANS

One significant aspect of the reparations transfer process was the deportation of German scientists and technicians to the Soviet Union, on a mass scale concentrated in the fall of 1946. The major program was completed during the night of October 28, 1946, when trainloads of Germans from aircraft and armaments plants were moved with their families and furniture to the Soviet Union.[45]

Deportations were concentrated among the staffs of key German plants. According to Fritz Löwenthal, more than 300 scientists, technicians, and skilled workers were deported from Zeiss; 26 chemists, seven engineers, and several skilled mechanics were co-opted from the Leuna works; and technicians and workers were drawn from the Junkers works at Dessau, the Oberspree cable works in Niederschoenweida, the Schott glass works in Jena, the optical works in Saalfeld and Poessneck, and the Gera workshops.[46] Löwenthal also cites

[45] For descriptions of deportation, see Löwenthal, *op. cit.* n. 14, and V. L. Sokolov, *Soviet Use of German Science and Technology, 1945-1946* (New York: Research Program on the U.S.S.R., 1955).

[46] Löwenthal, *op. cit.* n. 14, pp. 203-4.

a U.S. Navy report to Congress stating that 10,000 German scientists and technical specialists had been absorbed into Soviet industry by May 1947.[47]

These German workers began to filter back home in the early 1950s together with German, Austrian, and Italian prisoners of war and deportees. In January 1952 *The Times* (London) reported that there was a continuing flow of Germans from the optical and precision instruments industries: "It seems to show that Russia can now do without these craftsmen."[48] The report particularly noted the return of 310 highly skilled workers from the Zeiss works in Jena, after five years in Russia. It is probable that all German deported workers were returned by 1957-58.

REPARATIONS FROM FINLAND, 1944 TO 1955

The Finnish-Soviet Peace Treaty of December 17, 1944, required Finland to transfer goods to the Soviet Union valued at $300 million in 1938 prices over a period of eight years. The amount was similar to that for Hungarian and Rumanian reparations, but in the Finnish case there was little Soviet interference in the manufacturing and delivery—this being entirely a Finnish responsibility whereas in Hungary and Rumania the Soviets formed "joint companies" to carry out the task. Some 60 percent of the indemnity comprised metallurgical and engineering products, the balance being ships, cable, and wood products—amounting in all to a considerable proportion of the Finnish national product.[49]

The technical nature of this huge indemnity required Finland to establish major new industries and to expand engineering industries that were of only negligible importance before the war. This was done with credits and equipment from the United States and Sweden, and thus provides some excellent examples of "indirect transfers."

A. G. Mazour sums up Finnish achievements in reparations deliveries to the U.S.S.R. as follows: "Mere survival was a miracle. To meet the obligations and still manage to survive was an achievement which commands profound respect and admiration."[50] Jensen has calculated the reparation payments as a percentage of net national product as follows:[51]

[47] *Ibid.*, pp. 205-6.
[48] *The Times* (London), January 29, 1952, p. 4g.
[49] Bartell C. Jensen, *The Impact of Reparations on the Post-war Finnish Economy* (Homewood, Ill: Richard D. Irwin, 1966). See also A. G. Mazour, *Finland Between East and West* (Princeton: Van Nostrand, 1956), p. 173.
[50] Mazour, *op. cit.* n. 49.
[51] Jensen, *op. cit.* n. 49, p. 18.

Year	Reparations as percentage of NNP	Reparations as percentage of state expenditures
1944	0.3	0.7
1945	7.6	20.9
1946	4.8	13.7
1947	4.1	13.7
1948	3.2	10.7
1949	3.2	10.8
1950	1.6	6.1
1951	1.8	6.8
1952	1.1	4.1

The major deliveries under the program comprised about two-thirds of Finland's prewar ship tonnage plus considerable new construction. Ships transferred included 70 cargo vessels, one tanker, seven passenger ships, two icebreakers, and 15 barges from the merchant marine. In addition, substantial new deliveries of wooden and metal ships were required. During the first four years of the reparations period Finland delivered 143 new ships and two floating docks valued at $25.8 million, while the program for the second four years called for 371 ships and two docks valued at $40.2 million.[52] In all, about 359,000 gross registered tons of shipping with a total valuation of $66 million in new ships and $14 million in existing ships was delivered, requiring a significant expansion and modernization of the Finnish shipbuilding industry.[53]

The next largest category, comprising $70.7 million, was made up of industrial equipment and a number of complete plants. Among other things, this segment included 17 complete industrial plants to establish mills for the production of prefabricated wooden houses. This is of particular interest because instead of themselves supplying a plant specification, the Soviets requested that the Finns supply it (the delays involved in this procedure subjected Finland to a monthly fine of $45,000 payable in supplementary deliveries). The plants delivered (Table 2-6) were complete with sawmills, lumber kilns, conveyers, power plants, and repair shops.[54]

The remaining major categories included 2600 km of power cable, 34,375 tons of bright copper wire, and 1700 km of control cable ($12.9 million), pulp and paper products ($34.9 million), and wood products ($28 million).[55]

[52] J. Auer, *Suomen sotakorvaustoimitukset neuvostoliitolle* (Helsinki: Werner Söderström Osakeyhtiö, 1956), p. 318.

[53] *Ibid.*, p. 327; for a listing of ships by type see Urho Toivola, *The Finland Year Book 1947* (Helsinki, 1947), p. 84.

[54] Toivola, *op. cit.* n. 53, p. 335.

[55] *Ibid.*, pp. 84-85.

Table 2-6 COMPLETE INDUSTRIAL PLANTS SUPPLIED TO THE U.S.S.R. UNDER FINNISH REPARATIONS

Number of plants	*Description*	*Capacity per plant, annually*
3	Sulfite cellulose	40,000 tons bleached cellulose
2	Cardboard mills	58,000 tons cardboard
2	Woodpulp mills	50,000 tons woodpulp
4	Paper mills	30,000 tons paper
17	Prefabricated houses	1800 houses (each 50 square meters)
6	Plywood plants	12-15,000 cubic meters
2	Woodflour mills	2000 tons

Source: Urho Toivola, *The Finland Year Book 1947* (Helsinki, 1947), pp. 84-85.

REPARATIONS FROM JAPAN

In contrast to Manchuria, no reparations have been traced as originating in Japan for the Soviet Union.

Owen Lattimore had responsibility for developing and writing the machine tool and aluminum sections of the Pauley Mission report on Japanese reparations.[56] He makes only one reference to a possibility of Soviet reparations from Japan: "Although I do not believe that the U.S.S.R. should assert a substantial claim for reparations from Japan, nevertheless certain plants and machine tools may well be made available to the U.S.S.R."[57] Lattimore's reasoning was that the equipment might be allocated to the Soviet Union because the low economic development of the Far East would make absorption of Japanese industrial equipment and capacity difficult for Far Eastern countries and that China and the Philippines were not ready to receive reparations.[58] This argument was presented to the Far East Committee of January 12, 1946. There is no evidence, however, that the U.S.S.R. ever received the 850,000 machine tools Lattimore estimated were available in Japan for reparations purposes.[59]

REMOVALS FROM MANCHURIA

The 1946 Pauley Mission in Manchuria was organized in April 1946 under the instructions of President Truman. The mission included qualified American

[56] Edwin W. Pauley, *Report on Japanese Reparations to the President of the United States, November 1945 to April 1946* (Washington, April 1, 1946).

[57] *Ibid.*, pp. 11-12.

[58] Lattimore's logic is elusive. Low development suggests a *requirement* for machine tools; furthermore, the Soviet Union also had a relatively low level of development.

[59] Pauley, *op. cit.* n. 56, p. 3.

civilian engineers and industrial specialists from General MacArthur's headquarters in Japan.

From a base established at Mukden, inspection trips were made to important industrial and mining centers: Mukden, Fushun, Liaoyang, Anshan, Penhsihu, Kungyuan, Chinchow, Chinhsiao, Pehpiao, Fu-hsien, Hulutao, Kaiyuan, Ssupingchieh, Hsin-an, Changchun, Kirin, Harbin, and Mutankiang. Dairen, however, was not visited because permits were not granted by the Soviet Government or the local authorities; Antung was not visited because the Chinese Communists refused permission.

The four objectives of the Pauley Mission were as follows: (1) to survey Japanese assets in Manchuria subject to reparations; (2) to ascertain the productive capacity of Manchurian industry; (3) to estimate if immediate reparations removals from Japan could be utilized to improve or rehabilitate Manchurian industry; and (4) to prove or disprove reports that crippling removals had been made.

Manchuria has many natural resources, and the Japanese had created an extensive industrial structure there on the basis of these resources. The defeat

Table 2-7 REDUCTION IN CAPACITY OF MANCHURIAN INDUSTRY BY SOVIET REMOVALS

	Pauley Report [a]		*Japanese statistics* [b]	
Industry	*Cost of installations dismantled and removed*	*Percentage reduction in capacity*	*Cost of installations dismantled and removed*	*Percentage reduction in capacity*
Electric power	$201,000	71	$219,540	60
Coal and coke	50,000	90	44,720	80
Iron and steel	131,260	50-100	204,052	60-100
Nonferrous metals	10,000	75	60,815	50-100
Railroad	221,390	50-100	193,756	50-100
Machinery	163,000	80	158,870	68
Petroleum	11,380	75	40,719	90
Chemical	14,000	50	74,786	33
Cement industry	23,000	50	23,187	54
Textiles	38,000	75	135,113	50
Pulp & paper	7,000	30	13,926	80
Radio	25,000	20-100	4,588	30
Total	$895,030,000		$1,174,072,000	

Sources: [a]Edwin Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946). A report published by the Chinese Association for the United Nations, *A Report on Russian Destruction of Our Industries in the North-eastern Provinces* (Taiwan, 1952), has considerably higher figures of destruction than Pauley, but does not include such detailed inspection reports as characterize the Pauley Mission report. [b]*The Ashwan Steel Plant* (Hong Kong: Union Research Institute, 1956), Communist China Problem Research Series.

of Japan caused disruption of production centers and trade channels and upset the entire economic structure of the Far East; Soviet occupation further disrupted the industrial structure.

The findings of the Pauley Commission were that the wrecked condition of Manchurian industry evident between the time of the Japanese surrender and the visit of the Pauley Mission was due directly to Soviet removals and pillage, and to a lesser extent to indirect consequences of the Soviet occupation. The Soviets had concentrated their efforts on certain categories of supplies, machinery, and equipment: functioning power-generating and transforming equipment, electric motors, experimental plants, laboratories and hospitals, and the newest and best machine tools. The wrecked condition was due mainly to Soviet removals and partly to Soviet failure to preserve order.[60] (See Table 2-7.)

At the Fushun power plant, four 50,000-kw steam-electric generators plus the condensers, auxiliary equipment, stokers, and drums were removed. Thirty-four low-voltage transformers for electric furnaces were taken from the aluminum plant at Fushun (there were 36 transformers at the plant, but two outside on skids were left behind), and the Sodeberg electrodes were removed.

All machine tools from the Fushun coal hydrogenation plant were removed.

From the Manchu iron works (Anshan) power house, one 25,000-kw Siemens Halske turbogenerator and one 18,000-kw turbogenerator were removed, leaving 30,500 kw of capacity in place. From the plant's boiler house, four complete boilers with equipment were removed plus equipment for two more boilers. All rolling equipment was removed from the blooming mill. Ball mills and motors were removed from the sponge iron plant. Magnetic separators were removed from the iron ore treating plant; bearings on the roasting kiln were removed; chargers, pushers, and valve mechanisms were taken from the coke ovens; motors and trolleys from the blast furnace stockyard crane and skip hoists, and blowers and auxiliaries for six of the nine blast furnaces were also removed.

Practically all the machine tools and electrical equipment, seven cranes, and all electric motors were removed from the Mitsubishi machine plant in Mukden. In addition, all equipment (except one large press) and three overhead cranes were removed from the forging shop; cranes, machinery, and a large electric furnace were taken from the foundry. All equipment from the welding shop and all equipment for manufacturing steel tubes were taken from the seamless tube mill at the Mitsubishi plant.

Equipment removed from the coal hydrogenation research institute included high-pressure compressors, machine tools, and the distillation apparatus. All

[60] For example, one report states: "Mukden, the largest city in Manchuria, has been left without power for light, water, and other utilities, endangering the health and lives of its two million inhabitants." *"Selected Photographs from Pauley Mission to Manchuria: June 1946,"* Special Collection in the Hoover Institution, Stanford University.

machinery (except lens polishers and some grinders) was removed from the optical instrument plant at Mukden.

Boilers and heavy rubber processing equipment were taken from the belt-making building of the Manchu Rubber Company (Liaoyang), as were tire manufacturing equipment, hydraulic presses, rubber mills and collandars as well as bicycle tires, power and transmission belt manufacturing equipment, and machines for the manufacture of shoes and raincoats.

All tire-making machinery was removed from the Toyo Rubber Tire Company operation at Mukden, all cotton spinning equipment from the tire cord plant, and four nitrators for picric acid removal together with four centrifuges from Arsenal 383.[61]

REPARATIONS FROM ITALY

Under the Soviet Treaty of Peace[62] with Italy it was agreed that reparations amounting to $100 million were to be paid during a period of seven years. The reparations were to include part of Italy's "factory and tool equipment designed for the manufacture of war material"; part of Italian assets in Rumania, Bulgaria, and Hungary with certain exceptions; and part of Italian current production together with one-third of the Italian naval fleet.[63]

REPARATIONS AND REMOVALS FROM AUSTRIA

An estimated $400 million worth of capital equipment was removed by the Soviets from the Soviet zone of Austria in 1945-46.

The Austrian oil industry was exclusively in the Soviet zone, as were many finishing industries and most of the electrical industry. At Zistersdorf in Lower Austria, Soviet occupation forces removed and shipped to Russia about $25 million worth of oil well supplies and equipment. The Alpine Monton company in Styra, with steel plants at Donawitz and finishing plants at Kreiglach and Kindberg, had much of its equipment removed by the Red Army—all together 75 trainloads, including a new blooming mill, two 25-ton electric furnaces, one turbogenerator, and hundreds of machine tools.

There was extensive removal of equipment from the electrical equipment industry, including the wire and cable industry where almost all production facilities fell into Soviet hands. The two Vienna electrical plants, Simmering

[61] *Ibid*. Photos for this report were taken by U.S. Signal Corps during the inspection of Japanese industries by American industrial engineers.

[62] United Nations *Treaty Series*, vol. 49, no. 747 (1950), pp. 154 *et seq*.

[63] For details see Giuseppe Vedovato, *Il Trattato di Pace con l'Italia* (Rome: Edizioni Leonardo, 1947), pp. 127-30, 317-31, 363, 561.

and Engerthstrasse, were partially dismantled by the Soviets. The Goertz Optical Works, the leading manufacturer of optical lenses, was seized and removed in 1946.

In transportation industries the plant of Weiner Lokomotiv Fabrik, a manufacturer of locomotives, was dismantled and one thousand of the twelve hundred machine tools in the plant were shipped to Russia. The largest of Austria's motor vehicle producers, Steyr-Daimler-Pusch A.G., suffered extensive equipment removals (however, the largest agricultural machinery producer, Hofherr-Schrandz, was left intact and operated under Soviet control). Numerous plants in the clothing, fertilizer, and chemical industries also had extensive equipment removals to the Soviet Union.

In addition to the dismantling and removal, major deliveries of goods to the Soviet Union were required by the treaty under which Austria regained her independence. The value of such deliveries, largely industrial and transportation equipment, totaled $150 million in six years (plus ten million metric tons of crude oil valued at about $200 million in ten years).[64]

REPARATIONS AND REMOVALS FROM RUMANIA

Under the armistice signed September 12, 1944, Rumania agreed to provide Russia with reparations valued at $300 million, in addition to acceding to Soviet annexation of Bessarabia and Northern Bucovina. The Soviets then proceeded to remove the entire Rumanian Navy plus 700 ships, barges, and tugs comprising the major part of the Rumanian merchant marine, about one-half the country's rolling stock, all automobiles, and large quantities of equipment from the Rumanian oil fields.

Particular emphasis was placed on removal of oil refineries and equipment owned by American and British companies. In November 1944, the following was reported to the U.S. Secretary of State:

> The Russians have been working with all possible speed, even at night, to remove oil equipment of Astra Romana, Stela Romana, and another oil company in which both British and American companies are interested. This equipment is being taken to Russia.[65]

In addition, 23,000 tons of tubes and casing was removed from oil company warehouses. The Soviets claimed that this material was actually the property of German companies sent to Rumania during the war and therefore was not

[64] *The Rehabilitation of Austria, 1945 to 1947* (Vienna: U.S. Allied Commission for Austria, [1948?]; F. Nemschak, *Ten Years of Austrian Economic Development, 1945-1955*, (Vienna: Association of Austrian Industrialists, 1955), p. 8.

[65] U.S. Dept. of State, *Foreign Relations of the United States*, vol. IV (1944), p. 253.

owned by the American and British companies. In any event, Andrei Vyshinsky, then the Soviet assistant people's commissar for foreign affairs, suggested it comprised only a small amount of the equipment required for rehabilitation, and "the amount of equipment was so small it might be written off as a minor Lend Lease shipment."[66]

It was later reported that the Russians had occupied more than 700 factories in Rumania, and that considerable amounts of industrial equipment and supplies including oil drilling equipment, actually the property of British and American oil companies, were being removed to Russia.[67]

Diplomatic protests by the United States led to the establishment in 1945 of a Joint U.S.–Soviet Oil Commission to consider the problem. This commission was dissolved in August 1947 without apparently arriving at any agreement. It was then stated that the Soviets had removed 7000 tons of equipment at the end of 1944 from Romana-Americana, a U.S. subsidiary of Standard Oil of New Jersey. This equipment was valued at $1,000,000.[68]

There is no question that there were sizable Soviet equipment removals from occupied areas after World War II; a minimum value figure in excess of $10 billion in 1938 prices can be set for equipment thus removed. The unresolved question concerns the usefulness of such removals in the U.S.S.R.

The argument against usefulness, which also assumes irrationality on the part of the Soviets, is built on no hard evidence except observations of rusting equipment along rail lines from Germany to the U.S.S.R.

On the other hand, the fact that dismantling was spread over a number of years suggests that there was a continuing demand for the equipment. We can also trace delivery of important processes and equipment to the U.S.S.R., and the Berlin Ambi-Budd plant negotiated back to the West was found to have been carefully numbered and guarded for a period of some years although not used by the Soviets.

Furthermore, by the time the war ended the Soviets had extensive experience in dismantling, and after the war they took pains to disguise their intentions and actions. In Manchuria there is evidence that Chinese mobs were encouraged to loot buildings after Soviet removals, and it is not unlikely that such decoy actions were undertaken in Germany.

It is concluded, therefore, that the Soviets removed extensive industrial capacity from a number of countries under a carefully planned program executed with reasonable care. This capacity had the potential to make a significant contribution to Soviet postwar industrial production, and this contribution will be examined in more detail in Part II.

[66] *Ibid.*, p. 263.
[67] *Ibid.*, vol. V (1945), pp. 542, 629.
[68] U.S. Dept. of State, *Bulletin*, August 3, 1947, p. 225.

CHAPTER THREE

Trade as a Transfer Mechanism

The prime means for transfer of Western technology to the Soviet Union has been through normal channels of commerce. Since 1918 Russian foreign trade has been a state monopoly, and this monopoly power has been utilized in a superbly efficient manner to direct the most advanced of Western technological achievement to the Soviet economy. Its monopolistic position, of course, allows the Soviet state to play one foreign country against others and individual Western firms against firms in all other countries in the acquisition process.

Table 3-1, based on United Nations data, presents the percentage of machinery and equipment (U.N. category SITC 7) contained in total Soviet trade with major Western countries between 1953 and 1961. The most significant observable feature is the consistently large percentage that SITC 7 forms of total Soviet imports. Although the high point (97.56 percent of 1959 Danish exports to the U.S.S.R.) is today unusual, the percentage is usually in excess of 60 percent of Soviet imports from almost all major Western industrialized nations, and percentages in excess of 70 percent are not unusual.

Figure 3-1 presents data for the single year 1959 in schematic form and indicates at a glance the high proportion of machinery and equipment from all Western countries. Figure 4-2 illustrates the significant lack of Soviet capital goods exported to the West; only Greece imported Soviet machinery and equipment in 1959. The Soviet Union normally exports machinery and equipment only to underdeveloped areas as part of barter deals; even foreign assistance projects financed by the Soviets have a major foreign machinery component.[1]

In the 1920s and 1930s over 90 percent of U.K. and German shipments to the Soviet Union came within the SITC 7 category; since that period such high percentages are less frequent, but they have remained sizable enough over a period of almost 50 years to suggest the key relationship between trade and Soviet industry.[2]

[1] See chapter 7.

[2] Even well informed commentators have taken positions directly opposed to this factual presentation. For example, Senator Jacob Javits of New York comments: "Trade with the West as a general matter, must necessarily be a marginal factor in the performance and potentialities of the Soviet economy." *Congressional Record, Senate*, vol. 112, pt. 9 (89th Congress, 2d session), May 24, 1966, p. 11233.

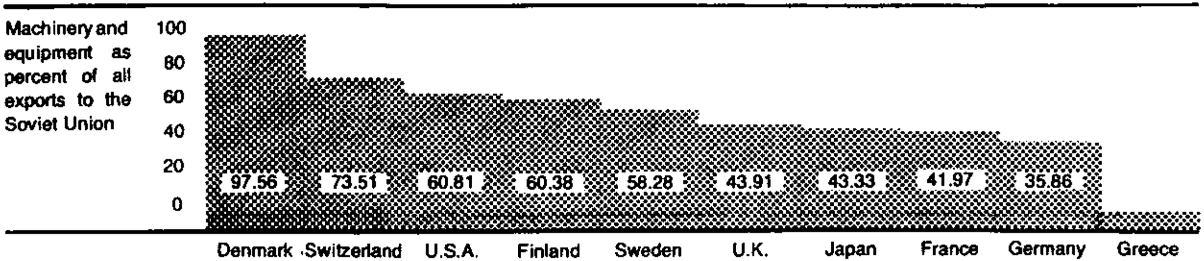
Table 3-1 PERCENTAGE OF TOTAL EXPORTS TO THE SOVIET UNION COMPRISING MACHINERY AND EQUIPMENT (SITC 7), FROM 1953 TO 1961

Country	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*Average 1953-1961*
Switzerland	—	—	—	—	—	—	73.51	83.41	91.50	84.73*
Sweden	46.90	62.62	61.02	70.40	55.04	54.47	58.28	39.93	49.21	54.17
Finland	—	48.14	58.25	53.43	50.23	47.89	60.38	61.74	46.25	53.29
Denmark	25.48	2.47	68.64	95.78	42.72	39.10	97.56	78.93	40.64	50.04
Germany	58.13	75.80	64.03	54.24	37.40	69.29	35.86	44.32	56.52	49.87
United Kingdom	53.97	39.52	46.37	37.09	28.53	25.12	43.91	53.54	62.87	43.95
Austria	93.86	50.92	83.94	5.55	54.16	47.15	32.20	42.30	45.68	42.56
United States	17.65	0.93	2.89	59.49	12.71	19.95	60.81	48.82	36.78	41.86
Netherlands	12.32	44.27	63.76	60.08	69.36	2.72	9.87	44.39	36.58	39.50
France	2.56	9.95	23.27	52.98	21.45	25.80	41.97	48.69	52.24	38.16
Japan	—	—	15.96	84.43	14.20	15.81	43.33	29.01	39.12	32.53
Italy	16.09	31.05	15.36	2.10	13.58	10.94	11.08	21.90	32.46	20.42
Norway	—	9.49	—	0.16	0.07	0.62	0.33	0.06	5.42	2.12

Source: *U.N. Yearbook of International Trade Statistics* (New York, 1958).

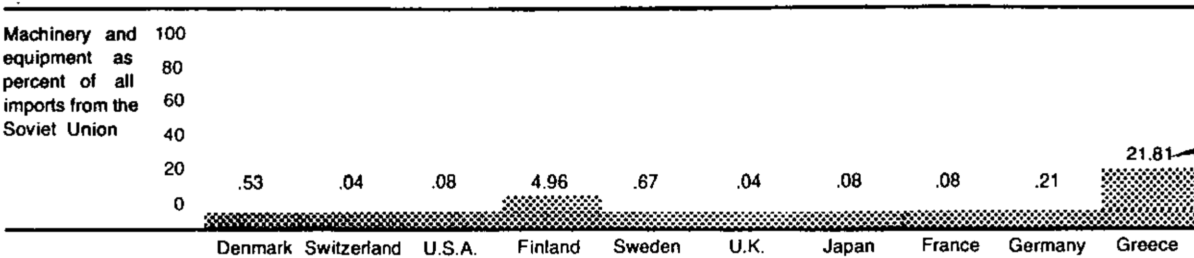
* Three years only.

Figure 3-1 EXPORTS OF MACHINERY AND EQUIPMENT, AS PERCENTAGE OF TOTAL TRADE, FROM CAPITALIST COUNTRIES TO THE SOVIET UNION (1959)



Source: United Nations, *Commodity Trade Statistics*, Statistical Papers, series D, vol. IX, no. 4 (January-December 1959).

Figure 3-2 EXPORTS OF MACHINERY AND EQUIPMENT, AS PERCENTAGE OF TOTAL TRADE, TO CAPITALIST COUNTRIES FROM THE SOVIET UNION (1959)



Source: United Nations, *Commodity Trade Statistics,* Statistical Papers, series D. vol. IX, no. 4 (January-December 1959).

The following selection of trade agreements made by the Soviets with Western nations illustrates that Soviet exports consist almost entirely of raw materials:

Date and trade agreement	Soviet exports under the trade agreement
1953 Denmark trade agreement	"Wheat, oil cake, soya beans, cotton, timber, pig iron, asbestos, apatite concentrate." (U.N. *Treaty Series*, vol. 125, no. 2292, p. 10)
1956 Japan trade agreement	"Lumber, coal, mineral ores, oil, metals, fertilizer, asbestos and fibers." (*Japan Times* [Tokyo], October 20, 1956)
1957 Denmark trade agreement	"Grain, apatite concentrate, potash, pig iron, coal, coke, petroleum products, timber, cotton, chemicals, agricultural equipment, 150 autos, 150 motorcycles." (U.N. *Treaty Series*, vol. 271, no. 3912, p. 132)
1959 United Kingdom trade agreement	"Grain, timber and timber products, wood pulp, manganese ore, asbestos, ferroalloys, non-ferrous metals, minerals, fertilizers, flax and other goods." (U.N. *Treaty Series*, vol. 374, no. 5344, p. 305)

This pattern of Soviet foreign trade, a consistent pattern since about 1922,[3] may then be seen as essentially an exchange of raw materials for Western technology.

More detailed examination of the impact pattern on a country-by-country basis for the period after 1945 illustrates the manner in which the Soviet foreign trade monopoly has been superbly used to induce a flow of modern technology into the Soviet economy to fill numerous gaps and offset persistent shortfalls in the planning process. Complementary to this process has been a propaganda campaign, obviously very effective, to obscure the exchange pattern. This campaign has succeeded to the extent of informing U.S. State Department statements to Congress and the public.[4]

UNITED KINGDOM AS A SUPPLIER OF CAPITAL GOODS TO THE SOVIET UNION

The first postwar trade and payments agreement between the U.S.S.R. and

[3] See chapter 21, Sutton I: *Western Technology . . . 1917 to 1930*; cf. Sutton, "Soviet Export Strategy," in *Ordance*, November-December 1969. A complete list of Soviet trade agreements at June 1, 1958, may be found in *Spravochnik po vneshnei torgovle SSR* (Moscow: Vneshtorgizdat, 1958), pp. 91-92.

[4] See, for example, testimony of former Secretary of State Dean Rusk, U.S. House of Representatives, *Investigation and Study of the Administration, Operation, and Enforcement of the Export*

the United Kingdom was signed at Moscow on December 27, 1947.[5] The agreement included both short- and long-term arrangements. Under the short-term arrangement the Soviet Union agreed to supply from its 1947 harvest 450,000

Table 3-2 UNITED KINGDOM DELIVERIES TO THE SOVIET UNION UNDER THE 1947 TRADE AGREEMENT

Deliveries under Schedule I			*Deliveries under Schedule II*		
Item Number	*Quantity*	*Description*	*Item Number*	*Quantity*	*Description*
1	1100	Narrow gauge 750-mm locomotives	1	£150,000 value	Scientific and laboratory apparatus
2	2400	Flat trucks, 750-mm	2	4	Pile drivers mounted on pontoons
3	2400	Winches (2 and 3 drums)	3	4 sets	Winding gear
4	210	Excavators	4	1	Electro dredger
5	54	Caterpillar loading cranes	5	18	Ball mills for copper ore grinding
6	250	Auto timber carriers	6	8	Ball mills for grinding apatite
7	14	Tugs	7	3	Rod mills for grinding ores
8	4	Dredgers	8	8	Spiral type classifiers
9	200	Locomobiles	9	2	Gyratory crushers
10	150	Mobile diesel electric generators, 50 kw	10	3	Railway steam cranes
11	24	Steam power turbine stations, 500 kw	11	48	154-kv Voltage transformers
12	£1,050,000 value	Plywood equipment	12	6	Complete distributing sets
13	£400,000 value	Timber mill equipment	13	45	Isolating switches (154 kv)
			14	10	Oil purifying apparatus
			15	300	100-kw electric motors

Source: Great Britain, *Soviet Union No 1 (1948)* Command 7297, (London: HMSO, 1948).

Control Act of 1949, and Related Acts, 87th Congress, 1st session, October and December 1961, (Washington, 1962), and *ibid.*, 2d session, Hearings, part. III, 1962.

[5] Published as Great Britain, *Soviet Union No. 1 (1948)*, Command 7297 (London: HMSO, 1948).

tons of barley, 200,000 tons of maize, and 100,000 metric tons of oats. In return the United Kingdom agreed to ensure the supply of 25,000 long tons of light rails with fishplates, nuts, and bolts, with an additional 10,000 tons to be supplied from U.K. military surpluses.

The long-term arrangement was more extensive. It included U.K. delivery of materials listed in Schedules I and II (Table 3-2) and supplies of wheat, pulses, pit props, cellulose, and canned goods from the Soviet Union in exchange for oil well tubes and tinplate from the United Kingdom.

Schedules I and II consist entirely of equipment and machinery. Two separate categories may be isolated: (1) sizable quantities of such equipment as narrow-gauge locomotives, flat trucks, winches, auto timber carriers, locomobiles, and generators—clearly intended for production purposes; and (2) four pile drivers, sets of winding gear, two gyratory crushers, and three railway steam cranes—materials in much smaller quantities for which it is unlikely the Soviets had production uses in mind. The spare parts and maintenance problem for a few equipment items is too great to make such purchases worthwhile; these items were probably intended for examination and technical information on British manufacturing methods.

Two major agreements were made with British companies a few years later, in 1954. In January of that year, 20 trawlers valued at $16.8 million were ordered from Brooke-Marine, Ltd. The specifications for these trawlers included the most advanced features available in the West (see chapter 21). In May 1954 a $19.6 million agreement was made with Platt Brothers for supplying textile equipment (see chapter 15).

Another five-year trade agreement between the United Kingdom and the Soviet Union came into force on May 24, 1959.[6] Again, in exchange for raw materials[7] the Soviet Union agreed to place orders with British firms:

> ... for equipment for the manufacture of synthetic fibres, synthetic materials and manufactures from them, and also other types of equipment for the chemical industry; equipment for the pulp and paper industry; forging, stamping and casting equipment; metalworking machine tools; equipment for the electro-technical and cable industry; equipment and instruments for the automation of production processes; pumping, compression and refrigeration equipment; equipment for sugar beet factories and other types of equipment for the food industry; equipment for the building industry, light industry and other branches of industry as well as industrial products and raw materials customarily bought from United Kingdom firms.[8]

There was also a comparatively small exchange of consumer goods in the agreement, to the value of $2 million.

[6] United Nations, *Treaty Series*, vol. 374, nos. 5323-5350 (1960), p. 306.
[7] See page 43.
[8] *Op. cit.* n. 6, p. 308.

The 1959 agreement was extended for another five years in 1964, and the quotas for the ten years between 1959 and 1969 provided for a continuing supply of United Kingdom technology to the U.S.S.R. This included machine tools, earthmoving equipment, mechanical handling equipment, equipment for the Soviet peat industry (there is no peat industry in the United Kingdom), mining equipment, gas and arc welding equipment, chemical, refrigeration and compressor equipment, and a wide range of scientific and optical instruments.[9]

The use to which some of this equipment has been put may be gleaned from a Soviet booklet published by NIIOMTP (Scientific Research Institute for Organization, Mechanization, and Technical Assistance to the Construction Industry) detailing the technical characteristics of British construction equipment.[10]

GERMANY AS A SUPPLIER OF CAPITAL GOODS TO THE SOVIET UNION

The German-Soviet trade agreements of the 1950s comprised the exchange of German equipment and machinery for Soviet raw materials, continuing the prewar pattern. For example, the 1958 trade agreement called for West Germany to export to the Soviet Union "mainly ... capital goods, including equipment for mining and the metallurgical industry, heavy and automatic machine tools for metalworking industries, equipment for the chemical industry, whaling factory ships."[11]

The German-Soviet trade agreement of December 31, 1960, affords a good example of the general composition and implementation of German-Soviet trade; this agreement provided for mutual trade from January 1, 1961, through December 31, 1963, and the form in which it was to be carried out. Two lists, A and B, were attached to the agreement providing commodity quotas for imports into both Germany and the Soviet Union, and both governments agreed to take "every measure" to enable fulfillment of these quotas. List A, comprising German imports from the Soviet Union, consists entirely of foodstuffs (grain, caviar, fish, oilcake, and vegetable oils), lumber products (sawed timber, plywood, and cellulose), and mineral materials (coal, iron ore, manganese, chrome, and particularly platinum and platinum group metals.). No products of a technological nature are included among German imports from the Soviet Union.

[9] For a complete statement of the quotas and the agreement see Peter Zentner, *East-West Trade: A Practical Guide to Selling in Eastern Europe* (London: Max Parrish, 1967), pp. 152-57.

[10] V. M. Kazarinov and S. N. Lamunin, *Zarubezhnye mashiny dlia mekhanizatsii stroitel'nykh rabot*, (Moscow: Niiomtp, 1959).

[11] *East-West Commerce* (London), May 7, 1958, p. 11.

List B, comprising commodity quotas for imports from West Germany into the U.S.S.R. for the years 1961 to 1963, consists almost entirely of goods of a technical nature. Table 3-3 lists the machinery and equipment items included

Table 3-3 COMMODITY QUOTAS FOR IMPORTS FROM WEST GERMANY TO THE U.S.S.R. UNDER THE TRADE AGREEMENT OF DECEMBER 31, 1960

Commodity	*Value (In DM)*
Machine tools for metal cutting (turning lathes, grinding machines, gear cutting machines, jig-boring machines, vertical lapping machines, machines for the processing of piston rings, component parts for passenger cars and tractors)	31,000,000
Machines for noncutting shaping (mechanical and automatic presses for the metal powder industry, embossing machines, hydraulic stamping presses, vacuum presses, forging manipulators, casting machines)	10,000,000
Power equipment and apparatus for the electrical engineering industry (water eddy brakes, furnaces, diesel power stations, silicon rectifiers for electric locomotives, electric dynamometers)	10,000,000
Coal mining equipment, equipment for metallurgical and petroleum industries (coal preparation plants, equipment for open-pit mining, agglomeration plants, rolling mills for cold rolling of tubes, rapid-working cable percussion drilling plants, loading machines)	110,000,000
Equipment for the food industry, including three complete sugar factories	126,000,000
Refrigeration plants	52,000,000
Equipment for light industries	5,000,000
Equipment for the chemical industry, Complete plant for production of polypropylene Crystallization of sodium sulfate (four plants) Hydraulic refining of benzene (one plant) Production of di-isozyanatene (one plant) Production of phosphorus (one plant) Production of simazine and atrazine (one plant) Manufacture of foils from viniplast (two plants)	11 complete plants
Equipment for the cellulose and paper industry (vacuum evaporating plants, supercalenders)	26,000,000
Equipment for the building materials industry (veneer plants [Ueber - furnieranlagen] for pressed boards made of wood fiber, assembling machines, equipment for the production of mineral wood)	21,000,000
Pumping and compressor plants (pumps and compressors of various kinds, glassblowing machines, ventilators)	63,000,000
Equipment for the polygraphic industry	10,000,000
Equipment for the cable industry	15,000,000
Fittings and component parts for high-pressure pipelines	44,000,000
Main track electric locomotives	20
Ships	157,000,000
Miscellaneous apparatus, including precision instruments and optical apparatus	16,000,000
Miscellaneous equipment, including special-type automobiles	21,000,000

Source: U.S. Senate, *East-West Trade*, Hearings Before the Committee on Foreign Relations, 88th Congress, 2d Session, March 13, 16, 23 and April 8, 9, 1964, p. 110.

in List B; these items, totaling 717 million DM, comprise machine tools and advanced equipment for the mechanical, mining, chemical, paper, building material, and electrical industries. The list also includes eleven complete plants for the chemical industry not included in the total of DM 717 million. The remaining DM 600 million of the agreement comprises specialized iron and steel products—rolled stock and tubes, for precisely those areas in which the Soviet Union is backward.

Thus the 1960 German-Soviet agreement is an excellent example of the nature of Soviet trade with industrialized countries. The Soviet Union imports from Germany goods with a technological component or of unusually difficult technical specification, and in return provides raw materials produced with equipment formerly imported from Germany and other Western countries.

ITALY AS A SUPPLIER OF CAPITAL GOODS TO THE SOVIET UNION

Italy has been a major supplier of industrial equipment to the Soviet Union since the 1920s. The 1953 Italian-Soviet agreement, for example, required the export of Italian machinery for manufacture of steel plate, textiles, foodstuffs, electrical cables, and fibers. Also under this agreement Italy contracted to supply cargo ships, refrigerated motor ships, tugs, cranes, and equipment for thermal electric stations.[12]

The Italian-Soviet trade agreement for 1958 required a far greater quantity of Italian industrial equipment, including equipment for complete production lines and plants. A partial list of the equipment supplied by Italian firms is as follows:[13]

530 interior and centerless grinders
25 horizontal boring machines with mandrels of 75-310 mm
44 repetition turret lathes
20 automatic thread-cutting machines of the "Cridan" type
43 vertical milling machines with table measuring 500 by 2500 mm
75 die-casting machines
26 crawler-mounted diesel electric cranes with grab buckets having a capacity of 25 to 50 tons
Cranes and excavators (470 million lire)
Two water turbines of 10,000 kw
Pressure pipe for hydroelectric power stations (610 million lire)
Three throttle valves for hydroelectric power stations
Three hydraulic brakes
Spares for thermoelectric power stations (625 million lire)

[12] *The Times* (London), October 28, 1953.
[13] *East-West Commerce*, V, 4 (April 8, 1958), 9.

One plant equipment for manufacture of sugar from molasses
10 production lines, complete, for tomato puree
Two production lines for tin boxes with tongue and key
Machinery for light industry (5500 million lire)
One cement manufacturing plant, complete with ovens
One plant for manufacture of reinforced concrete poles for electric transmission lines and lighting purposes.
One machinery plant for manufacture of asbestos cement tubes
Spare parts for ships (235 million lire)
High-frequency tools (780 million lire)
Miscellaneous machines (4700 million lire)

SCANDINAVIA AS A SUPPLIER OF CAPITAL GOODS TO THE SOVIET UNION

Finland has been a major supplier of equipment to the Soviet Union since 1945. For example, no less than 95 percent of all ships manufactured in Finland since World War II have been on Soviet account.

Major deliveries under the Finnish reparations agreements[14] were continued throughout the 1950s and 1960s by annual trade agreements. In exchange for Soviet raw materials, Finland was committed to supply not only ships but power plant equipment (including 25 boilers annually from 1956 to 1960), woodworking and paper-making equipment including complete plants for manufacture of paper and cardboard, plants for manufacture of cellulose, sawmills, veneer-making plants, frame saws, and wood planers. Hoisting equipment, including large bridge cranes, railway cranes, and freight elevators, comprise a significant portion of Finnish supplies.[15]

Sweden has been an important supplier of equipment for the Soviet chemical, food, and building industries under annual trade agreements since 1946. For example, the 1950 trade agreement between Sweden and the Soviet Union called for Swedish delivery of the following equipment[16]:

Equipment for building industry and manufacture of building materials (Sw. Kr. 23,500,000)
Equipment for food industries (Sw. Kr. 9,000,000)
Equipment for chemical industry (Sw. Kr. 12,000,000)
Power and electrotechnical equipment (Sw. Kr. 6,500,000)
One unit of mine elevator gear

[14] See chapter 2.
[15] United Nations, *Treaty Series*, vol. 240, no. 3403 (1956), pp. 198-204.
[16] *East-West Commerce*, V, 4 (April 8, 1958), 6.

Four units of excavating machinery and spare parts for deep drilling machinery (Sw. Kr. 1,300,000)
Spare parts for ships (Sw. Kr. 1,300,000)
Miscellaneous machinery and equipment (Sw. Kr. 3,250,000)

Denmark has also been a major supplier of equipment, particularly of diesel engines and cargo ships. The 1959 Danish-Soviet Trade Agreement included the following items of equipment:[17]

Cargo ships of 11,500 tons d.w. carrying capacity and with a minimum speed of 17.5 knots
Refrigerator ships of 1500 tons d.w.t.
Ship's equipment and spare parts (3,500,000 D. Kr.)
Components and parts for ships' diesel motors (6,000,000 D. Kr.)
Machinery for chemical industry and equipment (26,000,000 D. Kr.)
Machinery and equipment for food industry (17,000,000 D. Kr.)
Machinery and equipment for manufacture of cement and other building materials (3,500,000 D. Kr.)
Various machinery and equipment (3,500,000 D. Kr.)
Instruments and electronic apparatus (7,000,000 D. Kr.)

JAPAN AS A SUPPLIER OF CAPITAL GOODS TO THE SOVIET UNION

During the decade of the fifties, Japan, unlike the Soviet Union, developed a first-rate capability to build and export complete plants using in a few cases an indigenous Japanese technology (as in the case of Kanekalon) or more often an adapted or licensed foreign technology. Although Japan at first lacked experience in certain areas (e.g., the ability to guarantee complete performance for a plant in contrast to performance of individual items of equipment), this ability was gained during the 1960s.

Thus the late 1950s saw the beginning of a considerable export of advanced Japanese equipment to the Soviet Union. The first postwar trade and payments agreement between the Soviet Union and Japan was signed concurrently with the joint declaration ending the state of war between the two countries on October 19, 1956.[18]

The trade agreement provided for most-favored national treatment and included a list of products to be exported by each country. Soviet exports were, typically, raw materials, with a small quantity ($1 million) of metal cutting

[17] *Ibid.*, VI, 9 (September 28, 1959), 6.
[18] *Japan Times (Tokyo), October 20, 1956.*

equipment. On the other hand, Japanese exports to the Soviet Union were almost completely in the form of machinery or equipment, with significant proportions of specialized metal products. Marine equipment included two herring packing ships, two tuna fishing boats, and two floating cranes, in addition to marine diesels presumably for installation in Soviet vessels; also provided were ten sets of canning facilities for crab-packing ships and ten for salmon and trout. Moreover, provision was made for Soviet ship repairs in Japanese yards. Other transportation equipment included 25 locomotives (diesel, electric, and steam) with 25 passenger and freight cars in addition to 100,000 kw of mercury rectifiers for Soviet electric locomotives.

Other general machinery included mobile cranes and textile machinery, communications equipment, and various machine tools. Specialized metals included rolled steel products, tin plates, steel wire, and uncoated copper wire and cable. Various medical supplies and fiber yarns made up the balance.

A subsequent Japanese-Soviet trade agreement (1959) further demonstrated the continuing Soviet interest in Japanese capital goods—for example, in paper mills, cold storage plants, chemical plants, and related areas. About 60 percent of the later agreement comprised export of Japanese plants and equipment in exchange for Soviet raw materials.

Japanese exports may be described, then, as falling into two categories: advanced machinery, particularly transportation equipment; and specialized materials related to sectors where the Soviet Union has a very limited and antiquated capacity. Some exports, such as mercury rectifiers for electric locomotives and marine diesels, reflect sectors in which the Soviets have known weaknesses.[19]

EAST EUROPEAN COUNTRIES AS SUPPLIERS OF CAPITAL GOODS TO THE SOVIET UNION

The communist countries of Eastern Europe have been consistent and major suppliers of machinery and equipment to the Soviet Union since 1945. After extensive dismantling in 1945-46, the SAGs and similar joint stock companies were used to ensure a continuity of equipment to the Soviet Union. In the 1950s supply was placed under annual trade agreements.

In 1953 East Germany signed a trade agreement that had as its chief component the provision to the Soviet Union of electrical equipment, chemicals, machinery for the manufacture of building materials, and mining equipment.[20] The 1957 East German trade agreement with the Soviet Union called for the supply of

[19] See below, p. 221. A good description of the 1960 exports is in *The Oriental Economist*, (Tokyo), October 1960, pp. 552-57.

[20] *The Times* (London), April 29, 1953.

rolling mill equipment, hoisting equipment, forges, presses, raw stock, and a large quantity of seagoing vessels and river craft.[21]

Under the agreements for 1960-65 supply, signed on November 21, 1959, East Germany was required to supply the Soviet Union with engineering products, refrigerated vans and trains, main line passenger coaches, passenger ships, fishing vessels, a number of complete cement plants, equipment for the chemical industry, machine tools, and forge and pressing equipment.[22]

Poland under its trade agreements with the Soviet Union has been a major supplier of machine tools and equipment, rolling stock, and oceangoing ships.[23] Czechoslovakia has probably been the most important East European communist supplier of equipment. The Skoda Works in Pilsen has been a prominent supplier of machine tools and diesel engines for marine and locomotive use. Other Czechoslovak plants have sent electric locomotives, power plants, and general industrial equipment.[24]

During negotiations between the U.S.S.R. and Yugoslavia in the summer of 1947 the Soviets agreed to grant Yugoslavia $135 million in capital goods, including iron and steel plants, coking ovens, refineries, a zinc electrolysis plant, a sulfuric acid plant, copper and aluminum rolling mills, and molybdenum processing installation.[25] The resulting agreement (July 1947), which specified in great detail the equipment to be provided by the U.S.S.R. to Yugoslavia, included equipment of obvious Western origin, such as Dwight-Lloyd belts, Blake and Symons crushers, Dorr concentrators, Dorko pumps, Abraham filter presses, Sirocco ventilators, Sweetland filter presses, Dix hammer crushers, MacCully crushers, Junkers saws and Geller saws.[26] This was in addition to unnamed equipment for which, from material presented elsewhere, we know that the Soviets utilized a Western design—i.e., drill rigs, sulfuric acid and plant equipment, furnaces, rolling mills, and so on. However, concerning this 1947 agreement Vladimir Dedijer, a former member of the Yugoslav party central committee, comments: "The agreement was a mere ruse, for the Soviet Union had no intention of honoring it.... Of the 135 million dollars promised, the Soviet Union sent us installations valued at only $800,000."[27]

Since the 1950s Yugoslavia has been a supplier of advance equipment to the U.S.S.R., including numerous large and fast cargo ships and scarce copper sections.

[21] *East-West Commerce*, IV, 3 (March 12, 1957), 12.
[22] *Ibid.*, VI, 12 (December 8, 1959), 11-12.
[23] *Ibid.*, V, 5 (May 7, 1958), 7.
[24] *Ibid.*, V, 1 (January 3, 1958), 9.
[25] V. Dedijer, *Tito* (New York: Simon & Schuster, 1953), p. 288.
[26] United Nations, *Treaty Series*, vol. 130, no. 1732 (1952), pp. 374 *et seq*.
[27] Dedijer, *op. cit.* n. 25, pp. 288-89.

WESTERN RESTRICTIONS ON TRADE WITH THE SOVIET UNION

Attempts by Western countries to restrict export of goods with a strategic value to the Soviet Union have taken two main legislative forms. One is exemplified in the U.S. Export Control Act of 1949 and similar national acts in allied countries, and the other in the Mutual Defense Assistance Control Act of 1951 (known as the Battle Act) in the United States.

The Battle Act represents an attempt to prevent export of strategic items with capability of strengthening the military power of the Soviet Union from Western countries to the Soviet Union. At the time the act was introduced, at the end of the 1940s, the Free World had legislative control over export of strategic materials. The Battle Act provides for United States participation in the coordination of these national controls through an informal international committee, meeting in Paris and known as CoCom (Coordinating Committee). Essentially, the act reinforces the system of international controls in effect prior to its enactment and provides a link with U.S. strategic trade controls under the Export Control Act of 1949.

The Battle Act forbids U.S. aid to any country that knowingly permits shipment of strategic items to the Soviet bloc when such items are listed for embargo by the administrator of the act, i.e., by the State Department. The CoCom embargo lists are not made public, but the United Kingdom has published from time to time an embargo list as it relates to British exports to the Soviet bloc. This list gives an idea of the erosion that has taken place in restrictions since 1950. For example, on August 15, 1958, it was announced in the United Kingdom that certain goods had been freed from CoCom embargo control:

> All electrical generating machinery (other than mobile generators of more than 5 mw); all electrical motors (except those specially designed for submarines); all turbines; spectrographs, spectrometers (other than mass spectrographs and mass spectrometers); X-ray diffraction and electron diffraction equipment; electron microscopes; radio valve making machinery (except certain advanced types and those designed specially for making embargoed types of valves); civilian vehicles and aircraft; compressors and blowers; many types of machine tools; and ships (with certain restrictions on speed).[28]

The U.S. State Department for its part has never requested the President to apply sanctions under Section 103(B) of the Battle Act, and scores of violations have been made by Western countries without imposition of the sanctions required by law. In fact, inasmuch as the Battle Act has been violated from its inception, it has never provided an effective restraint to the export of strategic goods

[28] *Electrical Review* (London), August 22, 1958, p. 342.

from the West to the Soviet Union.[29] It is arguable that the measure is simply a badly conceived instrument, that it is for various reasons unenforceable. But certainly lax administrative action and gross administrative ignorance concerning Soviet technical capabilities and the use of Western processes and technologies have been major contributory causes to its failure and to the decline of coordinated export control.

The Export Control Act of 1949 as extended and amended to 1969 (when it was replaced by the Export Administration Act of 1969), provides for restrictions on materials whose export may have an adverse effect on the national security of the United States. Section 3(a) provides that rules and regulations shall be established for denial of exports, including technical data, to any nation "threatening the national security of the United States" if the President determines that such export "makes a significant contribution to the military or economic potential of such nation."[30]

This power is administered by the Department of Commerce for most exports, by the Department of State for munitions, and by the Atomic Energy Commission for nuclear materials.

EFFECT OF WESTERN EXPORT CONTROL RESTRICTIONS

The general assessment appears to be that Western export controls have not been effective.[31]

An excellent example of their ineffectiveness may be found in the supply of transportation equipment to the Soviet Union and its subsequent use against the United States and its Asian allies in the Vietnamese war. Whereas the Battle Act of 1951 and the more restrictive Export Control Act of 1949 include an embargo on "transportation materials of strategic value," an analysis of merchant vessels utilized by the Soviet Union to carry armaments to South Vietnam[32] and leased by Poland to Red China for similar purposes indicates that such ships and technology were acquired after the passage of the two export control acts.

Of 96 ships known to have been used by the Soviets on the Haiphong run, 12 have not been identified since construction is too recent for listing in ship registers. Of 84 ships positively identified, only 15 were even partly built in Soviet yards, and one of these was a small tug on a one-way trip

[29] For further material, see Battle Act reports to Congress and Gunnar Adler-Karlsson, *Western Economic Warfare, 1947-67* (Stockholm: Almquist & Wiksell, 1968).

[30] U.S. House of Representatives, *op. cit.* n. 4, 1st session, October and December 1961, Section 3(a).

[31] Adler-Karlsson, *op. cit.* n. 29, pp. 83-139.

[32] The State Department has pointed out that the Soviet vessels carry the armaments while leased Western vessels carry the economic supplies.

to Haiphong. The other 69, all tankers and cargo ships, were built outside the U.S.S.R.

Of these 69 ships, only 13 were built before the Battle Act embargo of 1951—*in other words 56 were built after the embargo and outside of the U.S.S.R.* Six of the 13 built before 1951 are Lend Lease ships.

The most important component of a ship is its propulsion unit, i.e., its main engine. None of the 84 identified ships on the Haiphong run has a main engine designed and manufactured in the Soviet Union. (There is one possible exception, where complete positive identification of a Sulzer steam turbine has not been made.)

Small marine diesel engines (2000 hp and less) are made at the prerevolutionary Russky Diesel works in Leningrad, under a 1956 technical-assistance agreement with the Skoda firm of Prague, Czechoslovakia. Larger and of course more important marine diesel engines, up to 9000 bhp (the largest made in the U.S.S.R.), are of Burmeister and Wain (Copenhagen) design. Although Denmark is a member of NATO and presumably supports the NATO objective of an embargo on war materials to the Soviet Union, the Burmeister and Wain firm was allowed (in 1959) to make a technical-assistance agreement for manufacture of the B & W series of marine diesel engines at the Bryansk plant in the U.S.S.R. These diesels are massive units, each 60 feet long by 35 feet high and almost 1000 tons in weight, with obvious strategic value.

Under such circumstances it may be asserted that attempts to control export of strategic goods have not been successful. Indeed there has been a massive and identifiable flow of military equipment to the Soviet Union from Western countries through the CoCom control net. As each member of CoCom has a veto over any shipment, it appears that the information utilized by the State Department and comparable Allied government offices is grossly inadequate and inaccurate.[33]

[33] This argument is expanded in chapter 27.

CHAPTER FOUR

Technical Assistance and Foreign Prototypes

Formal technical-assistance agreements with the Soviet Union are far less publicized today than they were in the early 1930s and therefore little public information is forthcoming. This information scarcity is compounded by the refusal of the U.S. Departments of State and Commerce to release precise information concerning U.S. assistance to the U.S.S.R. It is estimated, however, that since the 1930s the Soviets have had about 100 technical-assistance agreements in force with Western companies at any given time. This assertion applied as recently as late 1968, and it is unlikely the situation has changed since then or will change in the foreseeable future.[1]

Quite apart from formally contracted technical assistance there is a transfer of assistance through the medium of equipment sales and installations. Sometimes provision for such assistance is included in a formal agreement to supply an installation. For example, the 1968 agreement whereby Olivetti of Italy (a subsidiary of General Electric) undertook to build a $90 million plant at Oryol, south of Moscow, for manufacture of automation equipment and office machines was an outgrowth of a technical-assistance agreement in 1965.[2] Another such agreement—one of many that could be cited—was that between the Soviets and Fisher-Bendix of the United Kingdom in 1967, under which the British firm agreed to provide technical documentation and know-how to produce the Bendix automatic commercial washer in the Soviet Union.[3]

However, in the final analysis, any sizable sale of plant or equipment entails technical assistance. Such a sale usually includes not only equipment but also assistance for preparation of the specification, installation, training, and start-up. This was the case in the misnamed "Fiat deal" in which the supply of U.S. equipment was supplemented by Italian technical assistance including the printing of training manuals (in Russian) for Russian operatives in Italian printing plants. Quite clearly, then, technical assistance need not be formalized into an agreement;

[1] *Business Week*, October 5, 1968, p. 124. According to this source, in 1968, "100-odd ... Western companies ... have technical accords with the Soviets."

[2] *Ibid*.

[3] *East-West Trade News* (London), III, 7 (April 15, 1967).

it is more realistically viewed as part of any sale of technology, regardless of whether or not it is the stated subject of a written agreement.

Apart from formal technical assistance, there is the allied consideration of Soviet imports of single items of equipment for use as prototypes. There is no question that the Soviet Union draws an almost unbelievably large quantity of such prototypes from the West, primarily from the United States and Germany. It might not be rash to assert that the Soviet Union attempts to purchase one of every major industrial product manufactured in the West for analysis and possible reproduction. Examples extracted more or less at random from Soviet imports from the United States in 1960 and 1970 illustrate the magnitude of this flow of single items. In the third quarter of 1960[4] the Soviet Union imported the following items from the United States (almost all single items):

	Value
Industrial power sweeper	$ 2,001
Gas turbine engine	17,830
Centrifugal separator	19,850
Ultracentrifuge	15,645
Analytical balance	1,993
Air compressor	83
Centrifugal pump	1,700
Fluid stream analyzers	28,500
Hard gelatin capsule machine	309,631
Hydraulic presses	27,273
Industrial sewing machine	1,508
Mixing and blending machines	4,538
Percussion type drill	95,000
Plastics molding press	12,490
Vertical turret lathe	95,970
Tracklaying tractor (and blade)	15,000
Beet harvester and topper	8,055
Haying machine	4,970
Police motorcycle (with accessories)	1,944
Potato planters	6,093
Airplane tug and engine starter	86,450
Klischograph	8,950
Wattmeters	596

These small-lot imports are almost certainly for design purposes. Indeed, there never has been export of more than one or two items to the U.S.S.R. of agricultural equipment of the types listed (beet harvesters, haying machines, potato planters, and tractors) since the early 1930s (with the exception of Lend Lease items charged to the U.S. Treasury). Single imports of such equipment, when continued

[4] U.S. Dept. of Commerce, *Export Control*, Fifty-third Quarterly Report (Third Quarter 1960), p. 10.

over a lengthy period and not followed by substantial orders, are clearly for prototype use.

Ten years later we find a similar pattern of Soviet imports. In the second quarter of 1969 the U.S.S.R. imported from the United States the following items:[5]

	Value
Airborne navigation equipment	$ 18,116
Electronic computer	169,334
Spectrophotometer	169,334
Diesel engines	13,495
Atmospheric furnace system	92,944
Water filtration system	54,128
Sweep generator	18,358
Industrial weighing scales	15,752
Radiation detection and measuring instruments	208,410
Automatic typewriter	6,800
Power sweeper	6,283

That this process of single-item import has extended over a considerable period of time is determined by examination of the statistics of Soviet foreign trade. Soviet Trade Group 145 is "Excavators and road construction equipment"; imports in this group from the United States have been as follows:[6]

	Value in rubles	*Estimated number of units*
1949-56	None	None
1957	80,000	2
1958	122,000	3
1959	46,000	1
1960	57,000	2
1961-65	None	None
1966	55,000	2

The tabulation shows that import of small batches or single units is followed by a gap with no imports and then small-batch imports are resumed.

The manner in which such single items are analyzed in the Soviet Union may be inferred from Soviet technical manuals. Such books fall into two basic categories: (1) those that describe in a detailed, comparative manner individual items of foreign equipment, and (2) those that describe the single item that

[5] U.S. Dept. of Commerce, *Export Control*, Eighty-eighth Quarterly Report (Second Quarter 1969), p. 12.

[6] Values taken from *Vneshniaia torgovliaia SSSR; Statisticheskii sbornik, 1918-1966* (Moscow, 1967), pp. 146-47; units calculated at approximately 25,000 to 45,000 rubles per unit.

has been chosen as the Soviet standard, i.e., for duplication on a large scale. Selected data from several such Soviet publications will make the argument clear.

Soviet technical literature has always contained a sizable number of books—usually paperbacks issued in editions of between 2000 and 10,000 copies—making comparative studies of foreign machines. The Soviet Academy of Construction and Architecture, for example, issued in 1959 a 62-page paperback entitled *Zarubezhnye mashiny dlia mekhanizatsii stroitel'nykh rabot*, consisting of a detailed examination of foreign mechanical equipment used in the construction industry. On pages 19-20 a detailed table provides comparative figures on capacity, load, type, and model of engine, speed (converted to kilometers per hour), number of speeds, and total weight in kilograms for 38 foreign models of mechanical dump cars. These models include Aveling-Barford (U.K.); Road Machines (U.K.); Benoto (France); Bates (U.K.); Dart (U.S.A.); Koering (U.S.A.); Orenstein Koppel (West Germany). In other words the Soviets acquired one of virtually every foreign dump car and made a detailed comparative study of characteristics. The booklet is complete with photographs and diagrammatic blowups of the mechanical features. Several of the more interesting Western models are examined in more detail by comparing such features as chassis construction, brakes, and engine characteristics. Finally technicoeconomic efficiency factors are calculated. It might be argued that such comparative studies may be a prelude to Soviet purchase, except that this type of equipment has not been imported in quantities larger than small batches of one to six since the 1930s and (as will be indicated later) Soviet equipment is based with only minor exceptions on such Western models.

A similar hard-cover publication (3400 copies) was a book issued in 1968, authored by N. N. Kalmykov and entitled *Burovaia tekhnika i tekhnologiia za rubezhom*. Pages 20 to 27 contain numerous photographs of United States tri-cone drilling bits—supposedly denied export from the United States to the U.S.S.R. under export control laws. Figure 7 illustrates the Globe Type S-3; Figure 8 the Globe Type SS-2; Figure 9 the Hughes Type OWV; Figure 10 the Smith Type SV-2; Figure 11 the Globe Type MHY-3; Figure 12 two views of the Type EM and two views of the Type EM-1C manufactured by Chicago-Pneumatic; Figure 13 the Reed Type YS and Type YM; Figure 14 the Security Type M4N; Figure 15 the Globe Type M-3; Figure 16 the Chicago Pneumatic Type ER-1; Figure 17 the Chicago Pneumatic Type ER-2; Figure 18 Security Types S4 and S-4T; Figure 19 the Reed Type YR; and so on.[7]

The rest of the volume is a detailed discussion of American oil well drilling equipment. Some of the diagrams suggest that copying of the equipment is the objective: for example, the diagram on page 199 compares tooth profiles

[7] The model letters were not transliterated from the original English to the Russian; therefore, they have not been transliterated into English but are given as in the Russian text.

on various tubes. In brief, the book is a clear comparative exposition of the technical features of U.S. oil well drilling equipment.

In the field of U.S. coal mining practice and equipment, a recent Soviet book is R. Yu. Poderni, *Ugol'niia promyshlennost' SShA* (Moscow, 1968; 2600 copies). This book contains comparative performance and technical data on U.S. equipment that would be difficult to find even in the United States. For example, pages 132-33 detail operating characteristics of all Bucyrus-Erie and Marion excavators currently in production; page 146 has comparative data on the seven walking draglines produced by the Marion Company, and is followed by details on the method used by the firm to calculate excavator productivity. If the book were to be translated into English it would provide a useful little manual for excavator and dragline operators in the United States. A similar book on mining practice also was published in 1968, entitled *Rekonstruktsiia, mekhanizatsiia i avtomatizatsiia shakht za rubezhom*, by K. K. Kuznetsov and others (Moscow, 1968; 2700 copies). This book provides information on development and mechanization of foreign mine shafts. The bibliography suggests the scope of Soviet acquisitions; it includes company catalogs and literature (that of the Hibernia and Westphalia firms) and company journals. Soviet interest is reflected in the issue of foreign developments in the field as "Express Information."

The refinement of technical details given in this type of book is suggested by the following translation of Table 1 in a publication entitled *Analiz rabot po avtomatizatsii pitaniia utkom tkatskikh stankov za rubezhom* by Yu. P. Sidorov (Moscow, 1968; p. 10). The table compares operating characteristics of foreign-made stitching machines:

Operating Angles of Automatics

Model of machine and firm	*Start stitching operations*	*Light (no load) stitching*	*Transfer to new bobbin*	*Shift spools*	*Full operating angle*
Northrop, England	311	2	14	33	49
Ruti, Switzerland	325	2	8	25	35
Draper, U.S.A.	312	9	13	26	48
Sohengo, West Germany	306	4	17	33	54
Saurer, Switzerland	320	4	10	26	40

In the electronic sector, one type of publication includes operating characteristics of foreign equipment, no doubt as a guide to purchases by Soviet organizations. For example, a booklet issued in 1968 includes details on over 2000 American, Japanese, East German, and West German transistors—*Zarubezhnye transistory shirokogo primeneniia*, by V. F. Leont'ev. Another type of publication includes data on utilization of equipment in the West and obviously provides

more than mere information on available equipment. For example, G. G. Sitnikov's *Transzistornye televisory SShA i Iaponii* (Moscow, 1968) is a selection of articles either translated from American and Japanese sources, or detailing circuits reproduced from such sources; pages 68-70 are entitled "TV 120771 firmy EMERSON (SShA)."

These precise examinations of foreign abilities are by no means limited to technology in the narrow sense. They also include analyses of Western management systems. For example, one booklet of 143 pages (9000 copies printed) describes the operations of Olivetti–General Electric plants in Italy—N. A. Salomatin's *Organizatsiia i mekhanizatsiia upravleniia proizvodstvom na predpriiatiiakh italii* (Moscow, 1969). It provides information on the Italian plants of Olivetti–General Electric that would be difficult to find in a well-stocked Western business library. After a brief introduction (without the usual Marxist-Leninist prefixes), it discusses organization of production in each of the G.E. plants (with photographs), including reproduction of documents used, types and numbers of business machines, organization charts, work programs, and a small section on the use of the PERT management system.

An examination of plastics used in buildings, but compiled without benefit of the courtesy extended by Olivetti–General Electric at the plant level, is entitled *Polimernye stroitel'nye materialy* (Moscow, 1968). This 102-page booklet (7000 copies issued) details Western uses of plastics in building, and includes three rather bad color photographs and a discussion of products by trade name and physical properties.

With the help of such fairly common publications it is possible to trace import of foreign equipment in small batches, and its subsequent use first as prototype then as duplication of the prototype for series production of a "Soviet" machine or piece of equipment.

The Soviet production of electric locomotives provides an excellent example of this evolution. Small batches of electric locomotives were imported from the West in early 1930s—first General Electric and Brown-Boveri, followed in the 1950s by Skoda, Japanese mercury rectifiers, and Schneider-Alsthom locomotives from France. More recently these imports have been supplemented by batches of Krupp silicon rectifier electric locomotives and another group of Czech locomotives. Figure 4-1 illustrates the process by which these batches of imported prototype locomotives have been converted into Soviet classes of electric locomotives.

It is unlikely that export of technical data, a normal accompaniment to sales, by itself provides information for "copying." The Export Control Act of 1949 provides specific authority for controlling export of data for national security reasons, and in 1951 stringent controls were put on data for Soviet bloc destinations; since then validated export licenses have been required for shipment of data not generally available in published form. General license

Figure 4-1 FOREIGN ORIGINS OF SOVIET ELECTRIC LOCOMOTIVES

Date	Foreign locomotive type imported	Number imported	Soviet utilization: Russian class	As prototype for	Date
1930					1930
1932			"S" Class		1932
	General-Electric (U.S.A.)	29	Ss		
	Brown-Boveri (Italy)	7	Si →		
1934				VL-19	1934
1936					1936
1938				VL-22	1938
1940				VL-22 (340 kw)	1940
1942					1942
1944	Electric locomotive axles (VI-1-108) U.S. Lend Lease - - →				1944
1946				VL-22m (400 kw)	1946
1948					1948
1950					1950
1952				VL-8 (N-8)	1952
1954			"NO" Class		1954
	Skoda (Czechoslovakia) mercury → rectifiers		N-60		
	silicon rectifiers		N-62		
	Japanese (mercury rectifiers only)		N-60 electric mechanical equipment →	VL-23	
1956	Skoda (Czechoslovakia) mercury	50	chSl		1956
1958	Schneider-Alsthom (France)	40	F (T)		1958
1960	Schneider-Alsthom (France)		FP (TP)		1960
	Krupp (Germany) silicon rectifier	20	K		
1962	Skoda (Czechoslovakia)		chS2		1962
1964					1964
1966					1966
1968					1968
1970					1970

Legend: - - - - - → Prototype development

——————→ Production

Sources: Association of American Railroads, *A Report on Diesel Locomotive Design and Maintenance on Soviet Railways* (Chicago: AAR Research Center, 1966); and Association of American Railroads, *Railroads of the U.S.S.R.* (Washington, D.C., n.d.).

GTDP permits export of data generally available in stores or by subscriptions, or of unpublished data "not directly and significantly related to design, production, and utilization in industrial processes" and available in academic institutions and laboratories.

It is also unlikely that firms would freely ship data to the U.S.S.R. given the Soviets' long history of retaining such material or making unauthorized use of it. Moreover since June 1959 all U.S. exporters of certain specified types of unpublished chemical data and services relating to petroleum and petrochemical plants and processes must obtain written assurances from the importers in friendly countries that neither the technical data nor the resultant machine, equipment, plant, process, or service is intended to be sent to a Sino-Soviet bloc destination or to Poland.

Thus in the third quarter of 1960 the Department of Commerce approved only 18 licenses for export of technical data to the Soviet bloc, including those for rolling mill accessory equipment, a phosphoric acid plant, compressors for urea plants, drawbenches for tubes and bars, superchargers for vehicles, and instructions manuals for communications equipment.[8] Given the restrictions and the limited exports of such data, then, it is probable that the import of prototypes provides the more valuable source for copying.

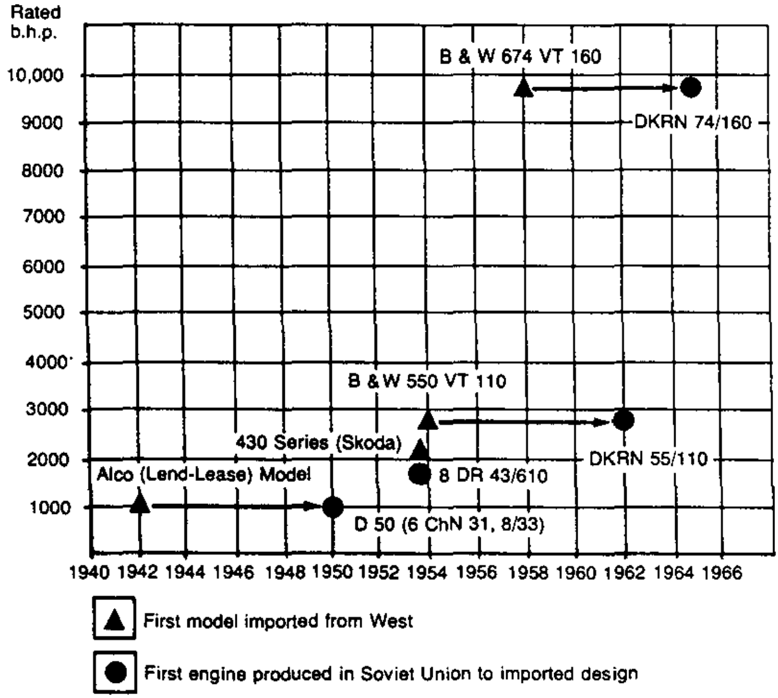
Import of prototypes and subsequent copying is advantageous to the Soviet Union in several ways: it minimizes internal research and development investment, provides a quick answer to the Party's demands for instant technology, and above all eliminates the cost of investing in processes that will fall by the wayside.

In a market economy numerous processes and products, perhaps several hundred alternatives for any one product, may move from invention to innovation and enter the marketplace for sale to consumers. Consumer demand and technical efficiency (or inefficiency) eliminate the least desirable, and normally there is only a relative handful of survivors. The elimination of those that fall by the wayside, those products and processes sometimes called the "wastes of competition," is, however, a necessary step along the road to achieving efficient economic and technical choices. Socialists may criticize the waste involved, but the alternative is either to choose a single process arbitrarily without going through the market or to depend on technology tested in a foreign market-place.

The time lag between selection of a specific foreign process and its subsequent production in the U.S.S.R. (via import of prototypes and copying) is significant. Figure 4-2 illustrates the approximate time lags for some of the more important types of marine diesels adopted from foreign designs; between six and eight years appears to be the average time between import of the first foreign model

[8] U.S. Dept. of Commerce, *op. cit.* n. 5, p. 7.

Figure 4-2 MARINE DIESELS: TIME LAGS IN CONVERTING FOREIGN TO SOVIET MODELS



Source: Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

and its initial production in the U.S.S.R. (The exception is produced under joint technical-assistance agreements set up in COMECON.) This lag is favorable when compared to the alternative of developing a suitable technology inside the U.S.S.R. without a background of research and development experience and without the guidance of the marketplace. There is little question that without such imports the Soviet Union (unless it were to effectively decentralize the innovative function and adopt a market economy) would have great difficulty in advancing from its present technological levels. It may be noted in this regard that even Yugoslavia, a socialist country with a quasi-market influence which supplies important technology to the U.S.S.R. (see the Skoda example cited in Figure 4-2), is itself still dependent on Western technology in the marine diesel sector.[9]

[9] More detailed information concerning marine diesels is given in chapters 6, 17, and 21.

We may infer from this brief discussion a point that will be further illustrated later: the degree of indigenous technical innovation in an economy appears to be directly related to the structure of the economy. The greater the influence of market forces, including a demand-supply price system, the profit incentive, and free entry and exit, the greater the degree of indigenous innovation. Conversely, the greater the degree of centralized technical decision-making and lack of personal profit incentive and disciplinary marketplace forces, the less the degree of indigenous innovation.

CHAPTER FIVE

Financial Aspects of Technical Transfers

Previous volumes of this study have only cursorily mentioned the financial means by which technical transfers have been effected. These financial factors are generally beyond the scope of this study, but a summary outline is perhaps in order at this point.[1]

The financing of technical assistance has not normally taken the form of government-to-government transfers; until recently, it was usually accomplished through private loans and credits guaranteed by a Western government, but several large French and German long-term loans in the late sixties may herald a change. Although the role of Western governments has been obscure it has also been fundamental: it is unlikely that individual Western firms, financial institutions, and banks would have continued to provide long-term credits or loans without government guarantees. For example, in discussing British Government support, Paul Einzig points out how the Soviets have reneged on payments. Soviet arrears on United Nations payments, he writes, are a breach of the "most solemn pledge imaginable," and "were it not for the guarantees given by the official Export Credit Guarantees Department most industrial firms would not dare to risk granting such credits and would find it difficult to finance them."[2]

[1] The relations between Western financial houses and the Soviet Union have been explored in the literature of only one country—France. Henry Coston, a well-known French writer of reference books, has also published detailed studies on French financiers and their financial support of the U.S.S.R. The following in Coston's "Lectures Françaises" series are of interest: *Entre Rothschild et Moscou; Les Financiers appuint l'Axe Paris-Moscou; L'Alliance avec Moscou; Les Allies capitalistes du communisme internationale; La Haute finance et les revolutions.* See also two longer studies by Coston: *Les Financiers qui menent le monde* (Paris: Librairie Française, 1958), and *La Haute Banque et les trusts* (Paris: Librairie Française, 1958).

A vast unexplored research field awaits some ambitious economist in the financial relations between American, British, and German financial houses and the Soviet Union. There is a great deal of raw archival material available for such a study or studies. The writer has been unable to locate any full-length published studies on these topics, and the article literature is limited to the subject of Western government financing of the Bolshevik Revolution; see for example George Katkov, "German Foreign Office Documents on Financial Support to the Bolsheviks in 1917," *International Affairs*, April 1956, pp. 181-89.

[2] *Commercial and Financial Chronicle* (London), February 20, 1964, p. 14. In a later article Einzig takes the British Government to task for favoring the Soviets over the Western countries;

The financing of U.S. equipment for the Volgograd automobile plant, to cite a recent example in the United States, was not of interest to private sources, and the original intent was to finance Volgograd through the Export-Import Bank. When this approach was rejected by Congress, other means were found by the administration to provide U.S. Government backing for construction of the largest automobile plant in the U.S.S.R. It is useful, then, to trace the main threads of such financing from the time of the Bolshevik Revolution to the present day, for without Western government and private assistance the technical transfers described in this analysis could not have taken place.

The Bolshevik Revolution itself was financed by "a steady flow of funds" from the German Foreign Ministry.[3] A memorandum to the German kaiser from Baron R. von Kuhlmann, minister of foreign affairs, dated December 3, 1917, reported that German objectives were to support the Bolsheviks financially in order first to remove Russia from the European war as an ally of Britain and France, and then "to provide help for Russia in various ways ... rehabilitation of the railways [and] provision of a substantial loan."[4] The first volume of this series describes how such German assistance was a key factor in bringing about Soviet recovery from the economic depths of 1922.

All banking institutions in the Soviet Union were nationalized under a decree of December 14, 1917. All banking business was declared to be a state monopoly, and all existing private joint stock banks and branches of foreign banks were merged into the State Bank. A subsequent decree, of December 2, 1918, liquidated foreign banks in the U.S.S.R.

Sometime before September 1919 the American-Russian Industrial Syndicate Incorporated was formed in New York by the financial interests of Guggenheim and Sinclair in order to trade with Russia.[5] The long-time interest in Soviet

he suggests that it is one thing to finance routine Soviet transactions but "it is a totally different thing for the British Government to go out of its way to provide additional special facilities for credits up to fifteen years to a maximum of £ 100 million for the exclusive benefit of the U.S.S.R. and other Communist countries." *Ibid.*, March 12, 1964, p. 11. Unfortunately, Einzig does not detail Soviet defaults; these are both numerous and substantial, although there is a prevailing myth to the contrary.

[3] Kuhlmann memorandum; see G. Katkov, "German Foreign Office Documents on Financial Support to the Bolsheviks in 1917," *International Affairs*, 32 (April 1956), 181-89. These "political funds" went through several routes to the Bolsheviks; one route was to the Nye Banken in Sweden and then to the Siberian Bank in Petrograd. The Nya Banken was headed by Olaf Aschberg, who was rewarded after the Revolution with the Russian Bank of Commerce concession in Russia. See also the roles of Alexander Israel Helphand (Parvus) and Kuba Furstenberg as reconstructed from German documents and other sources in Z. A. B. Zeman and W. B. Scharlau, *The Merchant of Revolution* (Oxford and New York, 1965). It should be noted on Parvus that his considerable wealth was acquired suddenly, and that no record exists as to its origins and no trace of it was found after his death.
Another flow of funds for revolution in Russia reportedly was from U.S. and European bankers (Schiff, Warburg, Guggenheim); see A. Goulevitch, *Czarism and Revolution* (Hawthorne, Calif.: Omni, 1962), pp. 230-34.

[4] Katkov, *op. cit.* n. 3.

[5] U.S. State Dept. Decimal File 316-126-50.

finance of the Guaranty Trust Company of New York also began in 1919, with a letter to the State Department inquiring about the legal status of Soviet banking institutions.[6]

In October 1921 the Soviet State Bank (Gosbank) was formed in Moscow with branches in Petrograd, Kassan, and elsewhere. Later in the same year the Guaranty Trust Company of New York was approached by Olaf Aschberg, a former director of the Nya Banken in Stockholm,[7] and the New York bank in turn went to the federal administration with a proposal to open exchange relations with Gosbank.[8] The views of Secretary of Commerce Herbert Hoover on this question were concisely stated: "This seems to me to be entirely in line with our general policy not to interfere with commercial relations that our citizens may desire to set up at their own risk."[9]

However, Charles E. Hughes, then U.S. secretary of state, pointed out that the Bolsheviks could acquire foreign credits by such an arrangement with the Guaranty Trust Company; and (although the secretary did not place much weight on this point) he suggested that the United States might not be able to protect representatives of Guaranty Trust in the Soviet state. Hughes concluded his memorandum: "Particularly I should like to know how it is proposed to secure an effective control of the use by the Bolsheviks of the foreign credits which would be made available in the new State Bank."[10] It was Hoover's subsequent recommendation that any such credits accruing to the State Bank be used for the purchase (question mark "purpose" in original memorandum) of civilian commodities in the United States, and thereby consistent with the humanitarian objectives previously established by the United States with respect to Bolshevik Russia.

In February 1922 overtures were also made to the Irving National Bank of New York to enter into business relations with the State Bank of the U.S.S.R.[11] This does not appear to have been pursued; the State Department files contain only a draft copy of an agreement between Guaranty Trust Company and Gosbank.[12] Under this agreement the Guaranty Trust Company assisted Gosbank in "establishing and maintaining an adequate system covering remittances from the United States of America to the Republic of Russia and [agreed to act] as its agent." The State Department took a noncommittal attitude and apparently disappointed Guaranty Trust Company because "it did not help them very much."[13]

[6] *Ibid.*, 58. Directors of Guaranty Trust at this time included W. Averell Harriman and Thomas W. Lamont; see Sutton I: *Western Technology ... 1917 to 1930*.

[7] U.S. State Dept. Decimal File 316-126-663.

[8] *Ibid.*, 136.

[9] *Ibid.*

[10] *Ibid.*, 141.

[11] *Ibid.*, 158.

[12] *Ibid.*, 160-169.

[13] *Ibid.*, 174.

This link with Guaranty Trust in the United States was followed in 1922 by the establishment of an international bank—the Russian Bank of Commerce in Moscow—by a foreign syndicate including the Krupp and Stinnes interests in Germany, and Danish, Dutch, Swedish, and American banks and banking institutions including Guaranty Trust. The head of the Russian Bank of Commerce was Olaf Aschberg.[14] The board of the concession included A. D. Schlesinger (formerly chief of Moscow Merchant Bank), Kalaschkin (chief of the Junker Bank), V. V. Ternovsky (former chief of the Siberian Bank), and Max May of the Guaranty Trust Company of New York. May was designated director of the foreign division of the new bank.[15] A report on an interview with him contains the following statement: "In his opinion, besides its purely banking operations, it [the concession] will of course largely finance all lines of Russian industries."[16]

At that time Aschberg had severed his connection with Nya Banken and was president of the Economic Bolaget bank in Stockholm, which acted as the Swedish representative of the Russian Commercial Bank. In Germany the Russian bank was represented by Garantie- und Credit Bank für den Osten of Berlin. At the end of December 1922 the U.S. legation at Riga referred to this Aschberg concession as the "only real effort made by a foreign group of capitalists" to finance the Soviet Union.[17] It was also pointed out that a group with German capital was working on a project—the Central Asiatic Financial Project—to finance German export trade in Turkestan.

There is in the State Department files an excellent contemporary report by A. Michelson entitled "Private Banks in the Republic of Soviets."[18] Michelson points out that the Russian Bank of Commerce, i.e., the bank operated by Aschberg and linked to Guaranty Trust in New York, was the largest such private bank in the U.S.S.R. and the first bank that had succeeded in establishing itself "partly through the assistance of foreign capital." Michelson adds the interesting comment that "there are, however, serious reasons to suppose that the capital of the Russian Bank of Commerce constitutes the sums belonging to the Bolsheviks themselves which are deposited with Swedish banks." This report also refers to Aschberg as an "agent of Soviet power for all sorts of its financial combinations." The Russian Bank of Commerce was clearly the largest such bank in terms of balances—232.6 million rubles in 1923 as compared to 128.8 million rubles for the Industrial Bank (Prombank) and 80.9 million for the Municipal Bank of Moscow. In March 1923, however, the Russian Bank of Commerce failed.[19] The U.S. Legation in Stockholm reported in 1924

[14] *Ibid.*, 209-211.

[15] *Ibid.*, 237; see Report 2437 from U.S. Legation in Stockholm, Sweden, October 23, 1922.

[16] *Ibid.*, 249.

[17] *Ibid.*, 264.

[18] *Ibid.*, 432. Michelson was general secretary of the committee of representatives of Russian banks in Paris.

[19] *Financial Times* (London), March 3, 1924.

that Aschberg had been dismissed from his connection with the Russian Bank of Commerce in Moscow and that "a large portion" of Soviet funds had been employed by Aschberg for investments on his personal account.[20]

The Gosbank, established in 1922, also depended heavily on foreign consultants for its establishment. Sweden's Professor Gustav Cassel, a leading European authority on banking who was appointed advisor to Gosbank in 1922, provided a public statement to the effect, "I do not believe in a negative policy.... To leave Russia to her own resources and to her own fate is simply folly."[21]

The creation of both Gosbank and the Russian Bank of Commerce was made in close consultation with European and American bankers. For example, in May 1922 Wittenberg, head of the National Bank of Germany, acted as consultant in the Soviet Union,[22] and in October 1922 a group of bankers including Aschberg, Wittenberg, and Scheinmann (chief of Gosbank) arrived in Stockholm to conduct further negotiations with foreign banks.

Finally, an agreement between the Guaranty Trust Company of New York and Gosbank was signed on August 1, 1923. It was agreed that all transactions would be in dollars, with the Guaranty Trust Company acting as a clearing house.[23] The Guaranty Trust Company so advised the Department of State in a letter dated September 14, 1923.[24] Thus the Guaranty Trust was uniquely connected with the establishment of banking in the U.S.S.R. and the financing of trade with the West.

BANQUE COMMERCIALE POUR L'EUROPE DU NORD

In January 1923 it was reported that the Soviet Union had acquired all the shares of the Chinese Eastern Railway formerly held by the Russo-Asiatic Bank; two French financial institutions, the Société Générale and the Banque de Paris et Pays Bas, were the main owners of the Russo-Asiatic Bank.[25] By June 1923 the Soviets had acquired 60 percent of the shares of the Russo-Asiatic Bank while French holders retained the balance.

Negotiations between representatives of the Soviet Union and French banking interests for the formation of a joint Franco-Soviet bank in France broke down in May 1925. Thereupon the Soviets purchased a small bank in Paris, Banque Commerciale pour les Pays du Nord, with a main office in Paris. This bank, founded in 1920 by Russian banker A. Khaiss with a capital of one million francs, was purchased in 1921 by the Wissotski interests, important prerevolution-

[20] U.S. State Dept. Decimal File 316-126-534.
[21] *Ibid.*, 235-236.
[22] *Ibid.*, 182.
[23] *Ibid.*, 424.
[24] *Ibid.*, 459.
[25] *Ibid.*, 285.

ary Russian merchants. The reported purchase price paid by the Soviets to the Wissotskis was £130,000 sterling.[26]

After purchase of the bank the brothers D. V. Wissotski and F. Wissotski continued to serve on the board temporarily, while two new directors, Volidsky and Sharov, were appointed to represent Soviet interests; also appointed as directors were Reisen and Iablokov, two former officers of the Azov Bank; Coön, formerly chairman of the Trade and Industry Bank; and Kempner, formerly of the Central Mutual Credit Bank. The American Consulate in Paris reported on August 20, 1925, that the Soviet intention was to issue new stock on the French market and so indirectly secure foreign participation in the enterprise.

During the 1930s the Banque Commerciale was accused of financing Communist Party activities in France. By 1964 there had been a slight name change and assets had grown to $562 million. There were 268 employees, of whom only three were Russian. A similar bank in London, also founded in the early 1920s, was the Moscow Narodny Bank, which had a remarkable growth from only $24 million in assets in 1958 to $573 million in 1964; by the late 1960s this bank was the fourth largest dealer among the London banks in the Eurodollar market. Only the five directors were Russian, the balance of 200 employees being British.

In 1966 the Soviets opened the Woxchod Handelsbank in Zurich, Switzerland. The Soviets also own an insurance company in Vienna (Garant Versicherung) and have attempted to convert it into a full-fledged banking operation. The Austrian Government has so far objected to such operations on the grounds that Garant Versicherung has illegally bought into Western companies to influence their commercial policies.[27]

Thus although Western skills are still heavily utilized in banking, the scene of operations has been transferred from the Soviet Union, where foreign banks are forbidden to operate, to Europe and the United States, utilizing foreign employees under Russian control. One of the key advantages to the Soviets is that such penetration assists the task of influencing and directing the trade policies of Western firms on sales of Western technology to the Soviet Union.

CHASE NATIONAL BANK[28]

In the 1930s the Chase National was one of four American banks and financial houses to institute relations with the Soviets (in addition to Equitable Trust, Guaranty Trust, and Kuhn, Loeb). Its role in the twenties and the thirties

[26] *Ibid.*, 803-804.

[27] *Forbes*, February 15, 1967, p. 60.

[28] Chase National merged with Bank of Manhattan (a former Kuhn, Loeb bank) March 31, 1955, to become Chase Manhattan Bank. Directors of the Chase Manhattan Bank (1968) are David Rockefeller, Eugene R. Black, Roger M. Blough, John T. Connor, and C. Douglas

has been described.[29] There was a close connection between Chase and the Soviets in the pre-World War II days; for example the advisor to Reeve Schley (director and vice president of Chase National Bank) was Alexander Gumberg, reportedly a Bolshevik agent.[30] The Chase Bank also acted as an agent for the Soviets in the 1930s,[31] and in 1930 Amtorg accounts, according to the U.S. Treasury, were "all with the Chase Bank."[32] Today Chase Manhattan (the merged Chase National and Manhattan banks) is Moscow Narodny's correspondent in New York; hence the ties appear to continue.

The Chase Manhattan Bank is controlled by the Rockefeller interests. Nelson A. Rockefeller, governor of the State of New York, is also the prime founder of the International Basic Economy Corporation (IBEC), which in 1967 made an agreement with Tower International, Inc., headed by Cyrus Eaton, Jr., of Cleveland to further transfers of U.S. technology to the Soviet Union. As this agreement was reported, "The joint effort contemplated by International Basic Economy and Tower is seen as combining the investment skills and resources of the Rockefellers and the special entree to Soviet-bloc officialdom that Tower enjoys."[33]

U.S. CREDITS FOR FINLAND: ADMINISTRATIVE SCHIZOPHRENIA

While this study is limited chiefly to the technical and economic aspects

Dillon. Most if not all appear to be proponents of expanded trade with the U.S.S.R. For John T. Connor see U.S. Senate, *Export Expansion and Regulation*, Hearings before the Subcommittee on International Finance, 91st Congress, 1st session (Washington, 1969), pp. 183-85; for Dillon (former Secretary of the Treasury), see U.S. Senate, *Government Guarantees of Credit to Communist Countries*, Hearings before the Committee on Banking and Currency, 88th Congress, 1st session, November 1963 (Washington, 1964), pp. 74-109.

[29] See Sutton, I, pp. 90, 207-9, 226, 262, 277-78, 289-91. The links between Western financial houses providing financial assistance to the Soviet Union might be worth exploring. For example, Equitable Trust signed an agreement in London on March 7, 1923, to act for Gosbank (U.S. State Dept. Decimal File 316-126-295); a director of Equitable Trust was Otto Kahn, who was a director of Kuhn, Loeb, which has been prominent in financing of Russian business. Directors of Guaranty Trust included Thomas W. Lamont (of Morgan interests) and W. Averell Harriman, who also had other business connections with the U.S.S.R. The evidence appears to suggest (although the author has not explored the topic) that a comparatively small group of bankers and financiers has been consistently associated with Soviet financing. At least these are the names that turn up in the fifty-year history; it may simply be that more information is on record concerning their financial houses. (A study of the financial links between the West and the Soviet Union would be a fascinating and worthwhile topic for a doctoral dissertation.)

[30] *Guide to the Manuscripts of the State Historical Society of Wisconsin* (Madison: Wisconsin State Historical Society, 1957), p. 57. On Gumberg, see Robert Bruce Lockhart, *British Agent* (New York and London: G. Putnam's Sons, 1933), p. 220.

[31] *Congressional Record, House*, vol. 77, pt. 6, 73d Congress, 1st session, June 15, 1933, p. 6227.

[32] U.S. Senate, *Morgenthau Diary (China)*, Committee on the Judiciary, (Washington, 1965), p. 70.

[33] *New York Times*, January 16, 1967.

of transfers, it may be instructive to examine in more detail a sample case of U.S. Government assistance to the U.S.S.R.

Credits from the United States were used to modernize and expand the wood products and paper industries of Finland after World War II; and the output of these industries was sent to the U.S.S.R. as reparations. There is a divergence between contemporary accounts of U.S. intentions and actions as recorded in the State Department files (at least in the declassified portions). While it was denied that there was any intent to grant U.S. credits to enable Finland to make Soviet reparations, in practice the United States advanced credits for precisely that purpose in a case that affords a well-documented example of foreign government assistance to the U.S.S.R.

In 1945 the *New York Times* noted that it was unlikely the United States would grant a Finnish request for a $150 million loan; such a grant was deemed undesirable as it would be used to develop industry to pay Soviet reparations.[34] Two weeks later, however, the Export-Import Bank granted a $5 million cotton credit and a $35 million general credit.[35] In the following month (January 1946) Secretary of State James Byrnes telegraphed American Chargé Hulley in Finland concerning the manner in which he should inform the Finnish authorities of the Bank actions:

> You should carefully emphasize that the credit has no political implications but has been granted entirely on the basis of economic considerations, and within the framework of our policy which you have repeatedly stressed to Finns that we do not propose to contribute directly or indirectly to reparations payment by Finland; that the purpose of credit is to facilitate the resumption of U.S.–Finnish trade.[36]

Later in the year there was a series of communications from the State Department to Finland advising that further loans could not be given or even considered. In one telegram (August 9, 1946) Hamilton, U.S. minister in Finland, indicated that the Finnish Government had been informed it would be a mistake for a Finnish mission to go to the United States with too optimistic a feeling, as the Export-Import Bank had many demands upon it.[37] This was followed by an urgent telegram (Acheson to Hamilton): "Further credit Eximbank out of question at this time" and "visit of mission to U.S. most undesirable and should be indefinitely postponed,"[38] and by another (Hamilton to Acheson): "[I have] strongly advised Finnish Government against mission to U.S.A. also

[34] *New York Times*, December 1, 1945, 7:3.
[35] U.S. State Dept. Decimal File 860d.51/1-1446: telegram.
[36] *Ibid.*
[37] *Ibid.*, 860d.51/8-946: telegram, Hamilton, August 9, 1946.
[38] *Ibid.*, Acheson to Hamilton, August 12, 1946.

advised against Graesbeck [head of the Finnish financial mission] proceeding to U.S.A. in private capacity."[39]

These telegrams, however, were followed by a grant of a $20 million long-term credit, a $12 million short-term credit, and a $5 million credit for industrial goods.[40] And contrary to the published assertions, the credits granted to Finland were in large part specifically for equipment that was virtually certain to be used to manufacture reparations goods for the Soviet Union. For example, the $20 million long-term credit of January 1948 was for

> machinery, equipment and materials required for recovery of export production in the lumber, pulp and paper industry. These materials include wood-working machinery, hydroelectric equipment, iron and steel, spare parts for trucks, lead, coal, and petroleum products.[41]

There is no question that the State Department was informed that these credits would be used to modernize and expand the pulp industries. A Memorandum of Conversation dated December 12, 1946, concerning the discussion between the Finnish delegation headed by Graesbeck and two State Department officials (Havlik and Cleveland)[42] raised a question about the low level of Finnish exports of chemical pulp and commented, "Mr. Graesbeck's explanation of ... the run-down state of the machine equipment was not entirely satisfactory."[43] However, the meeting culminated in a suggestion that the Finns go to the Export-Import Bank. The consensus of the U.S. participants, after the departure of the Finnish delegation, was that a "small" loan of $20 to $25 million should be granted. One month later a $20 million loan was granted for the purchase of industrial machinery and equipment for the lumber and pulp and paper industries.

The U.S. export figures to Finland for the years 1945-48 reflect these credits and their use to purchase equipment for the manufacture of Soviet reparations. Sweden had provided credits for Finnish reconstruction in 1944 and 1945 to the amount of Kr150 million; Sweden's share of total Finnish imports was 51.3 percent in 1945 and only 10.0 percent in 1946 as the credits ran out.[44] On the other hand, the U.S. share of total Finnish imports was zero in 1945 (when no financing was available) and 19.4 percent in 1946 as financing became available under the Export-Import Bank credits.[45] Out of $59 million in 1947, just under $11 million was U.S. machinery and just under $5 million steel products—both categories required for the Finnish industrialization plan needed

[39] U.S. State Dept. Decimal File 860d.51/8-1446: telegram. Hamilton to Acheson, August 14, 1946.
[40] See Table 5-1.
[41] *New York Times*, January 23, 1947, 13:3.
[42] U.S. State Dept. Decimal File 860d.51/12-1246.
[43] *Ibid.*
[44] Urho Toivola, *The Finland Year Book 1947* (Helsinki, 1947), p. 261.
[45] *Ibid.*

to meet Soviet reparations demands. In the following year (1948) U.S. exports to Finland declined to $36 million but the proportion of machinery increased by almost 40 percent to over $14 million, including $5.5 million of industrial machinery. Thus American machinery, financed by the Export-Import Bank, was acquired by Finland to manufacture reparations for the Soviet Union.[46] (See Table 5-1.)

Table 5-1 CREDITS GRANTED TO FINLAND BY THE UNITED STATES, 1945-47

Date	Government agency in the United States	Amount authorized	Details
December 1945	Export-Import Bank	$5.0 million	Cotton credit
December 1945	Export-Import Bank	$35.0 million	General credit
January 1947	Export-Import Bank	$37.0 million	$20 million long term $12 million short term $5 million credit for industrial goods
February 1947	Export-Import Bank	$2.5 million	Credit
May 1947	Foreign Liquidation	$10.0 million	Credit to purchase surplus property overseas
September 1947	War Asset Administration	$10.0 million	Credit to purchase surplus in U.S.
Total 1945-47		$99.5 million	

Source: New York Times, December 1, 1945, 7:3; January 23, 1947, 13:3.

In the 1960s direct government-to-government financing came to the forefront. Germany advanced $400 million to the Soviet Union to purchase oil pipeline at 6 percent over 12 years coupled with assistance to pump natural gas into Germany. Italy financed about $400 million of the U.S.–VAZ automobile plant.[47] The largest single such transaction was made in early 1970 under the Pompidou Government in France; this agreement provided a credit of $810 million to the U.S.S.R. to finance five years' purchases of French machinery and equipment; the credits were for seven to eight and a half years, but interest rates were not announced.[48]

[46] The large proportion of Finnish output accounted for by reparations in the lumber, pulp, and paper fields, and in shipbuilding, may be found in Toivola, *Ibid.*, pp. 187-209.

[47] *Washington Post*, March 14, 1970, pp. A1, A15.

[48] *Ibid.* The interest rate is of some significance. This was an era of world investment opportunities at 8 percent; previous French credits were granted at 5.95 percent and it was reported the Soviets were pressing to bring even this low rate down. If Pompidou had granted lower rates (or even 5.95 percent in the light of world conditions in 1970) there would indeed have been widespread criticism. It does appear on the basis of the skimpy evidence publicly available, however, that the French, British, German, and Italian (and perhaps the U.S.) governments have been willing to grant more favorable terms to the U.S.S.R. than to their own citizens.

CHAPTER SIX

Patterns of Indirect Technical Assistance to the Soviet Union

There are several reasonably well-defined patterns of indirect transfer of technology to the Soviet Union apart from the direct transfers that are the subject of the bulk of this three-volume series. These important indirect transfers pose particular problems for enforcement of export control laws; indeed the existence of indirect transfers has been cited as a prime reason for the difficulty of reaching inter-allied agreement on export control. This difficulty in turn is urged by proponents of more assistance to the U.S.S.R. as a reason for further abandonment of control.

Flows of technology may be broadly categorized as follows:

A. Technology originating in the United States and transferred

1. directly from the United States to the Soviet Union, as in the "Transfermatic Case"
2. indirectly from the United States to an East European communist country, then retransferred to the U.S.S.R. either as technical assistance under COMECON[1] specialization agreements or in the form of equipment manufactured in Eastern Europe and supplied to the U.S.S.R.
3. indirectly from the United States to Europe and then to the U.S.S.R.
4. as direct assistance to an East European plant making equipment for the Soviet Union, i.e., contributing to their operative efficiency for technological exports to U.S.S.R.

B. Technology originating in Europe and Japan and transferred

1. directly to the U.S.S.R., as in the Burmeister & Wain technical-assistance agreement of 1959
2. indirectly through East Europe, as were M.A.N. (West Germany) engines built under license in Poland and exported in Polish ships to the U.S.S.R.
3. as European assistance to East European countries contributing to their capability to supply technology to the U.S.S.R.

[1] COMECON is the Council for Mutual Economic Assistance. An excellent review of its structure and function is M. Kaser, *Comecon: Integration Problems of the Planned Economies*, 2d edition (London: Oxford University Press, 1967).

It is these indirect flows that are briefly considered in this chapter.

DIRECT TRANSFERS OF TECHNOLOGY ORIGINATING IN THE UNITED STATES AND EUROPE

An excellent example of technology originating in the United States and directly transferred to the Soviet Union may be found in the "Transfermatic Case" of 1960-61. This case involved the proposed U.S. sale to the Soviet Union of two Transfermatic machines valued at $5.3 million. The units involved are multi-stage transfer machines for complete process machining of an engine—milling, boring, broaching, drilling, etc. Although the initial Department of Defense position was against granting the license on the grounds it would make a significant contribution to Soviet technology, in the final analysis U.S. Defense Secretary Robert McNamara decided on the basis of his own knowledge of such equipment that the application could go forward. Similar cases decided at about the same time involved Bryant Automatic grinders equipped with high-frequency grinding spindles, and automatic bore grinders for use in the manufacture of internal combustion engines. All these cases embodied a technology significantly advanced beyond that in the Soviet Union at 1960.[2]

More typical than these major transactions decided at a high political level are the smaller exports of U.S. technology. One of thousands of possible examples involved the December 4, 1961 licensing for shipment to the U.S.S.R. of eight flame detectors and industrial instruments. The shipments reportedly were for use in a plant to produce titanium dioxide. The rationale for export of such flame detectors was that industrial instruments of this type could be readily obtained by the Soviet Union from Western Europe.[3]

An example of direct transfer of technology from Europe to the Soviet Union is embodied in the Burmeister & Wain technical-assistance agreement of 1959 to transfer large marine diesel engine technology to the U.S.S.R. Thus the large marine diesels produced at the Bryansk plant in the Soviet Union are of Burmeister & Wain design. Burmeister & Wain technology is also transferred to the Soviet Union indirectly, through East European communist countries. For example, Polish marine diesel engines are based largely on the designs of Sulzer in Switzerland and Burmeister & Wain in Denmark, both of which firms have technical licensing agreements with Polish organizations.

[2] See p. 224 for more data.

[3] U.S. House of Representatives, *Investigation and Study of the Administration, Operation and Enforcement of the Export Control Act of 1949, and Related Acts*, Hearings before the Select Committee on Export Control, 87th Congress, 1st session (Washington, 1962), pt. I, p. 411.

TECHNICAL COOPERATION AGREEMENTS WITH SOCIALIST COUNTRIES

Numerous agreements aimed at strengthening technical cooperation among socialist countries and with European countries were made by the Soviet Union in the decades of the 1950s and the 1960s and provided vehicles for transfer of Western technology. These included agreements with Yugoslavia (April 26, 1955),[4] East Germany (April 26, 1956),[5] Finland (July 17, 1954),[6] Hungary (June 28, 1956),[7] United Kingdom (May 24, 1959),[8] (December 1, 1959),[9] and (January 9, 1961).[10]

Article I of such treaties is exemplified by the Soviet-Yugoslav agreement of 1955:

> The Government of the Federal People's Republic of Yugoslavia and the Government of the Union of Soviet Socialist Republics shall strive to develop scientific and technical cooperation between the two countries by exchanging the experience and technical achievements of the two Contracting States in industry, mining, construction, transport, agriculture, and other fields of economic activity, in the interest of each Contracting State.[11]

Article II usually specifies the manner by which the transfer shall be effected, i.e., through the "reciprocal communication of technical documentation and the exchange of relevant information, including patents and licenses, in accordance with the provisions in force in each of the Contracting States."[12]

The transfer in the Yugoslav case was to be conducted by the exchange of experts, students, and researchers and by the provision of documents and materials. The final articles in the treaty specify the technical details of funding, location of commissions, and similar matters.

The basic agreement was established with the creation of COMECON (Council for Mutual Economic Assistance, formed in January 1949), but it was not implemented for a number of years. Its purpose is to exchange economic experience, extend technical assistance, and generally render mutual economic assistance among socialist countries; it also provides for the bilateral technical-assistance agreements, or specialization agreements, among socialist countries

[4] United Nations, *Treaty Series*, vol. 378, no. 5423 (1960).
[5] *Ibid.*, vol. 259, no. 3692 (1957).
[6] *Ibid.*, vol. 240, no. 3403 (1956).
[7] *Ibid.*, vol. 259, no. 3700 (1957).
[8] *Ibid.*, vol. 374, no. 5344 (1960).
[9] *Ibid.*, vol. 351, no. 5032 (1960).
[10] *Ibid.*, vol. 404, no. 5810 (1961).
[11] *Ibid.*, vol. 378, no. 5423 (1960).
[12] Ibid.

(Table 6-1). These agreements provide the organizational structure for transfer of Western technology indirectly to the Soviet Union from Eastern Europe.

The specialization agreements made under COMECON and the resultant bilateral agreements (as reported in Western sources) are surprising in that, with the exception of agricultural and raw materials which comprise the bulk of Soviet exports, the listed specializations for production by the Soviet Union often are in sectors where this study has revealed a definite technical lag on the part of the Soviet Union.

The listed specializations do include all technologies mastered by Soviet engineers and those in which there has been a degree of indigenous progress, i.e., blast furnaces, open-hearth steel, heavy-section rolling mills, steam turbines over 100,000 kw, large generators, power plants, and heavy tractors.[13] Although in greater part based on foreign technology, these are sectors where the Soviet Union in the early 1960s was standing on its own feet.

On the other hand, the specialization agreements involve some technical areas where the Soviets are decidedly weak and backward. For example, very large long-distance pipe lines, synthetic rubber, large-capacity cement mills, printing industry equipment, synthetic fiber production equipment, heavy diesel and electric locomotives, passenger automobiles, and specialized ships all are areas where the Soviet Union is backward and requires continuing dependence on imported technology.[14]

Production of both synthetic rubber and plastics is retarded in the Soviet Union. The bulk of synthetic rubber capacity at 1960 was either the prewar SK-B or the Dupont Nairit process; similarly, plastics were few in number, poor in quality, and utilized a great deal of imported equipment or Soviet copies of foreign equipment. In neither of these industrial processes has the Soviet Union any new or worthwhile production equipment for export.

Ships are listed as a Soviet COMECON specialty, although three-quarters of the Soviet mercantile fleet and four-fifths of its marine propulsion units have been built in foreign yards. Large marine and locomotive diesels are also listed, although the Soviets lag badly in both. Equipment for the printing industry and synthetic fiber industries is currently imported, and Lavsan and Nitron fibers use British equipment.

Forging equipment is a known area of Soviet backwardness. Cement factories of large capacities are bought abroad. In 1970 steel sheet rolling mill and finishing equipment was at the U.S. 1930 level. Passenger cars were the subject of the so-called "Fiat agreement" in 1966.

[13] Not all shown on Table 6-1; see Heinz Kohler, *Economic Integration in the Soviet Bloc*, (New York: Praeger, 1965), pp. 138-40.

[14] *Ibid.*, pp. 138-40. For evidence see the following: long-distance pipelines, p. 130; synthetic rubber, p. 153; cement mills, p. 170; printing equipment, p. 329; synthetic fiber equipment, p. 178; locomotives, p. 248; passenger automobiles, p. 191; and specialized ships, p. 282. Compare with Table 6-1.

Table 6-1 COMECON SPECIALIZATION FOR HEAVY INDUSTRIAL EQUIPMENT

	U.S.S.R.	Bulgaria	Czechoslovakia	DDR	Hungary	Poland	Rumania
Oil drilling equipment	X	X					X
Oil refinery equipment	X						X
Rolling mill equipment	Heavy section iron rolling mill trains, heavy rolling mill trains		Heavy section iron rolling mill trains, wire-rod mill trains[a]	Continuous and semicontinuous wire-rod mill trains, leaf-metal and tube rolling mills[b]	Wire-rod mill trains	Light section mill trains, small rolling mill trains	
Coal industry equipment	Single-bucket excavators and shovel excavators for open-pit mining[c]		Multi-bucket excavators, stackers, over-burden trans-porter bridges[d]			Coal combine equipment, open-pit lignite, coking plants	
Lignite industry equipment				Multi-bucket excavators for open-pit mining, briquette factories[e]			
Cement factory equipment	Furnace capacity of over 1,000-2,000 t/day		Furnace capacity up to 800 t/day	Furnace capacity of 1,000-2,000 t/day			Furnace capacity of 400-450 t/day
Sugar factory equipment			X	X		X	
Aluminum production equipment					X		
Forging and pressing equipment	X		Heavy	Light		Heavy	

Heavy machine tools	Specialized, such as turret head lathes, long planing machines[f]	Specialized, for making ball bearings, lathes, drills	Highly mechanized automatic, precision, such as duplicating milling machines[g]	Specialized, such as open front vertical drills	Specialized, such as complete wheel set machining lathes, horizontal presses[h]	Specialized, such as knee and column type milling machines
Gas pipes	Very large, long-distance	Large, long-distance	Small, long-distance			
Marine diesels		Large	Large, 4,000-5,000 hp		4,000-5,000 hp ship diesel engines	
Diesel engines (excl. marine diesels)				X		
Blast furnaces	X	X			X	
Complete factories for reinforced concrete					X	

X = Specialization in all equipment in category

[a] Medium and fine sheet metal rolling mills

[b] Rolling mill trains, light section iron rolling mill trains and drawing die mill trains

[c] Coking plants, coal combines, coal cutting machines

[d] As well as soft coal mining equipment

[e] Burden transporter bridges, stackers, conveyor bridges, rotary bucket excavators with a cutting power of 80 kg/cm

[f] Machine tools for ball bearings

[g] Honing machines, thread grinding machines, gear hobbing machines, pipe cutters, pipe thread cutters, ball and roller bearings machine tools, lathes

[h] Up to 250 tons, cold pressure automatics, horizontal face plate lathes, roll grinding machines, toothed-wheel grinding machines for ball bearings

[i] Transverse planing machines, long planing machines with wide bench

Source: H. Köhler, *Economic Integration in the Soviet Bloc* (New York: Praeger, 1965).

It is interesting to note, therefore, that most of the categories claimed for Soviet specialization fall into one or the other of the two extremes—that which the Soviet Union has mastered and technically does reasonably well and that where it is decidedly backward and behind other bloc members, who themselves turn westward for technology.

The asserted existence of a COMECON category of Soviet specialization in sectors where the Soviet Union is ill equipped for specialization is confirmed by trade figures for the Soviet Union with East European countries. Table 6-2 expresses machinery and equipment as a percentage of total trade between the U.S.S.R. and various East European communist countries; the category of machinery and equipment of course comprises the most important category of products included in specialization agreements. With all East European socialist countries taken as a group, just over 42 percent of their total exports to the Soviet Union comprise machinery and equipment. On an overall basis, only 13 percent of Soviet exports to these countries comprises machinery and equipment; this 13 percent also includes exports to relatively backward countries, such as Bulgaria. In other words, East European countries in general are three times more important as shippers of machinery and equipment to the U.S.S.R. than is the U.S.S.R. as a shipper of equipment to those countries. This certainly suggests a relative technical backwardness in the Soviet Union in machinery and equipment. This pattern is highlighted by exports of the most important equipment producers: 62 percent of East German exports to the U.S.S.R. comprise machinery and equipment, over 58 percent of Hungarian exports are of this nature, and almost 45 percent of Czech exports.

Although the COMECON specialization and technical-assistance features relate to documentation and engineering assistance, not to physical movements of machinery, these trade figures do support the assertion of Soviet backwardness, as trade figures must broadly parallel relative technical capabilities. It would be unlikely that the Soviet Union is a major importer of machinery and at the same time provides extensive technical assistance for that machinery; such might apply in one or two special cases (e.g., in the provision of documentation for a specific machine), but not over the broad range of technology indicated. In any event, we know from other sources that the listed Soviet technical specializations which are in fact East European technical specializations, involve areas where these East European countries are receiving technical assistance from Western firms. For example, ship equipment is the subject of "hundreds" of technical-assistance agreements between Western firms and East European countries;[15] these firms are major builders on Soviet account although "specialized ships" are listed as a Soviet category under COMECON.

This question will now be examined in more detail.

[15] John D. Harbron, *Communist Ships and Shipping* (London, 1962), p. 108.

Table 6-2 MACHINERY AND EQUIPMENT AS PERCENTAGE OF TOTAL SOVIET TRADE WITH EAST EUROPEAN SOCIALIST COUNTRIES IN 1960

Country	*Percentage of machinery and equipment in total exports to the U.S.S.R.*	*Percentage of machinery and equipment in total imports from the U.S.S.R.*
All Socialist countries of Eastern Europe	42.36	13.52
East Germany	62.19	3.59
Hungary	58.39	22.57
Czechoslovakia	44.97	9.5
Poland	31.32	11.31
Bulgaria	16.36	13.52
Rumania	8.33	22.13
Yugoslavia	14.58	26.00

Source: P. I. Kumykin, ed., *50 Let sovetskoi vneshnei torgovli* (Moscow, 1967), pp. 108-38.

TECHNICAL ASSISTANCE FROM CZECHOSLOVAKIA TO THE SOVIET UNION

In December 1947 a scientific and technical cooperation agreement was signed between the U.S.S.R. and Czechoslovakia. It has been renewed at annual intervals with changes in the direction and focus of the technical cooperation. The agreement provides for extensive exchange of both personnel and documents. During 1956, for example, Czechoslovakia granted documentation to the Soviet Union on processes for leatherworking and shoemaking machinery, glass blocks, measuring and medical instruments, piping insulation, turbine blades, railroad wagons, locomotives, heavy diesel engines, and automobile engines:

> Over 100 Soviet experts acquainted themselves in Czechoslovakia with the production of sanitary equipment. Groups of experts from 16 Union Republics visited Czechoslovakia in order to study the manufacture of different kinds of footwear, artificial fibers, building structures, pumps, compressors, etc.[16]

In turn the Soviet Union passed over documentation for production of raw rubber, aluminum, phenol, steel works, coke and chemical plants, an aluminum wide-sheet mill, a plant for manufacture of penicillin and streptomycin, and high-voltage cables.[17]

In 1957 the Soviet Union assisted in the construction of an atomic reactor

[16] *Czechoslovak Economic Bulletin* (Prague), February 1957, pp. 17-19.
[17] *Ibid.*, p. 18.

and a cyclotron and Czechoslovakia in turn passed to the Soviet Union documentation for mine, metallurgical, machine tool, and other equipment:

> The Czechoslovak factories and research institutes will acquaint Soviet experts with the technology of production, for example, of turbines for high heads, high-pressure pumps, the production of heat-treated steel, diesel engines, equipment for the manufacture of artificial leather and with the application of light ferroconcrete constructional units.[18]

Some interesting observations may be made about the exchange. There is little question that Czechoslovak diesels, electric locomotives, and other equipment sent to the Soviet Union are of top quality. Skoda diesels compete in the world market against Western-made diesel engines. On the other hand, some of the Soviet grants seem out of place. In 1957, for example, the Soviet Union sent instructions for the manufacture of calculating machines and steel tubes—two of the most backward fields in the U.S.S.R. To be sure, it also gave assistance in open-hearth furnaces and coke ovens—areas in which Soviets have made design progress based on classical Western processes.[19]

The Skoda Works at Pilsen provides an excellent example of indirect U.S. assistance via an East European communist country to the Soviet Union. The Skoda plant is the most important single industrial unit in Czechoslovakia and a prominent manufacturer of diesel engines, armaments, and heavy industrial equipment. Czechoslovakia itself is the fourth largest world producer of diesel engines, of which 80 percent are exported, the largest buyer being the Soviet Union.

Under terms of the 1956 scientific and technical cooperation agreement with the Soviet Union, Skoda sends technical assistance to the Soviet Union in the field of diesel engines and specialized machine tools for making ball bearings, lathes, and drills, together with heavy equipment for forging and pressing. This type of equipment is a specialty of the Skoda plant, which also has an agreement with the Simmons Machine Tool Corporation of Albany, New York. Simmons is an old, established machine tool company specializing in the design of large automatic and numerically controlled special-purpose machines. Under the agreement Simmons equipment is built by Skoda in Czechoslovakia and marketed under both the Simmons name and specification in the United States and also as a joint Simmons-Skoda line. Included in the Simmons-Skoda line are such machine tools as heavy-duty lathes (40-inch to 13-foot-diameter swing), vertical boring mills (53-inch- to 60-foot-diameter swing), horizontal boring mills (five-, six-, eight-, and ten-inch bar diameter), rotary tables from 78.74 by 78.74 inches to 14.9 by 18 feet, planer-type milling

[18] *Ibid.*, p. 19.
[19] See p. 123 below.

machines, and roll and punch shaft grinders.[20] In 1961 an electronic computer valued at $68,600 was exported to the Skoda Works in Pilsen in Czechoslovakia for use in payroll processing and stock control.

Thus it may be seen that a prominent East European communist organization supplying both armaments and specialized heavy equipment to the Soviet Union is able to take direct advantage of the most advanced U.S. technology. Thus, indirectly, advanced U.S. technology is made available to the Soviet Union.

The nature of Czechoslovak exports to the U.S.S.R. indicates the technical assistance provided. In 1957 the Czechs installed a large turbocompressor refrigerator plant at Stalingrad. The plant is one of the most modern in the world with a capacity to supply 30 ice rinks.[21] In the same year the following were shipped: several small rolling mills; two rotary cement kilns with a capacity of 500 tons every 24 hours; Tesla BS 242 electron microscopes; and 40 cooling plants. One of the most interesting contracts in 1958 was to supply the U.S.S.R. with 55 complete automatic cement packing plants, each unit capable of filling 1000 bags of 50 kg every hour.[22] Between 1945 and 1960 Czechoslovakia supplied the U.S.S.R. with equipment for 21 complete sugar mills.[23] In 1959, 20 pig slaughtering lines, 60 diesel electric shunting locomotives, seven vessels for a pressure of 320 atmospheres, another 140 refrigerator units, and similar equipment were sent.[24]

SPECIALIZED ASSISTANCE FROM YUGOSLAVIA

Much of Yugoslav trade with the Soviet Union (Table 6-3) is in specialized metal commodities and fabricated metal units, partly restricted under export control laws for direct sale to the U.S.S.R. by Western countries. The most prominent Yugoslav example is that of copper. During the decade of the fifties copper was on export control lists for the U.S.S.R.; Yugoslavia, a one-time exporter of copper to the United States, then became a net importer of U.S. copper and channeled its own copper production to the Soviet Union in the form of copper products and wire.

A letter to Congress from Frederick G. Dutton, an assistant secretary in the Department of State (dated July 30, 1962), indicated that during 1957 and 1958 Yugoslavia made a number of exports to the Soviet Union of items prohibited under the Battle Act, Title 1. These shipments included semifinished copper

[20] *Thomas' Register*, 59th edition (1969), vol. VII, p. 988; the agreement is reported in European League for Economic Cooperation, *Economic Industrial, Scientific and Technical Cooperation Between the Countries of Eastern and Western Europe* (Brussels, 1967), p. 43.

[21] *Czechoslovak Foreign Trade* (Prague), no. 2, 1957.

[22] *Ibid.*, no. 6, 1958.

[23] *Ibid.*, no. 1, 1959.

[24] *Ibid.*, no. 4, 1959.

products valued at $5.3 million, cable valued at $1 million, electric motors and generators valued at $355,600, machine tools valued at $175,400, and a small quantity of lubricating oil. On January 9, 1959, the President directed continuation of U.S. assistance to Yugoslavia despite these breaches in the CoCom limitations.[25]

Table 6-3 COMMODITIES SUPPLIED BY YUGOSLAVIA TO THE U.S.S.R., DURING JANUARY 1960-SEPTEMBER 1961

	January-December 1960		*January-September 1961*	
Commodity	*Weight, kilograms*	*Value, thousands $**	*Weight, kilograms*	*Value, thousands $**
Copper rods	153,709	206.0	27,686	26.0
Copper plates	—	—	129,234	127.0
Copper tubes and piles	—	—	12,847	16.0
Tubes, pipes, plates, and sheets of copper alloys	—	—	28,929	23.0
Castings and forgings of copper alloys	6,267,978	7,445.0	4,885,762	5,213.0
Welding electrodes	998,000	245.0	1,471,946	364.0
Electric transformers	1,707,130	1,191.0	507,333	1,191.0
Power cables	12,524,760	6,273.0	10,501,015	4,800.0
Installation material	40,818	101.0	73,195	563.0
Installation wire for power current	1,537,577	1,306.0	516,283	563.0
Winding wire	695,183	858.0	372,899	423.0
Low-tension cable	3,450,044	1,711.0	1,491,037	665.0
Other electric equipment	13,223	71.0	—	—

Source: Statistika Spoljne Trgovine SFR Jugoslavije za 1960 godinu
*$1 = 300 dinars.

POLISH ASSISTANCE IN SHIPBUILDING

The COMECON technical agreements provide for Polish specialization in shipbuilding, marine diesel engines, and auxiliary-ship plant technologies. This technology is subsequently sent to the U.S.S.R. as finished products of Polish industry, i.e., ships and engines, as well as in the form of technical documents and prototypes.[26]

[25] U.S. House of Representatives, *op. cit.* n.3, 2d session, pt. 3 (Washington, 1962), p. 662.

[26] See chapter 21 for Polish ships supplied to U.S.S.R.; see also U.S. Naval Institute *Proceedings*, (Annapolis, Md.), January 1970.
For example, "... the Polish auxiliary industry which supplies equipment for shipbuilding, actively participates in the works concerning unification and specialization of the production shipbuilding equipment, which are carried out in the Engineering Commission of COMECON." *Polish Technical Review* (New York), no. 2, August 1964, p. 21.

Table 6-4 WESTERN LICENSE AGREEMENTS FOR SHIPBUILDING TECHNOLOGY WITH POLISH SHIPBUILDERS (IN FORCE AS OF 1964)

Polish company	*Western licensee*	*Technology*
Marine Equipment Plant (at Rumia)	Burmeister & Wain (Denmark)	Heat exchangers for marine power plants
Marine Equipment Plant (at Rumia)	Sulzer (Switzerland)	Silencers for main and auxiliary engines
Marine Equipment Plant (at Rumia)	Fiat (Italy)	Oil, water, and air coolers for Cegielski marine engines
ZAWO (at Slupsk)	Gustav F. Gerdts (West Germany)	Automatic steam traps for marine boilers
Hydroster Works	Baader (West Germany)	Fish processing plants
Gdynia Yards	C. Plath (West Germany)	Electronavigation equipment
Gdynia Yards	AEC (U.K.)	Gyropilots
Cegielski	Sulzer (Switzerland)	Electric power generators
Zgoda	Sulzer (Switzerland)	BH-22, BAH-22
	IMO (Sweden)	Vertical and horizontal screw pumps
	A/B Separator (Sweden)	Oil separators

Source: *Polish Technical Review*, no. 2, 1964, pp. 15-21; no. 3, 1967, pp. 9-11.

The first Polish oceangoing ship was built in 1948—the year of the takeover by the Polish Workers' Party—and since then the industry has expanded at a very rapid rate. In 1964, for example, there were no fewer than 90 plants in Poland making shipbuilding equipment, and Poland has been the leading foreign supplier of ships to the Soviet Union. It is, then, an important channel for indirect technical transfer of Western technology to the U.S.S.R.

Polish shipyards are a major supplier of ships for the Soviet merchant marine; in fact, three-quarters of Polish exports to the U.S.S.R. consist of rolling stock and ships,[27] and the level of ship purchases has been maintained over a period of many years. In general, Poland sells twice as much machinery to the U.S.S.R. as she purchases from the U.S.S.R.

Main diesel engines produced by Polish marine engine builders in 1960 were of two types: Burmeister & Wain, produced by Cegielski, the largest Polish engine builder, and Sulzer-type diesels produced by Zgoda. Referring to the Sulzer RD engines, the *Polish Technical Review* states:

[27] Alfred Zauberman, *Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962* (New York: Oxford University Press, 1964), p. 301.

> The RD engines are of comparatively new construction; however exploitation has already confirmed their high value. The best proof ... is the fact that the Sulzer firm took in 1963 the first place in world production of engines of this class. The exploitation results of RD engines produced with great care by H. Cegielski show that they equal the generally known and valued Swiss products.[28]

In addition, a wide range of other marine equipment, including all major shipboard mechanical equipment items, has been produced for Polish companies under foreign licensing arrangements; some of the more important agreements are summarized in Table 6-4. This Western technology has been transferred to the U.S.S.R. in two ways: as components of finished ships and as the export of component parts of Polish manufacture. Soviet use of this equipment is exemplified by Soviet ships on the Haiphong supply run to North Vietnam in the mid to late 1960s. Further, in the same period Polish-built ships were leased to Red China or used directly by the Polish Government to assist North Vietnam.

EAST GERMAN TECHNICAL ASSISTANCE TO THE U.S.S.R.

H. Mendershausen has cited the following examples of Western exports to East Germany that are utilized in Soviet end products[29]: copper sheet and tubes, special steel valves, measuring instruments, plastic sheet, nickel wire, bronze alloy used in mobile and stationary liquid-oxygen plants for Soviet missile sites at Karaganda, ball bearings from Switzerland for hammer crushers for use in Soviet cement plants; aluminum-plated metal and glass for electronic tubes from the U.S.A.; germanium from West Germany for machinery; crankshafts and valve springs from West Germany for marine diesel engines; and electrical parts for Soviet electrical equipment.

Mendershausen concludes that machinery imports from the West in great part equip East German production facilities and so make possible the highly developed East German metal fabricating industry and its extensive export programs. For example:

> The machinery-building divisions of this industry are the mainstay of East Germany's export trade. Heavy and general machinery, vehicles, and ships bulk large in export to the Soviet Union and the bloc countries.[30]

The Krupp concern of Essen has concluded several agreements with East European countries which significantly increase their ability to produce machinery

[28] *Polish Technical Review*, no. 2, August 1964, p. 22.
[29] Horst Mendershausen, *Dependence of East Germany on Western Imports* (Santa Monica: RAND Corp., July 17, 1959), Report no. RM-2414, pp. 36-39.
[30] *Ibid.*, p. 31.

for Soviet trade. One agreement with Hungary was for a $12 million plant to produce machine tools and truck engines in Budapest; the output from this plant is marketed throughout Eastern Europe. Another agreement provided for manufacture of machines from semifinished iron and steel in Poland; Krupp furnished the machinery but retained its ownership and sent technicians. Compensation in this case is in the form of part of the plant's production.[31]

AN EXAMPLE OF INDIRECT TRANSFER OF A TECHNOLOGY: MARINE DIESELS

The East European shipbuilding yards are major suppliers of ships to the Soviet Union. These yards are also recipients of significant technical assistance—in all major ships' components—from West European countries. Thus indirectly the Soviet Union again is a recipient of European technical assistance. Marine diesel engines may be taken as an example to illustrate this process of transfer.[32] (See Figure 6-1.)

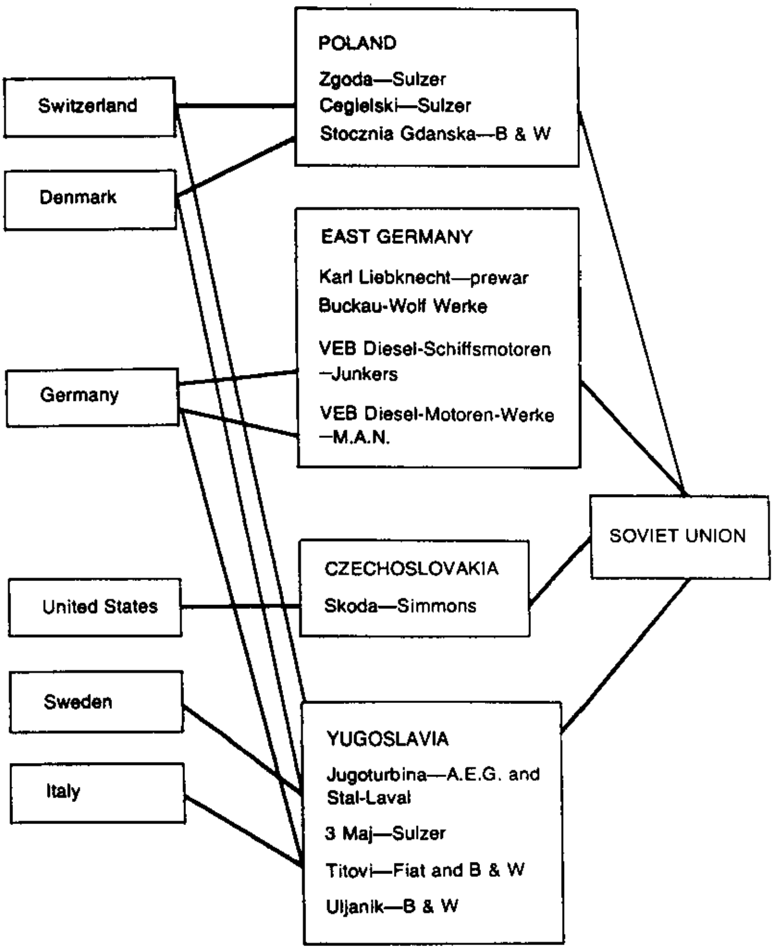
The Burmeister & Wain company of Copenhagen, manufacturer of marine diesels, has a technical-assistance agreement with the U.S.S.R. to build B & W marine diesels at Bryansk.[33] The company also has a technical-assistance agreement with Polish shipbuilding organizations for Burmeister & Wain engines.[34] Thus Stocznia Gdanska, most of whose output goes to the U.S.S.R., produces the B & W model 63-VT2BF-140 under license; a total of 355,000 hp was produced in 1968.[35] The two other Polish engine builders, Cegielski and Z.U.T. Zgoda, have technical-assistance agreements with Sulzer of Switzerland to produce Swiss Sulzer diesels up to 15,000 bhp (Cegielski) and 3000 bhp (Zgoda).[36] These agreements, concluded in 1956, are for production of the RSAD type, now the RD-76.[37] Cegielski also has a technical-assistance agreement with Fiat of Italy.[38]

Ships built in East Germany have marine diesels built either by VEB Diesel-Motoren-Werke Rostock or VEB Maschinenbau Halberstadt; both plants have technical-assistance agreements with M.A.N. of West Germany[39] to produce the M.A.N. model K6Z 57/80 marine diesel.

The four marine engine builders in Yugoslavia also have agreements with

[31] European League for Economic Cooperation, *op. cit.* n.21, pp. 44-45.
[32] The Soviets provide the Poles with hard currency to purchase ship equipment of this type on their behalf.
[33] *East-West Commerce* (London), VI, 2 (February 10, 1959).
[34] *Ibid.*, VI, 9 (September 28, 1959).
[35] *International Shipping and Shipbuilding Directory*, 1968, (80th edition; London: Benn Brothers), p. 455.
[36] *Ibid.*
[37] Harbron, *op. cit.* n. 16, p. 112.
[38] *Ibid.*, p. 109.
[39] *Ibid.*, p. 199.

Figure 6-1 INDIRECT TECHNICAL ASSISTANCE TO THE U.S.S.R. VIA EASTERN EUROPE: THE CASE OF MARINE DIESEL ENGINES



Sources: John D. Harbron, *Communist Ships and Shipping* (London, 1962); *International Shipping and Shipbuilding Directory, 1968* (80th edition; London: Benn Brothers).

Western countries. Titovi Zavodi Litostroj manufactures B & W and Fiat engines under license; "Uljanik" Brodogradiliste I Tvornica Dizel Potora at Pula manufactures B & W marine engines under license; the 3 Maj plant manufactures Sulzer marine diesels under license;[40] and the Jugoturbina plant manufactures Sulzer and A.E.G. turbines under license. These plants provide the total Yugoslav marine-engine building capacity, and are the source of engines for Yugoslav ships built on Soviet account.

It is particularly interesting that B & W (which provides technical assistance for the Bryansk plant in the U.S.S.R. and in the Yugoslav, Polish, and Finnish plants building engines on Soviet account) depends on U.S. technology for its engine-designing facilities. In 1967 Burmeister & Wain installed extensive computer facilities in its electronic data processing department for "extensive calculations for shipbuilding and design and construction of diesel engines."[41] This equipment comprised a Univac 1107 system with central processing and two Univac 1004 computers. Thus diesel engines for Soviet ships are designed with the aid of American computer equipment.[42]

[40] *International Shipping and Shipbuilding ..., op. cit.* n. 35, p. 458.
[41] *Shipping World and Shipbuilder* (London), July 20, 1967, p. 1249.
[42] See p. 318.

CHAPTER SEVEN

Western Equipment and Soviet Foreign Aid

On the assumption that Soviet construction work abroad will throw light on Soviet engineering and technology without the screen of censorship, attention should now be given to the most important of Soviet foreign aid projects—the Bhilai steel plant in India and the Aswan Dam in Egypt. Both projects were heralded as triumphs of Soviet engineering, and without question each has been a key factor in the economic development of the recipient country. Indeed, Aswan will have a fundamental influence on Egypt unparalleled in that country's thousands of years of recorded history.

Both projects had higher priority than any but military projects. The Soviet engineers and equipment utilized were the finest that could be obtained in the U.S.S.R.; in both cases the Soviets preferred to undertake construction using only Soviet equipment, and in the case of Aswan this was written into the first Soviet-Egyptian agreement. In Bhilai and Aswan, then, we have not only two prominent examples of modern Soviet engineering but also reasonably free access to uncensored information on Soviet construction methods and their results.[1]

THE BHILAI STEEL PROJECT IN INDIA[2]

In January 1945 the Indian Government appointed a panel of iron and steel industry experts to consider expansion of the Indian steel industry. The recommendations of the panel included construction of a major integrated plant at Bhilai in Madhya Pradesh. Construction started in 1955 with $130 million of financing from the U.S.S.R. to be repaid by India in 12 annual installments at 2.5 percent annual interest; capacity was planned as 1.3 million tons of ingot steel annually with possible expansion to 2.5 million tons.

A significant feature of the Bhilai project was that 90 percent of the erection work was done by Indians under the supervision of Soviet engineers. In June

[1] The best available technical description is a special supplement of *Indian Construction News* (Calcutta), VIII, 10 (October 1959).

[2] *Ibid.*, pp. 46-49.

1959 about 60,000 Indians were employed under 700 Soviet engineers and 854 Indian engineers.

All civil engineering work at Bhilai was handled by private contractors, the leading company being Hindustan Construction Co., Ltd., which had a contract for more than 80 percent of the excavation and concrete work, in addition to installation of underground communications. The company supplied from its own equipment resources the central batching plant, shovels, scrapers, bulldozers, cranes, and dump trucks. Photographs in *Indian Construction News*[3] indicate clearly the American origins of this equipment—Le Tourneau-Westinghouse, Northwest, Euclid division of General Motors, and so on.

An article by N. B. Lobotsky, Deputy Chief Engineer at Bhilai, comments: "Civil work is of paramount importance in constructing a steel works, and very often it is progress of civil work which determines a further success of various kinds of erection and special work."[4] Thus although Bhilai was designed by Gipromez (and is therefore a typical American layout),[5] Indian companies undertook the basic civil engineering, including the massive excavation needed for iron and steel works and the placement of 600,000 cubic meters of concrete in foundations and construction of concrete buildings.

In short, the excavation and concrete work—those project phases which later, at Aswan, were to cause the Soviets acute embarrassment—were undertaken at Bhilai by private Indian contractors. Ultimately the problem was similarly resolved at Aswan: 93 percent of excavation was handled by Egyptian contractor Osman Ahmed Osman, although originally it had been planned as 100 percent Soviet work.[6]

The Bhilai installation consists of three large standard blast furnaces, six large open hearths, and a merchant rolling mill. It utilizes the very simplest of iron and steel manufacturing techniques, producing only a narrow range of mild-carbon steel products. Its output may be described simply as production of the maximum tonnage of a limited range of the simplest steel shapes. Capacity is 770,000 tons of steel products annually comprising the following:[7]

Rails	110,000 tons
Heavy structurals	284,000
Sleeper bars	90,000
Rounds & squares	121,000
Flats	15,000
Billets	150,000
	770,000 tons

[3] *Ibid.*, p. 40.
[4] *Ibid.*, pp. 42-43.
[5] See above, p. 128 (below).
[6] Supplement, *Indian Construction News*, *op. cit.* n.1, p. 26.
[7] William A. Johnson, *The Steel Industry of India* (Cambridge, Mass.: Harvard University Press, 1966), p. 157. Johnson also points out that the ability to roll heavy sections for long rolling periods means little downtime and reflects favorably in output figures. The actual capacity

The plant produces mild-carbon steel shapes only—it does not produce flat-rolled products, wire, or alloy or tool steels, all of which require extensive finishing facilities including pickling, annealing, cold-rolling and other equipment, facilities in which the Soviet Union is noticeably backward.

Furthermore, even for this limited product range there are numerous restrictions imposed by the equipment; one of the most far-reaching in terms of Indian development is the small range of rolled sizes. The Bhilai mill can be compared (Table 7-1) with the Monterrey mill in Mexico, a small plant producing only 240,000 tons of steel products a year, but roughly in the same categories, and supplying a similar market in an underdeveloped country. Monterrey, however, produces a far greater range of sizes and offers a greater choice of products, although its smaller mill is confined basically to the types of steel products produced by Bhilai. The notable point is that although Bhilai has three times greater capacity than Monterrey, the Mexican mill can supply a greater range of sizes for every finished product, and this applies particularly to angles and flats.

Table 7-1 COMPARISON OF PRODUCTS FROM BHILAI MILL (INDIA) AND MONTERREY MILL (MEXICO)

Type of steel product	*BHILAI*		*MONTERREY*	
	No. of sizes	*Range of sizes*	*No. of sizes*	*Range of sizes*
Rails	8	24 – 105 lb/yd	11	12 – 112 lb/yd
Beams	10	100x50 – 600x210 mm	13	76 - 381x152mm
Channels	8	41x32 – 400x100 mm	10	76x35-300x60mm
Angles	34	40x40x5 – 80x80x12 mm	128	19x19x3 – 152x102x25mm
Flats	27	50x8 – 100x20	227	12x3 - 355x51mm
Rods	3	6, 8, 10 mm	11	6 – 38 mm
Rounds and squares	16	20 – 63 mm	51	6 – 101 mm

Sources: Bhilai mill: Hindustan Steel, Ltd., "List of Products from Bhilai Steel Plant," supplied by Bhilai Steel Plant, Public Relations Dept., January 1969.
Monterrey mill: Cia. Fundidora de Fierro y Acero de Monterrey, S.A., *Manual para constructores* (Monterrey, Mexico, 1959).

This interpretation of Bhilai's limited capabilities is shared by W. A. Johnson, who comments: "Bhilai rolls the simplest of products, heavy sections, which require less reprocessing than the lighter sections rolled by Durgapur and the flat-rolled products by Rourkela."[8]

of the plant is well in excess of rated capacity; i.e., there is a built-in excess capacity, enabling the plant to fulfill its targets with ease.

[8] See Table 7-2.

Table 7-2 LOCATION OF TRAINING FOR ENGINEERS AND SKILLED WORKERS FOR THE BHILAI PROJECT

	Soviet Union	*Private Indian firms*			*Indian Government works*		
		Tata Iron and Steel Co., Ltd.	*Indian Iron and Steel Co., Ltd.*	*Other firms*	*Mysore Iron and Steel Works*	*Bhilai*	*Total*
Junior engineers	109	—	—	—	—	2	111
Graduate trainees	188	—	—	—	—	35	223
Operative trainees	231	108	16	—	45	190	590
Skilled worker trainees	29	52	4	670	40	234	1029
Artisan trainees	—	—	—	—	—	50	50
Vacation trainees	—	—	—	—	—	10	10
Total (numbers)	557	160	20	670	85	521	2013
Total (percent)	26.67		42.23		30.10		

Source: *Indian Construction News* (Calcutta), October 1959; based on table on page 114.

Training of engineers and skilled workers for Bhilai was divided between the U.S.S.R. (about 26 percent, mainly engineers), Bhilai itself (about 25 percent, mainly operatives), and private and Indian Government firms (the remainder).[9] (See Table 7-2.)

Therefore, Bhilai may be described as a steel mill producing a very limited range of the simplest of steel products, with a typical American layout. Further, the civil engineering work and some of the training during construction were handled by private Indian contractors.

THE ROLE OF EGYPTIAN CONTRACTORS AND FOREIGN EQUIPMENT IN BUILDING THE ASWAN DAM

Construction of the Aswan High Dam was financed by the Soviet Union between 1958 and 1963 to the extent of $552 million at 2.5 percent interest. This loan was disbursed as follows:[10]

December 27, 1958	$100 million repayable over ten years for construction of the first stage of dam
August 27, 1960	$225 million repayable over ten years for the second stage of dam construction
Summer 1962	$170 million for additional construction work
June 18, 1963	$57 million for the hydroelectric power equipment
Total	$552 million

A series of international disputes, combined with Gamal Nasser's persistent determination to build the dam, led to the initial 1958 Soviet offer, which was promptly accepted by Egypt. The original German design, drawn up by Hochtief-Dortmund in the early 1950s, was inherited by the Soviets and studied in Moscow. Major changes were proposed in May 1959. These changes were considered by an international consultant board previously appointed by the Egyptian Government; this board in turn strongly advised against two of three Soviet proposals. The Soviets ignored further advice from the international board —as their contract gave them every right to do—and proceeded to plan and build according to their own ideas.

There is little question that the Soviet design changes made sense, although as finally built the dam looks little different from the original German elevation

[9] This chapter is limited to chiefly the examination of two projects; but our hypothesis might well be tested with respect to all overseas Soviet projects, although these were not numerous before 1960. For example, it is reported that the Soviet-built hotel at Inya Lake (Burma) has Otis elevators and Westinghouse air conditioning; see Victor Lasky, *The Ugly Russian* (New York: Trident 1965), pp. 21-2.

[10] B. R. Stokke, *Soviet and Eastern European Trade and Aid in Africa* (New York: Praeger, 1967), p. 83.

design. The main Soviet changes involved work methods and shifting the axis of the dam about 600 yards south; in fact, the sluicing method of moving sand suggested by the Soviets (and rejected by the international board) worked well in practice.

The Soviet engineers insisted that Aswan should be an example of state enterprise and therefore initially refused to subcontract to private Egyptian companies. Also, rather than adhere to the ten-year schedule planned by Hochtief-Dortmund, the Soviets reduced the construction schedule time to eight years.

The first years of work involved only the operational sequence of drill, blast, dig, load, and dump. The equipment needed for this sequence included drills, excavators, and dump trucks, and these items the Soviets supplied immediately in quantity.[11] Equipment problems began almost at once; by mid-1961 only 900,000 cubic yards of rock excavation was completed, instead of a planned three million yards. Soviet trucks broke down, Soviet-made tires were slashed by the granite rock, and while the old-fashioned Ulanshev excavators held up (except for the bucket teeth) the Soviet drills did not—so the Aswan Dam project headed into a major construction crisis.[12]

After a great deal of government-level discussion the excavation and concrete contracts were let to two private Egyptian companies: General Enterprises Engineering Company, run by Osman Ahmed Osman, and the Misr group.[13] The Misr contract covered the concrete work on the tunnels and the power station. The Osman contract, granted to Arab Contractors, Ltd., was of fundamental importance. Only one million yards of the 14 million cubic yards to be moved had been excavated by the Soviets; the Osman company handled the other 13 million yards under this contract. In other words, 93 percent of the Aswan Dam rock excavation was handled by a private Egyptian company, not by the Soviet construction force.[14]

Studies by Osman's Egyptian engineers pinpointed the Soviet dump trucks, only 77 percent as efficient as Western models, as the key to the problem. Subsequently, 54 British Aveling-Barford 35-ton dump trucks were hastily imported to supplement the 100 Soviet 25-ton dump trucks already at work. There was continual friction between Soviet and Egyptian engineers,[15] but the

[11] Construction equipment supplied by the U.S.S.R. included 16 electric excavators (4 to 5 cubic meters shovel capacity), 90 small excavators, 160 dump trucks of 25 to 30 tons capacity, 1600 drilling machines of various sizes, 75 bulldozers, 150 trucks, 140 passenger cars, 100 buses, 80 cranes of various capacities, 80 movable air compressors, 15 tugboats, 13 Hooper barges of 200 to 500 tons' capacity, and 11 sets of equipment for hydraulic movement of sand. *The High Dam, Miracle of XXth Century* (Ministry of the High Dam, Cairo Information Department: January 9, 1964), pp. 16-17.

[12] T. Little, *High Dam at Aswan: The Subjugation of the Nile* (London: Methuen, 1965).

[13] Arab Contractors, Ltd., with the Aswan Dam contract is a subsidiary of General Enterprises Engineering; the latter is partially financed by the government but operates as a privately owned company.

[14] Little, *op. cit.* n.12, pp. 100-4.

[15] *Ibid.*, p. 111.

private contractors held to their schedule. In the face of Soviet objections, overruled by Nasser, Soviet equipment was supplemented by foreign compressors, Atlas Copco (Sweden) drills (with Swedish engineers to supervise the drilling work), and two Ruston-Bucyrus excavators. A British engineer from Dunlop of the United Kingdom was brought in to find a solution for the shredding Soviet truck tires, and workmen were set to chipping away sharp rock edges. At one point late in 1963, "the U.A.R. Government begged Aveling-Barford to give them extraordinary priority by allowing more dump trucks, then at sea and bound for another destination, to be diverted to Egypt."[16] At the final ceremony, however, this British and Swedish equipment was hidden away from inquisitive eyes.[17]

There is no question that injection of private Egyptian companies using imported Western equipment into the Aswan Dam project turned a crisis into a schedule met on time.[18] A similar problem had been avoided at Bhilai in India by using imported Euclid dump trucks operated by the Hindustan Construction Company from the start of construction.

OTHER SOVIET PROJECTS IN THE UNDERDEVELOPED WORLD

It is notable that the Soviet Union has not undertaken to construct large-scale industrial projects elsewhere. Such socialist-sponsored projects have been handled by East European nations, although sometimes the financing has been provided by the U.S.S.R. in a three-way arrangement.

In Syria, the largest communist project under way at the end of the 1950s was a petroleum refinery constructed by Czechoslovakia at Homs. Built at a cost of $15 million financed on long-term credits, and having a capacity of one million tons, the plant has Czech equipment and supervision although some Russian engineers supervised parts of the construction.[19] East Germans and Bulgarians erected other projects in Syria in the 1950s while Soviet material assistance appears to have been confined largely to armaments.

In the Far East, although large Soviet offers of assistance were made in 1958 to Indonesia, the only two completed bloc projects in 1958 were a Czechoslovak tire factory and an East German sugar plant.[20]

[16] *Ibid.*

[17] *Ibid.*, p. 213.

[18] "The violent overhaul that the project needed was led by an Egyptian, Osman Ahmed Osman, forty-eight, the prime contractor and a master at getting big projects done under primitive conditions. Over the objections of the Russians, Osman supplemented their faulty equipment with better British and Swedish gear ... Osman became the hero of Aswan." *Fortune*, January 1967, p. 130.

[19] U.S. Dept. of State, *The Sino-Soviet Economic Offensive in the Less Developed Countries* (Washington, 1958), p. 55.

[20] *Ibid.*, p. 79.

In general, at the end of the fifties there had been large Soviet offers,[21] but except for Aswan and Bhilai, actual assistance had been confined mainly to military supplies.

Thus Soviet construction under its technical-assistance programs appears to generate more propaganda than transfer of indigenous Soviet technology. Bhilai had all civil engineering handled by Indian firms, and much training was handled at Bhilai or by private Indian Government firms. The chief Soviet contribution was in supplying equipment for a simple integrated facility with restricted rolling capabilities, and that based on typical American layouts. At Aswan the Soviets started excavation, but after 7 percent of the work was completed the civil engineering was contracted to two private Egyptian companies utilizing imported Swedish and British equipment.

These two large-scale projects, both of which received the highest nonmilitary priority, confirm the general conclusions of this study concerning weaknesses in Soviet engineering and technology.

[21] Raymond F. Mikesell and Jack N. Behrman, *Financing Free World Trade with the Sino-Soviet Bloc* (Princeton: Princeton University Press, 1958), p. 158. See Appendix Table II for a list of such offers from January 1953 to 1958.

Part II

Technical Transfers and Their Role in Soviet Industry

CHAPTER EIGHT

Western Origins of Mining and Excavating Equipment

Four fields of mining and excavating activity have been selected for consideration in this chapter: underground coal mining, the most important mining activity in the Soviet Union; iron ore beneficiation, important because of the nature of Russian iron ores; peat excavation, a typically Soviet industry; and the development of earth excavating equipment.

At the end of the 1920s imported German mining machinery was largely replaced by imported American machinery and still later by duplicates of this American machinery, in some cases manufactured in the U.S.S.R. under technical-assistance agreements with U.S. manufacturers. This practice has extended historically and in terms of equipment beyond the four mining activities considered in this chapter. A typical example, which also reflects the U.S. origins after 1930, may be found in production of dredges. By July 1932, some 22 new American Yuba-type dredges were sent to various placer gold fields in the Soviet Union;[1] these included three of 13.5-foot capacity, twelve of 7.5-foot capacity, and seven of 3.5-cubic foot capacity. The larger dredges were capable of handling 566 tons of sand per hour and were used in the Lena, Alden, and other Siberian fields. Steam and electric thawing apparatus was installed by American engineers hired from Alaskan gold mines, and five American-design cyanide plants were built in Siberia. U.S. hydraulic nozzles, steam shovels, cranes, scrapers, heated sluices, and other equipment also were imported.

Beginning in 1930 attempts were made to manufacture such equipment in the Soviet Union. In an earlier agreement with the Union Construction Company, an American firm, drawings and specifications had been supplied for gold dredges, and a similar agreement was made in 1932 with the Yuba Manufacturing Company, also American, for platinum dredges. A section of the Krasnyi Putilovets plant was set aside for the manufacture of the large Yuba dredge and three or four smaller dredges a year were manufactured at Votkinsk and Irkutsk. The production program of Soviet plants called only for duplication

[1] *Far Eastern Review* (Manila, Shanghai) April 1933, p. 168.

of U.S. and German equipment. For example, the production program of the Irkutsk plant in 1933 called not only for American-type dredges and power excavators, but also for 60 Black model ore crushers, 20 Simons model ore crushers, 2000 Koppel ore cars, and 2000 Anaconda ore cars.

These imports and Russian domestic copies were supplemented by heavy equipment imports under the Lend Lease program (see Table 8-1) and the October 1945 "pipeline" agreement.

Table 8-1 LEND LEASE EXPORTS OF MINING AND EXCAVATING EQUIPMENT TO THE U.S.S.R.

Lend Lease category no.	*Description*	*Total exports (arrived, after losses)*
V-4	Crushing, screening, and mixing machinery	$8,048,000
V-49	Mining and quarrying machinery	1,763,000
V-50	Earth, rock boring, and drilling equipment	8,983,000
V-51	Well and blast-hole drilling machinery	9,023,000
V-52	Excavating and dredging machinery	31,050,000
V-59B	Mine locomotives	1,133,000
Total		$60,000,000

Source: U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).

In 1945 300 Russian coal mining engineers were sent to locate and dismantle equipment in the German brown coal region. This equipment was transferred to the Moscow brown coal mining basin. Some equipment went elsewhere; for example, eight single-bucket excavators were sent to Tashkent.[2] Excavating equipment totaling 200,000 to 220,000 cubic meters daily capacity was removed to the U.S.S.R., as was coal mining equipment with a daily capacity of 40,000 to 45,000 tons and briquette-making capacity of 16,000 to 18,000 tons daily.[3]

Major imports of mining equipment have continued since World War II. One major U.S. mining equipment manufacturer, Joy Manufacturing Company of Pittsburgh, received a Lend Lease contract from the U.S. Government in 1944 to supply 600 long wall coal cutters for the Donbas mines and has continued to sell equipment for the coal and potash mining sectors since that time.[4] In

[2] Robert Slusser, ed., *Soviet Economic Policy in Postwar Germany* (New York: Research Program on the U.S.S.R., 1953) p. 84.

[3] *Ibid.*, p. 85.

[4] U.S. Senate, *East-West Trade*, A Compilation of Views of Businessmen, Bankers and Academic Experts; Committee on Foreign Relations, 88th Congress, 2d session, November 1964 (Washington, 1964), p. 81. The company name is omitted in the testimony but the facts suggest it was the Joy Manufacturing Company.

1963 the company received a $10 million contract—the eighth—for 30 continuous miners for potash mining,[5] and the following year it received another $5.5 million contract for combines, loading equipment, and self-propelled trolleys for potash mining.[6] Company representatives subsequently made an interesting statement before Congress concerning Soviet copying of their equipment designs:

> The Russians have copied our machines, but apparently there is not high enough priority on coal mining machinery in Russia to make a real effort in copying even for their use within the U.S.S.R. We know this because they continue to buy from us machines of which we know they have made copies.[7]

Recent Soviet technical manuals have descriptions and photographs of these "Soviet-Joys." For example, the self-propelled trolley VSD-10 manufactured at the Voronezh mining equipment plant from 1966 onward is a copy of the Joy self-propelled trolley.[8]

Where other countries have the preferred technology the Soviets are aware of it. For example, Canada is the traditional world leader in asbestos milling and processing equipment; Soviet mills were provided technical assistance by Canadian companies in the 1920s and 1930s[9] and in more recent times Canadian firms have continued to keep Soviet asbestos mills abreast of Western technology. In 1964, for example, Lynn MacLeod Engineering Supplies, Ltd., of Canada supplied $7.8 million in asbestos processing equipment for the Urals asbestos mills with technical assistance and company technicians for installation of the equipment.[10] It is interesting to note that a U.S. embargo on one component was overcome quite simply: "...the company eventually decided to use a Canadian-built product made under a licensing agreement with a U.S. company."[11]

Therefore we can trace a history of import of foreign mining equipment—with U.S. equipment usually the preferred equipment—and only partially successful domestic duplication of this equipment. Lack of total success in duplication is of particular interest in those sectors which are of relatively greater importance in view of Russian resource conditions; peat recovery and iron ore beneficiation are two such sectors and are considered below.

[5] *Congressional Record, House of Representatives,* August 23, 1963.

[6] *Los Angeles Times,* September 14, 1964.

[7] U.S. Senate, *East-West Trade, op. cit.* n. 4, p. 82. A notation is added that copies of the companies' equipment were on exhibit at the permanent industrial exposition in Moscow.

[8] For the VSD-10 see *Gornye mashiny dlya dobychi rud* (Moscow, 1968), and compare to the Joy self-propelled trolley in A. S. Burchakov *et al., Tekhnologiia, mekhanizatsiia i avtomatizatsiia proizvodstvennykh protsessov podzemnykh razrabotok* (Moscow, 1968), p. 329.

[9] See Sutton I, pp. 108-12; and Sutton II, pp. 184, 368.

[10] *Wall Street Journal,* February 19, 1964, 12:6.

[11] *Ibid.*

FOREIGN ORIGINS OF UNDERGROUND MINING EQUIPMENT IN THE COAL INDUSTRY

The coal mining industry, by far the most important of all mining industries in the Soviet Union, is mechanically almost completely based on foreign technical developments. Fortunately, we have a series of excellent reports by the National Coal Board of the United Kingdom that describe this technical diffusion from the West,[12] although this was not the prime purpose of the reports. Furthermore, in the words of one NCB report: "It must be appreciated ... that the Report emphasizes what is best in Soviet mining technique and does not elaborate on much that was seen which was well below the standard of modern British practice."[13]

Of the 391 million tons of coal produced in the Soviet Union in 1955, about 319 million tons was hard coal mined underground, only 7.5 million tons was open-pit mined, and the balance was brown coal. A large number of power-loading machines were in operation in the late 1950s, and Table 8-2 gives the total number of such machines, mostly face power loaders based on the frame-jib design, held in stock and in use in Soviet coal mines in the late 1950s with their Western prototypes. The in-use number is about twice that utilized in British mines in 1956-57.

Underground mining equipment in the Soviet coal industry is based completely on foreign models.[14] The variations, described below, are essentially either simplifications of foreign models or models which omit ancillary equipment or functions forming part of the original foreign machine.

The most commonly seen coal face cutter loader in the Soviet Union is the Donbass 1. There were 1411 in stock in 1956, and according to Soviet literature this model was widely used in the late 1960s.[15] There are six variants of the Donbass, all manufactured at Gorlovka—the Donbass 1; a more powerful version, the Donbass 2; the Donbass 6; a Donbass thick-seam machine; and the Gornyak, the thin-seam version. The Donbass 7 variant has a picked drum "rather similar to that recently developed for the Meco-Moore."[16] The Donbass in all its variants is essentially the British Meco-Moore. The main difference

[12] *Report by the Technical Mission of the* [U.K.] National Coal Board, *The Coal Industry of the U.S.S.R.*, pt. 1 (London, 1957); pt. 2 of this report consists of appendices.

[13] *Ibid.*, pt. 1, p. i.

[14] This conclusion is confirmed under current conditions (1969) by Vasiliy Strishkov of the U.S. Bureau of Mines, and is consistent with the National Coal Board reports: "The mining equipment and processes used in the Soviet mineral industry are standard—usually patterned on early American and West European models"; and "Studying, copying, and extensive application of Western technological progress and equipment in the Soviet mineral industry will be the main trend in the improvement of mineral industry technology." Letter to writer, May 6, 1969, from U.S. Bureau of Mines.

[15] V. N. Khorin *et al.*, *Ugol'nyi kombain "Donbass-1G"* (Moscow, 1969).

[16] U.K. National Coal Board, *op. cit.* n. 12, p. 26.

Table 8-2 POWER LOADING MACHINES IN SOVIET COAL MINES (AS OF APRIL 1, 1956)

1	*2*	*3*	*4*	*5*
	Number of Machines		*Percentage*	
Type of machine	*Held*	*In use*	*in use*	*Western prototypes*
COAL FACE MACHINES				
Donbass 1	1411	954	83.61	Meco-Moore
Donbass 2	11	3	27.27	Meco-Moore (more powerful Donbass 1)
Donbass 6	6	2	33.33	Meco-Moore (thick-seam version)
Gornyak	414	265	64.01	Meco-Moore (thin-seam version)
UKT 1-2	177	112	63.28	Colmol (or) Korfmann
UKMG	142	66	46.68	U.K. multi-jib design
Shakhter	81	60	74.07	Meco-Moore variations
	2242	1462	60.75	
OTHER POWER LOADING MACHINES				
Heading loaders:				
PK-2m (brown coal)	191	116	60.73	Joy Continuous Miner
ShBM-1 (tunneler)	26	17	65.39	Soviet prototype
	217	133	61.20	
Dirt loading:				
UMP	620	401	64.68	—
PPM 2-3	493	312	63.29	Conway Shovel
EPM 1	1808	1303	72.07	Eimco – 21
PML 5	1075	858	79.81	Eimco – 40
PMU	49	21	42.88	U.K. gathering arm loader
	4045	2895	70.32	
Coal loading machines:				
All types	777	534	68.86	—
(including GNIZ-30)	49	38	77.55	—
	826	572	69.25	

Source: United Kingdom, National Coal Board, *The Coal Industry of the U.S.S.R.*, Report by the Technical Mission (London, 1957), p. 24. Column 5 added from text.

is that the Russian Donbass cuts one way only, and is then flitted back along the coal face in a new track, while the original Meco-Moore machine is turned at the end of each cut. The Meco-Moore was originally designed in 1930 by Mining Engineering Co., Ltd., of the United Kingdom. It was developed through-

out the 1930s and received a stimulus in 1941 from increased wartime demand for coal. As of September 1956 some 155 Meco-Moore cutter loaders were in operation in the United Kingdom compared to 1224 Russian Donbass models based on a prototype Meco-Moore.[17]

In describing the less common coal face machines, the U.K. National Coal Board team reported that the UKMG cutter loader was "basically similar to our multijib design," with a slight difference in the cutter chains, and with no separate loading mechanism.[18] The same team reported with reference to the UKT 1 and 2 cutter loaders that "the general design of the machine is similar to the Colmol or Korfmann—and it loads coal in a similar manner—but it is single ended and there are no proposals in hand for making it double-ended."[19] Other cutter loaders under development were the K-26, described as similar to the Dosco,[20] and the A-2 plow of the Löbbehobel type with a support system similar to the Dowty Roofmaster.[21] Vasiliy Strishkov, a U.S. observer, comments on coal plows:

> In 1950, West Germany introduced a high-speed coal plough. But coal ploughs were not introduced in the Soviet Donets basin mines until 1962. It took 12 years for the U.S.S.R. to study, copy, and produce coal ploughs.[22]

Similar observations were made on other machines. The PK-2m brown coal cutter loader is described as similar to the Joy Continuous Miner (supporting the company's own observations) except that the cutter head swings horizontally, not vertically.[23] The most popular loaders are the rocker-arm type corresponding to the Eimco-21 and Eimco-40, with a smaller unit, the PPM-2, equivalent to the Conway Shovel. Of the PMU-1 the report noted: "This is railmounted, and the significant difference between it and British machines is that two conveyors are used."[24]

The winding systems in coal mine shafts use Ward-Leonard controls, the most modern being at Gorlovka, but no automatic winders, except one Ward-Leonard, have been seen.[25] A report of a French Cement Industry delegation noted that Ward-Leonard 250- to 300-kw controls are made at the Urals plant.[26]

[17] R. Shepherd and A. G. Withers, *Mechanized Cutting and Loading of Coal* (London: Odhams Press, 1960), p. 311.
[18] U.K. National Coal Board, *op. cit.* n. 12, p. 28.
[19] *Ibid.*, p. 29.
[20] *Ibid.*
[21] *Ibid.*, p. 30.
[22] Strishkov, *loc. cit.* n. 14.
[23] U.K. National Coal Board, *op. cit.* n. 12, pp. 32, 34, 41.
[24] *Ibid.*, p. 43. See also *Gornye ...*, *op. cit.* n. 8, for a Russian description of these machines with place and date of manufacture.
[25] U.K. National Coal Board, *op. cit.* n. 12, p. 58.
[26] *L'Industrie cimentière en U.S.S.R.*, Compte rendu de mission 9-28 avril 1960 (Paris, 1960), p. 33.

Flotation machines used in coal concentration plants are to a great extent based on French and U.S. designs and imports. As of 1964 there were 230 such machines operating in the U.S.S.R.[27] Of these, 104 were Fm-2.5 or FF-4 based on the French "Minemet," while eight were apparently Minemet Model NS-1500. These units are built in France by the firm of Minère et Meto, and in the U.S.S.R. at Novo-Irminskoi.[28] Another seven units were Airlift; the remaining 77 machines were Giprokoks Model 51-52 and KhGI-57—apparently also based on Minemet models.[29]

Plants manufacturing and repairing coal mining equipment were noted as modern and well equipped. In the case of the Prokopevsk Lamp Works, the NCB delegation noted "a large proportion of the equipment was seen to be of Continental or American manufacture."[30] Of the Rutchenkovsky Zavod the delegation said: "The majority of the machines installed are of American and Continental manufacture."[31]

In sum, in underground coal mining, the largest mining industry in the U.S.S.R., we find almost complete technical dependence on Western equipment —although a great deal of research and experimental work has been undertaken in Soviet research institutes.

BENEFICIATION OF IRON ORE

The Soviet Union has made considerable investment in upgrading facilities for iron ore, particularly to convert low-grade ores into blast-furnace charge. A brief summary of these developments suggests great dependence on Western, and in this case primarily German and American, practice. The 1959 report of the American Steel and Iron Delegation[32] concluded that "the equipment is standard—usually patterned after early American models."[33] In the late fifties there were 40 iron-ore beneficiation plants in the U.S.S.R., and the more advanced were visited by the delegation. Where magnetic separation can be used, "they have definitely settled on rotary kilns developed originally by the Lurgi company in Frankfurt."[34] The standard 150 by 11-foot kiln has a capacity

[27] N. G. Bedran, *Flotatsionnye mashiny dlia obogashchaeniia uglia* (Moscow, 1968), p. 5.
[28] *Ibid.*, pp. 57, 108-9.
[29] *Ibid.*, pp. 82-83.
[30] U.K. National Coal Board, *op. cit.* n. 12, p. 62
[31] *Ibid.*, p. 65. The close watch maintained on the U.S. coal mining industry is apparent in the Russian technical literature. See, for example, R. Yu. Poderni, *Ugol'naia promyshlennost' SSha* (Moscow, 1968), and K. K. Kuznetsov, *Rekonstruktsiia, mekhanizatsiia i avtomatizatsiia shakht za rubezhom* (Moscow, 1968).
[32] *Steel in the Soviet Union*, Report of the American Steel and Iron Ore Delegation's Visit to the Soviet Union May and June 1958 (New York: American Iron and Steel Institute, 1959).
[33] *Ibid.*, p. 58.
[34] *Ibid.*, p. 57.

of 1000 tons per day. For nonmagnetic ores, i.e., oxidized ores, the Soviets have decided on reduction roasting followed by separation. For this purpose two pilot Lurgi-type kilns served as pilot plants and it was planned in the late 1950s to build 50 similar kilns in the Krivoi Rog basin alone,[35] thus standardizing on Lurgi kilns for both magnetic and nonmagnetic ores.

For sintering iron ores, the German Lurgi-type machine is used as the standard. It is based on drawings for a 537-square-foot machine purchased from Lurgi and similar drawings for a 805-square-foot Lurgi machine from Czechoslovakia, the Czechs having passed on their purchased Lurgi drawings.[36]

Crushers for iron ore are patterned after American models; the 60-inch primary crushers, although strengthened, are "definitely patterned after an American model."[37] Cone crushers are of the Symons type with both long and short head varieties.[38] Most of the pumps for sand pumping "are patterned after a well-known American sand pump."[39] Internal drum filters "look very much like American types"; however in the late 1950s the Soviets intended to replace these with magnetic-type vacuum filters developed in Scandinavia.[40] The standard magnetic separator for wet work "is the American-type belt machine with a 55-inch belt."[41] The delegation report comments that at one of the plants the manager "took some pains" to point out the name plates on the machines (i.e., "made in the U.S.S.R."), but the report noted that "very few original developments in the concentrating equipment were seen."[42]

[35] *Ibid.*, p. 58.

[36] *Ibid.*, p. 109-10. No essential differences between the Soviet and the Lurgi sintering plants were seen. Sinter comprises about 60 percent of total furnace feed in the U.S.S.R. "In 1928 the Russians built a Swedish-type sintering plant equipped with movable pans (apparently what is known as the Holmberg system), and in 1931 the first continuous Dwight-Lloyd type plant was built in Kerch. Experiments showed that the continuous system had about 30 percent advantage over the Swedish system. Since that time all plants built in the Soviet Union were of the continuous Dwight-Lloyd type." *Ibid.*, p. 107.

[37] *Ibid.*, p. 58.

[38] *Ibid.*

[39] *Ibid.*

[40] *Ibid.*

[41] *Ibid.*, p. 59.

[42] *Ibid.* It should be remembered that the delegation visited only a few "advanced" plants. The position appears to have remained the same in 1963. Although the Indian Iron and Steel Delegation did not specifically mention origin of Russian processes, those processes described by that delegation are similar to those mentioned in the earlier American report. See National Productivity Council India, *Iron and Steel Industry in U.S.S.R. and Czechoslovakia* (New Delhi: National Productivity Council, 1963), pp. 44-45.

Other comments by the U.S. delegation include (at Magnitogorsk): "Plant equipment observed is based on original American models. The cone crusher is a 7-foot Nordberg ... Wet magnetic separators are all of the American Crockett belt type ... seldom used in new installations in the U.S.A." (p. 78). And (at the Kuznetsk concentrator): "The group was shown an automatic regulating and recording device for controlling the pulp density of the classifier. In design it appeared to be similar to one developed by Masco." "There are four magnetic separators for each section, all of them being of a modified Crockett belt type." "There are two filters per section. These are of the Dorrco internal drum type ... manufactured in East Germany." Two Lurgi kilns were being installed. American Iron and Steel Institute, *op. cit.* n. 32.

THE PEAT INDUSTRY IN RUSSIA

The Soviet Union has large deposits of peat and is the most important industrial user of fuel peat in the world. Six methods of production are used: elevator, scraper elevator, dredge-excavator, hydraulic (hydropeat), hydraulic-elevator, and milling.

The elevator and scraper elevator methods account for a small percentage of production. The dredge-excavator method was in use before the Revolution, as was the hydropeat method, developed by two Russian engineers. The hydraulic-elevator method combines the hydraulic method with an elevator installation. The milling method is undertaken with cultivators and milling machines towed behind tractors.[43]

Although the peat industry is primarily a Russian industry it has seen a good deal of transfer of technology. (See Table 8-3.) In the 1920s unsuccessful attempts were made to use foreign machines in bulk drying, and the Typermas machine was developed on Caterpillar tracks. For machines used in excavating large canals, foreign excavators and dredges manufactured by Marion, Weser-Hutte, and other foreign firms were the basis of Soviet excavators P-075, LK-0.5A, and E-505.[44]

Table 8-3 THE PEAT INDUSTRY METHOD OF EXTRACTION (1913 TO 1950)

	(given as percentage of total)				*(tonnage expressed in 1000 gross tons)*			
	1913		*1930*		*1940*		*1950*	
Method	tons	%	tons	%	tons	%	tons	%
Hydropeat	—	—	1797	21.7	9050	28.2	9040	25.3
Hydroelevator	—	—	90	1.1	1240	3.9	1000	2.8
Milling	—	—	186	2.2	5130	16.0	8280	23.2
Excavator (bagger)	—	—	40	0.5	961	3.0	5960	16.7
Elevator	1537	92.2	4054	48.8	9649	30.1	7350	20.6
Cutting	131	7.8	2139	25.7	6025	18.8	4070	11.4
Percentage mechanization	—	0	—	25.5	—	51.1	—	68.0
Total production	1688	—	8306	—	32,055	—	35,700	—

Source: G. Kazakov, *The Soviet Peat Industry* (New York: Praeger, 1956), pp. 217-18.

[43] George Kazakov, *Soviet Peat Resources* (New York: Research Program on the U.S.S.R., 1953), pp. 140-47.

[44] George Kazakov, *The Soviet Peat Industry* (New York: Praeger, 1956).

The standard Instorf elevator installation has been used since 1927. The Soviet SE-3 scraper-elevator installation, first built in 1938, consists of a dragline excavator combined with parts and motors from the standard elevator machine.

Mechanization of the bagger operation was undertaken by use of Ekelund excavators and other foreign machines, such as the Wieland. This was followed by the development of Russian designs—the Pankartov and the Biryukov baggers which in turn were replaced by the Instorf excavator, which is the standard excavator.

After 1950 the TE.P-2 excavator was introduced. This is a single-row multibucket excavator mounted on Caterpillar tracks and with a processing unit patterned on a Jeffrey crusher used in the Canadian peat industry.

The hydropeat method uses a water jet to flush out the peat and incorporates equipment of foreign origin—for example, the Ludlow type water valves, and NF-14 pumps patterned after American pumps.[45]

In peat loading, the UKL machine for loading peat onto rail cars is modeled on the U.S. Joy loader. In milling peat, equipment of German origin is used in addition to Randall-type harrows.[46]

THE ORIGINS OF SOVIET EXCAVATORS

We know from the Gorton Papers at the Hoover Institution that in the early 1930s Soviet planners consulted American engineers on the most suitable types of Western excavators to be copied and then proceeded, with U.S. assistance, to study, copy, and produce these machines in series.[47]

In 1931, for example, the Machine Building Trust collected data from those organizations using draglines and finally settled on five models; specifications of these models were then circulated to U.S. engineers for comments on suitability and numbers needed for 1932 and 1933. By 1932 choice had settled on five specifications:[48]

Model I: 4-cu. yd. bucket (3 cu. meters); total weight 12-13 tons, boom length 26-36 (8-11 meters); dumping radius, 15-16 ft. (4.5 to 5 meters); 30-40 hp on crawlers.

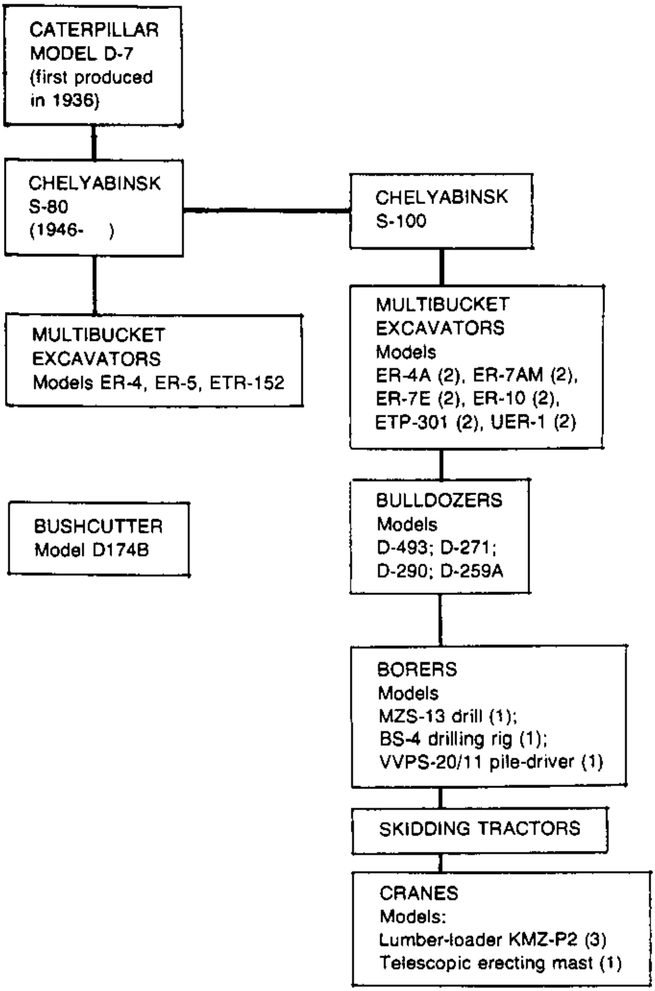
Model II: 0.97-cu. yd. bucket (0.75 cu. meter); boom length, 21 ft. (6.5 meters); dumping radius, 36 ft. (8 meters); weight, 35 tons.

Model III: Shovel clam shell bucket and crane; weight, about 65 tons; crawlers boom 25 ft. (7.6 meters); bucket 1.5 cu. yd. (1.15 meters).

Model IV: Shovel clam shell bucket and crane; weight, 120 tons crawlers; boom, 46 ft. (14 meters); dumping radius, 53 ft. (10 meters).

[45] *Ibid.*, pp. 76-85.
[46] *Ibid.*, p. 108.
[47] Sutton II, pp. 294-95.
[48] Gorton Papers, Hoover Institution Special Collections.

Figure 8-1 DEVELOPMENT OF SOVIET TRACTORS AND EQUIPMENT FROM THE CATERPILLAR D-7 TRACTOR



Sources: P.S.Neporozhnii, *Electrification and Power Construction in the U.S.S.R.* (Jerusalem: Israel Program for Scientific Translations, 1965), pp. 135-37; Ya. B. Lantsburg, *Spravochnik molodnogo mashinista keskavatora,* 2d edition (Moscow, 1968), p. 27.

Model IVa: Dragline for rocks, 3.2 cu. yd. (2.5 meters); weight, 120-130 tons; dumping radius, 36 ft. (11 meters).

These became the Soviet standard dragline excavators, and are based on the U.S. Marion and various German machines.

The Caterpillar D-7 tractor, first produced in the United States in 1936, became the Soviet S-80 in 1946 and the S-100 crawler tractor in the 1950s. The S-80 and the S-100 were then used as base models for a wide range of other Soviet equipment used in industries ranging from mining and lumber to construction. Figure 8-1 illustrates the origins of this equipment in relation to the Soviet S-80 and S-100 tractors. The ER-4, ER-5, and ETR-152 multibucket excavators were based on the S-80 tractor[49] and were replaced by another range of multibucket rotary excavators, the ER-4A, the ER-7AM, the ER-7E, the ER-10, the ETR-301, and the UER-1, all constructed on a C-100 tractor base. The two remaining models of multibucket rotary excavators are based on the T-74 tractor (the ETR-141) and the T-140 (the ETR-131).[50]

Bulldozers D-493, D-271, D-290 and D-259A—including most bulldozers produced in the U.S.S.R.—are based on the S-100 tractor base.[51] The MZS-13 drill, the BS-4 drilling rig, and the VVPS-20/11 pile driver are mounted on an S-100 tractor.[52] A telescopic erection mast is also mounted on a S-100 tractor chassis; and in the lumber industry numerous pieces of equipment, including the KMZ-P2 lumber loader, are based on the S-100.[53]

In sum, then, the range of mechanical handling equipment used in a wide range of industries is based on a single tractor chassis, the S-100 (earlier the S-80), derived from a prewar Caterpillar tractor model, the Caterpillar D-7.

[49] M. I. Kostin, *Ekskavatory: Spravochnik* (Moscow, 1959).

[50] Ya. B. Lantsburg, *Spravochnik molodnogo mashnista keskavatora* (Moscow, 1968), p. 27.

[51] M. D. Artamonov, *Tiagovye i dorozhnye mashiny na lesozagotovkakh* (Moscow, 1968), p. 303-6.

[52] P. S. Neporozhnii, *Electrification and Power Construction in the U.S.S.R.* Jerusalem: Israel Program for Scientific Translations, 1965), pp. 135-37.

[53] Alexis J. Pashin of Yale University has concluded on the basis of personal observation that "all the major equipment" in the logging industry "was either of foreign manufacture or copies, with some relatively slight modifications." This observation was made in 1958, but Pashin considers it holds good for 1968. Pashin also adds: "The same applies to the equipment we saw in the sawmills, plywood plants, and pulp and paper mills. All the major pieces of equipment were either of foreign make or obvious copies." Letter to writer, February 19, 1968.

CHAPTER NINE

Western Assistance to the Nonferrous Metal Industries

CANADIAN ASSISTANCE FOR NICKEL PRODUCTION

The first Russian nickel plant started production in February 1934 at Ufa in the South Urals with a capacity of 3000 tons annually. The Ufa plant, based on oxide ores, uses methods similar to those in the nickel plants of New Caledonia and Germany. It also processes oxidized nickel ores. The second Russian nickel plant started operations in 1935 at Rezh, near Sverdlovsk; this plant is also based on oxide ores and uses a similar process to produce nickel matte, which is transferred to the Ufa plant.

A third nickel plant, also based on nickel oxide ores, began operating in the 1930s in the Orsk and Aktyubinsk raions. The Orsk plant has a capacity of 10,000 tons of nickel per year and utilizes four Dwight-Lloyd sinter strands,[1] with electrorefining "similar to Canadian and Norwegian practice."[2]

The Pechenga plant, formerly called Petsamo, processes one quarter of Soviet nickel. This plant was developed and built by Petsamon Nikkeli Oy, a subsidiary of International Nickel Company, and taken over by the Soviets; it has three electric furnaces with a capacity of 1800 tons of concentrate per day with electrorefining at Monchegorsk.

Norilsk (started in 1940) and Monchegorsk (started in 1950) are also based on sulfide ores and Canadian practice, i.e., concentration by flotation, smelting to matte in electric furnaces, converting, and separation by flotation and electrorefining. These plants refine about one half of Soviet nickel, using processes based on International Nickel patents, while electrorefining at Monchegorsk is similar to Canadian and Norwegian practice.[3]

[1] Germany, Wehrmacht, Oberkommando: Microfilm T 84-127-8116, Captured German Documents.

[2] J. R. Boldt, Jr., *The Winning of Nickel* (Princeton: D. Van Nostrand, 1967).

[3] U.S. Patent 2,419,973 of 1947; U.S. Patent 2,425,760 of 1947; and U.S. Patent 2,432,456 of 1947. The flotation separation of copper nickel ores is attributed in Soviet literature to I. N. Maslenitskii and L. A. Krichevskii, although it is clearly based on International Nickel patents. Compare the flow sheet in *Journal of Metals*, XII, 3 (March 1960); K. Sproule, *et al.*, "Treatment of Nickel-Copper Matte," and I. P. Bardin, *Metallurgiya SSSR (1917-1957)* (Moscow, 1958; Jerusalem: Israel Program for Scientific Translations, 1961).

THE COPPER MINING AND SMELTING INDUSTRY

The technical assistance provided by American engineers to the Soviet copper mining and smelting industry was described in a previous volume.[4] No new locations had been established by the early 1960s, when production of refined copper reached an estimated total of 416,000 tons per year.[5] This capacity was achieved by expanding the already large plants built by Arthur Wheeler Corporation, Southwestern Engineering Corporation, and German firms in the 1930s; the Sverdlovsk refinery is still the largest Soviet refinery, followed by the Balkash refinery.

Copper is a subsector for which the Soviets have released very little hard data; it is surmised that major problems exist within the industry. For example, the Soviets are processing both oxide and sulfide ores by the same techniques; consequently, the recovery rate from oxide ores doubtless has been very low. There is also evidence that the metal content of the ore is declining, probably reflecting inadequate exploration methods. The recovery rate may also be declining.

This deficiency apparently has been offset by metal imports. Between 1954 and 1959 the Soviet Union purchased almost 550,000 tons of unwrought copper and copper wire from Free World countries—about 20 percent of total supply. This purchase was apparently necessary despite 391,711 tons of copper under Lend Lease, i.e., about seven years' supply at estimated 1940 rates of production, and in addition to over one million miles of copper wire and cable.[6] Imports rose at the end of the fifties to 150,000 tons in 1958 and 125,000 tons in 1959, and remained at high levels in the 1960s.[7]

Export control at first limited the form in which copper could be imported, but after August 1954 CoCom removed restrictions on wire of 6 millimeters and less in diameter; in August 1958 CoCom removed embargo on all forms of copper. Soviet copper exports to satellite countries have been balanced by imports of goods from those countries containing an equivalent amount of copper.

ALUMINUM PRODUCTION IN THE U.S.S.R.

In contrast to the Free World practice of using only bauxite ores for the production of aluminum, the Soviets use both bauxite and nonbauxite (nepheline, alunite, and sillimanite) ores—probably because of geological conditions rather than by technical choice. The nonbauxite deposits are low grade but can be

[4] See Sutton II, chapter 4.
[5] Confidential source.
[6] U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).
[7] *Vneshniaia torgovlia SSSR: Statisticheskii sbornik, 1918-1966* (Moscow, 1967).

openpit mined and are near power sources; the major factor militating against the use of nonbauxite deposits is the difficulty met in developing a usable technology. About 30 percent of Soviet aluminum is probably derived from nonbauxite ores which also yield byproducts for use in manufacture of cement and caustic soda. (See Table 9-1.)

Table 9-1 MINES, ALUMINA PLANTS, AND ALUMINUM PLANTS IN THE U.S.S.R. (WITH ALUMINUM PLANT PRODUCTION)

Mine	*Type of ore*	*Alumina plant*	*Aluminum plant*	*Annual plant production (1000 metric tons)*
Goryachegorsk	Nepheline	Achinsk	Stalinsk	160
			Krasnoyarsk	n.a.
			Irkutsk	n.a.
Arkalyk	Bauxite	Pavlodar	Pavlodar	n.a.
Boksitogorsk	Bauxite	Boksitogorsk	Volkhov	25
			Nadvoitsy	20
			Kandalaksha	20
Kyakhta	Sillimanite	n.a.	Irkutsk	n.a.
Severouralsk	Bauxite	Krasnoturlinsk	Krasnoturlinsk	120
		Kamensk	Stalinsk, Zaporozhye	60
			Yerevan	20
			Sumgait	60
			Stalingrad	100
Zaglik	Alunite	Kirovabad	Kirovabad	n.a.

Source: Confidential.

The conventional Western methods, i.e., Bayer and lime-soda sinter processes, are utilized for production of the 70 percent of alumina produced from bauxite. Development work on a process for producing alumina from nepheline goes back to at least 1929[8] but such a process was not in full use until the mid 1950s; up to 1955 all production of alumina was still from bauxite, in spite of claims that Volkhov utilized the nepheline process in 1932.[9]

The standard electrolytic method of reducting alumina to aluminum is used in Soviet plants, although there has been some discussion of a new electrothermal technique[10] at Irkutsk by which sillimanite is reduced directly to aluminum and silumin. It is likely that a percentage of equipment now in general use

[8] The Leningrad Institute of Applied Chemistry was working on the problem in 1929, apparently with help from American engineers. F. N. Stroikov, *"Alumina from Nepheline"* (mimeographed), is in the Stanford University Engineering Library. Presumably this translation was made for use by American engineers. See also Bardin, *op. cit.* n. 3, on the metallurgy of aluminum. A limited-edition review by Theodore Shabad, *The Soviet Aluminum Industry* (New York: American Metal Market, 1958), also has useful information.

[9] See Sutton II, pp. 57-60.

[10] *Izvestia*, December 20, 1960.

Table 9-2 ALUMINUM AND MAGNESIUM WORKS REMOVED FROM GERMANY TO THE U.S.S.R., 1945

Name of German plant	*Production*	*Annual capacity*	*Extent removed to U.S.S.R.*
Aluminiumhutte Bitterfeld der I.G. Farbenindustrie A.G. (Aluminiumwerk GmbH), Bitterfeld	Aluminum metal	35,000 tons (1943)	100 percent
Aluminium-Schmelzwerk, Bitterfeld der Metall-Gesellschaft A.G., Bitterfeld	Aluminum metal and castings	not available	80 percent
Aluminiumwalzwerk, Bitterfeld	Rolled aluminum	35,000 tons (1943)	80 per cent
Aluminiumwalzwerk, Aken	Rolled aluminum	10,000 tons (1943)	Part
Leipziger Leichtmetall-Werk Rackwitz (Bernard Berghaus Co.), nr. Leipzig	Aluminum and magnesium metal	10,000 tons (1944)	Part
Leichtmetallhutte, Aken. (I.G. Farbenindustrie A.G.)	Magnesium metal	8,000 tons	Part
Leichtmetallhutte (Magnesiumwerk), Stassfurt	Magnesium metal	12,000 tons	Part
Magnesiumwerk und Elektronbetriebe der I.G. Farbenindustrie, Bitterfeld	Magnesium metal	5,500 tons	80 percent
Aluminiumwerke Carl Ziegmann, Fischbach	Aluminum metal	70,000 tons	Part
Aluminiumhutte Lautawerke, Lauta	Aluminum metal	100,000 tons	Part
Aluminium-Prazisionsgub A.G., Potsdam-Babelsberg	Rolled aluminum	—	Part
Aluminium-Schmelzwerk Lautawerk, Lauta	Aluminum foundry	—	Part
Havelschmelze Velten, Aluminium-Schmelzwerk	Aluminum foundry	—	Part
Veltner Leichtmetallgieberel GmbH, Velten	Aluminum foundry	—	Part

Sources: G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik*, (Bremen: F. Trüjen, 1951); Great Britain, Ministry of Economic Warfare, *Economic Survey of Germany* (London: Foreign Office, n.d.).

is from Czechoslovakia; it was reported in the early sixties that the Czechs had "financed construction" of aluminum plants in the Soviet Union and received aluminum in exchange.[11]

In the production of more sophisticated aluminum metals, recourse is certainly to Western technology. For example, in 1969 the Glacier Metal Company (a

[11] Alfred Zauberman, *Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962* (New York: Oxford University Press, 1964), p. 225

member of the Associated Engineering group in the United Kingdom) installed a Soviet plant under an $8.4 million contract for the production of tin-aluminum bimetal strip for automobile and tractor bearings.[12]

After World War II the Soviets removed fourteen German alumina and aluminum-metal rolling and casting plants totally or in part to the U.S.S.R.[13] (See Table 9-2.) The most important alumina plant was the Vereinigte Aluminium-Werke A.G. plant at Lauta; it used the Bayer process (100,000 annual metric tons) with a small capacity using the Goldschmidt process (8000 metric tons annual capacity).

REMOVAL OF THE GERMAN MAGNESIUM ALLOY INDUSTRY TO THE SOVIET UNION

During World War II almost all the German magnesium alloy industry was concentrated around Bitterfeld, near Leipzig in the Soviet Zone of Germany, where it was founded in the late nineteenth century by I. G. Farben. The capacity of this industry in 1943 was 31,500 tons per year.[14] Most of the magnesium smelting, casting, and rolling capacity was therefore in plants operated by I. G. Farbenindustrie, and most of it was removed to the U.S.S.R.[15]

The industry was not damaged in World War II, and was visited by various Combined Intelligence Objectives Subcommittee (CIOS) teams in June 1945; their reports give an accurate indication of the technical state of the industry as it was taken over by the Soviet forces. The Metallguss Gesellschaft at Leipzig, partly removed to the Soviet Union, was a foundry casting light metal alloys and producing high-grade magnesium-alloy castings for aircraft engines as a licensee of I.G. Farben. Production averaged 400 metric tons per month of aluminum castings and 150 tons per month of magnesium-alloy castings; four-fifths of the output went to parts for Junkers engines and the balance for BMW engines.[16]

The Leipziger Leichtmetall-Werk GmbH at Rackwitz, near Leipzig, was a fabricator of aluminum and magnesium alloys with a capability of producing 200 metric tons of magnesium-alloy sheet per month and 50 tons of magnesium-alloy extrusions per month. The extrusion shop had four large presses and the capability to draw duraluminum wire. Two I.G. Farben plants, one at Aken and the other at Stassfurt, each had the capability to produce 12,000 tons of

[12] *Wall Street Journal*, November 1, 1969, 14:4.
[13] G. E. Harmssen, *Am Abend der Demontage: Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951).
[14] Great Britain, *Ministry of Economic Warfare*, *Economic Survey of Germany* (London: Foreign Office, n.d.), p. 90.
[15] Harmssen, *op. cit.* n. 13, pp. 94-95.
[16] Edward Johnson and Robert T. Wood, *The Magnesium Alloy Industry of Eastern Germany*, CIOS Report no. XXXIII-21, p. 6.

magnesium per year; both plants contained presses and extrusion equipment for aluminum tube.

The most important magnesium works was the I.G. Farben plant at Bitterfeld—also largely removed (80 percent) to the Soviet Union. The CIOS team reported on this plant as follows:

> 'For many years in Germany the I.G. Farbenindustrie plant at Bitterfeld had been the fountainhead of research and development work on magnesium alloys and by far the most important producer. It can be said that these works is the birthplace of the modern magnesium industry. Many of the techniques used in fabricating magnesium alloy and much of the physical, chemical and engineering data on magnesium and its alloys originated in Bitterfeld.[17]

There were two press buildings at Bitterfeld, each containing extrusion as well as forging presses. These major equipment items gave the Soviets a significant capability in magnesium forging. The older press building of Bitterfeld contained the following equipment:

a) 6000-ton Eumuco forging press

b) 3500-tons Schloemann extrusion press capable of extruding ingots up to 350 mm. in diameter

c) 1000-ton vertical tube extrusion press made by Hydraulic Duisberg

d) 300-ton forging press

e) 600-ton forging press

f) 5 small old extrusion presses

The new press building at Bitterfeld contained even more significant equipment:

a) A 5000-ton Eumuco extrusion press for ingots up to 450 mm in diameter

b) A double-acting air hammer made by Eumuco rated at 8000 meter-kilograms

c) Forging rolls by Eumuco for propellers

d) A 15,000-ton forging press made by Schloemann

e) A 30,000-ton forging press made by Schloemann[19]

This equipment can be used for the production of large magnesium and aluminum forgings, such as aircraft engine bearers and aircraft landing wheel forgings for use in the aircraft and space industries.

Massive use of this German technology generated some criticism in the 1950s. For instance, one Soviet metallurgist, B.S. Gulyanitskii, commented, "After the end of the War, Soviet specialists had the opportunity to acquaint themselves in detail with German and Japanese magnesium industry.... Some

[17] *Ibid.*, p. 41.
[18] *Ibid.*
[19] *Ibid.*

workers of the magnesium industry showed a tendency to redesign the national magnesium industry, completely imitating German technology."[20]

Thus we may conclude that Soviet nickel and copper smelting and refining processes are derived from Canadian, American, and Norwegian practices.

About 70 percent of Soviet alumina is produced by the Bayer and lime soda processes, and about 30 percent by a Soviet process based on nepheline; major difficulties have accompanied the use of the latter process. There were extensive removals of aluminum rolling and magnesium rolling and fabricating equipment from Germany at the end of World War II, and since that time imports of equipment have originated in Czechoslovakia and in Free World countries.

[20] *Ibid.*

CHAPTER TEN

Western Assistance to the Soviet Iron and Steel Industry

BLAST-FURNACE DESIGN AND OPERATION SINCE 1950

The U.S.S.R. relies heavily on blast furnaces to produce pig iron. Since Soviet industry generates comparatively little scrap, steel plant input is predominantly liquid pig iron from blast furnaces; by contrast, the United States practice uses pig iron and scrap in various proportions depending on location and relative prices.

M. Gardner Clark has discussed the development of blast-furnace design in the U.S.S.R.,[1] where until 1955 there were three basic furnace designs. The first, developed in about 1930 by the Freyn Company of Chicago, had a capacity of 930 to 1000 cubic meters and a nominal daily output of 1000 tons of pig iron. The second (1935-36) basic design was by Gipromez, with the earlier assistance of the McKee Corporation of Cleveland as consultants, and had a capacity of 1100 cubic meters. The third basic design of 1300 cubic meters came shortly thereafter and was worked out completely by Gipromez. During World War II there was a temporary reversal to a 600-cubic-meter design, and although a 1500-cubic-meter furnace was designed during that period by Gipromez, postwar construction continued in the three basic designs of the 1930s.

According to P. A. Shiryaev,[2] only one operating furnace in 1951 had a useful volume of 1370 cubic meters, i.e., the third, all-Gipromez, design. In other words, up to 1951 all Soviet blast furnaces except one were of the basic 1930 design, for which the McKee and Freyn firms acted as consultants.

In the late 1950s there was considerable discussion in Soviet engineering circles concerning larger furnaces with capacities of 1513, 1719, and 2286 cubic meters (the last designed by Giprostal), and Shiryaev has tables on the technical and economic efficiency of such designs.[3] According to the calculations

[1] M. Gardner Clark, *The Economics of Soviet Steel* (Cambridge, Mass.: Harvard University Press, 1956), p. 64-69.

[2] P. A. Shiryaev, "The Economic Advantages of Large Types of Blast Furnaces" in *Contemporary Problems of Metallurgy*, A. M. Samarin, ed., (New York: Consultants Bureau, 1960), p. 236.

[3] *Ibid.*

of Shiryaev and Ramm, there is little doubt that the large design (2286 cubic meters) is efficient in terms of cost. However, as was pointed out by American consultants in the 1930s, large-capacity blast furnaces have problems not reflected in the theoretical calculations; in particular, there are raw-material feed problems and physical problems connected with the ability of coke to withstand increased stack pressures. The Russians have built seven of the larger design, each producing 3000 tons of pig iron per day[4] although designed to produce 4000 tons per day.[5]

BLAST-FURNACE INNOVATIONS

Metallurgists have known since 1871 that raising blast furnace gas pressures substantially increases the rate of smelting. Application of top pressure began in both the United States and the U.S.S.R. during World War II, and widespread adoption of the technique came in both countries in the early 1950s. According to data in an article by V. G. Voskoboinikov, adoption started in the United States, but the U.S.S.R. quickly caught up, and by 1956, 51 furnaces with high top pressure were operating in the U.S.S.R. against only 28 in the United States.[6] Rapid adoption in the U.S.S.R. was undoubtedly due to the fact that output could be increased 5 to 10 percent with a comparatively small investment and simple equipment modifications; introduction was helped by a concentrated research effort.

Early studies in Belgium and at the U.S. Bureau of Mines noted two offsetting drawbacks to the use of oxygen in blast furnaces (as distinct from its use in open-hearth furnaces)—the cost of oxygen, and the detrimental effect on furnace linings. According to M. Gardner Clark, the Soviets repeated these tests in the 1940s, came to the same conclusions, and dropped this line of development. Later, in January 1963, the Voest Company of Austria received $10 million in lieu of patent rights for use of the Linz-Donawitz oxygen refinement process.

Direct reduction can be achieved by a number of comparatively recent processes—there are more than 30 variants—that circumvent the blast furnace. Their useful features are lower capital costs, lower minimum capacities, the ability to use noncoke fuels, and the ability to use low-grade ores. Although Germany had commercial direct-reduction operations before World War II, the process did not make headway until the 1950s.

The early German plants were moved to the U.S.S.R. in 1945, and the U.S.S.R. has since purchased further direct-reduction plants.

[4] *Wall Street Journal*, April 17, 1963, 14:3.

[5] N. G. Cordero, ed., *Iron and Steel Works of the World*, 3d edition (London: Quin Press, 1962), p. 771.

[6] V. G. Voskoboinikov and L. I. Slephushova, "Blast Furnace Operation at Increased Gas Pressures" in *Samarin, op. cit.* n. 2, p. 190.

Table 10-1 DISPOSAL OF 29 KRUPP-RENN DIRECT-REDUCTION PLANTS

Plant no.	*Original location*	*Date built*	*Date moved to U.S.S.R.*
1	Barbeck	1935	1945
2	Frankenstein	1935	1945
3	Watenstedt-Salzgitter	1941	1945
4	Czechoslovakia	1943	Still in place
5 to 29	Japan, Korea, and Manchuria	1935-45	All in Korea and Manchuria moved to U.S.S.R. in 1945-46

Source: The Krupp-Renn Process, for Production of Iron Without Metallurgical Coke Using Fine-grained Fuel and for the Economical Processing of Low-grade High Silica Ores (Essen, n.d.).

CONTINUOUS CASTING OF STEEL

Soviet attempts to apply continuous casting on a wide scale in an attempt to circumvent the blooming-mill stage demonstrate clearly both the political pressure for innovation in the Soviet Union and one of the pitfalls implicit in centrally decreed innovation.

Continuous casting of metals has been under development since Sir Henry Bessemer's original patent in 1858; by eliminating the need for the soaking pits and the blooming mill it offers the promise of large savings in capital costs and greater metal yields. The B. Atha Company in the United States produced file steel by continuous casting from about 1890 to 1910, but up to 1950, commercial applications of continuous casting were limited mainly to nonferrous metals, and particularly to aluminum. (All U.S. aluminum today is continuous-cast.) The first large-scale Western commercial steel installation was for alloy steels at Atlas Steel in Welland, Canada, in 1954, and by 1959 a total of 25 plants were operating on a development or commercial basis in at least 12 countries. In 1959 the U.S.S.R. had three development plants and probably three in production.[7] These were plants of the Junghans-Rossi type.[8]

The advantages of continuous casting are numerous if the process can be used on a production scale. Quality of cast slabs and blooms is good, although considerable difficulties have been encountered with continuous-cast rimming steels. The yield is excellent, with a ratio of liquid steel to slab of about 94 to 97 percent, compared with the conventional yield of 85 percent using a

[7] In 1963, one source stated only three plants were operating in the U.S.S.R. This is probably conservative, but see *Wall Street Journal*, April 17, 1963.

[8] *Institute of Metals Journal* (London), March 1958, p. 182; *Metal Progress (Cleveland, O.), May 1959, p. 106.*

blooming mill. Capital costs are decidedly lower, especially in small plants; both capital and operating costs for a blooming mill may be four times greater than with continuous casting.

In the early 1950s Soviet weaknesses in certain areas of iron and steel production became pressing. Rolled flat products (i.e., sheet and strip steel) comprised 20 percent of total rolled products in 1940[9] and increased to only 25 percent by 1955. By comparison, in the United States the 1940 ratio was over 45 percent, and in 1955 probably over 60 percent. A number of studies[10] have indicated that the percentage requirements of flat-rolled steel products increases with industrialization. In other words, the relative demand for sections (e.g., bars and structurals) declines, and the relative demand for sheet steel (for use in automobiles, appliances, galvanizing, pipe, and tinplate) increases as industrial development progresses. However, flat-rolled products require a much greater investment in processing and finishing facilities (pickling, annealing, cold rolling, skin pass mills, galvanizing, and tinning lines) than do section products. Apart from the magnitude of the investment involved, there are indications that the Soviets have not fully appreciated the technological gap they have to bridge between hot-rolled sections and flat cold-rolled products.[11]

The prospect of having to make substantial investments in rolling mill equipment and new techniques prompted a search for less expensive alternatives. Continuous casting was one promising alternative, which was recognized by Gipromez and other design bureaus; development work on the process began at the Central Research Institute for Ferrous Metallurgy in Moscow in 1938. The Krasny Oktyabr Works (1951), Novo Tula (1955), and Kirov (1956) continued this work. In 1956 continuous casting was presented to the Twentieth Congress of the CPSU as a possible means of leap-frogging Western technology: the lower capital costs would avoid heavy investment in blooming mills, sim-

[9] R. H. Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969), p. 20. Soviet production of steel was 20 million tons in 1940 and only 8.8 million tons in 1942; 2,589,766 tons of steel were sent between 1941 and 1945 under Lend Lease. Although this appears only a small fraction of Soviet output, Jones comments, "Appearances are deceiving. Most of the Lend Lease steel comprised specialty steels such as high-speed cold steel, cold-finished bars, hot-rolled aircraft steel, tinplate, steel wire, pipe and tubing, and hot-rolled sheets and plates. More than one-fifth of the Lend Lease steels included railroad rails and accessories. In other words, Russia imported specialty steels, freeing her mills from the expense and time involved in their production." Jones adds that the $13.2 million worth of equipment for their steel mills enabled the Soviets to increase the output of carbon steel ingots by 2.5 million tons per year.

[10] Various reports of the Economic Commission for Europe and Economic Commission for Latin America (United Nations).

[11] For example: "Of the cold-rolled sheets from rimming steel ingots at the Novosibirsk plant, 50 percent of the sheets were classified in the second grade ... due to ... small scabs ... measuring 0.5-3 mm wide and 200-300 mm long with a thickness of up to 0.2 mm." G. V. Gurskii, "The Continuous Casting of Steel" in *Samarin, op. cit.* n. 2, p. 285. No Western mill would classify this defect as a "second"; laminations of this magnitude are classified as scrap.

plified construction would reduce lead time required for development of more powerful blooming mills, and excellent yield offered the promise of increasing steel output per ruble of investment.[12] There is no doubt that by 1956 considerable progress had been made in solving problems connected with continuous casting of tonnage steels, but by Western engineering standards the process developed was not suitable for application in large plants. Western engineers were in general agreement that the process was then limited to alloy steels with a high hot strength. Inland Steel, for example, considered the process, and *Iron Age* reported: "In 1956 ... Inland decided in favor of conventional equipment and against continuous casting ... there was not sufficient time available to master all the problems."[13]

In 1956, then, continuous casting was under consideration in both the West and the U.S.S.R. for large-tonnage plants. Engineering opinion in the West was against adoption; on the other hand, the process was adopted in the Soviet Union.

Stal' reports that by 1961 ten installations had been brought into use, including pilot plants and single-strand units with limited capacity.[14] A rough estimate is that probably about one-half million tons was poured by continuous casting in the U.S.S.R. in 1961, with an absolute maximum of one million tons; directives of the party congress had called for 12 to 15 million tons to be poured by this method in 1961. By 1962 no Soviet plant was entirely dependent on continuous casting; i.e., the soaking-pit blooming-mill stage was retained in all steel plants. The cost to the Soviets in trying to meet the goals set by the party must have been considerable because of the investment in continuous casting plants, the continued demand for blooming mills and soaking pits which necessitated running two methods simultaneously in the same plant, and the lead time lost in blooming-mill development. In particular, it was known in 1956 that continuous casting was not suitable for rimming steels, which are preferred for reasons of quality in flat-rolled products, and for which Soviet production capacity is notably weak. By 1962 the problems connected with rimming steels had not been solved in either the U.S.S.R. or the United States.

[12] "Capital investment for the construction of continuous pouring installations is repaid in less than one year. With continuous pouring there is no need for blooming mills [or] the building of such costly premises of open-hearth plants as the mold yards and shops for ingot stripping. Continuous pouring of steel will become widespread in the sixth five year period. It was pointed out at the 20th Congress of the CPSU that if 12-15 million tons of steel are poured by the new method in 1960, which is fully feasible, this will yield an additional million tons of rolled stock (by cutting down losses and waste) and a saving of 2,000 million rubles." Lazar Roitburd, *Soviet Iron and Steel Industry* (Moscow: Foreign Languages Publishing House, 1956).

[13] *Iron Age*, May 18, 1961.

[14] S. K., "The Twenty-second Congress of the CPSU and the Soviet Iron and Steel Industry," *Stal'* (English version), no. 7, July 1961.

STEEL ROLLING TECHNIQUES IN THE SOVIET UNION

Although there was no attempt after World War II to remove complete iron and steel plants under reparations to the U.S.S.R., there was a great deal of selective removal—particularly of rolling mills and finishing equipment. The Hüttenwerk Salzgitter A.G. was dismantled between 1945 and 1950;[15] in fact, Alfred Zauberman estimates that four-fifths of East German metallurgical capacity was dismantled[16] (although this may have been restricted to specialized units). Plate rolling mills, tube facilities, coal washing plants, and special steel facilities in Manchuria were completely dismantled,[17] but blast furnaces were not removed and other facilities were only selectively removed.

Well after the war the U.S.S.R. was still turning out a large proportion of its limited production of steel sections on hand-bar mills; in 1956, for example, only 53 percent of rolled steel sections was produced on modern mills, leaving 47 percent to be produced on the old-type "in-train" hand mills. These figures indicate a considerable lag in technology. The hand-bar mill is very limited in both speed and capacity; continuous and semicontinuous mills have replaced "in-train" mills almost completely in the West. The only use for the hand-bar mill in the United States during the last 50 years or so has been possibly in limited rollings of special products; e.g., it is probably used for wrought iron. Even in Europe such mills are rare.

By far the weakest part of the Soviet iron and steel industry is in the production of flat-rolled products, i.e., hot- and cold-rolled sheet and strip as well as coated sheet and strip. For such production the choice of techniques is essentially between continuous or semicontinuous sheet and strip mills (including Steckel mills) and the obsolete hand-sheet mill or pack mill.[18] In 1960, the United States had 39 continuous wide hot-strip mills, all with extensive additional cold-rolling and finishing facilities; at the same time Japan had five, the United Kingdom four, and Mexico two wide strip mills. In 1960 the U.S.S.R. had only five continuous or Steckel-type mills.[19]

This lack of wide strip rolling facilities is reflected in the composition of Soviet steel output. The share of sheet steel in all rolled products was 25 percent

[15] *Germany, 1945-1954* (Cologne: Boas International Publishing Co. [1954?]), p. 493.

[16] Alfred Zauberman, *Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962* (New York: Oxford University Press, 1964), pp. 174, 187.

[17] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946).

[18] The hand-sheet mill has a few uses in the West today; it is used in the United Kingdom and Belgium for blue planished sheets, and in the United States probably only for high-silicon electrical sheets.

[19] Based on Iron and Steel Institute, *Production of Wide Steel Strip* (London, 1960), p. 75.

in 1955, but of this only 23 percent came from continuous or semicontinuous mills.

Table 10-2 suggests a heavy dependence on Western technology in the five wide strip mills operating in the U.S.S.R. in 1960: three are of Western manufacture. The first Russian-built continuous sheet mill was installed not in Russia but at Nowa Huta in Poland.[20] The tinplate mill for this plant was supplied by U.S. firms "financed from American credit."[21] The reported operating troubles of the Russian-made mill[22] would suggest in the context of our study that the Soviets installed their first mill in Poland to avoid domestic production interruptions from an inadequately engineered mill.

Table 10-2 ORIGINS OF SOVIET CONTINUOUS WIDE STRIP MILLS AS OF 1960

Mill	*Type*	*Width, inches*	*Origin*
1. Zaporozhtal	Continuous	60	U.S. (United)
2. Kuibyshev	Continuous	50	U.S. (United)
3. Magnitogorsk	Continuous	96	U.S.S.R. (Kramator)
4. Chelyabinsk	Semicontinuous	72	German (Steckel)
5. Voroshilov	Continuous	96 (?)	U.S.S.R. (?)

Source: Great Britain, Iron and Steel Institute, *Production of Wide Steel Strip* (London, 1960).

Note: There is also evidence of an old 50-inch German semicontinuous mill (from reparations) at Nizhni Tagil. A prototype Kramator reversing mill with furnace coilers is located at Lipetsk.

Thus it is concluded that there is a heavy Soviet dependence on Western technology in the production of flat-rolled steel from continuous and semicontinuous mills. It should be noted that the development, construction, and operation of this type of mill requires far greater technical sophistication than do the facilities for pig iron or steel production. "Shock" methods applied to wide strip mill scheduling would be chaotic, as shock methods cannot be applied to the more sophisticated technologies where tight control of specification is easily lost and a delicate balance must be maintained between the subsystems.

THE STEEL PIPE AND TUBE INDUSTRY

The two basic techniques in pipe and tube manufacturing are the seamless and welded tube processes. The earliest seamless techniques were variants of

[20] M. Gardner Clark, "*Report on the Nowa Huta Iron and Steel Plant Named After Lenin, Near Cracow, Poland*" (Ithaca: School of Industrial and Labor Relations, Cornell University, September 1957), mimeographed.

[21] Zauberman, *op. cit.* n. 16, p. 193.

[22] Clark, *op. cit.* n. 1.

the Mannesman skew rolling principle using a mandrel; present-day Stiefel mills, plug mills, and continuous seamless mills are based on Mannesman rolling principles and account for about 60 percent of Soviet tube production. The push-bench techniques, now obsolete, and the extrusion process for small-diameter special-alloy tubes are also of German origin.

The second main group of manufacturing techniques is a variant of the welded seam process, and accounts for the remaining 40 percent of Soviet tube output. The Fretz-Moon technique of continuous butt welding originated in the United States in the early 1920s; submerged electric-arc welding for large-diameter tubes and electric-resistance welding (ERW) were developed at a later date, although ERW did not come into widespread use until after World War II.

Most techniques in use in the world today conform to one of these two basic Western methods, one German and one American. An examination of Soviet methods indicates that all plants use one of these methods (except Lipetsk, which uses a spun-cast process of unknown origin). Moreover in 1962 Soviet pipe and tube plants not only were based on Western technology but to a great extent were using Western equipment. The Soviet heavy-machinery-building

Table 10-3 PROCESS USED IN SOVIET PIPE AND TUBE MILLS IN 1963

Plant	*Process*	*Product*
Taganrog	Pilger	Oil Pipe
Novomoskovsk	Pilger	Large-diameter oil pipe
Zhdanov	—	Seamless pipe and tube to 14 inches
Dnepropetrovsk	Stiefel	Seamless tubes
Dnepropetrovsk (Karl Liebknecht)	Pilger	—
Nikopol	Stiefel } Mannesman }	Small-diameter tube
Pervouralsk	Stiefel Rockrite }	Tubes for oil and chemical industry
Chelyabinsk	Fretz-Moon }	Oil and gas pipes to 38 inches in diameter
	Stiefel	—
	Pilger	—
	Electric resistance	—
	Weld mill	—
Kamensk-Uralskiy	Draw bench type	Pipe to 75 mm diameter
Viksa	Electric weld mill	—
Lipetsk	Spun cast	—
Rustavi	Mannesman (U.S.-built)	—
Sumgait	Seamless mills	—
Novosibirsk	Electric weld mills	—

Source: Economic Commission for Europe, *The European Steel Pipe and Tube Industry* (Geneva, 1955); M. Gardner Clark, *The Economics of Soviet Steel* (Cambridge, Harvard University Press, 1956); M. G. Cordero, *Iron and Steel Works of the World*, 3d edition (London: Quin, 1962).

plants do not appear to have completely mastered the art of building tube-rolling machinery, or else it has been found more advantageous to import Western equipment. There has been a limited development of new techniques, in effect modifications of the basic methods, by TsKBMM, and "authors' certificates" have been awarded to some Soviet designers, but the scope of this work is not extensive.

Table 10-3 indicates the process used in 15 Soviet tube and pipe plants. In 1960 the Soviet Union apparently could not produce a tube mill of any type capable of manufacturing steel tube greater than 400 mm in diameter.[23] This observation is confirmed by examination of the equipment contained in the most important Soviet tube mills. The Chelyabinsk tube mill, the largest in Europe with a production in excess of one million tons of tubes and pipes per year, has equipment completely of Western origin. Chelyabinsk has four Fretz-Moon mills for production of butt-welded tube between 3/8 and three inches in diameter; the strip heating furnaces in the Fretz-Moon mill were built from Salem Engineering drawings, and the leveling and uncoiling machines were made by Aetna Standard Company.[24] The Stiefel mill shop produces tubes between three and four inches in outside diameter using the standard Stiefel mill. The Pilger mill shop produces large-diameter seamless tubes from 12 to 22 inches in outside diameter; the piercer is a rotary-type Mannesman followed by two Pilger mills built by Eisenwerk Witkovice in Czechoslovakia. The worn rolls are built up by welding with Krupp welding rod.[25] A newer plant, completed in 1959, produces welded pipe up to 820 mm (32.3 inches) in diameter by the U.S. submerged-arc process, and is the first plant of its type in the Soviet Union.[26]

Another important Soviet tube mill is at Rustavi (all Soviet seamless tube capacity is located at either Nikopol or Rustavi). The report of the 1956 British Iron and Steel Delegation indicated that the Rustavi mill was "orthodox in design and layout and generally typical of works built about 30 years ago."[27] The Nikopol mill was originally installed by a U.S. firm in the 1930s.[28] In 1956 two Russian-built electric-resistance welding mills also were installed in Nikopol; these have piercers of the Mannesman type followed by plug or Stiefel mills.

[23] V. L. Agre, *Tekhnicheskii progress v chernoi metallurgii SSSR; Prokatnoe i trubnoe proizvodstvo* (Moscow, 1962). This is an excellent compendium of technicoeconomic information.

[24] *Iron and Steel Making in the U.S.S.R., with Special Reference to the Urals Region*, A Report to the British Iron and Steel Federation by a British Steel Delegation, (Rochester, Kent: Staples, 1956), p. 66.

[25] *Ibid.*, p. 67.

[26] *Ibid.*, p. 65.

[27] *The Russian Iron and Steel Industry*, A Report Prepared by a British Steel Mission to the U.S.S.R., Special Report No. 57 (London: Iron and Steel Institute, April 1956), p. 19. The reader should also see Yu. F. Shevakin, *Stany kholodnoi prokatki trub* (Moscow, 1966); and L. I. Spivakovskii, *Ekonomika trubnoi promyshlennosti SSSR* (Moscow, 1967).

[28] See Sutton II, p. 74.

SOVIET CONTRIBUTIONS TO METALLURGY

According to J. H. Westbrook, writing in 1961 after a visit to seven Soviet metallurgical laboratories,[29] the Soviets are more interested in exploiting the properties of compounds than in improving or understanding their nature. Says Westbrook:

> In the superalloy field, despite a large amount of research on nickel, cobalt, and iron-based superalloys, Soviet scientists are apparently without any unique advances or developments of their own. This observation is even more surprising in that they have had full knowledge of both the empirical and theoretical developments of the Western world. Most of their work is descriptive—it has not been (and, in most instances, *cannot* be) correlated with particular models of deformation or fracture.[30]

Westbrook then identifies three areas in which the Soviets have made unique contributions in the field of materials processing, although a decade later there is contradictory evidence as to whether the Soviets have been able to maintain their position in these fields:

1. friction welding
2. electroslag melting (for ingots of special alloys)
3. powder rolling

Westbrook also notes that laboratories in the early sixties were well supplied with equipment of foreign origin: "... they have a considerable amount of foreign-made equipment as well as Russian of foreign designs."[31] After pointing out that his delegation saw Russian-built copies of General Radio Variacs, Simpson meters, Du Mont oscilloscopes, and L & N recorders, Westbrook continues: "... they appear to concentrate on one design, their own or that of someone else, and then build and use large numbers of identical units."[32]

Soviet work in electroslag welding (where, unlike arc welding, the heat is obtained by passage of electric current through a bath of molten slag) came to fruition in about 1960 with the attainment of an ability to weld parts up to a thickness of 2⅜ inches using one electrode.[33] The process was immediately licensed to the Swedish firm Esab.[34] Russian work in friction welding by V. I. Vill led to publication of his textbook *Friction Welding of Metals* by the American Welding Society in 1962, although there is some question whether the Soviets have maintained any significant advance over current U.S. knowledge

[29] J. H. Westbrook, "High Temperature Materials in the Soviet Union," *Metal Progress* (Cleveland, O.), February 1962.
[30] *Ibid.*
[31] *Ibid.*
[32] *Ibid.*
[33] *Welding Journal* (London), February 1959, pp. 132-34.
[34] *East-West Commerce* VI, 3 (March 31, 1959), 8.

and methods.[35] Continued Soviet imports of furnaces for heat treating of metals from the 1930s through the 1960s also suggests that Russian work in metals processing has been somewhat uneven.[36]

Thus we may conclude, as have other observers,[37] that at the end of the 1960s Soviet technology in ferrous metallurgy industries is an adaptation of Western technology, although much Soviet work and effort have been devoted to developing this technology.

The classical blast furnace has been increased in volume and top pressure has been introduced. Sintering strands are Dwight-Lloyd to Lurgi drawings; coke ovens are modified Koppers-Becker[38]; and direct reduction is Krupp-Renn.

In steelmaking we find expansion in the size of the classical open-hearth furnaces with indigenous technological improvements. Oxygen convertor practice is Austrian and continuous casting Junghans-Rossi; blooming mills are basically United and Demag. Rolling techniques and finishing facilities in general are backward (except where modernized by imported equipment) and approximate the U.S. level of the 1930s.

[35] Appreciation is due E. Strickland for this information; see U.S. Patent 3,460,734 of August 12, 1969.

[36] A number of controlled-atmosphere heat-treating furnaces have been supplied from the United States and from Birlec, Ltd., in England; see *East-West Commerce*, IV, 9 (September 30, 1957), 14, and V, 11 (November 29, 1958), 3.

[37] Clark, *op. cit.* n. 1, p. 272: "We can say that the spectacular technical progress of the Soviet iron and steel industry in recent years has been almost exclusively in the realm of adoption, modification and improvement of inventions and innovations pioneered by the Western world."

[38] See pp. 141-43.

CHAPTER ELEVEN

Western Origins of Petroleum and Allied Industries

THE TURBODRILL: AN INDIGENOUS DEVELOPMENT

In the field of oil well drilling the turbodrill is a distinct Soviet innovation and quite different in principle from the U.S. rotary drill. In the 1960s over 80 percent of Russian oil well drilling was undertaken by the turbodrill method, which utilizes a hydraulic drive at the bottom of the drill hole in contrast to mechanical transmission through a string of steel pipes used in the rotary process.[1] It appears, however, that the method has not proved completely satisfactory: in 1960 it was recommended that development work be resumed on rotary drilling, a recommendation no doubt dictated by overheating problems with turbodrills as geological conditions necessitated ever deeper holes.

Russian turbodrills were tested by Dresser Industries of Texas specialists, who concluded that the drills did not offer any advantage over prevailing U.S. rotary techniques. Robert W. Campbell, whose work on the economics of the turbodrill is by far the most exhaustive, concluded:

> There is no denying that the turbodrill did make a very great contribution to the improvement of Soviet drilling performance, and the conclusion of our critique is not that the turbodrill was a mistake. Rather it is that the turbodrill could have made an even greater aid to improved drilling performance if the designers of this technology had better understood the correct economic criteria for design decisions.[2]

The interesting point is that while the Soviet Union was converted to the rotary technique in the 1920s by American companies,[3] a decision was made in the 1930s to convert to the indigenous turbodrill, and to a lesser extent to the electrodrill[4] (rarely used outside the U.S.S.R.). This decision, defective

[1] The best technicoeconomic discussion of Soviet drilling practice in English is Robert W. Campbell, *The Economics of Soviet Oil and Gas* (Baltimore: Johns Hopkins Press, 1968); see especially the appendix to chapter 5, "Economics of the Turbodrill."

[2] *Ibid.*, p. 120.

[3] Sutton I: *Western Technology ... 1917 to 1930*, pp. 23-25.

[4] The electrodrill in a Russian development similar to the turbodrill and dating back to the 1920s; in the 1960s it accounted for no more than 1 percent of total Soviet drilling footage.

on economic grounds (*vid.* Campbell), left the Soviets with major technical problems in the face of increasing deep-drilling requirements.

On the other hand, the work that has been done in the U.S.S.R. on rock bits, both core and cone types, follows American practice. For example in 1940 the Carter Oil Company in the United States began work on cone bits, first on a four-cone version and then on a three-cone version. Testing was started by Carter in 1948 and the technology was licensed to The Hughes Tool Company in 1956 although no tool based on the Carter principle has been made commercially.[5] The Soviets started experimenting with a two-cone bit in 1950 that had a "striking resemblance" to Carter's tools and methods.[6] The first Soviet bit No. DV-5 had a diameter of ten and three-quarter inches in working position and less than six inches collapsed, and "the Soviet method of lowering, connecting, disconnecting, and raising the retractable bits closely followed the Carter technique."[7]

U.S. ORIGINS OF REFINERY PROCESSES

Refinery capacity was expanded during World War II with significant assistance from Lend Lease.[8] Initial Russian requests for refinery equipment, handled by President Roosevelt and Harry Hopkins, included "crude distillation, cracking and stabilization plants; an aviation lubricating oil plant; a high-octane gasoline unit; and gasoline absorption plants."[9] These facilities were approved by September 1942 and required $41 million in equipment plus the services of 15 U.S. engineers.[10] Russian representatives inspected the ten "newest" refineries in the United States, and a program was established for training Russian engineers and operators in the use and maintenance of the equipment.[11]

At least 150,000 tons of equipment was sent under the program to build four new refineries, two with catalytic cracking and alkylation equipment; equipment for the production of 100-octane aviation gasoline was later added to

[5] *Petroleum Week* (Chicago), August 14, 1959, p. 25. Comparative diagrams in the text of this article.

[6] *Ibid.*

[7] *Ibid.*, p. 29. For details of the continuing Soviet interest in U.S. rotary drilling technology and bits, see N. N. Kalmykov, *Burovaia tekhnika i tekhnologiia za rubezhom* (Moscow, 1968).

[8] Sutton I, pp. 35-40, and Sutton II, pp. 81-90, for data concerning pervasive U.S. assistance in 1928-44.

[9] U.S. Dept. of the Interior, *A History of the Petroleum Administration for War, 1941-1945* (Washington, 1946), p. 269.

[10] U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 16. The figure of $41 million is too low; final figures were probably closer to $100 million for refineries. See U.S. Dept. of the Interior, *op. cit.* n. 8, p. 270, and add subsequent shipments under the "pipeline agreement."

[11] U.S. Dept. of the Interior, *op. cit.* n. 9, p. 270-71.

the other two refineries.[12] In all, U.S. assistance was provided for seven refineries between 1942 and 1946. Between $14 and $15 million worth of equipment was shipped for refineries at Guriev, Orsk, Kuibyshev, and Krasnovodsk, with an unknown amount of equipment for refineries at Syzran, Sterlitamak (Novo Ufa), and Moscow.[13] These American acquisitions became the basis for Soviet construction.

The Soviets have standardized the design of domestic-built refineries, and new capacity comprises completely integrated units with attendant secondary facilities. The Type A standard refinery has an annual crude oil charge of about 2.8 million tons and the more common Type B has an annual crude oil charge of 6.6 million tons; these are multiples of the smaller Type A unit. (See Table 11-1.) One refinery, that at Omsk, consists of three Type B standard units. Design also includes standardized process schemes dependent on the specification of the available crude oil:

Type I: For crude oil under 1.9 percent sulfur, producing fuel and lubricating oils—atmospheric and vacuum primary distillation, thermal cracking, catalytic cracking, catlytic reforming, lubricating oil production, and asphalt production.

Type II: For crude oil with less than 1.9 percent sulfur, producing fuel only—atmospheric and vacuum primary distillation, thermal cracking, catalytic cracking, and catalytic reforming.

Type III: For crude oil with over 2.0 percent sulfur—atmospheric distillation.[14]

The 1960 U.S. Oil Delegation was able to acquire sufficient data to construct flow diagrams and so isolate the standard process schemas described above. The basic flow sheets are those of Lend Lease installations known to have U.S. equipment, e.g., Novo Kuibyshev (Type A), Novo Ufa (Type A), Novo Baku (Type B), and Syzran (Type B). Further, R.E. Ebel has described Novo Ufa as "U.S. wartime design,"[15] and according to the Petroleum Administration for War Kuibyshev and Syzran were destinations for U.S. Lend Lease instal-

[12] *Ibid.*, and U.S. Dept. of State, *op. cit.* n. 10, p. 16, appendixes A and B "Pipeline Agreement." There was a significant amount of other petroleum assistance both in export of petroleum products and in oil field equipment.

[13] U.S. Dept. of the Interior, *op. cit.* n.9, p. 270. The figures given in this source for Syzran, Sterlitsmak, and Moscow are incomplete; they do not take account of shipments under the "pipeline agreement" of October 1945. A rather interesting example of the attempt to imitate American practice is the reprinting in book form of the standards of the American Petroleum Institute, particularly those relating to pumps, compressors, tubes, and casing. See *Rukovodstvo po trubam neftianogo sortamenta i ikh soedineniiam, primeniaemym za rubezhom (Spravochnoe posobie)* (Moscow: Standardy Amerikanskogo Neftianogo Instituta, 1969).

[14] *Impact of Oil Exports from the Soviet Bloc*, A Report of the National Petroleum Council, vol. II, October 4, 1962 (Washington, 1962), pp. 143-44. Also see *Chemische Technik* (Berlin), XIII, 7-8 (July-August 1961), 473-76.

[15] Robert E. Ebel, *The Petroleum Industry of the Soviet Union* (New York: American Petroleum Institute, June 1961), p. 118.

lation.[16] Thus we can trace domestic Soviet refinery construction to U.S. design and technology.

Table 11-1 MAJOR SOVIET REFINERIES BUILT BETWEEN 1945 AND 1960

Refinery	*Year of probable start*	*Year of finish*	*Final capacity (million metric tons*	*Origin of refinery*
Novo Baku	1948	1952-53	7.1 (increment 1950-60)	Type B standard
Kuibyshev No. 2	1947	1950	25.0	U.S. Lend Lease (Houdry)
Novo Ufa	1948	1951	12.5	U.S. Lend Lease (Houdry)
Chernilovsk	1950	1955	12.5	n.a.
Syzran	pre-1946	1950	7.0	U.S. Lend Lease
Salavat	pre-1946	1954	3.2	n.a.
Novo Ishimbay	1953	1955	2.6	Type A standard
Novo Gorki	1951	1958	2.6	Type A standard
Omsk	1949	1955	18.9	3 of Type B standard
Stalingrad	1946	1957	6.6	Type B standard
Perm	1951	1958	6.6	Type B standard
Fergana	1949	1958	6.6	Type B standard
Novo Yaroslavl	1953	1960	6.6	Type B standard
Ryazan	1952	1960	6.6	Type B standard
Angarak	1954	1960	12.6	2 of Type B standard
Kritovo	1958	1960	2.6	Type A standard
Pavlodar	1958	1960	6.6	Type B standard
Polotsk	1958	1960	6.6	Type B standard
TOTAL			149.7	

Source: *Impact of Oil Exports from the Soviet Bloc; A Report of the National Petroleum Council* (Washington, D.C., 1962), vol. 2, p. 150.

Just after World War II part of the German Leuna-Merseburg brown-coal synthetic gasoline plant was installed at Dzerzhinsk (Gorki) to produce avgas and nitrogen.[17] In 1953 East German companies supplied equipment for a synthetic gasoline plant, at Lake Baikal, producing 20,000 barrels per day.[18] In 1956 two refineries in the Arctic Circle near the Taimyr Peninsula installed U.S. equipment.[19]

A considerable quantity of oil processing equipment has been imported by the U.S.S.R. since World War II from Czechoslovakia, including sufficient

[16] U.S. Dept. of the Interior, *op. cit.* n. 9, p. 270.

[17] *Petroleum Refiner* (Houston), vol. 35, no. 9, p. 421. See p. 139 below.

[18] *Ibid.*

[19] *Ibid.*

capacity for several refineries, presumably for the standard Soviet Types A and B. Until June 1957 Czechoslovakia had manufactured and shipped the following units:[20]

Four cracking plants	1,460,000 tons/yr.
Two AVT plants	4,380,000 tons/yr.
Four GFU plants	1,460,000 tons/yr.
Five thermal cracking units	1,825,000 tons/yr.
Eleven AVT plants	12,045,000 tons/yr.

Moves to upgrade early U.S. technology were made in the first part of the 1960s. In 1963 Harold Wilson, the British prime minister, reported that the U.S.S.R. wanted to purchase a complete oil refinery in the United Kingdom and was prepared to pay $280 million for the installation.[21] In 1966 a contract was let to a French company, Société Gexa, for a gasoline plant; no further data were given except that the contract was valued at $13 million.[22] Presumably this acquisition will become the basis for further domestic construction in the refinery sector.

DEVELOPMENT OF NATURAL GAS UTILIZATION

The Soviet Union has rich resources of natural gas located some distance from consuming centers; this focuses attention on the development of a transmission system to move gas to the larger cities, and particularly to the industrial areas. Although writers do not agree on the exact figures, it is apparent that the length of pipelines in operation increased from about 4000 kilometers in the mid 1950s to about 40,000 by 1966.[23] Campbell has said: "In the Soviet Union the length of the city distribution network is only about two-thirds of the transmission system, whereas in the United States it is about double the length of the transmission system."[24] This implies, as Campbell points out, a low domestic utilization of natural gas.

Two factors of interest for this study are the diameter of the pipeline, as

[20] *Czechoslovak Foreign Trade* (Prague), June 1957.

[21] *Wall Street Journal*, June 14, 1963, 2:3.

[22] *Wall Street Journal*, June 27, 1966, 9:3.

[23] There is a discussion of this question in Campbell, *op. cit.* n. 1, chapters 7 and 10. Also see, J. Chapelle and S. Ketchian, *URSS, seconde producteur de petrole du monde* (Paris: Publications de l'Institut Français du Pétrole Collection, Science et Technique du Pétrole No. 4, 1963), pp. 258-63, for details on pipelines, maps, and listing of gas deposits. An incisive first-hand description of the situation in 1961 is contained in American Gas Association, Inc., "*U.S.S.R. Natural Gas Industry*," the report of the 1961 U.S. delegation to the Soviet natural gas industry. There is more information on city distribution methods in National District Heating Association, *District Heating in the Union of Soviet Socialist Republics* (Pittsburgh, 1967).

[24] Campbell, *op. cit.* n. 1, p. 208.

the Soviets have definite restrictions on size of pipe rolled,[25] and the use of compressors. The longest lines have been built with imported pipe. The first line, Saratov-Moscow (843 kilometers), completed in 1946, had U.S. Lend Lease assistance; the 1951 Dachava-Kiev-Moscow line was built with 20-inch (720-mm) pipe supplied by A. O. Smith in the United States[26] and as of 1962 it was the only pressure-welded line in the Soviet Union. The Moscow-Stavropol line (1020 mm) utilized pipe purchased from Phoenix-Rheinrohr in West Germany,[27] and Swedish welding rods.

The inability to produce requisite sizes of compressors has been a major drawback and has forced reliance on either imported compressors or the use of field pressure, thus reducing the effectiveness of transmission systems. The first line, Saratov-Moscow, with daily capacity of 80 million cubic feet, was equipped with 24 U.S. compressors of 1000 hp installed in six booster stations.[28] Campbell points out that lines have operated without compressors and cites the intention to install seven million kilowatts of compressor capacity on 26,000 km of line built between 1959 and 1965 (actually there was only one million kilowatts of compressors in the 28,500-kilometer system as of January 1, 1964).[29] The problems facing the Soviets in the field of compressors, and particularly in securing the desired mix of compressor types, are described by Campbell; suffice to note for our purpose that the original standard compressor 10GK-1 is a copy of the U.S. unit supplied for the Saratov-Moscow line,[30] and other mechanical units appear to be based on American types. For example, the 1961 American Gas Association Delegation reported a turbine unit in one new station: "The machine is very similar, except for its combustion system, to our Westinghouse W-52 PM- 5000 hp units"; and then the report adds the comparative data for the two units.[31] Further, while commenting on possible use of gas turbines, one Russian reportedly stated

> ... he would like to obtain information on gas turbine experience from a maintenance and operating standpoint in the United States. The only gas turbine with which they have had any extensive experience was a Brown-Boveri.[32]

The overall conclusion of the American Gas Association Delegation was: "In general it can be stated that the techniques of recovery, transportation, and utilization of natural gas in the U.S.S.R. are far behind those in the United States."[33] This conclusion was confirmed in 1970 when an agreement was

[25] See chapter 10.
[26] American Gas Association, Inc., *op. cit.* n. 23, p. 10.
[27] *Ibid.*, pp. 12-13.
[28] *The Oil Weekly* (Houston), November 5, 1945, p. 5.
[29] Campbell, *op. cit.* n. 1, p. 154.
[30] *Ibid.*
[31] American Gas Association Inc., *op. cit.* n. 23, p. 28.
[32] *Ibid.*, p. 25.
[33] *Ibid.*, p. ii.

signed with the Mannesmann-Thyssen concern of Essen, Germany, to supply 1.2 million metric tons of 52-inch-diameter pipeline for a total value of $327 million to carry natural gas from Siberia to Germany. Production of 52-inch-diameter pipe was not possible in the U.S.S.R. in 1970.[34]

THE GERMAN HYDROGENATION PLANTS

Soviet removals from the German petroleum industry after World War II were concentrated on a relatively few German plants for the production of liquid fuels and lubricating oils by the hydrogenation of brown coal. In general, liquid fuel plants were only partly removed.

The largest unit, a hydrogenation plant near Szczecin, Poland, with a capacity of 600,000 tons per year, was removed to the U.S.S.R.[35] The only unit in Germany reported as completely removed was the Brabag (Braunkohle-Benzin A.G.) at Magdeburg-Rothensee,[36] with a capacity of 220,000 tons per year including 120,000 tons of aviation fuel.[37] A smaller plant, Mineralölwerk Lutzkendorf (Wintershall A.G.), was 80 percent removed;[38] this plant was a producer of primary products from petroleum residues and tars, with a capacity of less than 50,000 tons per year.[39] The dozen or so other synthetic plants, although not greatly damaged by Allied bombing,[40] were only partially removed.[41]

In Austria the oil fields were not dismantled, but they were operated on Soviet account until the 1950s.[42]

REMOVAL OF THE GERMAN BROWN COAL BRIQUETTING INDUSTRY

Germany has large deposits of brown coal which requires drying and briquetting before use. The raw material is disintegrated by rollers, pressed to remove water, and passed through driers into briquetting machines. Since the coal itself

[34] *San Jose Mercury* (San Jose, Calif.), February 2, 1970.
[35] Alfred Zauberman, *Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962* (New York: Oxford University Press, 1964), p. 154.
[36] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), p. 94, no. 3.
[37] CIOS XXXII-107, *I.G. Farbenindustrie A. G. Works, Leuna*, p. 137M.
[38] Harmssen, *op. cit.* n. 36, no. 9.
[39] CIOS, *op. cit.* n. 37.
[40] U.S. Strategic Bombing Survey, *Oil, Chemicals and Rubber Division, Team 46, Plant Report No. 2: Braunkohle Benzin A. G.*, Zeitz, Germany; Braunkohle Benzin A.G., Boehlen, Germany; Wintershall A.G., Luetzkendorf, Germany (July 24, 1945).
[41] Harmssen, *op. cit.* n. 36, pp. 94-106.
[42] *Germany, 1945-1954* (Cologne: Boas International Publishing Company, [1954?]), p. 476.

contains a substantial quantity of bitumen, cementing material is not required.[43] German production of brown coal briquettes in 1938 was over 44 million metric tons—about 98 percent of the world's total production.

Russia possesses similar large deposits of brown coal in an area to the south of Moscow. The German brown coal briquetting plants were therefore of considerable interest, and 27 major plants from the Soviet Zone of Germany were removed to the U.S.S.R. (See Table 11-2.)

Table 11-2 LOCATION AND CAPACITY OF MAJOR GERMAN BRIQUETTING PLANTS COMPLETELY REMOVED TO THE U.S.S.R. IN 1944-46

German owner	*Location of plant*	*Number in Harmssen*	*1937 production (000 metric tons)*
Eintracht-Braunkohlenwerke A.G.	Werminghoff	16	790
Deutsche Erdöl	Regis-Breitingen	17	1200
Babina-Braunkohlenverwertung (Hermann-Mine)	Muskau	18	76
Ilse Bergbau A.G.	Hoyerswerda (Erika, Anna-Mathilde, and Renate-Eva plants)	22 60 61	2772
Bergwitzer Braunkohlenwerke	Bergwitz	34	230
Concordia	Nachterstedt	35	
Riebechsche Montanwerke	Deuben Profen Paul	36 37 38	2013
Braunkohlen- und Brikettindustrie A.G. (Bubiag)	Mückenberg	39	1659
Eintracht Braunkohlenwerke A.G.	Welzow	57-58	800
Hallesche Pfännerschaft	Senftenberg	59	267
	Total 1937 Production		9,807

Source: G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik*, (Bremen: F. Trüjen, 1951), *p.* 78 *et seq*.

Of these 27 plants, fourteen, with an annual briquetting capacity of almost 10 million tons, were completely removed to the Soviet Union and another ten, with a capacity of 6.3 million tons, were partly removed.[44] In all, briquetting capacity of over 16 million tons was all or partly removed and the remainder put into SAGs to produce brown coal briquettes which were partly exported to the West

[43] U.S. Department of War, *Coal Mining Industry of Germany*, W.D. Pamphlet no. 31-204 (Washington, September 7, 1944), pp. 155-57.

[44] A.G. Sächsische Werke (SPD # 15, Espenhain); Deutsche Erdöl A.G. (SPD # 19, Zipsendorf); Deutsche Erdöl A.G. (SPD # 20, Gross-Zossen); A.G. Sächsische Werke (SPD # 21, Hirschfelde); Werchen-Weiszenfelser Braunkohlen A.G. (SPD # 40, Zeitz); Riebecksche Montanwerke (SPD # 42, Kupferhammer, Oberroblingen); Mitteldeutscher Stahlwerke (SPD # 43, Lauchhammer); Deutsche Grube A.G. (SPD # 44, Bitterfeld); Michel-Werke (SPD # 46, Witznitz); Senftenberger Kohlenwerke A.G. (SPD # 62, Meurostolln).

in 1946-48 and partly exchanged for reparations equipment for the Soviet Union.

Other plants with similar processes in Poland, i.e., Oberschlesesche Hydrierwerke A.G. at Blachownia, I.G. Farben Heydebreck works at Kedzierzynia, and Anorgana (New Rokita) at Brzeg Dolny, also were partly dismantled and shipped to the U.S.S.R.[45]

A typical Lurgi standard low-temperature carbonization plant was that of A. G. Sächsische Werke at Espenhain,[46] where bomb damage was relatively light. Operations were easily restored, including the brown coal plant that was equipped to recover 5-6000 bbl/day of liquid hydrocarbons from coking brown coal. Built in 1936-40 and completely modern, the plant processed about six million tons a year of brown coal in a briquetting plant with 37 plunger-type presses—the largest in Germany. Briquets were then charged into a typical Lurgi "Schwelerie" (low-temperature carbonization plant), from which about 1.4 million tons of coke was produced annually.

The 1944 output of this plant was as follows:

Brown coal briquets	2,696,000 metric tons
Tar from Schwelerie	297,000 metric tons
Coke from Schwelerie	1,400,000 metric tons
Fuel oil	42,778 metric tons
Diesel oil	14,699 metric tons
Hard wax	6,541 metric tons
Soft wax	4,676 metric tons
Electrode coke	7,080 metric tons
25 percent crude phenols	32,000 metric tons
Sulfur	22,000 metric tons
Carbolic acid	9,600 metric tons

It can readily be seen that these plants were effective units for converting low-grade brown coal, first into useful fuels and then by subsequent processing into various chemicals.

KOPPERS-BECKER COKE OVEN TECHNOLOGY[47]

Construction of Soviet coke oven batteries before 1933 was undertaken by German, French, and American companies.[48] No coke ovens or byproduct recovery equipment, except for prototype items, have been purchased abroad

[45] Zauberman, *op. cit.* n. 35, p. 232.

[46] CIOS XXVIII-23, *A.G. Sachsische Werke, Espenhain.*

[47] Readers interested in coke oven accessory equipment should compare the excellent detail in I. L. Nepomniashchii, *Koksovye mashiny, ikh konstruktsii i raschety* (Moscow, 1963), with any standard Western book on coke oven practice or, for a quick comparison, United States Steel Corp., *The Making, Shaping and Treating of Steel* (Pittsburgh, 1957), chapter 4.

[48] Described in Sutton II, pp. 115-19.

since 1933; Soviet efforts have been concentrated on duplicating the best of foreign technology, particularly the Koppers-Becker system developed by Koppers Company, Inc., and its foreign licensees.

Soviet design organizations—particularly Giprokoks—have undertaken considerable work to improve Western coke oven systems. Giprokoks has been constantly at work since the early 1930s modifying and improving the original Koppers-Becker designs, and this work forms a distinct pattern based on the Koppers-Becker system with cross-over flues.

Table 11-3 DEVELOPMENT OF SOVIET COKE OVEN CONSTRUCTION, 1945-60

Period	*Coking chamber dimensions, in mm* Width (average)	Height	Length	Coal charge in metric tons or chamber volume in cubic meters
1945	407 (16")	4,300 (14'-1¼")	13,120 (43'-½")	20.0 (716 cu.ft.)
1950	407 (16")	4,300 (14'-1¼")	13,830 (45'-4½")	21.2 (748 cu.ft.)
1956-1960	407 (16")	4,300 (14'-1¼")	14,080 (46'-2¼")	21.6 m^3 (760 cu.ft.)
	450 (17¾")	5,000 (16'-5")	15,040 (49'-4⅛")	30 m^3 (1060 cu.ft.)

Source: Walter Farr, "Development of Coke-Oven Techniques in the U.S.S.R.," *Gas Journal* (London), September 12, 1962, p. 313.

The first standardization of the Koppers-Becker system was the PKI, which was followed by a second standardization, the PK-2, again followed in 1942-47 by modifications and improvements of Koppers-Becker and Disticoque designs of the early 1930s. These comprised first the PK-42 produced in 1942, the PK-45 produced in 1945, and the PK-47 produced in 1947. The disadvantages of the Koppers-Becker design were isolated and analyzed, and from this work and ensuing modifications came the PK-2K system. The new system was first built on a large scale at Choku in 1947, and with recirculating flues at Krivorozhye in 1949; essentially, the PK-2K improved Koppers-Becker system is equipped with cross-over flues and double-rich gas flues, with recirculation of heating gases. This design turned out to be satisfactory and was adopted for widespread application in coke-oven batteries built in the 1950s and later. In 1955 the design, further modernized, resulted in the type PV R-46, of which the first operating battery was erected in 1959 at Dneprodzerzhinsk.

One of the major changes resulted from an evaluation of the dimensions of coke-oven chambers. World practice has been to accept an average width of about 18 inches (457 mm); the Soviet Union early adopted a standard of 16 inches (407 mm). (See Table 11-3.) The first battery of type PK-2K coke

ovens at Khoku was built with 17¾-inch wide (450 mm) chambers, and during 1950-51 three further batteries were built with widths of 16 inches (407 mm), 17¾ inches (450 mm) and 20 inches (510 mm).[49] By the early 1960s Giprokoks was investigating the possibility of designing very large coke batteries, i.e., eight batteries with a capacity of up to seven million metric tons of coke per year.

Thus in coke oven practice we find the Soviets in the early 1930s obtained a cross section of Western technology which was installed in the Soviet Union by Western companies with Western equipment, and then proceeded to improve this Western technology. Improvements took the form of a consistent series of detailed experiments with coke ovens and analysis of operating results, and changes in oven design were developed on the basis of these results. However, the basic technology remains that of Koppers-Becker, with modifications to suit Soviet conditions.

[49] "Development of Coke Oven Techniques in the U.S.S.R.," *Gas Journal* (London), September 12, 1962, p. 311.

CHAPTER TWELVE

Western Assistance to the Basic Chemical and Fertilizer Industry

The Soviet chemical industry in 1960 reflected a very rapid growth in production of basic chemicals. Outside these basic chemicals, however—i.e. in such products as resins, herbicides, mixed fertilizers, plastics, general organics and petrochemicals—the overall production range was relatively small and the industry's progress had been insignificant.

Sulfuric acid is the most important of inorganic acids and probably the most important of all industrial chemicals; it enters into almost all industries. Its production in Russia increased from 121,000 tons in 1913 to just under 3,000,000 tons in 1953, 4,804,000 tons in 1958, and 8,518,000 tons in 1965. As has been indicated in an earlier volume,[1] the Soviets have utilized basic Western or Tsarist processes for the manufacture of sulfuric acid and have duplicated these processes in their own machine-building plants.

A recent Russian paper on sulfuric acid manufacture indicates that in the mid-1960s, 63 percent of sulfuric acid production was based on pyrites and carried out according to a standardized version of Western processes.[2] The Soviet process (utilizing fluidized bed roaster, electric precipitator, towers, and contact apparatus) is similar to contact processes in use in the West. No claim is made for Soviet innovation; rather the claim is made for the "intensification of operating units" based on Western processes. For example, "in 1930 the Soviet Union bought a small unit design (24 tons a day) for sulfuric acid production by the contact process. During the exploitation of the unit, Soviet specialists made some improvements, as a result of which its capacity was increased to 46 tons per day."[3] This scaling up of a process, similar to that noted in other industries, has been the sole form of Soviet innovation in sulfuric acid manufacture.

On the other hand, there is no indication that any great quantity of Western equipment has been imported for the Soviet chemical industry since World War II. In 1965 Nordac Limited of Uxbridge in the United Kingdom sold

[1] See Sutton II, pp. 109-12.

[2] United Nations Report E/CN.11/635, *Development Prospects of Basic Chemical and Allied Industries in Asia and the Far East* (New York, 1963), p. 518.

[3] *Ibid.*, p. 519.

a sulfuric acid concentration plant with a capacity of 24 tons per day of 78 percent sulfuric acid, but this contract appears to have been an exception.

In the production of the basic alkali—caustic soda—there has also been a rapid increase in Soviet production, from 55,000 tons in 1913 to 101,000 tons in 1933, to 448,000 tons in 1953, to 709,000 tons in 1958, and to 1,303,000 tons in 1965.[4] The traditional method of making caustic soda involves causticizing soda ash; this method has been replaced by a more modern method utilizing the action of an electric current on a brine solution, yielding chlorine as a byproduct. It is in the newer electrolyte process that we find Soviet dependence on the West: the Soviet electrolytic cell BGK-17 is an almost exact replica of the Hooker electrolytic cell.[5]

Although electrolyzer cells were on the embargo list in 1960, it appears that the Soviets were able to purchase sample cells and reproduce them in the Soviet Union. There is also a report that in 1960 a sodium hydroxide (caustic soda) plant was purchased in the West as well as a 24-ampere converting plant to be used in a chlorine unit.[6] Another source states that Krebs et Cie in France has supplied an electrolytic chlorine and caustic soda plant with a capacity of 200,000 tons per year.[7]

A substantial amount of standard equipment for producing alkali chemicals was obtained in Germany at the end of World War II. For example, the Deutsches Solvay Werke, an ammonia-soda works, was completely removed to the Soviet Union. Various producing plants with Billiter and mercury cells also were partly removed: the Bitterfeld North plant was 40 percent removed, the Wolfen plant was 40 percent removed, and the Goldschmidt plant was 80 percent removed to the Soviet Union.[8]

Therefore it may be seen that in the production of sulfuric acid, the large-tonnage commercial acid, and of caustic soda, the large-tonnage basic alkali, the Soviets have adopted and duplicated Western processes and in this manner achieved significant rates of increase in the output of basic chemical products.[9] However, as will be seen in following sections on the production of fertilizers and other types of chemicals outside this basic limited range (particularly in the organic chemicals), the Soviets have been forced to purchase capacity and

[4] G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962), p. 423.

[5] Compare *50 [Piat' desiat] let sovetskaya khimicheskaya nauka i promyshlennost'* (Moscow, 1967), p. 168; and Charles L. Mantell, *Industrial Electro-Chemistry* (New York: McGraw Hill, 1940), p. 419.

[6] Samuel Pisar, *A New Look at Trade Policy Toward the Communist Bloc*, (Washington: Subcommittee on Foreign Economic Policy of the Joint Economic Committee, 1961).

[7] *Chemical Week* (New York), September 3, 1960, p. 42.

[8] CIOS XXXIII-31, *Investigation of Chemical Factories in the Leipzig Area;* and G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951).

[9] *Chemistry and Industry* (London), February 13, 1960.

technology in the West on an increasing scale as the economy feels the adverse effects of its restricted range of chemical production.

Another aspect of Western purchases has been the acquisition of chemical apparatus obviously for experimental and prototype use: in 1960 the British company Griffin & George, Ltd., sold 13 gas liquid chromatographs for analysis—an area in which the Soviets lag badly. And a vacuum-insulated liquid-oxygen storage tank was sold by a British company in 1960.[10] Moreover there have been heavy imports of centrifuges and other laboratory apparatus.

Thus the chemical sector lags in both commercial development of new chemicals and manufacture of the intricate apparatus required to research and produce these new chemicals on a pilot basis. For technical advance in chemistry the Soviets look to the West.[11]

WESTERN PURCHASE FOR KRUSHCHEV'S CHEMICAL PLAN

In the late 1950s, as we have seen, the Soviets lagged in all areas of chemical production outside the basics previously described. This lag inspired a massive purchasing campaign in the West between 1958 and 1967. In the three years 1959 to 1961 alone, the Soviet Union purchased at least 50 complete chemical plants or equipment for these plants from non-Soviet sources.[12] Indeed the American trade journal *Chemical Week* commented, with perhaps more accuracy than we then realized, that the Soviet Union "behaves as if it had no chemical industry at all."[13] Not only was the U.S.S.R.'s industry producing little beyond basic heavy chemicals but, of greater consequence, it did not have the technical means of achieving substantial technical modernization and expansion of product range.

According to the general pattern of this "turn-key" purchase program, the Soviets supplied buildings—largely of prestressed concrete of a standard design—and associated power stations, together with unskilled labor and Russian engineer-trainees. The Western firm supplied designs and specifications according to exacting Soviet requirements, and process technology, engineering capability, equipment, and startup and training programs. These contracts were package deals that provided even more than the typical Western "turn-key" contract. Such contracts, unusual in the West except perhaps in underdeveloped areas

[10] Pisar, *op. cit.* n. 6.

[11] The reader should consult *50 let* ..., *op. cit.* n. 5, the official Soviet summary of 50 years of chemical production in the U.S.S.R., with two factors in mind: (a) the extraordinary degree of omission, i.e., nonstatement of simple facts, and (b) mentally insert the factor of unstated Western assistance.

[12] *Chemical Week*, March 11, 1961, p. 53. For a list see *Chemical Week*, September 3, 1960, pp. 42-44.

[13] *Chemical Week*, March 11, 1961, p. 54.

lacking elementary skills and facilities, were very attractive and highly profitable to Western firms: although the Russians are hard bargainers, their plight was well known in Western business circles.

The overall extent of equipment acquisition for the chemical industry may be judged from the following figures relating to Soviet purchases of chemical equipment from West European countries between 1960 and 1963, three key years in the campaign:

West Germany	$93 million
United Kingdom	$123 million
Italy	$72 million
France	$61 million
Holland	$20 million[14]

In the first stage of this program the Soviets placed sizable orders in West Germany under the 1958 trade agreement for plants to be constructed between 1958 and 1960. The larger plants under this program included an agglomerating plant from Lurgi A.G. with a hearth area of 75 square meters for sintering lead concentrates; a plant with a capacity of 6000 metric tons per year and valued at about $5 million, for the production of paraxylol and dimethyl-terelphtalate; three plants by Lurgi for the manufacture of detergents from petroleum products; and three plants for whale oil extraction.[15] Between 1961 and 1963 additional plants were supplied for the manufacture of polypropylene, di-isocyanates, and phosphorus[16] and sodium sulfate; plants for the hydraulic refining of benzene, dimazine, and atrazine; and two plants for the manufacture of foils from viniplant.[17] Further plants included an acetylene-from-natural-gas factory using the BASF process, with a capacity of 35,000 tons per year; a plant to manufacture phthalic anhydride; and a 5000-ton-per-year plant for the manufacture of highly dispersed Aerosil.[18]

Between 1961 and 1963 Italian companies, in particular Montecatini, supplied plants for the manufacture of acetylene and ethylene from natural gas. They also supplied plants for titanium oxide (20,000 tons per year) and maleic anhydride ammonia, and probably other units.[19]

Complete chemical plants supplied from the United Kingdom included numerous units apart from those in textiles, synthetic fibers, rubber, plastics, and fertilizers discussed elsewhere.[20]

A particular lag filled by British companies may be noted in pesticides.

[14] *Chemical Week*, March 21, 1964, p. 27.
[15] *British Chemical Engineering* (London), August 1958, p. 452.
[16] *Economist* (London), April 1, 1961, p. 54.
[17] See p. 163.
[18] *Chemical Week*, September 3, 1960, p. 42.
[19] *Economist* (London), April 1, 1961, p. 54.
[20] For Western plants for these industries, see relevant chapters.

In 1961 a British consortium, Wycon Services (a joint Fison's Pest Control and Constructors John Brown unit), contracted for two chemical plants in Ufa, Bashkir ASSR, at a cost of $6 million. One plant, based on Fison's Harston works, was designed to produce MCPA, a hormone weed killer. It was to have the capacity to produce enough weed killer for 11 million acres of cereal.[21] The other plant was to produce DMEU (dimethylol ethyleneurea), a resin used in the manufacture of drip-dry fabrics; this unit, with a capacity of 12,000 tons per year of resin, was fully automatic and based on Whiffen & Sons, Ltd., technology.[22] In 1964 the same consortium established a third plant, one for the production of TRA weed killer with a capacity of 200 long tons per year.[23]

In January 1967 Sturtevant Engineering of Manchester received a contract for $1.5 million to build yet another plant to produce agricultural pesticides with complete technical assistance.[24] A few weeks later Thomas Swan & Son of Consett, Durham, was asked to tender a bid for a complete plant for a "chemical used in road building."[25] A unit for the production of two and one-half tons per hour of glaubers salts was supplied by Kestner.[26]

In 1964 a British company—Power Gas Corporation, Ltd.—was building a $14 million plant for the manufacture of acetic acid in the U.S.S.R.[27] In December 1958 Hydrotherm Engineering, Ltd., of London contracted to supply equipment including an automatic heating and cooling plant (with heat generators, circulating pumps, and control equipment) to be used in the manufacture of synthetic resins.[28]

Two plants for the production of sodium sulfate, an input for the paper and pulp industries, were erected by British companies. The first, built in 1958-59, utilized the Kestner centrifugal atomization system, and the Kestner Evaporator & Engineering Company, Ltd., supplied a large spray-drying plant, all motors, a drier, and conveyer equipment for a plant to manufacture 5000 pounds of sodium sulfate per hour.[29] Of the second plant, built by Simon-Carves, Ltd., in 1962-63, little is known except that Darchem Engineering, Ltd., supplied 180 feet of 54-inch-diameter mild-steel gas main lined with stainless steel to Simon-Carves for installation in the project.[30] Also in the early 1960s, Constructors John Brown, Ltd., this time jointly with another British company, Marchon

[21] *Economist* (London), April 1, 1961, p. 54.

[22] *Ibid.*, see also *Chemistry and Industry*, March 18, 1961, p. 349.

[23] *Business Week*, May 30, 1964, p. 52.

[24] *The Times* (London), January 11, 1967.

[25] *The Times* (London), January 20, 1967.

[26] *Chemical Week*, September 3, 1960, p. 42.

[27] *Chemical Week*, November 14, 1964, p. 23. Power Gas Corp., Ltd., has a long history of activity in the Soviet Union; see Sutton II, pp. 103, 288, 369.

[28] *British Chemical Engineering*, December 1958, p. 690.

[29] *Chemistry and Industry*, February 7, 1959, p. 202.

[30] *Chemistry and Industry*, May 12, 1962, p. 869.

Products, Ltd., designed, equipped, and started up two plants for the manufacture of raw materials for detergents under a $15 million contract.[31]

Numerous complete plants have been supplied from other European countries. Belgium has provided a plant for the production of acetylene from natural gas and another for ammonia synthesis.[32] France has supplied numerous plants, including one for the production of acetic anhydride (20,000 tons per year), one for the production of phosphoric acid (60,000 tons per year), one for the production of titanium dioxide (20,000 tons per year), and another for the production of detergents.[33]

A number of plants have come from unknown origins (i.e., reported but without data concerning Western origins). In 1960 for example, a plant was supplied for the production of synthetic glycerin (20,000 tons per year); another for ethyl urea (1000 tons per year); one for the production of synthetic fatty acids (5000 tons per year); one for the production of sodium tripolyphosphate; one for the production of carbon black (in addition to another supplied by Japan); and two for the production of germanium.[34]

The United States has not been a major supplier of chemical plants; however, it has supplied several for fertilizer and phosphoric acid production.[35] It was reported in 1965, for example, that the Food Machinery Corporation of San Jose, California, was to build, maintain, repair, and operate a carbon disulfide plant in the U.S.S.R. This chemical is used for the manufacture of viscose rayon, ammonium thiocyanate, formaldehyde resins, xanthates, and carbon tetrachloride.[36]

The Soviet Union appears to be backward in both the development and the utilization of pharmaceutical drugs. The U.S. Delegation on Hospital Systems Planning, which visited the Soviet Union between June 26 and July 16, 1965, recorded the impression: "Although the important pharmaceutical agents are available for the treatment of patients, hospital pharmacy is not nearly as significant an endeavor as it is in the United States."[37]

An earlier visitor to the Soviet Union had reported to the State Department as follows: "Most of the antibiotics research is applied rather than fundamental ... development (or redevelopment) of products already produced by the West."[38] George Brown of the Sloan-Kettering Institute for Cancer Research in New York also commented that "it was Soviet practice to get the

[31] *Chemistry and Industry*, October 15, 1960, p. 1310.
[32] *Chemical Week*, September 3, 1960, p. 42.
[33] *Ibid.*
[34] *Ibid.*
[35] *Ibid.*
[36] *Los Angeles Times*, January 18, 23, and 30, 1965.
[37] U.S. Dept. of Health, Education and Welfare, *Hospital Services in the U.S.S.R.*, Report of the U.S. Delegation on Hospital Systems Planning, Public Health Service, June 26-July 16, 1965 (Washington, November 1966), p. 36.
[38] *Chemical Week*, October 3, 1959.

production facts concerning pharmaceutical drugs from U.S. patents and literature and then to develop these same drugs through experimentation."

The Austrian company Grill & Grossman supplied a $154,000 penicillin production plant in 1960,[39] and there has been continuing import of medical instruments and supplies.

PROGRAM FOR EXPANSION OF FERTILIZER PRODUCTION

Up to 1960, Russian output of fertilizers was mostly in the form of low-quality straight fertilizers;[40] there was no production of concentrated and mixed fertilizers such as are used in the West, and the use of liquid-nitrogen fertilizers was limited to the irrigated cotton-growing areas of Central Asia. In the early 1960s and particularly after the disastrous 1962 harvests resulting from Khrushchev's New Land plan, a program was begun to step up the production of fertilizers. Logically it made more sense to spend foreign exchange on fertilizer plants than on imported wheat.

Part of the expansion program was the purchase from the Joy Manufacturing Company of Pittsburgh of mining equipment (for potash mining)[41] valued at $10 million. This was supplemented by the purchase of a modern large-scale fertilizer production plant in the West. As Ivan Volovchenko, the Soviet minister of agriculture, put it: "We are scouring Europe for machinery capable of providing a quick start to the chemicalization of our agriculture, especially by the production of fertilizers."[42]

The program actually was initiated in about 1961 when Werkspoor N.V. of Holland (see Table 12-1) concluded a contract to build three plants for the production of urea (carbamide); part of the equipment for these plants came from the United Kingdom—Power-Gas Corporation, Ltd., supplied three installations for the crystallization of high-purity urea, each with a capacity of 100 tons per day, by the Krystal process.[43]

Also in 1961 a Belgium firm, Société Belge, was awarded a contract to provide technology for two ammonia synthesis plants with the equipment to

[39] *Chemical Week*, September 3, 1960, p. 42.

[40] The only removal of a fertilizer plant from Germany to the U.S.S.R. in 1945-46 was the Pierteritz phosphate plant reported dismantled in 1945; see *Germany, 1945-1954* (Cologne: Boas International Publishing Company, [1954?]), p. 376.

[41] See chapter 8.

[42] *Wall Street Journal*, November 7, 1963, 1:6.

[43] *Chemistry and Industry*, June 3, 1961, p. 754. These processes turn up in Soviet technical literature; see for example, D.S. Petrenko, *Proizvodstvo sul'fata ammoniia* (Moscow, 1966). The Simon-Carves vacuum evaporator is described on p. 43, the Power-Gas "Krystal" crystallizator on p. 44. Another aspect of the Soviet response is current publication of technical material on foreign mixed-feed apparatus; for example, see A.S. Danilin, *Proizvodstvo kombikormov za rubezhom* (Moscow, 1968).

Table 12-1 FOREIGN PURCHASES OF FERTILIZER PLANTS AFTER 1960

Name of firm supplying plant	*Type of produced fertilizer*	*Year of contract*	*Annual capacity (metric tons)*
Union Chimique-Chemische Bedrijven (Belgium)	Phosphoric acid	1964	620,500
Union Chimique-Chemische Bedrijven	Sodium tripoly phosphate	1962	365,000
COMECON (Kingisepp)	Phosphate fertilizer	1964	1,700,000
Société Belge	Ammonia synthesis	1961	two plants
Werkspoor N.V. (Holland)	Urea (carbamide)	1961	three plants (total 658,800)
Mitsui (Japan)	Urea	1964	—
Montecatini (Italy)	Ammonia	1964	—
Woodall-Duckham Construction Co., Ltd. (U.K.)			
Newton Chambers & Co., Ltd. (U.K.)	Chemical fertilizer	1964	ten plants
Occidental Petroleum Corporation (U.S.)			

Sources: *Chemical Week*, October 24 and November 14, 1964; *New York Times*, September 27, 1964; *Wall Street Journal*, October 18, 1963.

be supplied by another Belgian firm.[44] Under the 1960 trade agreement with Italy several plants were supplied for the production of ammonia.[45]

Then in 1964 a contract was awarded to Union Chimique-Chemische Bedrijven of Brussels for a 620,500 ton per year plant for the production of phosphoric acid, and another plant to be built near Kuibyshev with an annual capacity of 365,000 tons of sodium tripoly phosphate.[46]

A joint development with a Soviet "satellite" was reported in the Kingisepp area, under which the mining and production equipment was provided by the satellite in return for fertilizer; this program had a starting capacity of 850,000 tons per year and projected expansion to 1.7 million tons per year.[47] Other such plants were built by Mitsui of Japan and Montecatini of Italy, although the largest was an announced series of ten fertilizer plants arranged by the Occidental Petroleum Corporation[48] and built by Woodall-Duckham Construction Company, Ltd., and Newton Chambers & Company, Ltd., of the United Kingdom.[49]

The chemical sector provides an excellent illustration of the link between

[44] *Chemical Week*, October 24, 1964.
[45] *Ibid.*
[46] *Ibid.*
[47] *Ibid.*
[48] *Ibid.*
[49] *Ibid.*

Soviet planning and Western technology and equipment. In 1960 the Soviets had achieved considerable rates of increase in chemical production by the duplication of standard Western equipment and processes in a few basic chemicals—particularly sulfuric acid and caustic soda. Figures reflecting these impressive increases tended to obscure the extremely limited range of chemical products. When practical demand forced manufacture of a wider range of chemicals the Soviets turned to the West for process technology, complete plants, and equipment.

In 1959-60 orders for more than 50 complete chemical plants were placed in the West and the trade journals catalogued these acquisitions;[50] this process continued throughout the 1960s with the expenditure of several billions on Western chemical equipment to provide everything from penicillin to germanium processing for transistors and to fulfill a massive program for the production of mixed and concentrated fertilizers.

The interesting phase of the acquisition has yet to come. Many of the processes acquired during the 1960s are complex units requiring a great deal of highly sophisticated technical skill in construction and operation. While automation will solve the operating problem it may not be easy to duplicate the plants as has been done with the Solvay process in caustic soda and the Herreshoff-Bauer system in the manufacture of sulfuric acid.[51]

[50] *Chemical Week*, September 3, 1960, p. 42.
[51] See Sutton II, pp. 110-12.

CHAPTER THIRTEEN

Western Assistance to the Rubber and Plastics Industries

SYNTHETIC RUBBERS INTRODUCED AFTER 1945

It was demonstrated in the second volume of this series that although the Soviets had an early start in synthetic rubber production with the Russian-developed, sodium-polymerized SK-B butadiene, this lead was not maintained, and during World War II U.S. plants and technology were imported under the Lend Lease program to supplement the low-quality and limited-use SK-B.[1] Apart from a small production of Thiokol, the only Soviet synthetic rubber until the import of Lend Lease plants and technology was a butadiene type polymerized by sodium.

There was a significant change in the structure of Soviet synthetic rubber production in the 15 years between the end of the war and 1960. By 1959 only 55 percent of synthetic rubber was polymerized with sodium from alcohol (SK-B), while chloroprene-using Lend Lease technology and equipment (Dupont-Neoprene) constituted only about 7 percent of the total; the bulk of the remaining 38 percent came from the introduction of copolymers or styrene-butadiene types (SK-S), and a small production of nitrile (SK-N) with pilot production of other types. There was no commercial production in the Soviet Union of butyl and polyisobutylene types in 1960.[2]

In terms of tonnage, the Soviet Union produced about 323,000 tons of synthetic rubber in 1960. Of this total, 177,327 tons was the original SK-B type based on alcohol, of very low quality and providing products of low wearing abilities; 104,975 tons was of styrene-butadiene copolymer including the oil-extended types; 23,256 tons was Dupont-Neoprene (now called Nairit); and the balance comprised small-scale pilot production of 8075 tons of nitrile (SK-N) and 8798 tons of other types. By contrast, 99,000 tons of butyl and 38,000 tons of nitrile rubber alone were produced in the United States in 1960.

In brief, the increment in Soviet production of synthetic rubber between

[1] See Sutton II, pp. 122-26.
[2] See Table 13-1.

1945 and 1960 consisted almost completely of copolymers; i.e., it was of the styrene-butadiene type, in the amount of 104,975 tons. This copolymer was developed by I.G. Farbenindustrie A.G., and was produced in Germany from 1935 onward as Buna-S. Buna-S accounted for 90 percent of German synthetic rubber production in World War II and was introduced into the United States under the government construction program of 1942. It was not produced in the U.S.S.R. during the war.

At the end of World War II the Soviets removed as reparations two large I.G. Farben synthetic rubber plants from Germany—the Buna-Werke-Schkopau A.G. and the Chemische Werke Hüls GmbH. The combined capacity of these plants was just over 100,000 tons of styrene-butadiene copolymers; so a reasonable presumption is that the Soviet copolymer capacity came from the Schkopau and Hüls plants. Sumgait and Yaroslavl seem the logical relocation sites in the U.S.S.R. on both technical grounds (the raw material base is butane from oil) and intelligence grounds (these are sites known to have received such plants in the early postwar period.)[3]

The remaining increment in production came from the Dupont chloroprene type. (See Table 13-1.) Part of the chloroprene capacity came from Manchurian removals. A new plant opened in 1944 to produce 750 tons per year—the Manchurian Synthetic Rubber Company at Kirin—was largely removed under the supervision of two Soviet officials, Major Sherishetsky and Major Diement. Removals were concentrated on the gas generators; the reaction equipment; the distillation, polymerization, and catalyst preparation equipment; and the rolling equipment.[4]

Thus in the period 1945 to 1960 the increment in Soviet synthetic rubber capacity came from Buna-S plants transferred from Germany under reparations, from Lend Lease capacity, or to a small extent from Manchuria. No new Soviet types were developed and placed in full production, although a close watch was kept and research work undertaken on new Western developments.[5]

Given this inability to produce modern synthetic rubbers, reliance was placed both on import of Western synthetics and on plants to produce new types.

[3] CIOS no. XXII-22, *Synthetic Rubber Plant, Buna Werke-Schkopau A.G.*, and compare to *50 [Piat' desiat] let sovetskaya khimicheskaya nauka i promyshlennost'* (Moscow, 1967), p. 346. Also see CIOS no. XXII-21 *Synthetic Rubber Plant, Chemische Werke-Hüls*; and *Germany, 1945-1954* (Cologne: Boas International Publishing Company), p. 37: "Hüls suffered much more than other companies from dismantling." Further, see *Chemistry and Industry* (London), May 16, 1959, p. 628, for an article of Russian origin that states that the chief type produced after World War II was the butadiene-styrene by continuous emulsion polymerization.

[4] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946), p. 188.

[5] The general impression of Soviet backwardness in the rubber industry is confirmed by Edward Lane, Chairman of Seiberling Rubber Company, Akron, Ohio, who, after a trip to the U.S.S.R., stated he found industrial methods "very backward and far below ours." *Los Angeles Times*, July 20, 1964.

Table 13-1 SYNTHETIC RUBBER PRODUCTION TECHNOLOGY IN THE SOVIET UNION IN 1960 (BY TYPE OF RUBBER AND PLANT)

Plant	*Sodium polymerized butadiene (SK-B)*	*Styrene-butadiene copolymers (SK-S)*	*Nitrile (SK-N)*	*Chloroprene (neoprene)*	*Butyl and Polyiso-butylene*	*Others (including silicones)*
Kazan	Yes	—	—	—	—	—
Krasnoyarsk	Yes	—	—	—	—	—
Sumgait	—	Yes	Yes	—	—	—
Voronezh	Yes	Yes	—	—	—	—
Yaroslavl	Yes	Yes	Yes	—	—	—
Yerefremov	Yes	—	—	—	—	—
Yerevan	—	—	—	Yes	—	—
Process used	1. Original Soviet SK-B 2. U.S. wartime standard	I.G. Farbenindustrie (Buna)	Pilot production	Dupont (Neoprene or NAIRIT)	—	Pilot production
Percent produced by type	54.9	32.5	2.5	7.2	0.0	2.6
Quantity produced by type (metric tons)	177,327	104,975	8,075	23,256	0.0	8,798

Source: G. F. Borisovich, *Ekonomika promyshlennosti sinteticheskogo kauchuka* (Moscow: Khimiya, 1968), p. 37, for distribution by type. Tonnage calculated by author. For process and plants, see text.

Butyl rubber was deleted from U.S. export control in 1959,[6] allowing exports to the U.S.S.R., and a butyl plant utilizing Western equipment[7] came into pilot production in the 1965-66 period.[8]

In 1960 the Glasgow firm of John Dalglish & Sons, Ltd., implemented a "package deal" under which the firm supplied and erected in a new synthetic rubber plant in Siberia a series of machines for de-watering, drying, baling, wrapping, and packaging of synthetic rubber. This plant had a capacity of 70,000 tons of synthetic rubber per year.[9]

In 1961 the new synthetic rubber plants at Kursk and Ryzan received equipment installed and supplied by Von Kohorn International of White Plains, New York.[10]

In 1964 a Japanese consortium supplied a plant valued at $5.6 million to produce 8000 metric tons annually of rubber antioxidants; the consortium included the Fujinagata Shipbuilding Company, Kansai Catalyst, and Japan Chemical Machine Manufacturing Company.[11]

The Pirelli Company of Italy signed two contracts in 1968 with the Soviet organization Tekhmashimport of Moscow. The first contract with the Soviet organization was for supplying a plant, valued at over 800 million lire, for the manufacture of rubber latex thread. The second contract was to supply Russia with two complete plants for the manufacture of rubber latex gloves for surgical and industrial use; the amount of the transaction was about 750 million lire.[12] Pirelli was building about a dozen other plants in Eastern Europe and the Soviet Union in the late 1960s for such products as rubber tires, elastic yarns, and synthetic leather. In addition, a contract was concluded in 1967 for a $50 million plant to produce rubber parts for the Fiat 124 to be produced in the U.S.S.R., and negotiations were in progress for another plant to make tires for Soviet-Fiats.[13]

PRODUCTION OF CALCIUM CARBIDE AND ACETYLENE

Acetylene, a major input for synthetic rubber in the U.S.S.R., historically is produced from calcium carbide. Prewar Soviet calcium carbide capacity was

[6] U.S. House of Representatives, *Investigation and Study of the Administration, Operations, and Enforcement of the Export Control Act of 1949, and Related Acts*, Hearings before the Select Committee on Export Control, 87th Congress, 1st session (October and December 1961), pt. I, p. 333. Butyl, silicone, and nitrile rubbers were removed from embargo in the third quarter of 1959. Letter from Office of Export Control to writer, January 29, 1970.

[7] Confidential source.

[8] G. F. Borisovich, *Ekonomika promyshlennosti sinteticheskogo kauchuka* (Moscow, 1968), pp. 32, 37.

[9] *Chemistry and Industry*, December 19, 1959, p. 1609.

[10] *Chemical Week* (New York), March 11, 1961, p. 53.

[11] *Chemical Week*, November 14, 1964, p. 23.

[12] Communication from the Embassy of Italy, Washington D.C.

[13] *Business Week* (New York), July 13, 1968, p. 62. See also p. 200.

from Miguet-Perrou system furnaces installed in the 1930s[14] and having an annual capacity of about 80,000 metric tons.

A considerable addition to this capacity was made from reparations equipment removed from Germany and Manchuria. The I.G. Farben Buna-Werke at Schkopau, near Merseberg, produced its own calcium carbide by the electric furnace process for conversion into acetylene, in turn converted into acetaldehyde and butadiene.[15] Capacity was 298,255 metric tons in 1943[16] and the plant was largely removed to the Soviet Union.[17] Other calcium carbide capacity was removed from the Piesteritz works of Bayrische Stickstoffwerke A.G.,[18] which had a 1943 capacity of 155,570 metric tons[19]; the Mückenberg works of Elektrochemische Werke Dr Wacker GmbH using the Wacker dry process[20] with a 1943 capacity of 99,015 metric tons;[21] and a small plant at Spremberg, the Lanza GmbH, with a 1943 capacity of 22,550 metric tons.[22]

In Manchuria, at the Manchu Electrochemical Company, Ltd., in Kirin, the Soviets removed all the equipment from two plants including transformers and all auxiliary machinery, leaving only the electric furnace shells;[23] calcium carbide capacity of these plants was about 81,000 metric tons per year. The removal operation was supervised by Red Army Majors Sherishefsky and Diement, using Japanese technical assistance and local labor.[24]

About 500,000 metric tons of calcium carbide was made in the Soviet Union in 1960—the same as in 1953—and the major end use was the manufacture of acetylene; thus a large proportion of carbide capacity, and so ability to make synthetic rubber, can be traced to foreign origins. Even if reparations removals consisted only of machinery removals, excluding the furnaces, these machines would form the essential core of building efforts in the immediate postwar period.

As of 1953 there were numerous widely dispersed plants making calcium carbide—at Kirov, Yerevan, Kirovakan, Pipetsk, Voroshilovgrad, Leningrad, Kirovgrad, and Zaporozhe.[25] About one-half of the 1953 output of 500,000 tons was for synthetic rubber production, of which about one-third was made from calcium carbide.

[14] See Sutton II, p. 156.
[15] CIOS no. XXVIII-13, *Synthetic Rubber Plant, Buna Werke-Schkopau A.G.*
[16] BIOS, *The Acetylene Industry and Acetylene Chemistry in Germany during the period 1939-45*, Survey Report no. 30, pp. 10-11.
[17] G.E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), p. 106, no. 36.
[18] *Ibid.*, p. 106, no. 35.
[19] *Ibid.*, p. 106, no. 70.
[20] BIOS, *op. cit.* n. 16.
[21] *Ibid.*
[22] Pauley, *op. cit.* n. 4, appendix 10.
[23] Pauley, *op. cit.* n. 4.
[24] *Ibid.*
[25] S. A. Miller, *Acetylene: Its Properties, Manufacture and Uses* (New York: Academic Press, 1965).

Acetylene has in more recent times been made from hydrocarbons rather than calcium carbide; in the United States in 1958 some 40 percent of acetylene was made from hydrocarbons and other Western countries were moving toward this ratio. For example, in 1958 Italy produced 35 percent from hydrocarbons; France and West Germany, 34 percent; and Japan, 20 percent.[26] The Soviet Union and East Germany continued to produce 100 percent of their acetylene from calcium carbide, reflecting relative technical backwardness compared to the more advanced capitalist nations. (See Table 13-2.)

Table 13-2 PRODUCTION OF ACETYLENE FROM CARBIDE AND HYDROCARBONS, 1958

(000 metric tons)

Country	From carbide	From hydrocarbons	Total	Percentage of total carbide
U.S.A.	230	150	380	60
Italy	82	45	127	65
France	115	37	152	76
West Germany	255	80	335	76
Japan	250	60	310	80
East Germany	266	—	266	100
U.S.S.R.	170	—	170	100

Source: D.W.F. Hardie, *Acetylene, Manufacture and Uses* (London: Oxford University Press, 1965), p. 46.

Further, backwardness in acetylene manufacturing technology has been isolated as the main reason for the generally retarded nature of the Soviet organic chemicals industry.[27] Although there has been a great deal of research into various acetylene chemistry fields the knowledge has not been exploited, and in 1960 a U.S. Commerce Department report predicted that "Soviet progress in plastics, drugs, synthetic rubber, adhesives, and chemical intermediates will be retarded."[28]

In 1960 one-half of Soviet acetylene was being utilized for welding and cutting—compared with only 20 percent in the United States; the balance in both countries was used for the manufacture of organic chemicals. In other words, quite apart from the inability to utilize improved methods of production of acetylene, the end uses of the product itself were not changed. Thus market pressures making for technical change in the acetylene industry apparently were absent.

[26] D. W. F. Hardie, *Acetylene, Manufacture and Uses* (London: Oxford University Press, 1965), p. 46.
[27] *Chemical and Engineering News*, November 28, 1960, p. 26.
[28] *Ibid.*, quoting U.S. Dept. of Commerce report.

Evidently a pilot plant built in 1958 using the Russian Grinenko process[29] was unsuccessful, because in 1964 three plants were under construction by Western firms, all using Western processes. One of these plants, with a 35,000-ton capacity for the production of acetylene from hydrocarbons, was using the BASF process (formerly known as the Sachsse method); another in Angarsh, Siberia, was to use the SBA process of Société Belge de l'Azote; and the third plant, also with a capacity of 35,000 tons, was built in the Urals by the Italian firm Montecatini and using the Montecatini process.[30]

Consequently, by briefly examining the interlocking nature of chemical processes—even in only one field of organic chemistry, i.e., synthetic rubbers and one of its inputs—we can perceive two weaknesses in the Soviet system. First there is a technical weakness, i.e., an inability to convert promising research into practical working commercial systems; second, there is an economic weakness, i.e., the lack of economic forces or pressures to bring about technical change.

It is unlikely that these weaknesses stem from lack of effort or ability in research. In October 1963 a group from the Confederation of British Industry visited the Synthetic Rubber Institute in Leningrad.[31] The group concluded that it was an institute of "high calibre," the staff was competent, and the research was "well organized"; further, "the equipment is modern and lavish with clean and well planned laboratories."

The Institute has an interesting history. Founded in the 1920s by S. V. Lebedev,[32] it handled the original successful research and pilot production of sodium-butadiene synthetic rubber. Its function has expanded over the years and by 1961 the institute was housed in a new building of 5500 square meters and had established several pilot plants, some able to supply several hundred tons of rubber for large-scale evaluation. A total of 940 persons worked at the institute itself and another 900 at the pilot plants. It was noted that there was a "wealth of standard equipment" including, for example, five spectrometers —one of which was British (Hilger) and one German.

The main purpose of the institute in 1963 was (a) to find synthetic rubbers to replace natural rubbers in all applications and (b) to produce rubbers with special properties. The materials under investigation in 1963 included stereorubbers, ethylene, propylene copolymers, butadiene acrylonitrile, silicone, and

[29] S. A. Miller, *op. cit.* n. 25, p. 474.

[30] *Ibid.* Also see Kirk-Othmer, *Encyclopedia of Chemical Technology* (New York: Wiley, 1968), vol. I, pp. 186-88. The SBA process is reported as the SBA-Kellogg process, but the Kellogg company (in the U.S.) denies having built a plant in Siberia in 1964; letter to writer, April 17, 1969. The process referred to is probably one developed by Société Belge de l'Azote et des Produits Chimiques du Marly of Liège, Belgium.

[31] Confederation of British Industry, "Synthetic Rubber Institute, Leningrad, 18th October 1963"; typescript of manuscript sent to writer.

[32] Sutton I, p. 122.

polyurethane rubbers. Work was also in progress on a variety of antioxidants, including Ionol (I.C.I.) and Santowhite (Monsanto Chemical Company) as well as some Soviet developments.[33]

Thus in 1963 the Synthetic Rubber Institute had a long operating history, excellent research facilities, and capable staffing. Yet despite these observations and despite early work in the field and the successes which fructified in the original SK-B, there has been a significant lag in Soviet development of synthetic rubbers.

WESTERN ASSISTANCE FOR RUBBER TIRE PRODUCTION

The manufacture of almost all motor vehicle tire production can be traced directly to equipment of Western origin and, if we take account of the Soviet practice of working plants on a three-shift continuous basis, it is possible that all rubber tires in the Soviet Union have been produced on Western-origin equipment. As of 1960 the tire production capacity of equipment known to have been supplied by Western firms was about 24 million tires annually. Soviet civilian production in 1960 was about 16 million tires; closing of obsolete capacity and production of tires for military use constituted the difference.

Table 13-3 provides an approximate statement of equipment origins for tire production. A more precise statement relating foreign equipment to individual

Table 13-3 SOVIET TIRE OUTPUT IN RELATION TO WESTERN EQUIPMENT SUPPLY

Years	*Foreign firms supplying equipment or complete tire plants*	*Source*	*Approximate annual capacity of this equipment supply*
1931-7	Seiberling Rubber Co., Inc.[a] Francis Shaw & Co., Ltd.	U.S. U.K.	3,000,000 tires
1944-5	Ford Motor Co.[b]	U.S.	1,000,000 truck tires
1945-6	Deka-Werke (German reparations)[c]	Germany	300,000 truck tires
1946	Manchu Rubber Co. – (Manchurian reparations)[d]	Manchuria	30,000 truck tires
1957	United Kingdom 'Rustyfa' consortium (Dnepropetrovsk)[e]	U.K.	15,000,000 tractor truck and equipment tires
1957	Chatillon Tire Cord	Italy	—
1959-1960	Simon Handling Engineers, Ltd., Krasnoyarsk[f]	U.K.	2,000,000 tractor, truck and equipment tires
1968	Pirelli Co.[g]	Italy	—

Sources: [a]Sutton I: *Western Technology . . . 1917 to 1930;* [b]Sutton II *Western Technology . . . 1930 to 1945;* [c]See p. 31; [d]Calculated as 75 percent of the Manchu plant capacity; [e]*Anglo-Soviet Trade,* supplement to *Manchester Guardian,* December 7, 1960, p. 12; [f]*Mechanical Handling* (London), January 1964; [g]*Business Week,* July 13, 1968 p. 62.

[33] Confederation of British Industry, *op. cit.* n. 31.

plants cannot be made, as Soviet censorship has carefully eliminated from published reports data concerning tire sizes produced at each plant (an indicator by which equipment could be traced back to its Western origins) or any statement concerning location of foreign-purchased equipment.

The first Russian rubber tire plant was installed by the Seiberling Rubber Company at Yaroslavl[34] and a second plant was installed by Francis Shaw & Company, Ltd., of the United Kingdom in the early 1930s.[35] During World War II a Ford Motor Company tire plant was transferred to the U.S.S.R. and became the Moscow rubber tire plant.[36] Bought by Lend Lease for $10 million in 1942, it included a power plant for steam and electricity, and was capable of producing one million military tires per year; most of the plant had been shipped by autumn 1944. Some American engineers went to Russia in February 1944 to give technical advice, but in October 1945 the plant still lacked necessary utilities—water, steam, electricity, and compressed air.[37] The Deka-Werke, a producer of truck tires, was transferred to the U.S.S.R. from Germany under the reparations agreements,[38] and the adjustable-size tire-forming machines—about 75 percent of capacity—with autoclaves and calendars were removed from the Manchu Rubber Company in Manchuria and transferred to the U.S.S.R. in 1946.[39]

Soviet tire output in 1949 was 5,680,000 automobile and truck tires—about the capacity of the above-named plants.

In the mid to late 1950s several major contracts were let to foreign firms to supply complete, highly advanced tire manufacturing plants. The largest of these contracts was to a consortium of six British firms, known as Rustyfa,[40] and involved a total contract of $40 million.

The first inquiries to British firms for a new, modern tire factory came in April 1956; concurrent approaches were also made to firms in France, Germany, and the United States. A five-man British mission from the Rustyfa consortium flew to Moscow in March 1957 to complete negotiations. (One firm in the consortium, Francis Shaw and Company of Manchester, had already equipped a Russian tire factory in the thirties.) Dunlop Advisory Service acted as consulting engineers, and undertook the engineering survey and plans for the factory.[41]

[34] Sutton I, p. 223.
[35] *Economist* (London), April 13, 1957, p. 171.
[36] Sutton II, p. 184.
[37] Robert H. Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969,) p. 223.
[38] Harmssen, *op. cit.* n. 17.
[39] Pauley, *op. cit.* n. 4, appendix 10, Plant Inspection Report 2-C-2.
[40] Other members were Crompton Parkinson, Lancashire Dynamo Holdings, David Bridge, Ltd., Mather & Platt, Francis Shaw, Ltd., Simon Handling. George King and Heenan & Froude were subcontractors; see Peter Zentner, *East-West Trade: A Practical Guide to Selling in Eastern Europe* (London: Max Parrish, 1967), p. 80.
[41] *Economist* (London), April 13, 1957, p. 171.

The Rustyfa plant at Dnepropetrovsk, with its annual capacity of 15 million tires, is one of the largest tire factories in Europe. The advanced nature of the equipment supplied for the plant is typified by the monitoring equipment supplied. In 1957 the British Iron and Steel Research Association (BISRA) announced the development of an advanced system of recording plant performance; in 1957 Digital Engineering Company, Ltd., a firm licensed to build and sell the system, was awarded a contract to supply the BISRA monitoring equipment for the Dnepropetrovsk plant. This equipment comprised 500 monitoring or "detection points," with a centralized counting apparatus and printers for recording information. Many of the geared motors and mechanical handling equipment came from Lancashire Dynamo and Crypto, Ltd., whose Willesden works made the largest single shipment in its history—298 crated items—in April 1960 to the Russian plant.[42]

TECHNICAL ASSISTANCE TO THE PLASTICS INDUSTRIES

The Russian plastics and resins industry is even more backward than the synthetic rubber industry. It was reported in 1960 by Russian engineers that the Soviet Union did not have, "and badly needed high-speed, continuous process production equipment,[43] that there was no production of polyvinyl chlorides and foam plastics (among other types), and that there was only small-scale pilot production of such products as plastic laminates and glass fiber products.[44]

This admission by a Soviet plastics delegation to the United States confirmed reports from an earlier American delegation to the U.S.S.R. While avoiding overt criticism of the plants visited and indeed any overall conclusions concerning technical capacity in the plastics industry, individual observations and comments in the U.S. report suggest that the Soviets were noticeably backward in all areas except thermosetting plastics for industrial use. The report stated that the U.S. delegates were "surprised" that there apparently was no production of such plastics as polyethylene and noted particularly the considerable number of "plants they were not able to see," such as a caprolactum-nylon plant,[45] a butanol plant,[46] or "any petrochemical operations."[47]

Equipment in the plastics products plants visited constituted a mixture of imported machines (the polyvinyl chloride—PVC—compounding equipment at Vladimir Chemical, the compression molding shop at Karacharovo, the urea

[42] *Electrical Review* (London), April 15, 1960, p. 747.
[43] *Engineering News-Record* (New York), 164 (January 21, 1960), 56.
[44] *Ibid.*
[45] *Report on visit of U.S.A. Plastics Industry Exchange Delegation to U.S.S.R.*, Society of the Plastics Industry, Inc., June 2 to June 28, 1958 (New York, 1958), p. 2.
[46] *Ibid.*, p. 59.
[47] *Ibid.*, p. 61.

resin shop at Carbolit) and Russian-made equipment (the presses at Leningrad Laminated Plastics, Carbolit, and Karacharovo). Some of the usual comments about "copying" were made, although this report contains fewer observations concerning equipment origins than do similar reports from other industries.

Backwardness in plastics was solved in the usual manner, i.e., by the purchase of complete plants from the West. In 1959 the West German firm Badische Anilin licensed production of its process for the manufacture of polyethylene to the U.S.S.R.,[48] and German firms are reported to have sold numerous other plants,[49] including a polyester glass fiber unit (5000 tons per year); a styrene and copolymer unit (5000 tons per year); high- and low-pressure polyethylene plants by Salzgitter Industriebau GmbH (each of 24,000 tons per year); a polypropylene unit (10,000 tons per year); a polyvinyl pyrrolidone unit (180 tons per year); a melamine plant (10,000 tons per year); two plastics foam plants (3000 tons per year each); a PVC sheet plant; a PVC cable plant (40,000 kg/hr capacity); a polyethylene sheet plant and a processing unit (about $1.5 million together); and two plants for the manufacture of polyethylene pipe.[50]

In the early 1960s a group of six plants was contracted to British companies. The Simon-Carves, Ltd., firm, a member of the Simon Engineering Group, received a contract in 1963 valued at $56 million to design, equip, and start up four polyethylene plants; two had a capacity of 48,000 tons each and two a capacity of 24,000 tons each, with completion due in 1966.[51] Financing of $36 million was on five-year terms and arranged by Lazard Brothers & Company, an affiliate of Lazard Freres, the investment bankers of New York.[52] The total capacity of the four plants equaled total British polyethylene capacity in 1964.

Two gas separator plants to provide ethylene for two of the Simon-Carves polyethylene plants were ordered from Humphries and Glasgow, a U.K. engineering firm; these plants had an annual capacity of 120,000 tons of ethylene, the raw stock for polyethylene. The contract was valued at $16.8 million[53] and used the I.C.I. high-pressure process. Part of the contract was subcontracted to English Electric, Tube Investments, and Taylor Controls.[54]

In 1961 Sterling Moulding Materials, Ltd., of Cheshire shipped $12.1 million worth of equipment for Russia's first polystyrene molding powder plant, a facility with a capacity of 10,000 long tons per year. The company supplied technical assistance, installation services, and startup of operations for the Soviet Union.[55]

[48] Horst Mendershausen, *Dependence of East Germany on Western Imports* (Santa Monica: RAND Corp.), RAND RM-2414, July 17, 1959, p. 39.

[49] See p. 147 above.

[50] *Chemical Week*, September 3, 1960, p. 40.

[51] *Wall Street Journal*, April 30, 1963.

[52] *Ibid.*

[53] See *The Times* (London), February 1, 1965, for Russian complaints concerning these plants.

[54] *Economist* (London), May 4, 1963, p. 456.

[55] *Chemical Week*, March 11, 1961, p. 53.

Another British firm supplied $210,000 worth of plastics mixing equipment —FKM 300 DK Lodige-Morton mixers made by Morton Machine Company, Ltd., for PVC and PVA (polyvinyl acetate) powders.[56] Other chemical-plant orders placed in the United Kingdom included a styrene and polystyrene unit (20,000 tons per year) supplied by P.G. Engineering and BX Plastics; a cellulose acetate plant (3000 tons per year) supplied by Industrial Plastics and East Anglia Plastics; and a styrene foam plant.[57]

In 1965 a French firm, Speichim, contracted to build a plastics plant in the U.S.S.R. using technology licensed from Stauffer & Company, the U.S. chemicals manufacturer. The process was for the production of vinyl chloride by cracking ethylene dichloride, and was transferred for a flat fee plus royalties.[58] A unit for manufacture of polyethylene cloth also was purchased in France.[59]

In 1964 a Japanese consortium installed a polyvinyl chloride plant at a contract price of $14 million with an annual capacity of 60,000 metric tons of PVC. The consortium included Toho Bussan, a subsidiary of Mitsui; Kureha Chemical for process technology; and Chiyoda Chemical for engineering work.[60] The Sekisui Chemical Company had earlier supplied a plant to manufacture polyvinyl pipe (1200 tons per year) and polyvinyl fittings (1200 tons per year).[61]

In 1969 Berner Industries of New Castle, Pennsylvania, supplied equipment for a plastics plant,[62] supplementing an earlier installation for plastic pipe by Omni Products Corp.;[63] the Japanese Mitsui group reportedly was negotiating another contract for an ethylene plant of 450,000 tons' capacity to use Lummus technology[64] (Lummus is an American firm). Valued at $50 million, the plant was scheduled for construction in Siberia.

We may conclude that while SK-B synthetic rubber is an original Soviet development, no internal engineering ability was developed to break away from exclusive use of this limited-use rubber. Thus Soviet chloroprene rubber today is Dupont, the styrene-butadiene copolymers are I.G. Farben; a plant for butyl rubber was supplied by Western companies, as was equipment for the production of other synthetics and rubber antioxidants, and for the processing of finished synthetic rubber.

[56] *Chemistry and Industry*, April 4, 1959, p. 464.
[57] *Chemical Week*, March 11, 1961.
[58] *Wall Street Journal*, July 22, 1965, 10:4.
[59] *Chemical Week*, March 11, 1961.
[60] *Chemical Week*, November 14, 1964, p. 23.
[61] *Ibid.*
[62] *Business Week*, September 20, 1969.
[63] *Chemical Week*, November 14, 1964, p. 23.
[64] *Wall Street Journal*, July 9, 1969. Installations of unreported origin include another PVC plant and a 3000-ton per year plant for tetrafluorethylene; see *Chemical Week*, November 14, 1964.

The Soviet production of acetylene, an input for synthetic rubber, was restricted in the 1950s to the calcium carbide process at a time when the Western world was moving into production of acetylene from hydrocarbons. The Soviets then bought three acetylene-from-hydrocarbon plants in the West, each utilizing a different process.

Rubber tire output has been traced to Western production equipment. Similarly, in plastics the Soviets have purchased production capacity for polyethylene, ethylene, polystyrene, and polyvinyl chloride—key plastics in the modern world. No indigenous large-scale plastics production has been traced, only pilot operations.

CHAPTER FOURTEEN

Western Assistance to the Glass and Cement Industries

WESTERN ASSISTANCE TO THE GLASS INDUSTRY

The glass industry provides one of the earliest examples of Soviet duplication of Western equipment after significant import of similar equipment. In 1929 the Lissitchansk glass factory installed 80 Fourcault sheet glassmaking machines.[1] The following April, in 1930, the Gusev glass plant in Moscow, with a capacity of 10,000 tons of window glass per year, installed ten new Fourcault sheet glassmaking machines, of which two were imported from Belgium but eight were Soviet-made copies of earlier imports.[2]

Fourcault machines were built from 1929 onward at the Moscow machine building plant, and an attempt was made to supply the equipment demands of the glass industry completely from domestic production.[3] However, the Soviet glass industry appears to have had more than the normal share of problems, whether equipped with foreign or domestic machinery. The Dagestanskii Ogni plant, equipped by a U.K. firm with Fourcault machines and with four Owens bottle-making machines capable of producing 20 million bottles per year, was able to produce only one and one-half million bottles per year, and this production was at a cost 11 times greater than estimated with 60 to 70 percent rejects.[4] In 1930, to help overcome technical problems, Steklostroi employed an American mechanical engineer, C. E. Adler, a specialist in the design of machinery for glass factories.[5]

Even as late as 1957, however, the industry journal *Steklo i keramika* (New York) was reporting numerous problems in the glass and ceramic industries. In the late 1950s the industry was reported to be greatly in arrears and with little innovative ability. These observations were coupled with recommendations that Western technology be adopted. One report specifically mentioned the Dagestanskii Ogni works and indicated that there the only design change from the

[1] *Die Chemische Fabrik* (Weinheim, Ger.), II, 52 (December 25, 1929), 541. See also Sutton I, p. 222, for equipment in the Bely Bychok Plate Glass Works built in 1927.

[2] *Economic Review of the Soviet Union* (New York), V, 8 (April 15, 1930), 162.

[3] *Glass and Ceramics* (Washington, D.C.), 1957, p. 379.

[4] Society of Glass Technology *Journal* (London), 1928, p. 198.

[5] Amtorg, *Economic Review of the Soviet Union* (New York), V, 3-4 (February 15, 1930), 57.

original machines had been a change in the bearings and belt drive—this being presented as "modern technology."

After World War II major plant facilities from the German glass industry, particularly the optical grinding and optical instrument industries, were transferred to the Soviet Union. These transfers included the famous optical plants at Jena with subsidiary plants at Berlin and Perna in Saxony. These plants were essentially the only optical glass and instrument manufacturers in Germany and in the year October 1943 to October 1944 produced a total of 1700 metric tons of clear transparent optical glass and 28 metric tons of colored filter glass.

The Karl Zeiss plant at Jena, 94 percent transported to the U.S.S.R.,[6] was modern and particularly well equipped, with over 100 diamond saws; two of these were 420 mm in diameter and capable of running at 900 rpm, giving a surface speed of 20 meters per second.[7] Zeiss manufactured many lines of optical and scientific instruments including optical comparators and projectors, micrometers, and lenses and prisms.[8] The main plant was reassembled at Monino, near Moscow,[9] and utilized Zeiss experts Eitzenberger, Buschbeck, and Faulstich to develop detector, remote control, and recording gear. Other optical glass and optical instrument firms removed to the U.S.S.R. included the Zeiss-Ikon A.G. works at Dresden; Elektro-Optik GmbH at Teltow, Berlin (100 percent removal); and a number of camera manufacturers.[10]

However, the transfer of the Zeiss and similar works did not guarantee transfer of German technical expertise. In 1930 the Moscow planetarium had been equippped by Zeiss,[11] and in 1965, twenty years after the Zeiss plants had been removed to Moscow, the rebuilt Zeiss plant in Jena provided a two-meter-diameter mirror for solar, planetary, and satellite observations at the Shemakinskaya observatory.[12] The backwardness in optical, and particularly spectroscopic, instruments was confirmed by Soviet academician S. L. Man-del'shtam: "The design and production of these important instruments lags behind our needs and world quality standards. We are forced to buy abroad, and these are among the most expensive instruments."[13]

Laboratory glass exemplifies this technical backwardness. Up to about 1930 only one type of laboratory glass was used: type "No. 23" developed by V.

[6] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), p. 105.

[7] CIOS no. XXVII-23, *Optical Grinding and Centering Equipment Used by Karl Zeiss, Jena, 1946.*

[8] *Machine Tools*, (Washington: U.S. Foreign Economic Administration, Interagency Committee on German Industrial and Economic Disarmament, July 1945), p. 48.

[9] Werner Keller, *Ost Minus West=Null* (Munich: Droemersche Verlagsanstatt, 1960), pp. 283, 357, 365.

[10] Harmssen, *op. cit.* n. 6, p. 105.

[11] Amtorg, *Economic Review of the Soviet Union*, V, 1 (January 1, 1930), 10.

[12] *Kommunist* (Yerevan), November 3, 1965, p. 1.

[13] U.S. Senate, *Soviet Space Programs, 1962-65; Goals and Purposes, Achievements, Plans, and International Implications*, Staff Report, Committee on Aeronautical and Space Sciences, 89th Congress, 2d session (Washington: U.S. Government Printing Office, 1966), p. 351.

Ye. Tishchenko in 1899 and used continuously from 1900 to the present day. Although having certain disadvantages as well as advantages over standard foreign laboratory glasses (Jena 1920 and Pyrex), its chemical endurance is such as to merit its continued use. After 1930 manufacture of four other types was added to No.23; these types were Pyrex, No.846, Neutral, and Improved White.[14] These five varieties provided enough flexibility for laboratory requirements until the 1950s, when a few additional standard types were manufactured; however, the varieties manufactured in 1968 mainly consist of the old, established types including the original No. 23, Jena 20 (German), and Pyrex and Superpyrex (U.S.), plus imported glass from Czechoslovakia (Simax, Sial, Neutral, and Palex).[15]

In 1963 a British research delegation that was able to visit the three-year-old Glass Research Institute in Moscow particularly noted one laboratory that "carries out pilot plant work on glass manufacture on a scale that is equaled by only two or three laboratories in the whole of the Western world." This laboratory contained four small glass-melting tanks, but the major equipment was a large furnace capable of melting 70 tons of glass per day for a new experimental centrifugal spinner for the production of cone or back section of a cathode-ray tube for television receivers. The delegation concluded that this machine had many novel features and "seems to be an advance on other machines of this type in use in the Western world;"[16] apparently, however, it never reached development stage.

Manufacture of window glass, the largest tonnage glass product, exemplifies the present pervasive utilization of Western technology. The Fourcault process, imported in the U.S.S.R. in the 1920s soon after it was developed in Belgium, is the basis for standard Soviet glassmaking equipment. In this process the glass is drawn vertically in a continuous manner through a partially submerged "boat" with a narrow slot in the center over asbestos-covered rolls. The Soviet VVS machine is a replica of the Fourcault process (Figures 14-1 and 14-2), even utilizing direct translations of the integral parts of the process—for example, the "boat" is termed *lodochka* (a literal translation). Although the Colburn glassmaking process is known and described in Soviet texts,[17] it is not known whether the process has been utilized in practice.[18]

[14] *The Glass Industry* (New York), XXVI, 5 (May 1945), 228.

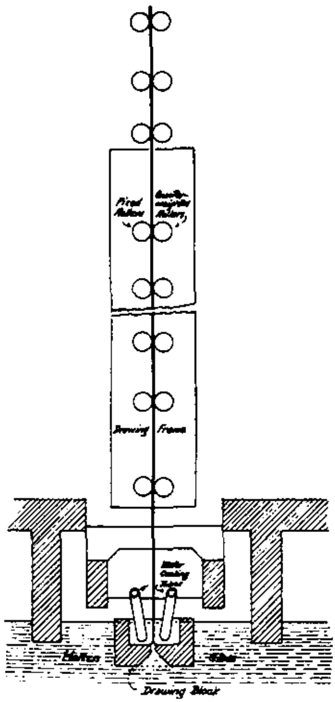
[15] *Spravochnik khimika* (Moscow) vol.V, 1968, pp. 333-34.

[16] *Visit to Glass Research Institute Moscow on 12th October, 1963*, Report by Confederation of British Industry, London, appendix E4. Unfortunately, no further trace of this machine has been found in the literature. See chapter 23 for technical assistance to the television industry; in 1967 the Soviets bought from France a pilot plant for manufacture of television tubes; *The Times* (London), February 1, 1967. Several months later Corning Glass in New York was reportedly negotiating for supply of glass, on which it holds patents, for color TV tubes to be used in this system; *Wall Street Journal*, May 23, 1967, 10:3.

[17] For example, I. I. Kitaigorodskii, *Tekhnologiia stekla* (Moscow, 1967), p. 336.

[18] This text also describes Soviet utilization of other Western glassmaking processes—for example, the Danner tube-making principle; *ibid.*, p. 418.

Figure 14-1 THE FOURCAULT PROCESS FOR SHEET GLASS MANUFACTURE

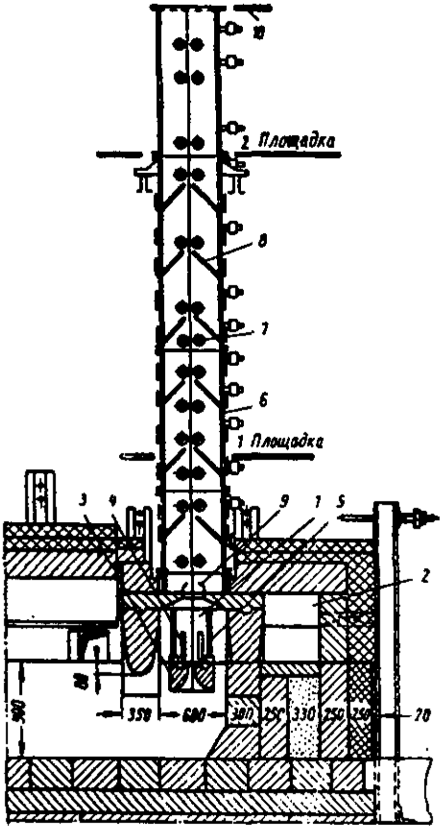


Source: Glass Industry, August 1928, p. 175.

In early 1967 the Soviet Union concluded a licensing agreement with Pilkington Brothers, Ltd., of Lancashire, England, to produce float glass in the Soviet Union. This is a new and revolutionary method of producing flat glass with a surface that does not need grinding after solidifying. By floating molten glass on a bed of liquid tin and making use of the solidification at different temperatures there is no requirement for rollers (as in the Fourcault process), which create imperfections requiring grinding. The agreement included supply of equipment by the Pilkington firm to a value of $4.2 million, sufficient to equip a plant to produce 50 million square feet of flat glass per year.[19]

[19] *Wall Street Journal*, March 30, 1967, 16:3.

Figure 14-2 SOVIET VVS MACHINE FOR SHEET GLASS MANUFACTURE



Source: I. I. Kitaigorodskii, *Tekhnologiia stekla* (Moscow, 1967), p. 319.

WESTERN ASSISTANCE TO THE CEMENT INDUSTRY

By and large the Soviets did not attempt to transport cement kilns to the Soviet Union under reparations, except for removals from Manchuria. (See Table 14-1.) The reduction in Manchurian cement capacity due to Soviet removals was approximately 890,000 metric tons with a replacement value of $17.8 million.

Table 14-1 MANCHURIAN CEMENT PLANTS REMOVED TO THE U.S.S.R.

Name	*Soviet removal or destruction*	*Metric tons capacity*	*Notes*
Harbin	none	110,000	Chicom territory
Mutanchiang	large	100,000	Chicom territory; Soviets removed equipment
Changtu	large	140,000	Chicom territory; Soviets removed equipment
Anshan	small	200,000	Some repairs needed
Miaoling	large	90,000	Equipment removed by Soviet Army.
Dairen	none	210,000	Under Soviet control
Kirin	large	260,000	Soviet Army removed almost all equipment
Chinhsi	small	150,000	50,000 metric tons capacity remaining
Fushun	small	210,000	80,000 metric tons capacity remaining
Liaoyang	small	180,000	90,000 metric tons capacity remaining
Penchihu	small	250,000	100,000 metric tons capacity remaining
Kungyuan	large	170,000	Soviets removed all equipment
Antung	large	130,000	Chicom territory; Soviets removed all equipment
Total		2,200,000 metric tons	

Source: Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946).

The Pauley Mission commented on the removals from six plants in the Fall of 1945 as follows:

> The six plants which suffered major removals by the Soviets were the most recently constructed and equipped with the newest machinery. The equipment which seemed to be particularly desired was the crushing, grinding, and pulverizing equipment, electric motors, generators, laboratory and testing equipment, and inter-plant haulage equipment. In one plant (Kirin) an attempt was made to cut the rotary kilns into sections and remove them. Fabricated fixtures were not ordinarily removed but they were usually badly damaged. Severe and wholly unnecessary damage to auxiliary equipment and buildings was characteristic of almost all stripped plants inspected by the Pauley Mission. There was a general appearance of complete devastation, probably due to the haste with which the Soviets were compelled to operate.... The nature of the removals has been such that restoration to former capacity of the plants affected will require almost complete rebuilding of the entire facilities.[20]

[20] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946), pp. 217-18.

Equipment removals varied greatly and, as Table 14-1 reveals, extended even to plants under Chinese Communist control. At Fushun, Soviet removals were limited to office supplies and equipment, testing equipment, automotive vehicles, a considerable number of cement bags, and some cement; similarly, at the Anshan plant only some equipment was removed. At Kungyuan, however, a complete removal job was undertaken; railroad tracks were laid into the center of the 170,000-metric-ton capacity cement plant to facilitate loading of equipment onto rail cars, and parts of the buildings were destroyed to remove machinery. This was a portland cement plant with a typical dry process; the American engineer (N.M. Taylor) who inspected the plant for the Pauley Mission reported that the rock crushers, belt conveyers, and overhead cranes were removed completely; the drive mechanism from two 70-meter kilns was removed, as was the drive mechanism from five (of eight) ball-reduction mills. The coal pulverization plant, four bagging machines, and the steam turbine generator were also removed.

At Penchihu only the steam turbine generators and about one quarter of the electrical control equipment were removed; while equipment at the Kirin plant, a 220,000-ton-per-year portland cement producer, was almost completely removed, including a gyratory crusher, two hammer crushers, three material dryers, five clinker mills, three cold dryers, one coal mill, two rotary kilns (only the blowers were taken, the kilns were not removed), two waste heat boilers, two turbogenerators, 38 transformers, 107 electric motors, and 18 machine tools.

Of a total of 2.2 million tons capacity affected by Soviet removals, about 890,000 tons was completely removed to the U.S.S.R.; the balance suffered selective equipment removals.

In East Germany only one cement plant was removed—Zementwerk at Niedersachswerfen.[21] The great prize in Germany was the Magdeburg works of Krupp-Gruson A.G., before the war one of the world's leading manufacturers of heavy machinery and structural steel fabrication; its principal products included heavy machinery for crushing and grinding and complete cement manufacturing plants. According to the U.S. Strategic Bombing Survey, only about 10 percent of the equipment in this plant was destroyed and another 10 percent damaged.[22] Consequently, the Soviets received an advanced and almost complete plant for production of complete cement plants. The immediate task of the plant was to provide a cement-making capacity of six million metric tons per year for the Soviet Union.

Although the Soviets have standardized domestic production of cement plants they have continued to buy advanced technology on the world market. In 1959–60

[21] Harmssen, *op. cit.* n. 6, p. 107.

[22] U.S. Strategic Bombing Survey, *Friedrich Krupp Grusonwerke, Magdeburg, Germany*, January 1947.

the largest cement plant in the world was built in Siberia by the French company Société Fives-Lille-Cail of Paris. The company provided a complete cement manufacturing installation including two 19-by-575-foot kilns. Construction of the plant was supervised by French engineers with startup and performance tests conducted by the Fives-Lille-Cail company. The production capacity is 33,000 barrels of Type I portland cement per day from an unusual mixture of limestone and nepheline residues. The technology in this plant was certainly the most advanced in the world at the time the plant was built. For example, the grinding department, the largest in the world, produced two grades of portland cement in mills 10 feet 5 inches in diameter and 46 feet long, each unit weighing 260 tons, loaded with upwards of 170 tons of grinding media and designed to run at 19 rpm through 2500-hp helical reducers. The storage and bagging facilities reflected the plant's size and included 20 silos with a total storage capacity of 80,000 tons, i.e., 16 days kiln production.[23]

In general, a large number of Soviet cement kilns have been manufactured abroad, although there is domestic production of standard designs.[24] The extent of internal use of foreign designs may be broadly gauged from a report of the French cement industry delegation to the U.S.S.R. in 1960.[25]

The description of cement plants visited by that delegation suggests they contain a considerable quantity of Western-manufactured equipment and Western equipment copied in the Soviet Union. It was reported that the Vorovskoi plant, built in 1911 and modernized in 1930 and 1945, with a current production of 325,000 tons, uses four Smidth (Copenhagen) furnaces; the crusher equipment was Krupp and Smidth with one crusher from the "Urals plant" (probably Uralmash).

At the Sebriakov plant near Stalingrad, with its annual production of one million tons of cement considered one of the most modern plants in the Soviet Union, it was noted that the crushing plant used 12 Wilfley-type pumps, with furnaces by Tellman in East Germany; the power station equipment was from Tempella in West Germany, and three turbo-alternators came from Skoda in Czechoslovakia. The crushing equipment was built in the Urals.

At the Novorossisk plant, founded in 1880 and expanded over the years, the delegation noted a considerable quantity of equipment of Western origin. The Novorossisk combinat comprises four plants: the October, with a capacity of one million tons per year; the Proletariat, with a capacity of 1,150,000 tons per year; the October Victory, with a capacity of 300,000 tons; and the First of May, also with a capacity of 350,000 tons. The Proletariat plant was not visited by the delegation, but it reported concentrators with Smidth Folax

[23] *Rock Products* (Louisville, Ky.), May 1959, pp. 128-31. See also E. I. Khodorov, *Pechi tsementnoi promyshlennosti* (Leningrad, 1968), p. 90.

[24] E. I. Khodorov, *op. cit.* n. 23, pp. 82-83.

[25] *L'Industrie cimentière en U.R.S.S.*, Compte rendu de mission 9-28 avril 1960 (Paris, 1960).

equipment. The October Victory plant was not visited. Equipment at the October was reported to be five Krupp crushers, five crushers manufactured in the Urals, and five Dorr-type silos of 500 cubic meters; the furnaces were identified as Tellman (Magdeburg). The First of May plant had four Lepol-type firing units, two standard Polysius (East Germany) granulators, and one large Polysius granulator; the plant uses a dry process of the Lepol type with equipment furnished by Polysius at Dessau and Magdeburg; the bagging machinery is from Smidth.

In the Soviet glass industry, the large-tonnage window glass sector is based on the Belgian Fourcault process with recent addition, with British equipment and technical assistance, of a Pilkington Brothers, Ltd., float glass unit. Glass tubing manufacture uses the Danner process, and laboratory glass production appears to consist of a limited range of types including a number of U.S. and Czechoslovakian glasses, and, notably, the Russian No.23 Tishchenko formula developed in 1899. Optical glassmaking is technically backward.

The cement industry utilizes a significant proportion of foreign equipment. The most advanced mills (for example, in Siberia and Sebriakov) utilize extensive foreign equipment in the kiln and crusher sections. Soviet domestic production of cement plants is of the standard type with no observable departures from world practice.

CHAPTER FIFTEEN

Western Technical Assistance to the Textile, Synthetic Fiber, and Pulp and Paper Industries

TEXTILES AND CHEMICAL FIBERS

Western assistance to the textile industry in the 1920s has been described in the first volume of this series.[1] In addition to the technical assistance in the period 1929-1931 provided by Lockwood Greene, a U.S. firm, and French technical assistance for the manufacture of viscose, there was a large supply of U.S., British, and German machinery for textile plants. The Kirovsky combine received textile equipment from the United States valued at $800,000 in 1930,[2] the Krasnaya Shelk textile plant received U.S. equipment in 1928,[3] and the large textile combine at Ivanovo-Voznesensk received 100,000 spindles, mostly from the U.K. firm of Tweedales and Smalley of Manchester, with warping machines from Schlafhorst of München Gladbach in Germany.[4] The Schlafhorst company also supplied warping machines for the Shuya Melange textile mill in 1932.

Some textile mills were also directed by foreign engineers. For example, in 1930 Samuel Fox was hired as a mechanic at $510.00 per month with a group of other American mechanics and sent to Baku to erect and start operation of a textile plant equipped with machinery from the United States. Fox directed the installation of equipment and later became director of the mill.[5]

Textile plants from East Germany were removed to the Soviet Union in 1945-46. Two large artificial silk spinning operations in Saxony (the Pirna and Sehma plants of Fr. Küttner A.G.) were completely removed to the U.S.S.R.,[6] and two Brandenburg units, the Premnitz plant of Agea and the Kurmärkische Zellwoll-AG plant at Wittenberge, both artificial silk producers, were removed, the former about 50 percent and the latter about 80 percent. Regular spinning mills appear to have been only partly dismantled; eight plants

[1] See Sutton I, pp. 231-33.
[2] Amtorg, *Economic Review of the Soviet Union* (New York, II, 11 (June 1, 1930), 224.
[3] *Ibid.*, V, 16-17 (September 1, 1930), 351.
[4] U.S. State Dept. Decimal File 861.5017/1c/684.
[5] U.S. State Dept. Decimal File 861.5017/Living Conditions/144, March 25, 1930.
[6] All data in this section from G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), p. 109.

in Saxony, three in Thuringia, and one in Mecklenburg were partly removed to the U.S.S.R. Of the nine weaving mills removed from Saxony, only one, the Mechanische Weberei at Grimma, was completely removed. Similarly, only six finishing operations were affected by dismantling—none was reported completely removed.

In 1954 an upgrading process began, and a large contract was granted Platt Brothers of the United Kingdom for the supply of $19.6 million worth of machinery to equip plants in the cotton, worsted, spinning, weaving, and finishing sections of the industry; numerous textile machine firms in Yorkshire and Lancashire participated in supply.[7] In 1958-59 Courtaulds, Ltd., supplied machinery and technical assistance for several rayon and cellulose acetate plants;[8] Fawcett Preston & Company of Bromborough, Cheshire, secured an order for nine pulp-steeping presses and two fiber-baling presses to be incorporated in this rayon plant;[9] and Kestner Evaporator & Engineering Company, Ltd., supplied Keebush equipment to Courtaulds for installation in the plants.[10]

In 1959 a plant for the production of rayon was supplied by Vickers-Armstrongs (Engineers), Ltd., and Highpolymer and Petrochemical Engineering Company, Ltd., for a total value of $7 million,[11] with $1 million worth of instrumentation supplied by Honeywell Controls, Ltd., a subsidiary of the U.S. firm.[12] A few years later, in 1966, Bentley Engineering Group (a subsidiary of Sears Holdings, Ltd.) received an order valued at $14 million for knitting machinery to equip two new knitting mills.[13]

Italian companies also have been prominent suppliers of textile machinery since World War II. In 1959 Châtillon supplied equipment for a high-tensile-strength cord fiber plant.[14] Further textile mill equipment was supplied under a contract with Sniaviscosa,[15] and in 1967 a contract was awarded the Sant'Andrea company of the Bombrini Parodi Delfino group and the Nuova San Giorgio firm of the IRI Finmeccanica group for machinery to equip a 50,000-spindle mill for the production of mixed woolen and synthetic yarns.[16]

A/B Karlstads Mekaniska Werkstad of Sweden received an order in 1959 for the "design and complete installation and equipment for a viscose rayon factory" (annual capacity of 200,000 tons of prehydraulized sulfate viscose rayon), and machinery was supplied by several Swedish factories.[17]

In 1958 a significant international arrangement to supply three synthetic

[7] *New York Times*, May 20, 1954, 3:6.
[8] *Chemistry and Industry* (London), August 2, 1958.
[9] *East-West Commerce* (London), VI, 12 (December 8, 1959), 6.
[10] *Chemistry and Industry*, December 2, 1961, p. 1968.
[11] *Chemistry and Industry*, May 9, 1959, p. 609.
[12] *Electrical Review* (London), 167 (August 1960), 308.
[13] *Wall Street Journal*, August 19, 1966, 11:6.
[14] *Problems of Economics* (New York), III, 4 (August 1960), 23.
[15] *Ibid.*
[16] Communication from Italian Embassy, Washington D.C.
[17] *East-West Commerce*, VI, 9, (September 28, 1959), 4.

fiber (probably rayon) plants to the U.S.S.R. was headed by Von Kohorn International Corporation of New York. Under this arrangement equipment was supplied by the U.K. firms of Baker Perkins and the A.P.V. Company, while Von Kohorn was "responsible for technical advice connected with the engineering and machinery part of the contract."[18]

Over $30 million worth of machinery was acquired in the United States in 1960 from a consortium of 40 U.S. textile equipment manufacturers. This, the largest single order received from the U.S.S.R. since the end of World War II, provided equipment for a 50,000-spindle mill at Kalinin, to spin, weave, and finish cotton, worsted, and man-made-fiber fabrics. This order was in addition to $6-7 million worth of similar equipment previously shipped by Intertex Corporation, a trading firm representing the 40 U.S. textile machinery manufacturers. Of the total $30 million, $20 million was paid in cash.[19]

Some of the principal equipment—to give an idea of the magnitude of the arrangements—included the following[20]:

Crompton & Knowles	630 type W-3 looms
Saco-Lowell	VersaMatic drawing frames S.J. spinning frames (MagneDraft) Saco-Lowell worsted frames
Whiting Machine Works	20,000 American system worsted spindles
Rodney Hunt	One continuous peroxide bleaching range

The 1962 report of an Indian textile delegation[21] covered nine of the larger textile mills with spinning departments. These were reported as old installations—"some of them 150 years and a few about 30 years old." They clearly represented the two eras of textile mill construction, the first under the Tsars and the second in the late 1920s and early 1930s by British and German companies. This imported equipment was supplemented by domestic duplicates of foreign equipment; neither the Indian nor the U.S. delegation noted indigenous innovation.

Duplication of Western Textile Equipment

In the late 1920s the Soviets started to copy Western textile equipment, and by 1928 the Shunsk mechanical plant at Ivanovo-Voznesensk produced its one thousandth automatic loom of the "Northrup type."[22]

[18] *Chemistry and Industry*, June 21, 1958, p. 763.
[19] *American Machinist* (New York), January 11, 1960, p. 84.
[20] *Textile World* (New York), February 1960, p. 4.
[21] *Textile Industry in the U.S.S.R. and Czechoslovakia* (New Delhi: National Productivity Council, November 1962), Report no. 19.
[22] Amtorg, *Economic Review of the Soviet Union*, III, 9 (April 15, 1928), 161.

In 1958 the U.S. Cotton Delegation visited the Tashkent textile machine construction plant, perhaps the largest manufacturer of roving frames, spinning frames, and twisters in the U.S.S.R. After noting that in the machine shop "there were many U.S.-made lathes and shapers in operation," the delegation reported that the plant expected to go into production of a "new apron-type long draft roving ... an improved Platt design which the staff had modified."[23]

The Indian delegation[24] noted that the blowroom lines in all Russian mills had the following equipment: porcupine opener, Crighton opener, double porcupine opener, and Scutchner with Kirschner beater. Carding machines were of the "ordinary" type with one mill using "Shirley type of cards." The only nonconventional (i.e., non-Western) equipment noted was used in the grinding of flats: "Flats are ground once in three months on Russian-made single flat-grinding machines. Their flat grinder is different in design and manufacture from the types common in our country."

In the drawing process "there was nothing particularly striking" and the mills used the "conventional" process, except that one mill used Saco-Lowell combers with heavy laps. Russian ring frames were "ordinary and conventional models"[25] with conversion to the Blaus-Roth type. In doubling, the Roto-Coner type machine was "generally used," and for multiple and winding a "similar type of English and Japanese double diner is used."[26]

In 1947 a shuttleless loom similar to the shuttleless loom weaving machine produced by Sulzer of Winterthur, Switzerland, was developed by Leonytev of the Moscow Textile Institute.[27] The U.S. delegation also noted winders of the Leesonia type[28] and "imperfect copies" of the Franklin Process package dyeing equipment.[29]

WESTERN DEVELOPMENT OF SOVIET SYNTHETIC FIBER CAPACITY

Soviet production of synthetic fibers is well behind that of the Western world. In 1965, of a total production of 407,300 metric tons of chemical and synthetic fibers, only 77,900 tons was synthetics; the bulk of the Soviet production

[23] U.S. Dept. of Agriculture, *Cotton in the Soviet Union*, Report of a Technical Study Group, Foreign Agricultural Service (Washington: U.S.G.P.O., June 1959), p. 5.
[24] *Ibid.*
[25] *Ibid.*, p. 58.
[26] *Ibid.*, p. 59.
[27] *Encyclopedia of Textiles* (Englewood Cliffs, N.J.: Prentice-Hall, 1960), p. 242.
[28] U.S. Dept. of Agriculture, *op. cit.* n. 23, p. 6. See Russian literature for more detail; for example see A. M. Liberman, *Organizatsiia i planirovanie predpriiatii tekstil'noi promyshlennosti* (Moscow, 1969), p. 167, for manufacture of Barber-Coleman winders.
[29] U.S. Dept. of Agriculture, *op. cit.* n. 23, p. 10.

was viscose fiber, which accounted for just under 75 percent of all chemical and synthetic fiber production in 1965.[30]

Although no breakdown by type of synthetic fiber has been traced in Soviet literature, it is estimated that the Soviets produced the following quantities of synthetic fibers in 1965:

Nylon	65,575 metric tons
Polyester	7,331
Acrylics	2,851
Polyvinyl chloride	1,629
	77,386 metric tons

This is a significant increase from the approximately 13,500 tons produced in 1956 (all Nylon 6), but still far below the U.S. production totals. In 1954, for example, the United States produced over 132,000 tons of synthetic fibers, just under twice the Soviet 1965 production.

Most Western observers comment on the extensive and potentially valuable research on synthetic fibers undertaken in the U.S.S.R. Writing in 1960, I.V. Maistrenko of the Institute for the Study of the U.S.S.R.,[32] described the work of VNIIV (All-Union Artificial Fiber Research Institute) while pointing out Soviet weaknesses in the engineering aspects of synthetic fiber production. E. M. Buras, Jr., in a detailed two-part summary of Soviet synthetic fibers in 1961, concluded that "if its fiber industry lags in growth, the cause will not be any lack of research and development capacity."[33]

In 1960 the Soviets were publishing papers on synthetics at the same rate as U.S. authors; Buras points out that "if we were to list references on synthetic fiber research, about 400 authors in all would have to be cited."[34] This activity was accompanied by cooperation with Czechoslovakia on 81 projects at 112 laboratories in the U.S.S.R. and Czechoslovakia. Further, Buras has outlined areas of research which the U.S. had hardly investigated and where the Soviets were deeply involved—particularly "elementorganic" polymers with possible military applications.[35]

[30] The Soviets have not always distinguished between synthetics and chemical fibers; a distinction has been maintained where possible throughout this section.

[31] These figures were calculated as follows (the Soviets have not published production figures for each synthetic): total for all "chemical" fibers (including synthetics) is given in *Narodnoe khoziaistvo SSSR, v 1968g.: Statisticheskii ezhegodnik* (Moscow, 1969), p. 253; the percentage of each type is given in *50 [Piat'desiat] let sovetskaya khimicheskaya nauka i promyshlennost'* (Moscow, 1967), p. 366.

[32] *Industrial and Engineering Chemistry* (Washington, D.C.), February 1960, pp. 44A-48A.

[33] *Chemical and Engineering News*, July 31, 1961, p. 134.

[34] *Ibid.*, August 7, 1961, p. 83.

[35] *Ibid.*

Finally, a report by two U.S. Army research scientists[36] concluded that by the end of the 1950s the Soviets had made independent advances in synthetic fibers; indeed, they had produced three synthetics with no counterpart in the West, and were cooperating with satellite countries in this research. Much Soviet research was being directed to military applications of fibers, and the authors point out:

> A possible threat from Soviet textile research lies, not in the development of slightly improved counterparts of nylon, Orlon, etc., but in the possibility of a real breakthrough emanating from extensive work in this field of new and unusual fibers.[37]

Three new research achievements reportedly were "Enant," a Nylon 7 represented as a new fiber made from cheap raw materials; "Ftorlon," a process which was said to have better mechanical properties than the Western "Teflon"; and "Vinitron," which was described simply as a "superior" product.[38]

Yet despite this obviously ambitious and viable research program, we find that all Soviet large-scale production facilities for synthetics have derived in greater or lesser degree from the West.[39]

Origins of Nylon 6 (Kapron) and Nylon 66 (Anid) Technology

The synthetic fiber nylon, made from benzene, hydrogen, and oxygen with no vegetable or animal fibers, originated with basic work in the 1920s at Dupont in the United States. Nylon 6 was developed and patented by Paul Schlack in Germany[40] and is known in Germany as "Perlon," while Nylon 66 was selected from among many possible nylons and established on a commercial scale in the United States in 1938; this nylon requires commercial quantities of two intermediates, hexamethylene diamine and adipic acid, the latter—as we shall see later—proving a problem for the Soviets.

Although considerable progress was made in the United States before World War II and in Germany during the war, the Soviet Union had no capacity for producing synthetic fibers (i.e., completely man-made fibers) at the end of World War II. The first Soviet synthetic fiber plant was brought into production

[36] R. C. Laible and L. I. Weiner, "Russian and Satellite Research and Development in the Field of Synthetic Fibers," *Textile Research Journal* (New York), 30, 4 (April 1960).

[37] *Ibid.*, p. 247.

[38] *Ibid.*

[39] This contrast has been noted in Western trade journals. For example, an editorial entitled "The Soviet Puzzle," *Skinners Silk and Rayon Record* (London), 37, 7 (July 1962), asks, "But why is there apparently such a gap between research and commercial development?"

[40] U.S. Patent No. 2,242,321 of May 6, 1941 (assigned to I. G. Farbenindustrie A. G.). The Soviets make a claim for Nylon 6 (Kapron) as a Soviet development in 1944; see *Bol'shaia Sovetskaia Entsiklopediia*, 2d edition (Moscow, 1949), vol. 9, p. 14.

at Klin in 1948[41] for the production of Kapron, i.e., Nylon 6. Large-scale production of Perlon (also Nylon 6) started in Poland at Landsberg (Gorzow) in 1941 with an annual production of 8.7 million pounds of Nylon 6 and one million pounds of Nylon 66.[42] This plant was owned by I. G. Farben, assignee of the Schlack patents, and used intermediates from the Leuna works. According to A. Zauberman,[43] the Landsberg plant was dismantled and shipped to the U.S.S.R. in 1944; it is probable that the first Soviet Kapron (i.e., Perlon or Nylon 6) plant at Klin was the rebuilt Landsberg plant. In fact, the Soviets may have acquired more than the Landsberg plant. For example, one excellent source comments:

> Much of the work on the production and spinning of synthetic polymers was done in Eastern Germany, in works which were either not seen at all or which could be only very superficially examined before they were taken over by the Russian forces. This may explain the scantiness of the available information about the spinning of polyurethane fibres ... vinylidene chloride copolymers ... [and] acrylonitrile polymers.[44]

Two other plants at Kiev and Riga (in former Latvia), both producing Kapron, were brought into production in the 1950s, and in 1956 Soviet production of Nylon 6 was 25 million pounds—which may be compared with U.S. production of 265 million pounds of all synthetic fibers in 1954. In 1960 Nylon 6 was the only synthetic fiber in full-scale production in the Soviet Union.

During the 1950s and 1960s a number of plants were built using the Schlack process of melt spinning and cold drawing the fiber from the condensation polymer of ϵ-caprolactum; these included Chernigov in the Ukraine, Mogilev in Soviet Armenia, the Engel plant in Saratov, Darnitsa in Kiev, and the Kalinin plant.

Kapron production was stressed over other synthetics for two reasons, according to A. L. Borisov:[45] first, there was an improvement in caprolactum production (the raw material for nylon), and second, the Kapron plants required relatively lower capital investment. In the fifties there was criticism in the technical literature concerning the substandard caprolactum supplied by Soviet plants; this quality problem was overcome by the supply of equipment from Germany for two

[41] E. P. Ivanova, *Ekonomika promyshlennosti khimicheskikh volokon* (Moscow, 1968), p. 30. The Soviets include synthetics within the "chemical fiber group"; the statistics in Ivanova are far more detailed for the United States and Europe than for the U.S.S.R., for which data are expressed as percentages computed from an undisclosed base.

[42] *Encyclopedia of Chemical Technology*, 2d edition (New York: John Wiley, 1963), vol. 16, p. 47.

[43] A. Zauberman, *Industrial Progress in Poland, Czechoslovakia, and East Germany, 1937-1962* (New York: Oxford University Press, 1964), p. 267.

[44] A. R. Urquhart, *The German Rayon Industry During the Period 1939-1945* (London, 1952), BIOS Subcommittee Survey Report no. 33, pp. 25-26.

[45] Soviet State Committee on Chemistry, quoted in *Chemical and Engineering News*, July 21, 1961, p. 131.

10,000-ton-per-year caprolactum (from aniline) plants, a caprolactum distillation plant, two caprolactum continuous polymerization plants, and a 10,000-ton adiponitrile-hexamethyl-enediamine plant.[46] This equipment—the core of the caprolactum manufacturing process—was installed at Soviet plants at Kirovakan (for the Kapron plant at Razdan), the Gubakha plant, and the Lisichansk plant in Kiev.

Continuing Soviet technical problems with the production of caprolactum were again eased in 1964 by the purchase of two caprolactum plants from a British-Dutch consortium. Two Japanese firms, Ube Industries, Ltd., and the Nissho Trading Company, were also competing for an order finally awarded by Tekhmashimport to a group including Simon-Carves of the United Kingdom and the Dutch State Mines for a bid of $25 million. Capacity of the caprolactum plants was 50,000 tons each per year.[47]

Therefore it may be seen that the enormous increase in Nylon 6 (Kapron) production in the U.S.S.R. has been dependent on supply from West Germany and the United Kingdom of key equipment and technical assistance for the manufacture of its essential raw material caprolactum.

Little practical success has been achieved in producing other nylons, although much research has been undertaken. Pilot plant production of Anid (Nylon 66) as made by Dupont and British Nylon Spinners was started in 1956 and small-scale production started at Kursk after Krupp installed German nylon spinning equipment. Part of the problem encountered in this production appears to have been a shortage of adipic acid; this lack was only partly offset by blending the available supply of hexamethylene adipamide salt with caprolactum (from the German and British plants) and hexamethylene azelaamide to form a mixed-fiber Anid G-669 and H-669. Another fiber, Enant (or Nylon 7), has been produced in small quantities only.

Other synthetic fibers produced in commercial quantities are Lavsan, Nitron, and Kanekalon.

Krupp Construction of the Stalinogorsk-Kursk Lavsan Complex

Between 1958 and 1961, under a $14 million contract, Krupp of West Germany built a polyester fiber (polyethylene terephthalate) complex of three plants in the Soviet Union.[48] The fiber produced by this complex is known in the U.S.S.R. as Lavsan. Its patents are held by Imperial Chemical Industries, and it is known as Terylene in the United Kingdom and Dacron in the United

[46] *Ibid.*

[47] *New York Times*, September 13, 1964. In 1967 it was reported that the Soviets were seeking six additional caprolactum plants in Germany; *Wall Street Journal*, April 14, 1967, 4:4.

[48] *East-West Commerce*, V. 6 (June 16, 1958), 3; *Chemical and Engineering News*, July 31, 1961, p. 132. It was reported in 1967 that the Soviets were purchasing six polyester plants, with total capacity of 60,000 tons per year, in Czechoslovakia; *Wall Street Journal*, April 14, 1967, 4:4.

States. The first unit built by Krupp was at Novo Kuibyshev to convert petroleum stock into *p*-xylol, which is shipped to a second Krupp-built plant at Stalinogorsk for conversion into dimethyl terephthalate. This stock in turn is shipped to the third Krupp-built plant at Kursk, where the raw material is spun into Lavsan polyester fiber. The project has capacity to produce six million pounds of Lavsan annually.[49]

Polyspinners, Ltd., Construction of the Siberian Lavsan Plant

Imperial Chemical Industries, in a continuing association going back into the 1930s, has made available to the Soviet Union polyethylene manufacturing technology and information on manufacture of polyester fibers and petrochemicals.[50] In May 1964 the company headed a consortium known as Polyspinners, Ltd., which signed a contract worth $140 million—probably the largest British contract with the U.S.S.R. since the Bolshevik Revolution and itself part of a larger agreement. The Polyspinners consortium was required to build a combine in Siberia for the production of a polyester fiber developed from terephthalic acid and ethylene glycol, i.e., Terylene or Dacron. The contract was guaranteed by the British Government under its Export Credit Guarantee Program, and bank credit provided for a 12- to 15-year loan to assist the Soviets in paying for the complex. Utilizing British engineers as supervisors, the combine was built at Irkutsk in Siberia with Russian operating engineers trained at ICI plants in the United Kingdom.[51] The chief construction companies were John Brown & Company, Ltd., of Scotland and Stone Platt of England; numerous other British companies made up the consortium, some of which were the following:[52]

Baker Perkins Chemical Machinery, Ltd.	Loadcell weighing equipment
Gardners (Gloucester)	Large drum blenders
Sigmund Pulsometer Pumps	Pumps
Sharples (Camberley)	Centrifuges
Hydrotherm Engineering, Ltd.	High-temperature heating systems
W. P. Butterfield, Ltd. (Engineering)	Stainless and mild-steel pressure vessels
Lawrence Scott and Electromotors	Electrical machines and control gear
Aiton & Co., Ltd.	Agitators
Gibbons Bros., Ltd.	Shell and tube-heat exchangers
English Electric Co.	Electric motors and switchgear
Dunford & Elliott Process Engineering, Ltd.	Rotary louvre pryers
Petrocarbon Developments	High-purity nitrogen plant

[49] *Chemical and Engineering News*, July 31, 1961.
[50] *Ibid.*
[51] *New York Times*, May 17, 1964.
[52] P. Zentner, *East-West Trade: A Practical Guide to Selling in Eastern Europe* (London: Max Parrish, 1967), p. 78.

Purchase of Japanese Kanekalon and Acrylonitrile Plants

The Soviet-Japanese trade agreement of March 1959 included provision for Soviet purchase of technology and a production plant for Kanekalon, a Japanese-developed synthetic fiber based on acryl and blended with 60 percent polyvinyl acetate and 40 percent acrylonitrile. For a total purchase price of $30 million the Soviets received patent rights, engineering data, and plant equipment to produce 30 tons of Kanekalon and 15 tons of acrylonitrile daily. This amount was apportioned three-quarters to the Kanekalon and one-quarter to the acrylonitrile, the former being supplied by Kanegafuchi Chemical Company and the latter by Toyo Koatsu Industries. Machinery came from several Japanese companies: filament spinning equipment from Kawasaki Aircraft; instrumentation from Yokogawa Electric; and electric motors from Tachikawa and Toshiba. It is notable that the capacity of the plant was large by Japanese standards; payment terms provided for 20 percent down and the balance over five years.[53] The agreement included the necessary training of Russian engineers and technicians in Japan.[54]

Several years later, in 1965, it was reported that the Asahi Chemical Company in Tokyo had sold the Soviets "the world's largest acrylonitrile monomer manufacturing plant," at a cost of $25 million.[55]

The other half of the Soviet acrylic fiber capacity has come from Courtaulds, Ltd., in the United Kingdom. In April 1959 Courtaulds concluded a $28 million contract for the construction of a complete acrylic fiber plant and related supply of process technology and technical assistance. This single plant doubled Soviet 1960 acrylic fiber production.[56]

WESTERN ASSISTANCE TO THE PULP AND PAPER INDUSTRY

In 1930 the Soviet Union had a shortage of paper and wood pulp and both were imported in substantial quantities; pulp and papermaking machinery was not produced in the Soviet Union until after 1932.[57] The large pulp and paper plants built in the Soviet Union before 1930 were with complete American equipment and technical assistance. The Balakhna plant, with a capacity of 88,200 tons of pulp and 145,000 tons of paper including 133,000 tons of newsprint, started operation in 1928; a second section was activated in 1930. All equipment—General Electric control units and Bagley Sewall papermaking

[53] *The Oriental Economist* (Tokyo), October 1960, p. 555.
[54] *Chemical and Engineering News*, July 31, 1961.
[55] *Los Angeles Times*, August 31, 1965.
[56] *Chemical and Engineering News*, July 31, 1961. See also R. W. Moncrieff, *Man-Made Fibres* (New York: Wiley, 1963), p. 695.
[57] *Za Industrializatsiiu* (Moscow), February 21, 1931.

equipment—was imported. The Siaz plant started operating in 1930 with a capacity of 144,000 tons of pulp per year, again with completely imported equipment, part from Norway and part from the United States, including Thorne bleaching towers.[58] The Kondopoga plant started its first section in 1930, and foreign technical assistance and equipment for this plant was so extensive that American foremen supervised the mill as late as October 1933.[59]

Plants built in the Soviet Union after 1933 and before World War II used domestic duplicates of foreign equipment, particularly the Fourdrinier machine; some outside assistance was given during the Lend Lease era, when $367,000 worth of pulp and paper industry machinery was shipped to the Soviet Union.

Table 15-1. ORIGIN OF SOVIET PAPER, BOARD AND PULP CAPACITY AS OF 1958

Metric Tons			
Origin	*Paper*	*Board*	*Pulp*
Russia (pre-1917)	247,800	8,200	91,000
Soviet Union (1917-58)	509,720	26,500	977,750
Manchuria (reparations)	13,000	—	33,000
Baltic States (occupation)	110,500	—	252,000
Finland (occupation)	119,700	45,000	417,000
South Sakhalin (occupation) (Karafuto)	1,277,000	—	2,492,000
Total (1958)	2,277,720	79,700	4,262,750

Source: Pulp, Paper and Board Bills: Union of Soviet Socialist Republics, (New York: American Paper and Pulp Association, April 1959), p. 6.

Note: Excludes East German reparations and Lend Lease equipment.

Although these mills provided sizable additions to Russian pulp and paper capacity before and during World War II, the extraordinary increment of capacity came after Soviet occupation of Finland, the Baltic States, and Karafuto (South Sakhalin), with lesser increments provided by equipment removals from Manchuria and East Germany. In 1958 Soviet sulfite, sulfate, and mechanical pulp capacity totaled 4,262,750 metric tons, of which 91,000 metric tons was prerevolutionary capacity and 894,750 metric tons built in the Soviet period. The balance, i.e., 75 percent of capacity, was from Finnish, Baltic, and Karafuto mills.

A total of 252,000 metric tons of pulp capacity and 110,500 metric tons of paper capacity was added by mills in Lithuania, Latvia, and Estonia. In Lithuania the Soviets gained the 70,000-ton sulfite pulp mill at Klaipeda; in

[58] Amtorg, *Economic Review of the Soviet Union*, V, 10 (May 1930), 210.
[59] U.S. State Dept. Decimal File, 861.5017/Living Conditions/726.

Latvia the Sloka mill, founded in 1886, provides a capacity of 60,000 tons of sulfite pulp and 50,000 tons of paper. Two smaller pulp mills have contributed another 25,000 tons to Soviet capacity. In Estonia the Soviets have the use of four mills: the Tallin mill, founded in 1890, with an annual capacity for 3000 tons of paper and 77,000 tons of mechanical and sulfite pulp; the Kero mill, another large mill with a capacity for 40,000 tons of sulfate pulp and 16,000 tons of paper; and the Turi and Koil mills, each with a capacity for 8000 tons of paper (the Turi mill also has a 5000-ton sulfite pulp capacity).

Former Finnish mills are the Enso (30,000 tons board and 80,000 tons sulfite pulp capacity), and the Kexholm, on Lake Ladoga, with a capacity of 100,000 tons of bleached and unbleached pulp; the Sovietskii, Vyborg, Lyaskelya, Pitkyaranta, Kharlu, and Souyarvi also are former Finnish mills making Finland's contribution to Soviet pulp and paper capacity 417,000 and 119,700 metric tons, respectively. The Souyarvi mill has a 15,000-ton board capacity, making a total of 45,000 tons (with the Enso board capacity) obtained from Finland.

Over one-half ot the total Japanese production of pulp wood between 1935 and 1945 was from Karafuto, the Japanese half of the Sakhalin peninsula.[60] These wood pulp facilities, mainly chemical pulp processes—sulfite pulp and kraft pulp—were ceded to the Soviet Union at the end of World War II and included nearly all Japanese productive facilities in these types. The significant contribution of these former Japanese facilities to Soviet pulp and paper capacity is indicated in Table 15-2. No less than 1.40 million tons capacity of sulfite pulp, 1.09 million tons of mechanical pulp, and 1.27 million tons of paper capacity were transferred to the Soviet Union.

The Manchurian pulp and paper industry was removed on a selective basis to the Soviet Union. One plant, the Manchurian soya bean stem pulp mill, was removed completely, and according to T. A. Rendricks, a U.S. Army inspection officer, "This plant was more completely stripped than any I have seen to date."[61] The mill produced a high-grade pulp from reeds growing on the banks of the Liao, Yalu, and Sungari rivers as well as a staple fiber from soya bean stalks by a company-developed process. Capacity was 15,000 tons of kraft pulp and 10,000 tons of paper per year, and equipment consisted of shredders, cooking and reagents tanks, separators, mixers, and storage tanks.[62] "Absolutely everything was removed by the Soviets except built-in installations, namely cooking tanks, reagent tanks, drying furnaces, separation tanks, and

[60] Based on R. Seidl, *The Wood Pulp Industry of Japan* (Tokyo: SCAP [Supreme Command Allied Forces in Pacific] General Headquarters, Natural Resources Section, September 1946), Report no. 56.

[61] Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States*, (Washington, July 1946).

[62] *Ibid.*

Table 15-2 JAPANESE PULP AND PAPER MILLS ON SAKHALIN (KARAFUTO) TAKEN OVER BY THE SOVIET UNION IN 1945

			CAPACITY IN METRIC TONS				
			PULP			*MECHANICAL*	
Mill	*Location*	*Built*	*Sulfite*	*Sulfate*	*Mechanical*	*Paper*	*Board*
Korsakov	Otomari	1914	140,000	—	—	—	—
Yuzhno Sakhalinsk	Toyohara	1917	280,000	—	—	25,000 kraft	—
Dolinsk	Ochiai	1917	280,000	—	—	264,000 kraft	—
Kholmsk	Maoka	1919	—	—	—	240,000	—
Tomari	Tomarioru	1915	140,000	—	140,000 (rayon)	20,000	—
Chekhov	Noda	1922	140,000	—	—	59,000	—
Uglegorsk	Esutoru	1925	140,000	—	268,000	388,000	—
Makarov	Shirutoru	1927	280,000	—	204,000	281,000	—
Poronaisk	Shikuka	1935	200,000	—	280,000 (rayon)	—	—
TOTALS			1,600,000	—	892,000	1,277,000	—

Source: Pulp, Paper and Board Mills: Union of Soviet Socialist Republics, American Paper and Pulp Association, April 1959; *Note:* Excludes East German reparations and Lend Lease equipment.

bases for heavy lathes," according to Rendricks. Dismantling began on September 28, 1945, and the last shipment was made on November 15, 1945.[63]

The Nippon-Manshu pulp manufacturing plant at Tunghua, with an annual pulp capacity of 18,000 metric tons, also was completely removed to the Soviet Union,[64] as was the Yaluchiang paper mill at Antung with a capacity of 3000 tons of printing paper per year.[65]

Other plants were selectively removed. The Shinseimei paper plant at Chinchow lost five carloads of paper felts, conveyer belts, and electric motors,[66] while the Kanegafuchi Paper Company lost only 10 percent of capacity[67] and the Chihua Paper Company was not disturbed at all.[68]

Removals from Germany in this industrial sector consisted only of paper plants. The most important removal was the Leipziger Chromo- und Kunstdruckpapierfabrik vorm. Gustav Najork in Leipzig. About 27 plants in Saxony and

[63] *Ibid.*
[64] *Ibid.*, p. 231.
[65] *Ibid.*, p. 231.
[66] *Ibid.*, p. 227.
[67] *Ibid.*, p. 231.
[68] *Ibid.*

another dozen in Thuringia, Brandenburg, and Mecklenburg were also removed to the Soviet Union.

Considerable equipment has been supplied from Finland for the woodworking and paper-manufacturing industries. For example, in the 1956 trade agreement it was agreed that Finland would supply three paperboard-making machines and four papermaking machines, in addition to two plants for the manufacture of sulfate cellulose. This was in addition to a large quantity of pumps and fittings. The Tampella firm, as part of this agreement, received an order from the Soviet Union "for machinery for a semicellulose plant and a cardboard factory with a daily capacity of 200 tons for delivery in 1959. The cellulose plant will use reeds as raw material."[69] In 1962 the Tampella firm built another corrugated cardboard mill in the Soviet Union with a capacity of 300,000 tons per annum.[70] It was also reported:

> A/B Defibrator, Stockholm, has obtained an order from the Soviet Union for Kr32 million (£2,200,000) worth of machinery and equipment for making hardboard. Delivery is to take place by the end of 1958. The company has previously sold fiberboard machinery to the Soviet Union.[71]

In 1958 the West German firm of Himmelheber contracted to install in the U.S.S.R. several plants based on the Behr process of manufacture of fiberboard; these were of 50,100 tons daily capacity.[72]

By combining the capacity originating in Japan, Manchuria, Finland, and the Baltic States we arrive at the conclusion that only between one-quarter and one-third of Soviet pulp, board, and paper capacity in 1960 was actually built by the Soviets, either with or without foreign technical assistance. In 1960 only 22.4 percent of papermaking capacity had been built in the Soviet era in the Soviet Union; another 10.9 percent had been built in Russia before the Revolution; the balance (66.7 percent) came from postwar Soviet acquisition of facilities in the Baltic States, Finland, and Japanese Karafuto. (See Table 15-3.)

In pulp-making capacity, we find that only 22.9 percent was built in the Soviet Union during the Soviet era, and only 2.1 percent of 1960 capacity originated in prerevolutionary Russia; no less than 75 percent of pulp-making capacity came from Soviet acquisitions in Finland, the Baltic States, and Karafuto.

[69] *East-West Commerce*, IV, 12 (December 9, 1957), 4.

[70] *Fortune*, August 1963, p. 80.

[71] *East-West Commerce*, IV, 6 (June 28, 1957), 11.

[72] U.S. Dept. of Agriculture, *Forestry and Forest Industry in the U.S.S.R.*, Report of a Technical Study Group (Washington, March 1961), p. 56. Also see pp. 56-57 for use of Western equipment in the manufacture of fiberboard.
Alexis J. Panshin of Yale University concluded on the basis of his 1958 tour that in the sawmill, plywood, and pulp and paper plants, "all the major pieces of equipment were either of foreign make or obvious copies." Letter to author, February 19, 1968.

Table 15-3 ORIGINS OF SOVIET PAPER, BOARD, AND PAPER CAPACITY IN 1960

	Percentage Built in Soviet era	*Percentage Built in Tsarist era*	*Percentage from occupation*	*Total*
Paper	22.4	10.9	66.7	100.0
Board	33.3	10.2	56.5	100.0
Pulp	22.9	2.1	75.0	100.0

Source: Table 15-1.

In board-making capacity, about one-third had been built in the Soviet Union, primarily with Western technical assistance, and 10.2 percent was inherited by the Soviets from prerevolutionary mills. Over one-half, i.e., 56.5 percent, of board-making capacity came from Soviet acquisitions in Finland and the Baltic States.

Therefore it may be seen that as of 1960 a relatively small portion of Soviet capacity in this industry had been built in the U.S.S.R. during the Soviet era—and even this with extensive foreign technical assistance.

The 1960s saw the beginning of the construction of a gigantic wood-processing combine at Bratsk in Siberia. The capacity of this combine increased by a factor of two Soviet rayon pulp output, and by 300,000 tons (or six times) the amount of paper-board production. The combine has associated sawmills, a furniture plant, a hard-board mill and various wood chemistry plants.[73] The rayon cellulose plant utilizes equipment from the EMW firm of Karlstadt, Sweden; the carton manufacturing equipment was installed by Tampella of Finland.[74] The central instrumentation for the pulp plant was provided by A/B Max Sievert of Stockholm, Sweden; this company supplied installations as built by Leeds and Northrup and the Foxboro Company (Sievert is the manufacturing licensee and agent in Sweden for the Leeds and Northrup Company).[75] The wood pulp plant near Irkutsk has equipment from Rauma Repola Oy of Finland.[76]

Thus it can be seen that the Soviet pulp and paper industry and the textile industry utilize large proportions of imported machinery. No innovation was noted in textile production in the fifties and sixties by expert delegations from the United States and India, and Russian-made equipment then consisted of duplicates of Western equipment—primarily U.S., U.K., and German. This duplication apparently was not altogether successful, as large new installations were made in the 1960s by Italian and American companies.

[73] *Metsalehti* (Helsinki), March 3, 1959.
[74] *Chemical Week*, (New York), September 24, 1966, p. 39.
[75] Letter to author from Leeds and Northrup Company, Philadelphia, August 14, 1967.
[76] *Chemical Week*, September 24, 1966, p. 39.

It seems clear that all developments and equipment in synthetic fiber have originated in the West, despite significant Soviet research efforts in this field. Production of Nylon 6, particularly the production of caprolactum, is dependent on Western equipment and processes from the United Kingdom, Germany, and Japan. Lavsan utilizes German and Czechoslovak machinery; the largest Lavsan unit was built by a British consortium (Polyspinners, Ltd.). Acryl fiber technology and capacity is from Japan and the United Kingdom.

In pulp and paper we find an unusual situation in that as of 1960 two-thirds of the Soviet paper capacity, over one-half of board capacity, and three-quarters of pulp capacity originated in countries occupied by Soviet forces in the forties—the Baltic States, parts of Finland, and particularly Japanese Karafuto. The new Siberian wood processing combines are heavily dependent on Swedish, Finnish, and, indirectly, American technology and equipment. There has been no significant innovation in this group of industries.

CHAPTER SIXTEEN

Western Assistance to the Motor Vehicle and Agricultural Equipment Industries

THE MOTOR VEHICLE INDUSTRY

The Soviet motor vehicle manufacturing industry has a history of production of a very limited range of utilitarian vehicles in a few large plants built with considerable Western technical assistance and equipment. These few plants manufacture most of their own components but export some components to vehicle assembly plants in other areas of the Soviet Union.

There is a high degree of integration between military and civilian models, partly because military and civilian vehicles require a large proportion of similar parts and partly because of the need to maintain unification of military and civilian design to assist model changeover in case of war. This unification of military and civilian automobile design has been described by A. N. Lagovskii:

> The fewer design changes between the old and the new type of product, the easier and more rapidly the enterprise will shift to new production. If, for example, chassis, motors, and other parts of a motor vehicle of a civilian model are used for a military motor vehicle, of course the shift to the mass production of the military motor vehicle will occur considerably faster and more easily than if the design of all the main parts were different.[1]

To achieve unification, precise standards are imposed on Soviet civilian vehicles to enable their conversion in wartime, and as Lagovskii points out, part of current "civilian" production of tractors and motor vehicles may be used directly as military vehicles.[2]

Quite apart from the "unification of design" aspect described by Lagovskii, the Soviets produce both military and civilian vehicles in the same plants, continuing a practice begun in the early 1930s. Accordingly, claims that U.S. technical assistance to the Soviet automobile industry has no military potential, are not founded on substance.[3]

[1] A. N. Lagovskii, *Strategiia i ekonomika*, 2d edition (Moscow, 1961), p. 192.

[2] *Ibid.*, pp. 192-93.

[3] U.S. House of Representatives, Committee on Banking and Currency, *The Fiat-Soviet Auto Plant and Communist Economic Reforms*, 89th Congress, 2d session (Washington, 1967), p. 42. See chapter 27 for military vehicle production. The installation is commonly known as the Fiat-Soviet auto plant, although the Fiat technical component is negligible compared with that of U.S. equipment supplies.

Western assistance to this industry may best be described by examining motor vehicle plants separately in approximate order of size and by outlining the Western contribution to the technical design and production facilities of each.

Table 16-1 lists in descending order of size the major Soviet motor vehicle plants planned or in operation as of 1971, together with approximate output and the main features of Western origin; Table 27-1 (see p. 384) identifies the civilian and military models produced by these plants.

Table 16-1 WESTERN ORIGINS OF AUTOMOBILE AND TRUCK PLANTS IN THE SOVIET UNION AS OF 1971

Plant	*Model Designation*	*Approximate Annual Output*	*Summary of Western technical assistance*
Volgograd (Togliatti)	VAZ	600,000 (1974 projected)	Three-quarters of equipment [a] from United States; Fiat technical assistance in construction and operation
Moscow Small Auto	MZMA	300,000	Original Ford Motor Co. equipment (1930), replaced by German Opel (1945) and Renault (1966)
Gorki	GAZ	220,000	Ford Motor Co. (1930); Renault (1970); Gleason Works (1970)
Kama	(KAZ?)	100,000 [b] (projected)	Design and engineering by Renault (France). Equipment from a consortium of U.S. firms: licenses applied for (1971) by Satra Corp., Swindell-Dressler, Ex-Cell-O Corp., Cross Company, and (unconfirmed) Giffels Associates, Inc.
im. Likhachev	ZIL	100,000	U.S. equipment (mostly prewar)
Urals (Miass)	URAL	55,000	A. J. Brandt, Inc. (1930 plant moved from Moscow in 1941)
Odessa } assembly	OdAZ	21,500	General Motors (1945)
Lvov } plants	LAZ		
Minsk	MAZ	14,400	German technical assistance (1945-46)
Yaroslavl	YaAZ	8,000	Hercules Motor Co. (1930)

Sources: See Sutton II, Chapter 11; *Kratkii avtomobil'nyi spravochnik*, 5th edition (Moscow, 1968); *Automotive Industries* (Philadelphia), January 1, 1958; U.S. House of Representatives, Committee on Banking and Currency, *The Fiat-Soviet Auto Plant and Communist Economic Reforms*, 89th Congress, 2d sess. (Washington, 1967); Leo Heiman, "In the Soviet Arsenal," *Ordnance*, January-February 1968 (Washington: American Ordnance Association, 1968); U.S. Senate, Committee on Foreign Relations, *East-West Trade: A Compilation of Views of Businessmen, Bankers, and Academic Experts*, 88th Congress, 2d sess., November 1964 (Washington, 1964); *Metalworking News*, August 16, 1971.

[a] *Forbes* (October 1, 1966) states three-quarters; the figure may be somewhat less, but is certainly over one-half.

[b] Will be the largest plant in the world (covering 36 sq. mi.), and its output of heavy trucks will be greater than that of all U.S. manufacturers combined. Financing by Chase Manhattan Bank and the Export-Import Bank.

Lend Lease provided a significant contribution to the Russian vehicle stock in World War II and provided the basic designs for postwar domestic production. Vehicles supplied under Lend Lease included 43,728 Jeeps and 3510 Jeep-Amphibians; truck shipments included 25,564 vehicles of three-quarter ton, 218,664 of one and one-half ton, 182,938 of two and one-half ton, 586 of two and one-half ton amphibian, and 814 of five ton. In addition, 2784 special-purpose trucks, 792 Mack ten-ton cargo trucks, 1938 tractor trailers, and 2000 spare engines were sent.[4]

The report of the British delegation visiting the Central Automobile and Engine Research Institute in 1963 suggests that at that time there was a continued reliance on the West, but for design and equipment rather than assembled vehicles. The delegation reported:

> The first installation which we were shown was two single-cylinder engines on which combustion chamber research was carried out; these were old U.S. Universal crankcases, presumably supplied on Lend Lease during the War, and which had obviously not been used for some time. The lack of up-to-date instrumentation was noticeable, the only instrument other than normal thermometers and pressure gauges being an original type Farnborough indicator.[5]

The delegation found no evidence that the extensive staff at the institute, although obviously capable, was doing any large amount of development work. The numerous questions asked of the delegation related to Western experience —for example, on the V-6 versus the in-line six layout—and this, to the delegation, suggested an absence of worthwhile indigenous development work.

German Automotive Plants Removed to the Soviet Union

During the latter part of World War II much of the German automotive industry moved eastward into the area later to be occupied by the Soviet Union, while the second largest auto manufacturer in Germany, Auto-Union A.G., with six prewar plants dating back to 1932, was already located in the Chemnitz and Zwickau areas. Before the war the six Auto-Union plants had produced and assembled the Wanderer automobile, the Audi automobile, Horch army cars and bodies, DKW motorcycles, and automobile motors and various equipment for the automobile industry. It is noteworthy that Auto-Union and Opel, also partly located in the Soviet Zone, were more self-contained than other German vehicle manufacturers and met most of their own requirements for components and accessories. Although Auto-Union was the only German automobile

[4] U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), p. 19.

[5] Confederation of British Industry, "Visit to the Central Research Automobile and Engine Institute, 12th October 1963"; typescript supplied to the writer.

producer to produce automobiles during the war, the firm did make a sizable percentage of tanks and army vehicles (Table 16-2) and in 1944 was the only producer of engines (HL 230) for Tiger and Panther tanks.

Table 16-2 MODELS PRODUCED BY AUTO-UNION A.G. IN 1945 AS PERCENTAGE OF TOTAL GERMAN PRODUCTION

Model	*Maximum monthly production*	*Percentage of total German production of this model*
Full-track truck (R.S.O.)	600	50
1½-ton Steyr truck	750	40
3-ton half-truck	400	50
Steyr motor	1650	45
Steyr gear-box	1300	40
3-ton half-track motor (HL 42)	1500	60
Tank engine (HL 230) for Tiger & Panther	800	50
Army automobile	1000	30
Light motorcycle (RT 125)	600	100
Heavy motorcycle (NZ 250)	1650	100

Source: U.S. Strategic Bombing Survey, *Auto-Union A.G., Chemnitz and Zwickau, Germany*, January 1947 edition, (Washington: Munitions Division, 1947), Report No. 84, p. 5. Date of Survey: June 10-12, 1945.

The Siegmar works near Chemnitz, which manufactured tank engines, was heavily damaged during the later phases of the war. But because all equipment except twenty machine tools, i.e., 4 percent of the total machine-tool stock, was repaired within ten weeks the plant was in full operation at the end of the war. It is also noteworthy that the one-and-one-half-ton Steyr truck, produced at a rate of 750 per month at the Horch plant of Auto-Union, was specially designed for Russian winter conditions in early 1942 as a result of the difficulties experienced with the German standard army truck in the 1941-42 winter campaign.[6]

When the Russians occupied Saxony in 1945, one of their first measures was to completely dismantle the Auto-Union plants and remove them to the Soviet Union.[7] When one considers that in these key plants they had acquired complete facilities to produce tank engines at a rate of 750 per month as well as a truck specially designed for Russian conditions, it is not surprising that

[6] U.S. Strategic Bombing Survey, *Auto-Union A.G., Chemnitz and Zwickau, Germany*, 2d edition (Washington: Munitions Division, 1947), Report no. 84. (Dates of survey: June 10-12, 1945).

[7] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), pp. 101-2; see also *Germany, 1945-1954*, (Cologne: Boas International Publishing Co., [1954?]).

Soviet armored personnel carriers to this day bear a distinct resemblance to German World War II armored personnel vehicles.[8]

Full information is not available on the movement of the Leipzig plant owned by Bussing-National Automobil A.G., a manufacturer of armored cars, or of the firm's dispersal plants in the Saxony area; however, it was reported that the Bussing-National Chemnitz plant was 30 percent removed to the Soviet Union.[9] Three BMW (Bayerische Motorenwerke A.G.) plants were dismantled by the Russians and reportedly were completely shipped to the Soviet Union[10] (see Table 16-3). And the Adam Opel A.G. truck plant at Brandenburg, with a 1944 production of 20,000 three-ton Opel trucks and a capability to produce its own parts (with the exception of sheet metal, rear axle gears, and brake cylinders) was completely removed to the Soviet Union.[11]

In the Soviet sector of Berlin, the Ambi-Budd Presswerk A.G., a subsidiary of the U.S. Budd Company, was the largest single body producer in Germany before World War II. This plant completely escaped bomb damage. Although its equipment was dismantled for transportation (including tools and pressing machines for German passenger automobiles such as the Ford Taunus, the Hanomag 1.3 litre, and the Adler Trumpf-junior), it was not removed to Russia. Instead, "The machines, tools and pressed parts, carefully packed and numbered ... lay for years on the grounds of the works under the guard of a small section of Russian soldiers."[12] Apparently the Soviets had no requirement for equipment to manufacture automobile bodies and no reason to invest in transportation of the 300 specialized machine tools to the Soviet Union. Ultimately, the Ford Company at Cologne negotiated the return of the tools for the Taunus model to the Rhine plant of the Ford Motor Company, and Hanomag succeeded in doing the same for its own equipment.[13]

Other German automotive producers were completely or partly removed to the Soviet Union, including Vomag Betriebs A.G. of Plauen in Saxony, a manufacturer of trucks and diesel engines, and the Auto-Räder plant at Ronneburg in Thuringia, with 550 machine tools for the production of wheels for automobiles and military vehicles. The Bastert Chemnitz plant, a manufacturer of cylinders, was completely removed to the Soviet Union; the Auto-Bark motor plant at Dresden was completely removed; and the truck producer Phanomen-Werke at Zittau was partly removed to the Soviet Union.[14]

[8] *Ordnance* (American Ordnance Association, Washington) January-February 1968, pp. 372-73.
[9] Harmssen, *op. cit.* n.7, pp. 101-2, no. 31.
[10] Harmssen, *op. cit.*, pp. 101-2, nos. 78,79, and 80. However, *Germany, 1945-1954* (*op. cit.* n. 7, p. 216) reports that the BMW plant was later reconstructed sufficiently to build vehicles for the Red Army.
[11] Harmssen, *op. cit.* n. 7, pp. 101-2, no. 105.
[12] *Germany, 1945-1954, op. cit.* n. 7, p. 216.
[13] *Ibid.*
[14] Harmssen, *op. cit.* n. 7.

Table 16-3 SUMMARY OF GERMAN AUTOMOBILE PLANTS MOVED TO THE SOVIET UNION IN 1944-50

Name of plant in Germany	*Percentage removed from Germany to the U.S.S.R.*	*Output, 1939-45*
Auto-Union A.G. Chemnitz Plant No. 1	95	Caterpillar trucks (RSO)-5650
Auto-Union A.G. Chemnitz Plant No. 2	100	1½-ton truck – 2000 HL 230 tank engine – 4519
Auto-Union A.G. Siegmar-Schönau plant	100	HL 230 tank engine – 4519
Auto-Union A.G. Audi plant	100	One-half-ton truck – 7787
Auto-Union A.G. Horch plant at Zwickau	100	Steyr motor – 30,000 Steyr gear box – 24,500
Auto-Union A.G. Zschopau plant	100	Army motorcycles
Auto-Union A.G. Scharfenstein plant	100	Parts and electrical equipment
Auto-Union A.G. Burkhardtsdorf branch plant (Fa. Max Pfau & Gustav Frisch)	100	
Bussing-National Automobil A.G. press plant, Chemnitz	30	Armored cars
BMW (Bayerische Motorenwerke A.G.), Dürerhof (Eisenach plant)	100 reported	
BMW Diedorf plant	but possibly	Army vehicles
BMW Treffurt plant	less	
Adam Opel A.G. truck plant, Brandenburg	100	Trucks

Sources: G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), pp. 101-2; *Germany, 1945-1954* (Cologne: Boas International Publishing Co. [1954?], pp. 216, 422; U.S. Strategic Bombing Survey, *Aircraft Division Industry Report*, 2d edition (Washington, 1947), Report no. 4.

In Austria the automobile plants at Graz and Steyr were almost completely dismantled and removed.[15] These plants produced three models of the Steyr Type A one and one-half ton truck. These, complete with an eight-cylinder V-type engine, were produced at the rate of 50 to 60 per day. The Ford plant in Budapest, Hungary, was not removed but operated on Soviet account.[16]

Some of these removals can be traced directly to Russian locations through subsequent production. These aspects will now be considered in more detail.

[15] F. Nemschak, *Ten Years of Austrian Economic Development, 1945-1955* (Vienna: Association of Austrian Industrialists, 1955).

[16] U.S. Foreign Economic Administration, *U.S. Technical Industrial Disarmament Committee to Study the Post-Surrender Treatment of the German Automotive Industry* (TIDC Project no. 12, Washington, July 1945), p. 23.

Origins of the Moskvich Passenger Automobile

The Moscow Small Car plant, built by the Ford Motor Company as an assembly plant for parts manufactured in the United States and later at the Ford-built Gorki plant, was brought into production in 1940 but produced only a few model KIM-10 light cars before World War II. In 1947 the plant reopened producing a single model, the Moskvich 401, through 1956. That model was replaced by the Moskvich 402. The 407 came into production in 1958 and in turn was replaced by the 408 in 1964.

The 1947 Moskvich 401 was, in effect, the 1939 German Opel Kadett with a few minor differences.[17] *Product Engineering*[18] concluded that the Moskvich 401 "bears a more than striking appearance to the prewar German Opel Kadett"—the instrument panel "is identical to the 1939 car," the four-cylinder engine has the "same piston displacement, bore, stroke, and compression ratio," and the same single-plate dry clutch, four-speed gear box, Dubonnet system front-wheel suspension, and four-wheel hydraulic brakes (derived from early Chevrolet models).

Differences from the original Opel were a Russian-made carburetor (K-25A), which "closely resembles a Carter down draft unit"; the electrical system, "similar in appearance to the Bosch design"; and a six-volt "Dutch-made battery."[19] The only apparently unique, noncopied feature was a device for facilitating brake adjustment.[20]

In 1963 the Moscow Small Car plant was visited by a delegation from the Confederation of British Industry, which reported an annual production of 80,000 cars produced by 15,000 workers in a plant of 160,000 square meters. Forge and press work was done in-plant, but castings were bought from supplier organizations. The delegation noted: "The layout of the plant and the tooling are not greatly different from Western European plants, but space, ventilation, and lighting are well below U.S. standards."[21]

In October 1966 an agreement was made with the French state-owned automobile manufacturers Renault and Peugeot to place French technical assistance and automobile know-how at the disposal of the Moskvich plant. As a result of this $50 million agreement, the plant increased its output capability

[17] A. F. Andzonov, *Avtomobil' Moskvich* (Moscow, 1950).

[18] New York, November 1953, pp. 184-85.

[19] The domestic Moskvich had a 3-CT-60 battery; *Product Engineering* probably examined an export version. The Soviets typically use foreign batteries, radios, and tires on export versions, and sometimes foreign engines as well (Rover and Perkins diesels).

[20] The *Product Engineering* article has a photograph of the Moskvich; also see *Kratkii avtomobil'nyi spravochnik*, 5th edition (Moscow, 1968), pp. 41-45.

[21] Confederation of British Industry, "Visit to the Moskvitch Car Manufacturing Plant, 10th October 1963"; typescript supplied to the writer.

from 90,000 to 300,000 automobiles annually; and the Renault company retooled the plant to produce modern compact automobiles[22] by installing two new production lines.[23]

The Ford-Gorki Plant

Vehicles produced by the Gorki plant, originally built by the Ford Motor Company and originally a producer of the Ford Model A and 1934 model Ford, continued to manifest their American lineage after World War II, and the plant's original U.S. equipment continues in use to the present day.[24] Production of two trucks and the Pobeda M-20 passenger vehicle started in 1946. The first postwar trucks (GAZ 51 and GAZ 63) were almost exact duplications of U.S. Army World War II vehicles; indeed, the unusual hood design and the hubcap design on the front wheels, for example, were precise replicas. Parts were also made at Gorki for the GAZ 93 and shipped to Odessa to be assembled; GAZ 93 was a dump truck with the same engine and chassis as the GAZ 51.

The Pobeda, produced between 1946 and 1955, had obvious similarities to the U.S. Army world war passenger vehicle, and had an M-20 engine remarkably similar in construction to a Jeep engine. The GAZ 69 and GAZ 69A, produced at Gorki between 1953 and 1956 when production was shifted to Ul'yanovsk, are described by the C.I.A. as "Jeep-like vehicles" and indeed bear a resemblance to the U.S. Army Jeep.[25] The 1956 model change introduced the Volga—described as a replica of the 1954 Mercury;[26] those cars, fitted with automatic transmissions, received a single-stage torque convertor with features like those in early U.S. models.[27]

The Moscow Plant im. Likhachev

The Moscow plant im. Likhachev is the old AMO plant originally built in 1917, rebuilt by A. J. Brandt, Inc., in 1929-30[28] and expanded over the

[22] *Wall Street Journal*, October 17, 1966; and *Minneapolis Tribune*, October 1, 1966. Other interesting information concerning the negotiations and Soviet demands is contained in *Le Monde* (Paris), June 2, 1966, and *L'Express* (Paris), October 1966, pp. 10-16.

[23] *The Times* (London), February 1, 1967.

[24] U.S. Senate, Committee on Foreign Relations, *East-West Trade: A Compilation of Views of Businessmen, Bankers, and Academic Experts*, 88th Congress, 2d session, November 1964, p. 79.

[25] *The Fiat-Soviet Auto Plant..., op. cit.* n. 3.

[26] *Wall Street Journal*, May 6, 1966.

[27] *Automotive Industries* (Philadelphia), June 1, 1958, p. 61.

[28] Sutton I, pp. 248-49.

intervening years. Over time its name has been changed from AMO to the Stalin plant and then to im. Likhachev. The plant contains key equipment supplied under Lend Lease. For example, the crankshaft lathes currently in use were supplied by a U.S. firm in October 1944.[29] One or two copies of these lines were then duplicated by the Soviets in 1948-49.[30]

In the late 1950s it was reported that "Likhachjov [*sic*] does its own design and redesign and in general follows American principles in design and manufacture"; the same source suggested that the Soviet engineers were quite frank about copying, and that design lagged about three to five years behind the United States. The plant's bicycle production techniques were described as "American with Russian overtones";[31] the plant had developed the "American Tocco process" for brazing[32] and many American machines were in use, particularly in the forging shops.[33]

The Urals plant at Miass (known as Urals ZIS or ZIL) was built in 1944 and largely tooled with the A. J. Brandt equipment evacuated from the Moscow ZIS (now ZIL) plant. The plant started production with the Urals-5 light truck, utilizing an engine with specifications of the 1920 Fordson; this suggests that the original Ford Motor Company equipment supplied in the late 1920s was being used, probably supplemented by Lend Lease equipment.

Smaller plants at Ul'yanovsk and Irkutsk assemble the GAZ 69 from parts made in Moscow, although in 1960 Ul'yanovsk began its own parts production and Irkutsk and Odessa handled assembly of other vehicles—including the GAZ 51 at Irkutsk and trucks with large bodies for farm and commercial use at Odessa. Other assembly plants are Kutaisi (KAZ-150 four-ton truck), the Zhdanov bus works at Pavlovsk (PAZ-651 bus and PAZ-653 ambulance), and the Mytishchi machine works (building trucks on ZIS-150 and GAZ 51 chassis).

The Odessa Truck Assembly Plant

The Odessa truck assembly plant almost certainly originated from two Lend Lease truck assembly plants shipped from the United States to Odessa via Iran in 1945.[34]

Nearly half of the Lend Lease trucks supplied to the Soviet Union were shipped through the Persian corridor route in parts, assembled at two truck

[29] *East-West Trade ...., op. cit.* n. 24, p. 79. Contract No. W-33-008 Ord 586, Requisition R-30048-30048A1.

[30] *Ibid.*

[31] *Product Engineering*, July 14, 1958.

[32] *Ibid.*

[33] *Automotive Industries*, January 1, 1958.

[34] This is inferred from evidence presented in this section; the writer does not have positive identification.

assembly plants in Iran, and forwarded by road as complete vehicles with Russian drivers to the U.S.S.R. About 409,000 trucks were thus sent to the U.S.S.R., equal to seven and a half months of U.S. production at the peak wartime period. The two Truck Assembly Plants (TAPs), at Andimeshk and Khorramshahr, were designed by General Motors and consisted of bolted structural framework on poured concrete floors; they were equipped with cranes, tractors, trailers, and battery chargers. Their output was 50 trucks each per eight-hour shift or about 168,000 vehicles per year from both plants if operated on a three-shift basis—as they would be in the U.S.S.R. Under authorization of November 1944,[35] these two plants were dismantled and shipped to Odessa.[36]

Between 1948 and 1955 the Odessa assembly plant turned out the GAZ 93 dump truck with a GAZ 51 six-cylinder gasoline engine of 70 horsepower, followed by a modified version model GAZ 93S. Since 1960 Odessa has been a major trailer manufacturing plant.[37] The GAZ 93 and 93A have a basic resemblance to the Lend Lease U.S. Army two-and-one-half-ton cargo trucks.

U.S. and Italian Assistance to Volgograd (VAZ)[38]

The Volgograd automobile plant, built between 1968 and 1971, has a capacity of 600,000 automobiles per year, three times more than the Ford-built Gorki plant which was the largest auto plant in the U.S.S.R. until Volgograd came into production.

Although the plant is described in contemporary Western literature as the "Togliatti plant" and the "Fiat-Soviet auto plant," and indeed does produce a version of the Fiat 124 saloon, the core of the technology is American, and three-quarters of the equipment,[39] including the key transfer lines and automatics, came from the United States. What is remarkable is that a plant with such obvious military potential[40] could have been equipped from the United States in the middle of the Vietnamese war, which has been largely supplied by the Soviets. Had there not been strong Congressional objections, it is likely that even the financing would have come from the United States Export-Import Bank.

[35] Memorandum 28, November 1944, AG 400.3295, HQ Amet.

[36] T. H. Vail Motter, *The Persian Corridor and Aid to Russia*, (Washington: Department of the Army, Office of the Chief of Military History, 1952), pp. 281, 432, and 494.

[37] Trailers OdAZ Models 885, 784, 794, 832, 795, 935, 822, and 857 B for cattle and the refrigerated trailer Model 826. See *Kratkii* ...., *op. cit.* n. 20, pp. 307-50.

[38] The best summary of this project, the largest single unit of assistance in the 50 years since the Bolshevik Revolution, is *Fiat-Soviet Auto Plant* ..., *op. cit.* n. 3. This document also reprints many of the more informative journal articles written while the contract was in negotiating stages. The Italian economic daily *24 Ore*, May 5 and May 7, 1966, also has details.

[39] See note to Table 16-1.

[40] See chapter 27.

The construction contract, awarded to Fiat S.p.a., included an engineering fee of $65 million;[41] in 1970 at peak construction, 1000 Italian engineers and technicians were employed on building the Volgograd plant.[42]

The agreement between Fiat and the Soviet Government includes:

> The supply of drawing and engineering data for two automobile models, substantially similar to the Fiat types of current production, but with the modifications required by the particular climatic and road conditions of the country;
> The supply of a complete manufacturing plant project, with the definition of the machine tools, toolings, control apparatus, etc;
> The supply of the necessary know-how, personnel training, plant start-up assistance, and other similar services.[43]

About three-quarters of the production equipment in Volgograd, including all key machine tools and transfer lines, came from the United States. Although the tooling and fixtures were designed by Fiat, over $50 million worth of special equipment came from U.S. suppliers. This included:

a) foundry machines and heat-treating equipment, mainly flask and core molding machines to produce cast iron and aluminum parts and continuous heat-treating furnaces;
b) transfer lines for engine parts, including four lines for pistons, lathes, and grinding machines for engine crankshafts, and boring and honing machines for cylinder linings and shaft housings;
c) transfer lines and machines for other components, including transfer lines for machining of differential carriers and housing, automatic lathes, machine tools for production of gears, transmission sliding sleeves, splined shafts, and hubs;
d) machines for body parts, including body panel presses, sheet straighteners, parts for painting installations, and upholstery processing equipment;
e) materials handling, maintenance, and inspection equipment consisting of overhead twin rail Webb-type conveyers, assembly and storage lines, special tool sharpeners for automatic machines, and inspection devices including surface roughness measuring instruments for paint, fabric, and plastic materials.

Some of the equipment was on current U.S. Export Control and CoCom lists requiring clearance and changing of control regulations.

U.S. equipment was a necessity (despite talk of possible European supply and the fact that the Soviets had made elementary automatic production lines

[41] *Ibid.*, p. 21.
[42] *The Times* (London), February 1, 1967.
[43] Letter from Fiat S.p.a. to writer, May 31, 1967.

as far back as 1940[44]) because U.S. equipment has proved to be far more efficient and productive than European, and Soviet automatic lines have been plagued with problems and deficiencies.[45] Fiat plants in Italy are themselves largely equipped with U.S. equipment—a measure of the necessity of U.S. equipment for the VAZ plant.

Table 16-4 EXPORT OF U.S. MACHINERY FOR THE VOLGOGRAD AUTOMOBILE PLANT

Year and quarter	*Description of industrial machinery*		*Approved licenses (Million)*
1968			
2d quarter	Gear manufacturing and testing	$9.2	$15.6
	Molding and casting line foundry equipment	2.9	
	Crankshaft grinding machinery	2.3	
3d quarter	Automatic piston machinery	5.1	10.8
	Automatic crankshaft grinders	2.3	
	Industrial furnaces	1.3	
4th quarter	Valve grinding line	2.0	6.4
	Metal cutting machinery	1.6	
	Grinding and honing machinery	0.8	
1969			
1st quarter	Not specified	32.8	32.8
Total			$65.6 million

Source: U.S. Dept. of Commerce, *Export Control* (Quarterly Reports), 1968, 1969.

Some of the leading U.S. machine tool firms participated in supplying the equipment enumerated in Table 16-4: TRW, Inc., of Cleveland supplied steering linkages; U.S. Industries, Inc., supplied a "major portion" of the presses; Gleason Works of Rochester, New York, supplied gear cutting and heat-treating equipment; New Britain Machine Company supplied automatic lathes.[46]

Further equipment was supplied by U.S. subsidiary companies in Europe and some came directly from European firms (for example, Hawker-Siddeley Dynamics of the United Kingdom sold six industrial robots.)[47] In all, approximately 75 percent of the production equipment came from the United States

[44] U.S. Senate, *Export of Strategic Materials to the U.S.S.R. and Other Soviet Bloc Countries*, Hearing Before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws, 87th Congress, 1st session, Part 1, October 23, 1961, "Appraisal of Soviet Mechanization and Automation" in testimony by J. A. Gwyer, p. 84.

[45] *Ibid.*

[46] *Forbes*, October 1, 1966.

[47] *Schenectady Gazette*, August 6, 1969.

and about 25 percent from Italy and other countries in Europe, including U.S. subsidiary companies.[48]

In the late 1960s Soviet planners decided to build what will be the largest truck factory in the world on the Kama River. This plant will have an annual output of 100,000 multi-axle trucks, trailers, and off-the-road vehicles. It was evident from the outset that, given the absence of internal Soviet technology in the automotive industry, the design, engineering work, and key equipment for such a facility would have to come from the West. In late 1971 the plant was under construction with design and engineering work by Renault of France. A license had been issued for equipment to be supplied by a consortium of American firms: Satra Corporation of New York, Swindell-Dressler, Ex-Cell-O Corporation, Cross Company, and according to *Metalworking News* (August 16, 1971) Giffels Associates, Inc., of Detroit.[49]

TRACTORS AND AGRICULTURAL MACHINERY

A report by a technical study group of the U.S. Department of Agriculture summarized the Russian agricultural machinery position in 1959 as follows: "Machinery from the U.S.A. has been used as a pattern for Russian machinery for many years. This is evident from the designs of older machines in particular, and a few of the new machines."[50]

This official statement parallels the findings of this study for the period to 1960, although the writer was unable to find any new designs that could not be traced to some foreign, but not necessarily American, origin. (The study group was interested in U.S. machinery—not European equipment.)

Soviet tractors produced before World War II came from three plants established in the early 1930s with major U.S. technical and equipment assistance.[51] The Stalingrad tractor plant was completely built in the United States, shipped to Stalingrad, and then installed in a building also purchased in the United States. This unit, together with the Kharkov and Chelyabinsk plants, comprised the Soviet tractor industry at that time, and a considerable part of the Soviet tank industry as well. Equipment from Kharkov was evacuated and installed behind the Urals to form the Altai tractor plant which opened in 1943.

[48] There are varying reports on the percentage of U.S. equipment. See *Los Angeles Times*, August 11, 1966, and note to Table 16-1. The figures may be approximately summarized as follows: all key equipment, three-quarters of the production equipment and one-half of all equipment used in the plant and supporting operations.

[49] See p. 192.

[50] U.S. Dept. of Agriculture, Agricultural Research Service, *Farm Mechanization in the Soviet Union*, Report of a Technical Study Group (Washington, November 1959), p. 1.

[51] Sutton II, pp. 185-91.

Three postwar tractor plants were in operation by 1950, and thereafter there was no further construction. The Vladimir opened in 1944, the Lipetsk in 1947, and the Minsk plant and the Kharkov assembly plant in 1950. This was the basic structure of the Soviet tractor industry in 1960. In brief, additions to tractor capacity between 1917 and 1960 can be identified in two phases:

Phase I, 1930-33: Stalingrad (1930), Kharkov (1931), Chelyabinsk (1933); U.S. equipment and design with U.S. models.

Phase II, 1943-50: Altai (1943), Vladimir (1944), Lipetsk (1947), Minsk (1950), and Kharkov tractor assembly plant (1950); U.S. and German equipment, with U.S. (and one German) models.

These plants produced a limited range of tractors with a heavy emphasis on crawler models rather than the rubber-tired tractors more commonly used in the United States. The 1959 USDA technical delegation[52] estimated that 50 percent of the current output was in crawler models as contrasted to only 4 percent in the United States; the military implications of such a mix is obvious. These crawler models, including the heavy industrial tractors S-80 and S-100, are produced in the older plants built in Phase I in the 1930s.

In 1960 the Stalingrad plant produced the DT-54 and the DT-57 crawlers at a rate of about 110 per day.[53] Kharkov produced the DT-54 at a rate of 80 per day[54] in addition to 80 DT-20 wheeled tractors and 20 self-propelled chassis DSSH-14 using the same single-cylinder engine. Chelyabinsk concentrated on the production of S-80 and S-100 industrial models, used not only as tractors but as bulldozers and as mobile base for a wide range of equipment including cranes, excavators, and logging equipment.

The postwar tractor plants concentrated on agricultural tractors. The Altai, with prewar U.S. equipment evacuated in 1943 from Kharkov, produced 40 of the DT-54 crawlers per day; Vladimir produced 60 wheeled models per day, first the DT-24 model and after 1959 the DT-28. Lipetsk produced about 55 of the crawler KDT-35 model per day, and Minsk produced about 100 of the MTZ-5 Belarus and seven Belarus models daily.[55]

In general, the Soviet Union in 1960 produced about one-half—a very high proportion—of its tractors in crawler models and concentrated this production in two or three types, almost all production being C-100 industrial tractors or DT-54 and DT-20 agricultural tractors. The remaining models were produced in limited numbers only.

[52] U.S. Dept. of Agriculture, *op. cit.* n. 50, p. 24.

[53] *Ibid.*

[54] *SAE Journal* (New York), February 1959.

[55] *Ibid.*

The S-80 and S-100 (Caterpillar) Crawler Tractors

In 1951 two Soviet S-80 Stalinets diesel crawler tractors were captured by the United States Army in the Korean War and shipped to the United States, where they were sent to the Caterpillar Tractor Company for technical inspection and investigation. The S-80 was identified as almost identical to Caterpillar designs built in Peoria, Illinois, between February 1942 and March 1943. As 85 percent of machines in this period were sold to the U.S. Government, it is a reasonable supposition that the originals were Lend Lease tractors. The Caterpillar Company investigation concluded the following on the S-80:

> It looked like a Caterpillar tractor. It smelled like a Caterpillar tractor. It sounded like a Caterpillar tractor. It made horsepower like a Caterpillar tractor.[56]

The Caterpillar investigation provided two clearcut conclusions. First, the Soviet copy was well engineered; in fact according to Davies, "We feel this machine is the best engineered of any foreign-made tractors we know anything about."[57] The design had been completely changed over to the metric system—no small task—and the machine had been "completely reengineered" to conform to Soviet shop practice, manufacturing standard and domestically available machines and materials. Although it was concluded that the machine was roughly finished and probably noisy, Caterpillar investigators expressed a healthy respect for Soviet engineering abilities. They commented: "The whole machine bristles with engineering ingenuity."

The second major conclusion was that the Soviet engineers "were clever in not trying to improve the Caterpillar design.... By sticking to Caterpillar's design, they were able to come up with a good performing, reliable machine without the usual development bugs.[58]

Figure 16-1 illustrates some of the technical similarities of the Caterpillar D-7 and the Chelyabinsk S-80.

The metallurgical composition of the S-80 component parts varies from the original—mainly in the substitution of more readily available manganese and chrome for U.S. molybdenum specifications, and in different heat-treatment practices which probably reflect Soviet equipment and process availabilities. However, according to observers the end result is not significantly different—except that the Russian product generally has a rougher finish (except where finish is needed for functional purposes)—and tolerances are held as

[56] Lecture by J. M. Davies, director of research for Caterpillar Tractor Company, to the Society of Automotive Engineers Earthmoving Conference at Peoria, Illinois, April 10, 1952.
[57] *Ibid.*
[58] *Ibid.*

Figure 16-1 Comparison of Caterpillar D-7 and Chelyabinsk S-80

(a) TRANSMISSION CASE AND DRAWBAR



This comparison exemplifies differences in manufacturing practices; where Caterpillar used forgings, the Soviets used castings—no doubt reflecting lack of forging machines.

(b) TRANSMISSION GEAR



The Soviet gear has the same number of teeth but due to rough finish has more error in tooth spacing. Russian gear teeth are hand-finished, not machined-finished.

Figure 16-1 (cont.)

(c) TRANSMISSION SHIFT AND FORK



Possibly because the Soviet forging dies were newer, the transmission fork is a better job; Caterpillar does a little more machining.

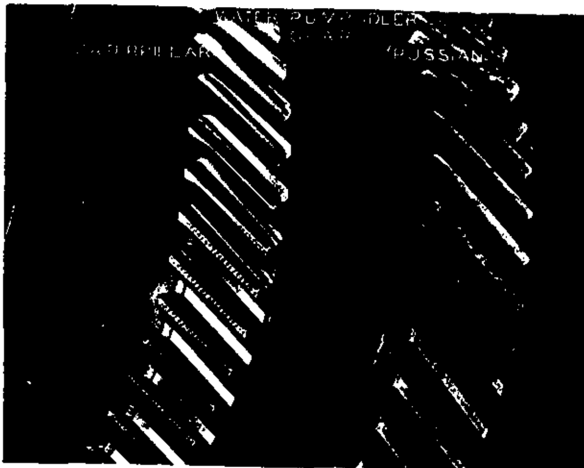
(d) PISTON



The Russian alloy in the piston has both silicon and copper; Caterpillar has no silicon. The casting methods differ slightly.

Figure 16-1 (cont.)

(e) WATER PUMP IDLER



Again the Soviet finish is rough, and this may affect life of the gear.

(f) SOVIET S-80 TRACTOR



(Photographs 16 a-f courtesy of Caterpillar Co.)

Further comparisons of this nature are contained in *Product Engineering*, (New York), October 1952; and *SAE Journal*, (Society of Automotive Engineers, New York), June 1952; these compare other parts of the tractor, but in general their conclusions support the findings indicated in this text.

close as, or even closer than, on the American counterpart.[59] Comparison of metallurgical specifications of Russian and American tractor parts from the Caterpillar D-7 tractor in Table 16-5 illustrates this point.

Table 16-5 COMPARATIVE METALLURGICAL SPECIFICATIONS IN SOVIET S-80 AND CATERPILLAR D-7 TRACTORS

Part	*Material*	*Hardness*	*Heat Treatment*	*Miscellaneous*
		Soviet S-80		
Fuel pump plunger	AISI 52100	Rockwell A79-82	Oilp-quenched and tempered	—
Fuel pump barrel	AISI 52100	Rockwell A79-28	Oil-quenched and tempered	—
Track pin bushing	Approx. AISI 1020	Case: Rockwell C64 Core: Rockwell C32	Carburized, quenched, and tempered	Cracks in case
Flywheel clutch plant (center)	Gray iron, high emanganese	Approx. Brinell 230-250	None	Pearlitic cast iron
Final drive gear	AISI 1045	Case: Rockwell C56 Core: Rockwell C20	Induction-hardened one tooth at a time	Prior structure quenched and tempered; Residual tensile strength
Final drive pinion	2.7% Ni 0.85% Cr	Tip of tooth: Rockwell C60-64 Core: Rockwell C22-25	Carburized, quenched and tempered	About 1% C in case
Transmission gear	2.5% Mi 1.04 Cr	Tip of tooth: Rockwell C61-65	Carburized, quenched, and tempered	About 1.25% in case
		Caterpillar D-7		
Fuel pump plunger	AISI 52100	Rockwell A79-82	Oil quenched and tempered	—
Fuel pump barrel	AISI 52100	Rockwell A79-82	Oil quenched and tempered	—
Track pin bushing	AISI 1020	About same	Carburized, quenched, and tempered	Bushings sometimes sometimes crack due to soft core
Flywheel clutch plant (center)	Cast iron (0.6%C.) (0.6%Cu)	Brinell 230-250	None	Pearlitic matrix
Final drive gear	AISI 1045	Case: Rockwell C56 Core: Rockwell C18	Induction-hardened and tempered	High compressive stress in rim
Final drive pinion	0.55%Ni 0.50%Cr 0.20%Mo	Rockwell C59-64	Carburized, quenched,and tempered	
Transmission gear	0.55%Ni 0.50%Cr 0.20%Mo	Rockwell C59-62	Carburized, quenched, and tempered	Depth of carburized case is less

Source: Caterpillar Company

[59] *Product Engineering*, October 1952, pp. 154-59.

The parts for which Russian standards were higher are probably accounted for by the fact that the tractors examined were military tractors made to more exacting specifications; for example, on the track pins the Russian pin has a much better uniformity of hardening that the D-7 pin, and the Russian track link is considerably lighter.[60]

Soviet copies are not, then, precise replicas—they are more accurately described as "metric imitations." Two principles are balanced in the imitation process: (1) to copy the original Western model as precisely as possible, to avoid costs of research and development and by close copying to avoid the pitfalls ironed out in the original debugging of Western development models; and (2) to convert the model to Soviet metric practice and shop practice—not always consistent with the first principle.

Thus, the Caterpillar Company research engineers reported:

> Not a single Russian part is interchangeable with the Caterpillar part from which it was copied. Metric dimensioning is not the only reason, however, because even the internal parts of the Caterpillar fuel pump (made to metric dimensions originally) are not interchangeable with the Russian parts.[61]

In effect, then, the Russian tractor S-80 was a very ingeniously reengineered copy of the Caterpillar tractor D-7. The question logically arises: Why spend so much effort and engineering time on a complete reengineering job? The answer has to lie in some extraordinary defect in the Soviet industrial system; if it pays to reengineer a U.S. tractor to metric dimensions with the numerous problems involved rather than design a new tractor for Russian operating conditions, then something more than cost of research and development is involved.

Wheel-Track Tractors in the Soviet Union

The first mass-produced wheel tractor in the Soviet Union was based on the International Harvester Farmall.[62] It was produced first in Leningrad, and after 1944 at the Vladimir factory, with a 22-hp four-cylinder kerosene engine. In 1953 this wheel tractor model was supplemented by the Belarus, produced at the Minsk tractor plant; this is a 40-belt horsepower diesel-engined wheel tractor similar to the Fordson Major manufactured by Ford Motor Company, Ltd., at Dagenham in England. Finally, in the early 1950s the Soviets produced the DT-20 Row Crop tractor and the ABC-SH-16 self-propelled chassis, both with the same one-cylinder diesel engine and built at the Kharkov tractor works.

[60] *Ibid.*, p. 159.
[61] *Product Engineering*, October 1959, p. 155.
[62] See V. V. Korobov, *Traktory avtomobili i sel'skokhozyaistvennye dvigateli* (Moscow, 1950), p. 10.

The self-propelled chassis and the single-cylinder engine are based on a design originated by the German firm of Heinrich Lanz A.G. of Mannheim, West Germany. Before World War II this firm produced the well-known Lanz single-cylinder two-stroke hot-bulb type engine, which was of great simplicity, able to perform well on low-grade fuels, and therefore suitable for use in relatively underdeveloped countries. In the late 1950s the total daily production of the Lanz engine and associated equipment was approximately 545 per day.[63]

Origins of Other Farm Machinery and Equipment

Soviet agricultural machinery and equipment is dependent almost entirely on foreign prototypes. As late as 1963 a U.S. Department of Agriculture report commented as follows:

> As soon as feasible the U.S.S.R. buys prototypes of new foreign machines and places them at one of ... 29 machine test stations. If the machine or parts of it have desirable characteristics, production is recommended.[64]

In 1958 a U.S. technical study group sent to the Soviet Union to observe soil conservation[65] noted that the Soviet laboratories in the soil science field had instruments and equipment similar to those in American laboratories. Furthermore, methods of application of fertilizer had been copied from American equipment. For example:

> We observed a large number of anhydrous ammonia applicators, for injecting ammonia gas into soils, at the Middle Asian Scientific Research Institute on Mechanization and Electrification of Irrigated Agriculture near Tashkent. These seemed to be copies of ours; in fact, a Schelm Bros. machine made in East Peoria, Ill., was alongside several Soviet machines. Also exhibited at the Institute

[63] *SAE Journal*, February 1959, p. 51.

[64] U.S. Dept. of Agriculture, *Soviet Agriculture Today*, Report of the 1963 Agriculture Exchange Delegation, Foreign Agricultural Economic Report No. 131 (Washington, December 1963), p. 35. There is some confusion on the part of executive departments concerning this copying. For example, the following statement was made to Congress in 1961: "MR. LIPSCOMB. Does the Department of Commerce feel that Russia has developed a great deal of their agricultural equipment from prototypes obtained both legally and illegally from the United States? MR. BEHRMAN. No, sir. I don't think that the evidence we have indicates that the equipment that they themselves produce copies—that they produce copies of equipment which we have supplied." U.S. House of Representatives, Select Committee on Export Control, *Investigation and Study of the Administration, Operation, and Enforcement of the Export Control Act of 1949, and Related Acts(H.R. 403)*, 87th Congress, 1st session, October 25, 26, and 30, and December 5, 6, 7, and 8, 1961; p. 403.

[65] U.S. Dept. of Agriculture, Soil Conservation Service, *Soil and Water Use in the Soviet Union*, Report of a Technical Study Group, (Washington, 1958), p. 23.

for Mechanization and Electrification was a crude version of the two-wheel, tractor-drawn broadcast-type spreader such as is widely used in the United States.[66]

Drainage research equipment also appears to have been developed from U.S. models; the conclusion of the delegation was: "Most of [the machines] appear to be adaptions of American or European types."[67] These observations relate to a back-hoe ditcher, a wheel-type trencher, and a tile laying machine (copied from a similar machine made in the Netherlands by the Barth Company), a pool ditcher, a mole drain device, a ditch cleaner, brush cutters, and a virgin peatland plow.[68]

Other agricultural equipment also appears to have been copied from U.S. equipment; for example, the fertilizer spreader No. BB-35 is a close replica of the New Idea, an American model, and the corn drill model SUK-24 is very similar to U.S. models of such equipment. Examination of a single agricultural machine—the cotton picker—will bring out this process of duplication in greater detail.[69]

The Rust Cotton-Picking Machine

The Rust cotton-picking machine, developed and patented by John Rust, an American agrarian socialist, was the first spindle picker, and in the long run the most successful; in fact, the Rust principle has been preserved essentially in its original form in machines currently made by four U.S. companies. The first Rust patent was filed in 1928. By 1936 ten machines had been built in the United States, and two of them were sold to Amtorg.[70] Whereas Rust in the United States was forced to abandon production by 1942 because of insufficient financing and lack of durability in the machine, the Soviets on the other hand went ahead—they adopted the Rust principle and started to produce cotton pickers utilizing this principle in large quantities.[71]

[66] *Ibid.*, p. 30.

[67] *Ibid.*, p. 36.

[68] *Ibid.*

[69] This duplication may be found even in minor equipment items. For example, compare various seed drills and their feedwheel mechanisms; *Encyclopedia Britannica* 17: "Planting Machinery," (Chicago: William Benton, 1958) p. 1011; and V. N. Barzifkin, *Mekhanizatsiia sel' skokhoziaistvennogo proizvodstva* (Moscow, 1946), p. 103.

[70] J. H. Street, *The New Revolution in the Cotton Economy* (Chapel Hill, N.C., 1957). On p. 128 Street quotes from *Survey Graphic* (July 1936) as follows: "John Rust made a trip there [to the U.S.S.R.] to supervise their introduction in the belief that they [the cotton pickers] would be used 'to lighten man's burden rather than to make a profit at the expense of the workers.'"

[71] *Strana Sovetov za 50 let: Sbornik statisticheskikh materialov* (Moscow, 1967), p. 156. A good source of technical detail concerning the Soviet cotton picker is I. I. Gurevich, *Khlopkouborochnaya mashina KhVS-1, 2M: Rukovodstvo po ekspluatatsii* (Tashkent, 1963). There is a translation: U.S. Dept. of Commerce TT 66-51114/1966.

By 1940 the Soviets had a park of 800 cotton pickers based on the Rust principle, whereas the United States, where Rust had initiated, developed, and built the original machines, had none in commercial production and only a few in use on a custom picking basis. Only in 1942 did International Harvester announce it was ready to go into commercial production of machines based on the principle, producing 12 in 1941 and 1942, 15 in 1943, 25 in 1944, and 75 annually in 1945-47. In 1945 Allis-Chalmers started work using a modified Rust principle, but by 1949 only 49 Allis-Chalmers pickers had been manufactured. By 1953 cotton pickers designed on the Rust principle were produced not only by International Harvester and Allis-Chalmers but also by Ben Pearson, J. I. Case, and Massey-Harris-Ferguson. Deere attempted to develop the Berry spindle picker between 1943 and 1946, but abandoned the effort.

In 1953, then, about 15,000 pickers were available in the United States while the Soviet Union had about 5000 cotton pickers in operation.[72]

In summarizing this discussion of the Soviet automotive sector, it may be said that the Soviet Union was as dependent on Western automobile manufacturing technology in 1970 as it was in 1917. In 1968-70 U.S. companies installed over $65 million worth of equipment in the 600,000-autos-per-year VAZ plant; in 1917 the Baltic and AMO plants, large units for the times, were also equipped with the latest American equipment.[73] Therefore there has been no innovation of indigenous Soviet automobile or truck technology.

The Stalinetz S-80 and S-100, both heavy tractors that provide the chassis for other Soviet equipment, were found to be replicas of the Caterpillar D-7. Other agricultural equipment, including farm implements and cotton pickers, is based on American models, although there are a few examples of British (Fordson Major), German (Lanz tractor engine), and Dutch (Barth tile laying machine) origins.

[72] *Strana Sovetov ...., op. cit.* n. 71.
[73] Sutton I, pp. 243-44.

CHAPTER SEVENTEEN

Western Origins of Soviet Prime Movers

This chapter examines the Western origins of some of the common Soviet prime movers—diesel engines for marine and truck use and internal combustion engines, together with steam boilers and steam and gas turbines.

Fortunately, complete and reasonably accurate Soviet data are available on marine prime movers (diesel, steam, and gas turbine engines) used in marine propulsion systems. These data, derived from a detailed descriptive listing of the 5551 ships in the Soviet merchant marine as of July 1967,[1] were subjected to an exhaustive analysis to determine the types and origins of marine engines used in Soviet merchant ships. (See Table 17-1.)

Two characteristics were examined: first, diesel, and steam engines by type and system, i.e., by their technical characteristics; and second, the origin and date of construction of these engines in order to arrive at an understanding of the manner in which the Soviet merchant marine had been acquired, i.e., the rate of addition of different types of engines, changes in foreign supply sources, and the extent to which the Soviets may possibly have divested themselves of foreign assistance.

Table 17-1 lists marine diesels (if more than four units of a single type were identified) in use in the Soviet merchant marine in 1967. The table does not include steam turbines, reciprocating steam engines, diesel-electric engines, or gas turbine engines; steam turbines and gas turbines are discussed later in the chapter. The table does include about 80 percent of the marine propulsion units in use.

The most striking characteristic is the absence of diesel units of Soviet design. Although a few (reference numbers 6, 10, 11, 12, 14, and 35) are listed as of probable foreign origin and three units (reference numbers 9, 26, and 43) are not identified, there is evidence to suggest that these units are of Sulzer or M.A.N. design except for reference number 43, which is probably of Fiat design. Early technical-assistance agreements in the 1920s with the Sulzer and M.A.N. firms resulted in several "Soviet" diesels manufactured

[1] Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966), plus annual supplements.

Table 17-1 TECHNICAL CHARACTERISTICS OF SOVIET MARINE DIESELS IN USE IN 1967*

			Specification of marine diesels in use in 1967			
Reference number	*Engine design*	*Country of origin*	*Number of cylinders*	*Cylinder diameter (mm.)*	*Piston stroke (mm.)*	*Rated bhp*
1	Buckau-Wolf	G.D.R.	8	240	360	300
2	Buckau-Wolf	G.D.R.	6	320	480	400
3	Buckau-Wolf	G.D.R.	8	320	480	550
4	Skoda	Czechoslovakia	8	430		2500
5	Görlitzer	G.D.R.	6	175	240	200
6	M.A.N.(probable)	Germany	6	300	500	600
7	Alco	U.S.A.	6	318	3300	1000
8	Burmeister & Wain	Denmark	5	500	1100	2900
9	Not identified	—	6	180	220	150
10	Sulzer (probable)	Switzerland	6	250	340	300
11	M.A.N. (probable)	Germany	8	300	500	800
12	M.A.N. (probable)	Germany	4	300	500	400
13	M.A.N.	Germany	6	570	800	4000
14	M.A.N. (probable)	Germany	12	150	180	300
15	Sulzer	Switzerland	6	760	1550	9600
16	Burmeister & Wain	Denmark	5	620	1400	600
17	M.A.N.	Germany	7	700	1200	6000
18	Görlitzer	G.D.R.	8	365	550	2000
19	Burmeister & Wain	Denmark	8	740	1600	13000
20	Sulzer	Switzerland	5	720	1250	4500
21	Sulzer	Switzerland	8	480	700	3000
22	Lang	Hungary	8	216	310	200
23	Lang	Hungary	8	315	450	1000
24	Burmeister & Wain	Denmark	9	500	1100	5200
25	M.A.N.	Germany	6	520	900	1900
26	Not identified	-	12	180	200	150
27	Burmeister & Wain	Denmark	7	740	1600	11000
28	M.A.N.	Germany	6	700	1200	5800
29	Sulzer	Switzerland	6	560	1000	2400
30	M.A.N.	Germany	5	520	700	4500
31	Burmeister & Wain	Denmark	8	350	620	2260
32	Burmeister & Wain	Denmark	9	900	1550	19800
33	Sulzer	Switzerland	6	500	900	2000
34	Polar	Sweden	6	340	570	1550
35	M.A.N. (probable)	Germany	6	150	180	150
36	Mash.Kiel A.G.	Germany	8	290	420	640
37	Götaverken	Sweden	7	760	1500	8750
38	Burmeister & Wain	Denmark	6	740	1600	9760
39	Fiat	Italy	8	750	1320	8000
40	M.A.N.	Germany	9	720	1200	8150
41	M.A.N.	Germany	6	600	1050	5600
42	Polar	Sweden	5	345	580	1260
43	Not identified	Italy	6	540	960	2000
44	Sulzer	Switzerland	7	760	1550	9100

Source: Calculated from Registr Soyuza SSR, *Registrovaye kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

* Includes all units for which more than four engines of a single type were identified.

in the 1930s and 1940s.[2] No purely Soviet marine diesels have been traced in this period,[3] so the units mentioned are probably either M.A.N. or Sulzer. These companies have manufactured units with similar technical characteristics.

Positive identification of foreign origin for the other units in Table 17-1 has been made, and agreements or sales have been traced from the Western company either to the Soviet Union or to an East European country manufacturing the design under foreign license and then in turn selling the unit to the Soviet Union.

The two most common designs are those of M.A.N. (Maschinenfabrik Augsberg-Nurnberg A.G.) of Augsburg, Germany, and Burmeister & Wain of Copenhagen, Denmark. The latter company has supplied technical assistance and designs for large marine diesels, while M.A.N. units are normally less than 4500 hp. Sulzer in Switzerland, the former Buckau-Wolf at Magdeburg in Germany, Skoda in Czechoslovakia, and Nydqvist & Holm (Polar) in Sweden are other commonly found marine diesel designs.

Table 17-2 indicates the number of each of these marine diesel designs in use in the Soviet merchant marine in relation to geographic origin. One noticeable disclosure is that, of the 4248 marine diesels in use in 1967, an extraordinarily large number (2289 or 54 percent) were manufactured in Czechoslovakia and that 82 were manufactured at the prerevolutionary Russky Disel plant in Leningrad. Another common design is that of Görlitzer in East Germany, comprising 239 marine diesels in two models.

Table 17-2 ORIGINS OF SOVIET MARINE DIESELS, BY NUMBER OF EACH DESIGN, 1967

Reference number in Table 17-1	*Built outside U.S.S.R.*	*Built inside U.S.S.R.*	*Total*
1	1,413	—	1,413
2	519	6	525
3	351	—	351
4	170	82	252
5	202	—	202
6	2	147	149
7	—	142	142
8	76	25	101
9	—	96	96
10	41	47	88
11	—	80	80
12	—	68	68
13	66	—	66
14	—	64	64

[2] See Sutton I, pp. 35, 332.

[3] *Ibid.*

Table 17-2 (cont.)

Reference number in Table 17-1	*Built outside U.S.S.R.*	*Built inside U.S.S.R.*	*Total*
15	61	—	61
16	51	—	51
17	39	—	39
18	37	—	37
19	36	—	36
20	36	—	36
21	42	—	42
22	35	—	35
23	31	—	31
24	5	24	29
25	24	—	24
26	—	23	23
27	10	12	22
28	21	—	21
29	21	—	21
30	17	—	17
31	18	—	18
32	13	—	13
33	11	—	11
34	11	—	11
35	1	9	10
36	10	—	1C
37	10	—	10
38	5	5	10
39	7	—	7
40	6	—	6
41	7	—	7
42	5	—	5
43	4	—	4
44	4	—	4
TOTAL	3418	830	4248

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Burmeister & Wain of Denmark has been a prominent supplier of diesel marine engines, and under an agreement signed in 1959 the Soviet Union now manufactures Burmeister & Wain diesels at Bryansk in the Ukraine. Thus numerous Burmeister & Wain designs figure into Table 17-2, either as units imported from Denmark (reference numbers 8, 16, 19, 24, 27, 31, 32, and 38) or as units manufactured at the Burmeister & Wain plant in Copenhagen and, under license, at Bryansk in the Soviet Union (for example, reference numbers 8, 24, 27, and 38).

The most prominent feature of Table 17-2, however, is the relatively small number (830, or 19.5 percent) of marine diesels actually manufactured inside the Soviet Union.

Table 17-3 lists the origins of these Soviet marine diesels according to aggregate horsepower. This listing provides a more accurate reflection of the importance of each type of unit for the Soviet merchant marine.

In general terms, four-fifths (79.3 percent) of the aggregate diesel generated horsepower was built outside the Soviet Union. Of a total of 4,633,890 hp, some 3,672,890 hp was built outside the Soviet Union and only 961,000 hp was built inside the Soviet Union, and even that portion required foreign technical assistance.

Table 17-3 ORIGINS OF SOVIET MARINE DIESELS AS OF 1967, BY AGGREGATE HORSEPOWER FOR EACH DESIGN

		Aggregate horsepower built			
No.	*Reference number from Tables 17-1 and 17-2*	*Outside U.S.S.R.*	*Inside U.S.S.R.*	*Total*	*Percentage of this design built outside the U.S.S.R.*
1	4	425,000	205,000	630,000	67.5
2	1	423,900	—	423,900	100.0
3	8	220,400	72,500	292,900	75.2
4	13	264,000	—	264,000	100.0
5	32	257,400	—	257,400	100.0
6	27	110,000	132,000	242,000	45.5
7	17	234,000	—	234,000	100.0
8	2	207,600	2,400	210,000	98.8
9	3	193,050	—	193,050	100.0
10	20	162,000	—	162,000	100.0
11	24	26,000	124,800	150,800	17.2
12	7	—	142,000	142,000	0.0
13	21	126,000	—	126,000	100.0
14	28	121,800	—	121,800	100.0
15	38	49,500	99,000	99,000	50.0
16	6	1,200	88,200	89,400	1.3
17	37	87,500	—	87,500	100.0
18	30	76,500	—	76,500	100.0
19	18	74,000	—	74,000	100.0
20	11	—	64,000	64,000	0.0
21	15	58,560	—	58,560	100.0
22	39	56,000	—	56,000	100.0
23	29	50,400	—	50,400	100.0
24	40	48,900	—	48,900	100.0
25	19	46,800	—	46,800	100.0
26	25	45,600	—	45,600	100.0
27	16	41,400	—	41,400	100.0
28	5	40,400	—	40,400	100.0

Table 17-3 (cont.)

No.	Reference number from Tables 17-1 and 17-2	Aggregate horsepower built: Outside U.S.S.R.	Inside U.S.S.R.	Total	Percentage of this design built outside the U.S.S.R.
29	31	40,080	—	40,080	100.0
30	41	39,200	—	39,200	100.0
31	44	36,400	—	36,400	100.0
32	23	31,000	—	31,000	100.0
33	12	—	27,200	27,200	0.0
34	10	11,400	15,000	26,400	43.2
35	33	22,000	—	22,000	100.0
36	14	—	19,200	19,200	0.0
37	34	17,050	—	17,050	100.0
38	9	—	14,400	14,400	0.0
39	43	8,000	—	8,000	100.0
40	22	7,000	—	7,000	100.0
41	36	6,400	—	6,400	100.0
42	42	6,300	—	6,300	100.0
43	26	—	3,450	3,450	0.0
44	35	150	1,350	1,500	10.0
		3,672,590	961,000	4,633,890	79.3 percent

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

The most important design, Skoda of Czechoslovakia, contributes 630,000 hp to the Soviet merchant fleet. The next design in terms of contribution to aggregate horsepower is that of Buckau-Wolf, contributing 423,900 hp; this is numerically the most common unit. Other prominent designs are Burmeister &Wain (the 2900 hp unit) with 292,900 hp, M.A.N. of Germany with 264,000 hp, and Burmeister & Wain (the 11,000-hp unit), which contributes some 242,000 hp to the total.

The last column in Table 17-3 indicates the percentage of each design built outside the Soviet Union. While it is obvious from the table that a comparatively small amount (20 percent) of aggregate horsepower was built inside the Soviet Union, it may not be so readily obvious that this domestic construction is also concentrated into a few designs. For example, the 1000-hp unit, originally an American Locomotive design sent to the Soviet Union under Lend Lease, contributes 142,000 hp. It is today built only inside the Soviet Union, whereas other types, particularly Burmeister & Wain designs, are both built in the Soviet Union and imported.

Table 17-4 shows quite clearly the fact that units of large horsepower are

not built in the Soviet Union. This table lists construction inside and outside the Soviet Union in terms of rated horsepower category. It is notable that the units of 9000-12,000 hp, partly built in the Soviet Union and partly imported, are the Burmeister & Wain design built with technical assistance under terms of the 1959 agreement. Otherwise, units built in the Soviet Union are of much smaller capacity.

Table 17-4 PERCENTAGE OF SOVIET MARINE DIESELS BUILT OUTSIDE THE SOVIET UNION AS OF 1967 (BY RATED HORSEPOWER CATEGORY)

Horsepower rating category	*Built outside U.S.S.R. (in bhp)*	*Built inside U.S.S.R. (in bhp)*	*Total bhp*	*Percentage built outside U.S.S.R.*	*Category as a percentage of total aggregate horsepower*
Less than 1,000	891,000	235,200	1,126,300	79.1	24.3
1-1,999	99,950	142,000	241,950	41.3	5.2
2-2,999	839,880	277,500	1,117,880	75.2	23.9
3-3,999	126,000	—	126,000	100.0	2.7
4-4,999	502,500	—	502,500	100.0	10.8
5-5,999	187,000	124,800	311,800	59.9	6.7
6-6,999	275,400	—	275,400	100.0	5.9
7-7,999	—	—	—	—	—
8-8,999	192,400	—	192,400	100.0	4.1
9-9,999	144,460	49,500	193,500	74.2	4.2
10-10,999	—	—	—	—	—
11-11,999	110,000	132,000	242,000	45.5	5.2
12-12,999	—	—	—	—	—
13-13,999	46,800	—	46,800	100.0	1.0
14-14,999	—	—	—	—	—
15-15,999	—	—	—	—	—
16-16,999	—	—	—	—	—
17-17,999	—	—	—	—	—
18-18,999	—	—	—	—	—
19-19,999	257,400	—	257,400	100.0	5.5
Totals	3,672,890	961,000	4,633,890	79.3	99.5

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Note: This table includes all marine diesels where more than 20 of a single model were manufactured or imported. It does not include reciprocating steam engines, steam turbines, gas turbines, or diesel-electric drives.

We may conclude concerning marine diesels that the Soviet Union is still heavily dependent on Western technology. The significant increment in size of unit built after 1960 is due mainly to the Burmeister & Wain technical-assistance

agreement, although East Germany and Czechoslovakia have also contributed significantly to Soviet construction of marine diesels. The technical lag is extraordinary when compared to the gigantic increment since World War II in the Soviet mercantile fleet.

FOREIGN TECHNICAL ASSISTANCE TO SOVIET MARINE ENGINE CONSTRUCTION

The Soviet marine diesels actually manufactured in the Soviet Union have received a considerable amount of foreign technical assistance. Technical-assistance agreements were made with both M.A.N. and Sulzer in the 1920s,[4] and the Soviet Union has continued since that time to receive M.A.N. and Sulzer technology in addition to new assistance agreements with Burmeister & Wain of Denmark and Skoda of Czechoslovakia in the fifties and sixties.

An agreement was signed in early 1959 in Copenhagen by Niels Munck, managing director of Burmeister & Wain, and Mikoyan, who visited the company on his way back to Moscow from a visit to the United States.[5] The Danish company also has a licensing agreement with the Polish engine builders Stocznia Gdanska, and part of that organization's annual production of 350,000 bhp of B & W designs goes to the Soviet Union.[6]

Under the 1956 Scientific and Technical Cooperation agreement between the U.S.S.R. and Czechoslovakia, the Skoda works sends technical documentation and technical assistance to the U.S.S.R. on the latest marine diesel designs. Skoda is also a major direct supplier of diesel engines to the U.S.S.R.[7]

The available evidence strongly indicates that all Russky Disel (Leningrad) marine engines are made under the technical-assistance agreement with Skoda of Czechoslovakia while all diesels at Bryansk are built under the B & W agreement. Under the COMECON specialization agreements, Czechoslovakia undertakes development and production of large marine diesels while the Soviet Union is not listed for that responsibility—nor indeed for any development or production of marine diesels of any size.[8] Agreements and trade between the two countries confirm this. The 1956 Scientific and Technical Corporation required Czechoslovakia to send technical documentation for the manufacture of the latest designs in diesel engines to the U.S.S.R. Further, Czechoslovakia is not only the fourth largest producer of diesel engines in the world—far larger

[4] *Ibid.*
[5] *East-West Commerce*, VI, 2 (February 1959), 3.
[6] See chapter 6.
[7] See chapter 6 for more information on these indirect transfers.
[8] See Frederic L. Pryor, *The Communist Foreign Trade System* (London: George Allen & Unwin, 1963), Appendix E.

Table 17-5

UTILIZATION OF DIESEL ENGINES IN SOVIET VEHICLES

Diesel engine model	*YaAZ-M204A*	*YaAZ-M204B*	*YaAZ-M206A*	*YaAZ-M206B*	*YaAZ-M206D*
Soviet vehicle model	ZIL-152	MAZ-200B	KrAZ-219	KrAZ-214	ZIL-127
	MAZ-200	MAZ-502	KrAZ-221		YaAZ-210E
	MAZ-200G		KrAZ-222		YaAZ-218 (1957)
	MAZ-205				YaAZ-210 (1951-58)
	MAZ-501				YaAZ-210G (1951-58)

Source: *Kratkii avtomobil'nyi spravochnik,* 5th edition (Moscow, 1968) p. 409.

Table 17-6

ORIGINS OF TRUCK DIESEL ENGINES IN THE SOVIET UNION UP TO 1960

Basic engine Model number	*Type*	*Weight, kg*	*Number of cylinders*	*Displacement*	*Cylinder diameter, mm*	*Piston Stroke*	*Horsepower*	*rpm*	*Western origin*
YaAZ-M206D	In-line	960	6	6.97	108.0	127.0	180	2,000	GMCModel (U.S.)
YaAZ-M206A	V	890	6	6.97	108.0	127.0	180(215)	2,000	GMC Model (U.S.)
YaAZ-M204A	V	800	4	4.65	108.0	127.0	120	2,000	GMC Model (U.S.)
D-12A	V	1,400	12	38.80	150.0	180.0	300	1,500	Not known

Source: *Kratkii avtomobil'nyi spravochnik,* 5th edition (Moscow, 1968).

than the U.S.S.R.—but also exports 80 percent of all its diesels, and the U.S.S.R. is the largest buyer.[9]

DIESEL ENGINES FOR TRUCK USE

The range of diesel engines for truck use in the Soviet Union is very limited. Between 1945 and the mid-1960s, when new models YaMZ-236 and YaMZ-238 replaced earlier engines,[10] only four commonly used models were identified.

Three models widely used in trucks and buses were based on General Motors engines: the YaAZ-M206D, a six-cylinder in-line 180-hp engine; the YaAZ-M206A, a V-type version of the same engine; and a four-cylinder V type developing 120 hp mainly for use in the MAZ-200 truck produced from 1947 to 1966 at Minsk. These three basic models, produced at Yaroslavl,[11] have been utilized for at least a dozen Soviet truck and bus models. (See Table 17-5.)

The only other engine that has been produced is the D-12 type used in the MAZ-525, MAZ-530, and BelAZ-540 dump trucks. This engine has a 300-hp rating, compared to the 120-180-hp range of the YaAZ series (see Table 17-6). Its origin is not known, although the Soviets received the Kloeckner-Humboldt-Deutz diesel engine plant in 1946 under U.S. Operation RAP,[12] and Deutz prewar diesels had similar specifications.

The new model truck diesels introduced in the late 1960s (YaMZ-236 and YaMZ-238) bear considerable resemblance to the U.S. Cummins engine. The YaMZ-236 has a layout similar in many respects to the Cummins 90° V6-200, while the YaMZ-238 resembles the Cummins 90° V8-265.[13]

A backwardness in truck diesel engines is reflected in Soviet use of European diesel engines in the few Soviet automobiles assembled in Belgium and sold on the European market. The Volga automobile was offered with an optional Rover U.K. diesel engine in 1965; the Moskvich was offered by the Soviets, also in 1965, with a Perkins U.K. 99 diesel engine.[14] In 1968 Soviet trucks sold in Europe also utilized diesel engines supplied by Perkins.

In 1960-61 the Soviets attempted to purchase in the United States over $40 million worth of specialized equipment for the manufacture of truck engine blocks.[15] This generated a great deal of controversy in Congress, and ultimately

[9] *Czechoslovak Economic Bulletin* (Prague), no. 306 (March 1956), 25.

[10] *Ekspluatsionnye kachestva dvigatelei YaMZ-236 and YaMZ-238* (Moscow, 1968).

[11] See Sutton II for assistance to this plant.

[12] See chapter 2.

[13] No confirmation can be obtained from the company on this point, but compare G. D. Chernyshev, *Dvigateli YaMZ-236, YaMZ-238* (Moscow, 1968), pp. 5, 16, with D.S.D. Williams, *British Diesel Engine Catalogue*, 6th edition (London, 1965), p. 57.

[14] S. d'Angelo, ed., *World Car Catalogue* (New York: Herald Books, 1965), pp. 228, 356.

[15] U.S. House of Representatives, Select Committee on Export Control, *Investigation and Study of the Administration, Operations, and Enforcement of the Export Control Act of 1949, and Related Acts (H.R. 403)*, 87th Congress, 1st session, October, December 1961 pt. I, p. 220.

the sale involved only two transfermatic machines to produce V-8 engine blocks; one unit was valued at $3.4 million and one at $1.9 million, for a total of $5.3 million. The units were required by the Soviets to produce 225-hp truck engines.

DIESEL-ELECTRIC PRIME MOVERS

The most important Soviet diesel-electric prime mover is the 2 D 100 unit utilized in more than 1000 type TE 3 diesel-electric locomotives and more than 50 merchant vessels.[16] The 2 D 100 power plant is a two-stroke, opposed piston model with ten cylinders developing 2000 hp at 850 rpm. Design work started in 1950; the first locomotive with the unit was produced in 1953 and the first ship in 1954.

The opposed piston principle was developed by Fairbanks-Morse in the United States, and the Soviet 2 D 100 is a copy of Fairbanks Morse Model 38D 8-1/8 series, although the cylinder diameter of the Soviet version is 207 mm compared with 206.37 mm in the Fairbanks Morse original.[17]

Since no other diesel-electric unit has been identified in current production, the possibility exists that this unit is used in the Soviet icebreakers of the "Ledokol" series for which no engine data are given in the Soviet Register, and also in numerous Soviet naval units propelled by diesel-electric propulsion units.

INTERNAL COMBUSTION ENGINES

About 95 percent of Soviet internal combustion engine production in 1959 was represented by two engines, an in-line six-cylinder in the GAZ 51 truck series and another in-line six-cylinder in the ZIL 150 series.[18] Most of the remaining production was taken up by heavier truck engines. Table 17-7 summarizes the origins of the major truck and automobile gasoline engines in operation up to 1960.

The original Moskvitch 401, a four-cylinder in-line engine, was a copy of the 1939 German Opel engine. Two subsequent versions, the MZMZ 407 and the MZMA 408, were modified versions of the original Moskvitch 401

[16] For merchant ships see Registr Soyuza SSR, *op. cit.* n. 1; for locomotives see K. A. Shishkin *et al.*, *Teplovoz TE-3* (Moscow, 1969).

[17] Fairbanks Morse, Power Systems Division, *Fairbanks Morse 38D8 1/8 Series Opposed Piston Diesel and Gas Engines* (Beloit, Wis., n.d.), Bulletin 3800D8-S3.

[18] Barney K. Schwalberg, *Manpower Utilization in the Soviet Automobile Industry*, Supplementary Report (Washington: U.S. Department of Commerce, Bureau of the Census, June 1959), p. 16.

Table 17-7 ORIGINS OF AUTOMOBILE AND TRUCK INTERNAL COMBUSTION ENGINES IN THE SOVIET UNION UP TO 1960

Basic engine model number	*Type*	*Weight, kg*	*Number of cylinders*	*Displacement, litres*	*Cylinder diameter, mm*	*Piston stroke*	*Horsepower*	*rpm*	*Western Origin*
401	in-line	112	4	1.07	67.5	75.0	26.0	4,000	Opel
MZMA 407	in-line	123	4	1.36	76.0	75.0	45.0	4,500	modified
MZMA 408	in-line	123	4	1.36	76.0	75.0	50.0	4,750	
GAZ 20	in-line	153	4	2.12	82.0	100.0	52.0	3,600	World War II Ford/Willys
GAZ 69	in-line		4	2.12	82.0	100.0	52.0	3,600	¼-ton truck (Jeep)
GAZ 21A	in-line	146	4	2.445	92.0	92.0	75.0	4,000	Improved GAZ 20
UAZ 451	in-line	145	4	2.445	92.0	92.0	70.0	4,000	(WW II Jeep)
UAZ 450	in-line		4	2.43	88.0	100.0	62.0	3,800	
GAZ 13	V		8	5.52	100.0	88.0	195.0	4,200	Ford Motor Co.
ZIL 111	V	312	8	5.98	100.0	95.0	200.0	4,200	
GAZ 51	in-line	235	6	3.48	82.0	110.0	70.0	2,800	Ford Motor Co. plant
ZIL 158B	in-line	400	6	5.55	101.6	114.3	109.0	2,800	
Ural 353A	in-line	380	6	5.55	101.6	114.3	95.0	2,600	
ZIL 150	in-line	—	6	5.55	101.6	114.3	90.0	—	1934 Fordson engine;
ZIL 164A	in-line	380	6	5.55	101.6	114.3	100.0	2,800	Hercules Motor Co.
ZIL 157K	in-line	380	6	5.55	101.6	114.3	110.0	2,800	equipment
KAZ 606A	in-line	380	6	5.55	101.6	114.3	104.0	2,600	
GAZ 53	V	215	8	4.25	92.0	80.0	115.0	3,200	Ford Motor Co. plant

Source: Kratkii avtomobil'nyi spravochnik, 5th edition (Moscow, 1968).

and the latter was used in the Moskvitch automobile as late as the mid-1960s.

The GAZ 20 is the four-cylinder U.S. Jeep engine and used in both the civilian and military versions of the GAZ 20 and the GAZ 69. Its closest U.S. counterpart is the World War II Ford/Willys one-quarter-ton Jeep engine, and the Soviets presumably based their design on Lend Lease supplies and equipment.

The GAZ 21A and UAZ 451 are improved versions of the original Jeep engine, with somewhat larger displacement (2.445 instead of 2.12 litres) and a higher horsepower rating (70-75 hp instead of 52 hp). The GAZ 51, the GAZ 53 with a V-8 engine of U.S. type, and all other GAZ engines, are built in the Ford-designed and -built Gorki plant,[19] which received a considerable quantity of new U.S. machinery during and after World War II.

The 5.55-litre displacement engine used in the ZIL-158B, the Ural 353A, the more common ZIL 150, the ZIL 164A, the ZIL 157K and the KAZ 606A has the same engine characteristics as the prewar Fordson tractor engine produced at Yaroslavl with equipment installed by the Hercules Engine Company in 1934.[20]

FRENCH ORIGINS OF MARINE GAS TURBINES

Soviet marine gas turbines are based on French turbines imported in 1959. Table 17-8 lists all gas turbine-powered Soviet ships built up to 1967 and the origin of their gas generators and turbines. The typical plant consists of four free-piston gas generators, 340 by 904 mm, manufactured by S.I.G.M.A. at Venissieux,[21] and a gas turbine geared to the shaft manufactured by Société Alsthom of Belfort, France.[22] The hulls were built and the French turbines installed at the Baltic Yards in Leningrad.

WESTERN ORIGINS OF SOVIET STEAM TURBINES

Analysis of the Soviet register of shipping suggests that no steam turbines for merchant marine use were manufactured in the Soviet Union before 1959.[23]

[19] See Sutton I and II.

[20] *Ibid.*

[21] S.I.G.M.A. is Société Industrielle Générale de Mécanique Appliquée, a subsidiary of Organisation Bossard et Michel S.A.

[22] Alsthom is Société Générale de Constructions Electriques et Mécaniques Alsthom, a subsidiary of Française Thomson-Houston-Hotchkiss-Brandt S.A. Cie and affiliated with Thomson Electric Company of New York.

[23] This statement should be modified by the observation that Soviet Navy ships use steam turbines; hence the Soviets probably had a capability for manufacturing marine steam turbines before 1959. The statement here applies only to the merchant marine.

Table 17-8 ORIGINS OF SOVIET MARINE GAS TURBINES AS OF 1967

Soviet register number	*Name of Ship*	*Date Launched*	*Gas Turbine manufacturer*
2126	*Pavlin Vinogradov*	1960	S.I.G.M.A. France (1960)
4465	*Umbales*	1962	S.I.G.M.A. France (1959)
4859	*Johann Mahmastal*	1965	S.I.G.M.A. France (1959)
2197	*Pechorales*	1964	S.I.G.M.A. France (1959)
4345	*Teodor Nette*	1963	S.I.G.M.A. France (1959)

Sources: *Lloyd's Register of Shipping, 1969-70,* (London, 1969); Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965*, (Moscow, 1966).
Note: These five ships constituted the total Soviet fleet of gas turbine-powered ships to 1967

In 1964 the Soviet mercantile fleet had 45 ships powered by steam turbines. The acquisitions of these turbines fall into three distinct periods: stage one, that of foreign purchases only; stage two, that of foreign purchases concurrent with limited domestic production of steam turbines; and stage three, that of domestic manufacture of steam turbines without foreign imports.

Stage one extended from 1953 through 1956. In 1953 the Soviets installed German boilers in a Dutch ship with turbines built in 1919, possibly as a test bed for further work. Then in 1955 six steam turbines for marine use were ordered in France and two more in East Germany. Of the French turbines, one came from Schneider et Cie at Le Creusot (France), one from a subsidiary of this company (Société des Forges at Ateliers du Creusot), and four from Ateliers et Chantiers de Bethune located at Nantes on the western coast of Brittany. The turbines supplied by Schneider et Cie at Le Creusot were undoubtedly of Westinghouse design, inasmuch as Schneider has a licensing agreement with the Westinghouse Electrical Corporation in the United States and both companies jointly own a French development company, Société de Développement Westinghouse-Schneider of Paris.

In 1959 the Soviets produced the first domestic (at least nonmilitary) marine steam turbine, which was installed in a 12,000-ton ship (Soviet Register Number 1602); this was followed by construction of four turbines in 1959, seven in 1960, six in 1961, five in 1962, and eight in 1963. However in 1959, when the first Soviet merchant marine steam turbine was produced, four turbines were purchased abroad and installed in ships later added to the Soviet mercantile fleet. One turbine came from Italy and was installed in the *Giuseppe Garibaldi;* this was a geared turbine manufactured by the Ansaldo shipyards in Genoa,

Italy. This company is licensed to manufacture De Laval geared turbines (De Laval is an American corporation). Another De Laval turbine was installed in the *Trud* (Soviet Register Number 4393). This was a geared turbine manufactured by De Lavals Angturbin in Stockholm, Sweden, and also manufactured under license from the De Laval Company in the United States. Two additional steam turbines were purchased in Japan. One, from the shipbuilding company Hitachi, is a Kawasaki turbine with water tube boilers. The second turbine was purchased in 1960, and is a geared unit manufactured by Ishikawajima Harima in Tokyo; this company has a licensing agreement with Foster Wheeler in the United States for manufacturing water tube boilers for marine use.

Thus, between 1958 and 1961 the Soviets purchased four steam turbines abroad and manufactured another five or six steam turbines within the Soviet Union. Undoubtedly the initial Soviet steam turbines were compared with imported turbines concerning operating characteristics.

Up to 1962 we find that the Soviets manufactured an average of five or six steam turbines per year and since that time all units have been manufactured domestically. The Western predecessors of these domestic steam turbines are not known; they may be Metropolitan-Vickers (a subsidiary of Westinghouse) under an old agreement, or General Electric, or possibly even Sulzer.

A similar three-stage development process appears to be under way in marine gas turbines; several gas turbines were purchased in France in 1960 and presumably by the end of the decade of the sixties the Soviets will have started to manufacture, within the Soviet Union, marine gas turbines according to this design.

ORIGINS OF MARINE BOILERS INSTALLED BETWEEN 1945 AND 1960

Between 1945 and 1960 a total of 447 marine boilers of three types (water tube, fire tube, and combined) were installed in Soviet merchant ships. Of this total, only 76 (or 17.0 percent) were manufactured in the Soviet Union. The remainder were imported: 181 (or 40.5 percent of the total) from Finland, 116 (or 25.9 percent) from the East European communist countries of East Germany and Poland, and the rest from non-Finnish sources in the Free World, including 46 (or 10.3 percent) from Sweden.

There are several noteworthy observations concerning these boilers. The large percentage imported, i.e. 83 percent, suggests there was a major Soviet weakness in this area. The 17 percent Soviet-manufactured boilers also are of a standard type; between 1949 and 1954 only one type of marine boiler was manufactured, i.e., of a 174-square-meter heating surface with a working pressure of 15.0 kg/cm^2. Between 1955 and 1960 this standard model was replaced by another of 180-square-meter heating surface with the same working

pressure. During this period of 15 years the Soviet Union manufactured only a single standard boiler model at any one time. The flexibility required in practice was attained by imports from Eastern Europe and the Free World;[24] larger sizes of marine boilers with greater working pressures were imported in a variety of models from Finland, Poland, East and West Germany, Sweden, Italy, Denmark, Norway, Belgium, the United Kingdom, and Holland. (See Table 17-9.)

Table 17-9 ORIGINS OF MARINE BOILERS INSTALLED IN THE SOVIET UNION BETWEEN 1945 AND 1960

Size of boiler; m² of heating surface	*Finland*	*U.S.S.R.*	*Poland*	*East Germany*	*Sweden*	*Other Free World countries*	*Total*
718	—	—	—	—	—	2 (Italy)	2
495	—	—	2	—	—	—	2
390	—	—	—	4	—	—	4
386	—	—	—	2	—	—	2
287	—	—	1	—	—	—	1
286	—	—	—	2	—	—	2
260	—	—	—	—	3	—	3
254-6	—	—	69	2	—	1 (Denmark) 2 (Norway) 4 (FRG)	78
245	—	—	4	—	—	3 (U.K.)	7
235-8	—	—	—	—	32	—	32
213-9	—	—	—	—	11	1 (Belgium)	12
204	—	—	8	—	—	—	8
186	—	—	—	16	—	—	16
180	—	35	—	—	—	—	35
174	—	41	—	—	—	—	41
170	4	—	—	4	—	6 (Holland) 4 (FRG)	18
163-5	17	—	—	—	—	2 (FRG)	19
150	1	—	—	—	—	—	1
140	128	—	—	—	—	1 (FRG)	129
136	—	—	—	2	—	—	2
125	—	—	—	—	—	2 (Norway)	2
103	31	—	—	—	—	—	31
	181	76	84	32	46	28	447
Percentage of Total	40.5	17.0	18.8	7.1	10.3	6.2	99.9

Sources: Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966). See chapter 28 for diagram based on these data.

[24] See diagram, p. 407.

The most significant conclusion is that a detailed examination of one important class of prime movers—marine diesels, for which we have complete and accurate data does not produce evidence of useful Soviet innovation. Four-fifths of these units, whether measured in terms of units or aggregate horsepower, were built abroad and those built inside the U.S.S.R. had considerable, if not complete, dependence on foreign designs and for the most part technical assistance in the form of drawings and sample engines.

The evidence produced for truck diesels, internal combustion engines, and gas turbines suggests a similar heavy dependence on foreign technology—no indigenous Soviet work forms the basis for large-scale production of these propulsion systems. In boilers we find long-term manufacture of a single model of 174 to 180 cubic meters for marine use (boilers are of course manufactured in other models for nonmarine uses), with flexibility obtained by boilers from outside the U.S.S.R.

CHAPTER EIGHTEEN

Western Assistance to Soviet Atomic Energy

SOVIET THEORETICAL WORK BEFORE WORLD WAR II

Russian aptitude for theoretical work in mathematics and physics is well exemplified in the fields of high-energy physics and atomic theory. As a result of the work of Petr Kapitsa and other physicists in the decade of the twenties, Soviet research paralleled Western research in the 1930s. A series of institutes was established, of which the Nuclear Physics Laboratory at the Leningrad Technical Institute under Igor Kurchatov was preeminent. Two cyclotrons were established under Kurchatov (at the same time as scientists at the University of California at Berkeley pioneered the cyclotron), but two other cyclotrons were left unfinished until the end of the war.

According to A. Kramish, Soviet scientists had made several major discoveries by 1940 and "the Russians are justified in claiming priority for the discovery of spontaneous fission."[1] Work was undertaken on methods for quantity production of fissionable materials, i.e., uranium-235 and heavy water, and methods later used by the United States in the Manhattan Project were under active discussion and even partly published in the U.S.S.R. before World War II.

The Nazi attack of June 1941 brought this promising theoretical work to a halt, and for some years thereafter Russian activity was limited to monitoring Western progress, particularly the extraordinary progress in the United States. There is no question that Soviet scientists were at least on a par with Western scientists in 1940, and in some areas of theory they could have been slightly ahead.

The wartime monitoring process comprised espionage, not only in the United States and Canada,[2] but also in Germany.[3] It was later asserted in scientific circles in the United States that scientific "secrets" could not be effectively retained, and official U.S. policy, as announced by President Truman in October 1945, was to retain the engineering and industrial techniques but not the scientific

[1] M. J. Ruggles and A. Kramish, *The Soviet Union and the Atom: The Early Years* (Santa Monica: RAND Corp., 1956), Report no. RM-1711. Arnold Kramish has also published *Atomic Energy in the Soviet Union* (Stanford, 1959); this is in great part a reproduction of the material in RAND report no. RM-1711 and companion studies.

data within the United States; hence the preparation of the 1945 Smyth Report, which was of some assistance to Soviet work.[4]

German wartime efforts in the same field, from the scientific viewpoint, were on a level with those of the United States. The Weinberg-Nordheim report[5] concluded that German wartime researchers "were on the right track and their thinking and developments paralleled ours to a surprising extent. According to this report the Germans knew the correct lattice dimensions for a P-9U system as well as the required quantity (four tons) of P-9. Their uranium metal "was about as pure as ours," their theory of the chain reaction "was in no wise inferior to ours, in some respects it was superior," and the only nonengineering "secrets" they might not have had was an understanding of the Xeon-135 poisoning problem and possibly of the properties of plutonium-240.[6] It was primarily lack of heavy water that accounted for inability of the Germans to achieve a chain reaction; however, their total effort was on a much smaller scale than the American effort. The report concludes:

> We must proceed, therefore, on the basis that anyone knowing what is in the German reports can establish a chain reaction provided he has sufficient materials. The Smyth report will give additional very helpful hints. The time when others can establish a chain reaction is therefore no longer a matter of scientific research but mostly a matter of procurement.[7]

Given vigorous Soviet atomic espionage, the high level of prewar Soviet scientific work, the American inability to retain scientific secrets, and the availability of German atomic work, scientists, and equipment to the Soviet Union (both through espionage and as a result of postwar capture of German reports), the Soviets had adequate *theoretical* knowledge of atomic weapons manufacture in 1945.

What was perhaps as important as the access to atomic bomb research,

[2] See U.S. Congress, Joint Committee on Atomic Energy, *Soviet Atomic Espionage*, 82d Congress, 1st session, April 1951; and *The Report of the Royal Commission to Investigate the Facts Relating to and the Circumstances Surrounding the Communication, by Public Officials and Other Persons in Positions of Trust, of Secret and Confidential Information to Agents of a Foreign Power: June 27, 1946* (Ottawa, 1946).

[3] A. Kramish, *The Soviet Union and the Atom: The "Secret" Phase* (Santa Monica: RAND Corp., 1957) Report no. RM-1896, p. 17 fn.

[4] U.S. Senate, *Nuclear Scientist Defects to United States*, Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws of the Committee on the Judiciary, 89th Congress, 1st session (Washington, 1964).

[5] U.S. Atomic Energy Commission, *Memorandum on the State of Knowledge in Nuclear Science Reached by the Germans in 1945*, by A. M. Weinberg and L. W. Nordheim (Oak Ridge, Tenn: Technical Information Service, November 8, 1945), German Series no. G-371.

[6] Weinberg and Nordheim pointed out their limited access to German reports, but were able to establish these major propositions.

[7] AEC *Memorandum*, *op. cit.* n. 5, p. 3.

the Soviets had access *on an exclusive basis* to German hydrogen bomb work. David Irving notes a series of experiments on thermonuclear fusion at the German Army explosives research establishment at Kummersdorf; the results of these experiments were captured by Soviet forces and the only document to fall into Western hands, according to Irving, was a "six-page report among the *Alsos* collection ... entitled 'Experiments on the Initiation of Nuclear Reactions by Means of Exploding Substances.' "[8]

Therefore, as the Weinberg-Nordheim report concludes, the important restriction to Soviet atomic development at 1945 was not the scientific method of "making an atomic bomb" but the materials and equipment with which to undertake the program; i.e., it was "mostly a matter of procurement."[9]

CONTRIBUTION OF THE ATOMIC SPIES TO SOVIET WORK

The Soviets made persistent efforts during World War II to penetrate Western work in atomic energy. General L. R. Groves indicates that the major atomic espionage was carried on by Soviet, not German, agents,[10] and such espionage has undoubtedly continued since that time. There is a correlation between the work of the known Soviet agents—Fuchs, Greenglass, May, and Pontecorvo—and subsequent Soviet developments in the atomic energy and weapons field.

Klaus Fuchs, a theoretical physicist, was a member of the inner group in the development of the atomic bomb in World War II; his work in England concerned the gaseous diffusion process used in the Oak Ridge plant. In the United States, Fuchs was intimately associated with both groups (SAM and the Kellex Corporation) working on gaseous diffusion.[11] According to Karl Cohen, former director of the Atomic Energy Commission, Fuchs " ... had intimate and detailed knowledge of all phases of the design of the K-25 plant, including methods of fabricating the barrier, the assembly of the diffuser, and the planned production rate."[12] At Los Alamos, Fuchs took part in making the first atomic bomb and in the weapons work involved.

By contrast, both May and Pontecorvo understood the operating problems

[8] David Irving, *The Virus House* (London: William Kimber, 1967), pp. 193-95; p. 194 has a photograph of p. 1 of the 1944 German Army report on initial work on an H-bomb. The full report is probably at Oak Ridge, Tennessee.

[9] AEC *Memorandum*, *op. cit.* n. 5, p. 3.

[10] Leslie R. Groves, *Now It Can Be Told* (New York: Harper and Row, 1962), p. 141.

[11] U.S. Congress, Joint Committee on Atomic Energy, *Soviet Atomic Espionage*, 82d Congress, 1st session, April 1951 (Washington, 1951).

[12] Letter, Cohen to Joint Committee on Atomic Energy, in *ibid.*, p. 23. Fuchs also was working on uranium hexafluoride and the control problems of gaseous diffusion plants.

of plutonium piles and both worked on the Hanford reactor, which was copied by the Soviet Union in developing the first Soviet reactor.[13]

Nunn May worked in 1942 at the Cavendish Laboratories in Cambridge, England, and in January 1943 went to Canada where he was senior member of the Nuclear Physics Division. Espionage, for which he was sentenced to ten years in prison, consisted of supplying the Soviets with samples of uranium-235 and uranium-233. May admittedly also passed on to the Soviets information that was still classified in 1946.[14]

Prior to his defection to Russia in 1950, physicist Bruno Pontecorvo worked as senior principal scientific officer at the British Harwell Laboratory. The most significant knowledge possessed by Pontecorvo concerned the Hanford reactor and the nuclear aspects of the Canadian NRX heavy-water pile at Chalk River, Ontario—at that time the most advanced reactor of its type in the world.[15]

David Greenglass, the fourth atomic spy, was a machinist assigned to the Los Alamos weapons laboratory, where he worked on high-expolsive lens molds: "Greenglass testified that he conveyed to Russia a diagram of the atomic bomb, along with a detailed explanation and related materials in writing."[16]

In sum, the Soviets gained a great deal of useful information and technical know-how from espionage sources; by themselves these data were of limited use, but combined with other sources they comprised a package with significant potential.

THE GERMAN CONTRIBUTION TO SOVIET ATOMIC ENERGY PROJECTS[17]

The widespread impression that the Soviets did not gain useful materials, equipment, or information from the German atomic research program is erroneous.[18] (See Table 18-1.)

[13] *Ibid.:* May p. 2, Pontecorvo p. 2. See also p. 242 below.

[14] *Ibid.*, p. 2.

[15] *Ibid.*, p. 1.

[16] *Ibid.*, p. 3.

[17] For the status of the German atomic energy projects in 1945 and also for a measure of the technology and facilities removed to the Soviet Union, see the G Series of reports at the Atomic Energy Commission, Oak Ridge, Tennessee. Some 394 reports are listed in Atomic Energy Commission TID-3030, *German Reports on Atomic Energy*. See also BIOS Final Report 675, *Production of Thorium and Uranium in Germany*.

[18] For example, see G. A. Modelski, *Atomic Energy in the Communist Bloc*, (Melbourne, 1959), p. 36. Modelski concludes: "... the Russians may have picked up some useful material and information, as well as some trained men, but the sum total cannot have been very large. German research had not progressed very far during the war and by 1944, far from having a pile working, German scientists merely envisaged the possibility that one might be made to work."

Table 18-1 SUMMARY OF GERMAN ATOMIC ENERGY PROJECTS REMOVED TO THE U.S.S.R. IN 1945

Material or project	*Location and plant*	*Status at 1945*
Uranium metal reduction	DEGUSSA, Frankfurt plant (moved to Berlin in 1944)	Peak annual production 5,000 kg (1942); removed to U.S.S.R.
	DEGUSSA, Berlin-Grünau plant	Peak production of 376 kg (1945); removed to U.S.S.R.
Stocks of uranium metal and oxides at Oranienburg plant Uranium metal refinery	Auer A.G.	Removed to U.S.S.R.
Heavy water	Stocks at Leuna in Silesia	Probably removed to U.S.S.R.
Separation processes	von Ardenne magnetic separator	Removed with von Ardenne to U.S.S.R.
	Groth centrifuge	
Linear accelerator	Berlin	Removed to U.S.S.R.

Source: David Irving, *The Virus House* (London: William Kimber, 1967).

In 1945 the bulk of German uranium ore, the balance of 1200 tons removed by the German Army from Belgium in 1940, was moved to a salt mine near Stassfurt in what was to become the Soviet Zone. A British-American mission attached itself in 1945 to a U.S. infantry division and under "Operation Harborage" seized the mine and the 1100 tons of Belgian ore located nearby. This uranium ore was removed to the American Zone of Germany.[19]

Uranium metal was produced in Germany in World Warr II at two plants operated by DEGUSSA (German Gold and Silver Extraction Corporation). Uranium oxide supplied by Auer A.G. in Berlin was reduced by DEGUSSA at its Frankfurt plant, and by the end of 1940 the company was producing a maximum of one ton of uranium metal per month. In the United States, by way of comparison, almost no uranium metal was available until the end of 1942; when the first chain reaction took place at Chicago, the DEGUSSA plant in Frankfurt had manufactured over seven tons of uranium metal.[20]

Work began in 1942 on a second uranium production plant identical to the DEGUSSA plant but at Grünau, Berlin. In January 1945 the DEGUSSA Frankfurt plant was removed to the Auer location near Berlin, where the uranium metal was being refined. The Soviets occupied Oranienburg and the Auer works, and so obtained several tons of pure uranium oxide and, more importantly, the two DEGUSSA uranium smelting plants and the Auer refining plant. In addition they captured five tons of uranium metal powder, a quantity of uranium

[19] See Irving, *op. cit.* n. 8; also see S. Goodsmit, *ALSOS* (New York: Schuman, 1947).
[20] Irving, *op. cit.* n. 8, pp. 75-76.

cubes, and about 25 tons of unrefined uranium oxide and uranates. This became the uranium stockpile for the early Soviet atomic bomb program.[21]

Unlike the American program, for which the ultrapure graphite necessary for use as a moderator was produced by several firms, the German atomic project was not able to use graphite as a moderator and thus came to be dependent on the use of heavy water. Part of the Norwegian heavy water plant, captured by the Germans and then destroyed by British Commandos, was duplicated by I. G. Farben at Leuna. The Leuna plant was later subjected to heavy bombing, but the surviving drums of heavy water were transported to the I. G. Farben plant at Myrow in Silesia and presumably captured there and removed to the Soviet Union.[22]

By the time the war ended the Germans had seven isotope separation processes under consideration, excluding the gaseous diffusion process used in the United States, and at least two of these had been brought to the equipment stage. Manfred von Ardenne had developed a magnetic isotope separator similar in concept to the magnetic process that was then used at Oak Ridge in the United States and later built at von Ardenne's Berlin laboratories. Also, a prototype centrifuge with an operating speed of 50,000 revolutions per minute was built by Groth; although the early models failed, it seems that this centrifuge process had practical possibilities for isotope separation. In 1945, von Ardenne's laboratory at Berlin, complete with a Van de Graaf machine, a cyclotron, and the prototype electromagnetic isotope separation equipment, was removed with von Ardenne himself to the Soviet Union.

The Germans also built several subcritical piles. The first German pile was at the Kaiser Wilhelm Institute of Biology and Virus Research in Berlin. This was a heavy-water pile, and according to the American intelligence mission which inspected it in July 1945 after much of the equipment had been removed to the Soviet Union, it appeared to have been excellently equipped when compared to the primitive setup that Enrico Fermi used at Columbia University in the United States.

The Kaiser Wilhelm Institute was stripped of all its equipment, including a high-voltage linear accelerator, and moved to the Russian atomic project at Obninchoye.[23]

Another pile, built at Leipzig, was destroyed in a 1942 explosion, and a third pile was located at Haigerloch. In the late summer of 1944 all uranium pile research was removed to Stadtilm in Thuringia in what was to be the Soviet Zone. Later, in 1945, some pile research was moved south.

It is interesting to note, then, that while in 1944 and early 1945 rocket development projects under Werner von Braun moved westward into the future

[21] *Ibid.*, p. 263.
[22] *Ibid.*, pp. 157, 178, 191-92.
[23] *Ibid.*, p. 264.

U.S. and British zones, the movement of atomic energy projects (metal reduction, uranium ore, and pile research) was eastward into the future Soviet Zone, and there most of it remained when the war ended.

Finally, the Soviets rounded up the uranium project scientists and most went, under good contracts, to the Soviet Union. Among these men were von Ardenne, an expert in the separation process and something of an equipment genius, and Nikolaus Riehl, an expert in the processing and refining of uranium metal; both worked for about ten years on the Soviet atomic project.[24]

The German nuclear scientists were settled at Sukhumi and remained there from 1945 until some time after 1955. The sanatoriums along the Black Sea coast were converted into nuclear research institutes where the German groups were installed and projects started. For example, Heinz Barwich was the leader of 18 scientists working on theoretical questions concerning control problems in the diffusion process of isotope separation.[25] Associated in this work was Yuri Krutkov, who was technically known as a "prisoner-engineer" and had been released from a prison camp for this purpose. Another group at Sukhumi was the von Ardenne team working with R. A. Demirkhanov on instrumentation for nuclear energy and later on ion sources and mass spectrography. Although the Sukhumi laboratories are today of secondary importance, they formed the key section for the development of atomic energy in the Soviet Union in the forties and fifties and employed many German engineers. Some of the personnel have since returned to Germany, but others are still in Sukhumi.

Methods for the mass production of uranium-235 were developed at Sukhumi. The Soviets undertook duplication of both the barrier method (already established in the United States) and the centrifuge method of isotope separation. Doctor Zuehlke specialized in the barrier question. The manufacture of metallic barriers was divided into two groups: those working on flat barriers and those working on tube barriers. Max Steenbeck, another German scientist, was one who concentrated for a number of years on the ultracentrifuge method for separating uranium gas.[26]

In summary, at the end of World War II the Soviets obtained from Germany not only scientists and expert technicians (the Germans were then on the threshold of achieving a chain reaction) but facilities for ore processing, reduction, and refining of uranium metal and oxides, two working isotope separation processes and operating equipment, advanced laboratories and equipment, and several

[24] *Ibid.*, p. 263. Irving also lists about a dozen other Germans, key members of the German atomic energy project, who went to the Soviet Union.

[25] See Dr. Barwich testimony to U.S. Senate, *Nuclear Scientist Defects* .... *op. cit.* n. 4, pp. 10 *et seq.*

[26] See *ibid.*, for usefulness of U.S. reports to German work in the U.S.S.R. Also see U.S. Senate, Committee on the Judiciary, *Scope of Soviet Activity in the United States*, Hearings Before the Subcommittee to Investigate the Administration of the Internal Security Act and other Internal Security Laws, 84th Congress, 2d session, (Washington, 1956), pt. 21.

subcritical piles. In addition they located and removed small stocks of heavy water, uranium metal, and uranium oxides.

The Soviets failed to obtain from the Germans any information on the gaseous diffusion separation process, the use of graphite as a moderator, or knowledge of a chain reaction in practice. Nor did they obtain any operational atomic weapons technology, although they did acquire useful German research work. These technologies could only have come from the United States or from Great Britain (for the gaseous diffusion process).

Probably the most accurate estimate of Soviet capability in atomic development at the end of World War II was made in November 1945 by Major General L. R. Groves, testifying before the Senate Special Committee on Atomic Energy. General Groves was director of the Manhattan Project during World War II, and at that time was more knowledgeable than any other person concerning the industrial and technical features of production of atomic materials and atomic bombs. He made a statement relative to the Soviet Union as follows:

> I testified before the House Committee in response to a direct question on that point, that one nation could catch up and produce a bomb, if they did it in complete secrecy, probably within from 15 to 20 years—more likely the latter. If they did it without secrecy and with a great deal of help from the United States and from England and Switzerland—and I say Switzerland because she is a manufacturer of precision machinery—it would be done in five to seven years, probably seven.[27]

Under questioning from the committee, General Groves elaborated on the assistance that would be needed. This would have to include engineering developments, i.e., the design and manufacture of and the specifications for metallurgical processes. Groves commented on the fact that at the Hanford Engineering Works, the Dupont Company had over 10,000 subcontractors, "each of them supplying a different material . . . they were supplying subassemblies."[28] At least 50 percent of these 10,000 subcontractors required some special "know-how." With all the technical resources of American industry it had taken 18 months to build this kind of equipment, and according to General Groves, in 1945 such resources could have been obtained only in the United States, England, and Switzerland, with possibly some parts in Sweden. Switzerland was isolated by General Groves because it has been a center of high-grade machine tools of special design: "You find a great many [Swiss machine tools] in this country [i.e., the U.S.A.]

[27] U.S. Senate, Special Committee on Atomic Energy, *Hearings* Pursuant to S. Res. 179, Creating a Special Commission and Investigating Problems Related to the Development, Use and Control of Atomic Energy, 79th Congress, 1st session, November and December 1945 (Washington, 1946), pts. 1-3; *idib.*, 2d session, January and February 1946 (Washington, 1946), pts. 4, 5.

[28] *Ibid.*, pts. 1-3, p. 67.

particularly in any plant that has been in operation for a number of years and has accumulated a number of special Swiss machines."[29]

It is quite clear that in 1945 the Soviets with outside help of a detailed nature, would have required five to seven years to reproduce the American achievement, and that such assistance could only come from one of three countries—the United States, England, or Switzerland. General Groves's testimony is entirely consistent with evidence provided in this study concerning Soviet technical backwardness.

INDUSTRIAL ASPECTS OF THE SOVIET ATOMIC PROGRAM

The conclusion of the Weinberg-Nordheim report is supported by Klaus Fuchs's statement that he could do no more than explain to the Soviets the principle upon which a bomb was based: " ... it was up to the Russians to produce their own industrial equipment."[30] Neither could any other of the atomic spies provide more than information on scientific and technical principles. The key question after taking atomic espionage into account, then, is this: Where did the Soviets get the industrial ability to manufacture an atomic bomb? This achievement is infinitely more important than transfer of scientific information; it is also more difficult to assess.

Klaus Fuchs indicated that he had been "astonished" when the Soviets "succeeded in making and detonating a bomb so rapidly," and he added that although scientifically they were sufficiently advanced, he "could not have believed that commercially and industrially they had developed so quickly."[31]

Certainly the overall conclusions of this study and General Groves's expressed views raise similar questions about Soviet industrial ability. In 1945-46 the U.S.S.R. was technologically backward and heavily dependent on the West. Even though priority there is traditionally given to military objectives, the extraordinary effort required—one that strained even American technical resources—was far beyond purely Soviet industrial abilities in the 1940s and 1950s.

It is therefore suggested, in line with the Weinberg-Nordheim report and the comments of Klaus Fuchs, that the essential question to be answered about Soviet atomic weapons development, and about the Soviet atomic energy program in general, is what was the source of the industrial capability to manufacture atomic materials, including atomic weapons. The argument, outlined below, is that the technical capability came by various routes from the West.

The basic raw material for atomic reactors is uranium ore converted into uranium metal—the metal being the raw material for pile operation.

[29] *Ibid.*, p. 69.
[30] Allan Moorehead, *The Traitors*, (London: Hamish Hamilton, 1952), p. 141.
[31] *Ibid.*

In January 1943 the Soviet Purchasing Commission requested eight tons each of uranium oxide and uranyl nitrate salts.[32] A. Kramish indicates that if this was processed into metal it would yield "just about the right amount of material necessary to duplicate the United States experiments at Chicago."[33]

In March 1943 two licenses were granted to the S. W. Shattuck Chemical Company of Denver, Colorado, for shipments to the Soviet Union: one was for 200 pounds of urano-uranic oxide and 220 pounds of uranium nitrate, and one for 500 pounds each of urano-uranic oxide and uranium nitrate. Granting of these licenses was followed in April 1943 by a license for 25 pounds of uranium metal and in November 1943 by a license for 1000 grams of heavy water. These licenses were granted by the Lend Lease administration to the Soviet Purchasing Commission in the United States. General Groves comments:

> There was a great deal of pressure being brought to bear on Lend Lease apparently to give the Russians everything they could think of. There was a great deal of pressure brought to give them this uranium material.[34]

However, it seems unlikely that the Soviets obtained sufficient reactor materials from U.S. sources. Soviet requisition No. R-12045 of February 4, 1943, for uranium oxide was not filled, and so far as the allowed 25 pounds of uranium metal is concerned, General Groves comments:

> We didn't stop [the] shipment for a very good reason. We were anxious to know if anybody in this country knew how to make uranium metal. . . . We were willing that the Russians have 25 pounds . . . it would be worth more than that to us to find out how to make uranium metal.[35]

Later, on March 31, 1944, Lieutenant General L. G. Rudenko wrote to Secretary of War Stimson to the effect that the Soviet Union was "in most urgent need of the following materials for its war industry," i.e., eight tons of uranium nitrate, eight tons of urano-uranic acid, and 25 pounds of uranium metal. Again, these quantities were sufficient to duplicate U.S. work.[36]

The only Soviet receipt of uranium metal from the United States was two pounds of inferior material. However, in June 1948 the Canadian Radium & Uranium Corporation of New York City did ship to the Soviet Union 500 pounds of black uranium oxide and 500 pounds of uranium nitrate—and the

[32] U.S. Congress, *Soviet Atomic Espionage*, *op. cit.* n. 11, pp. 184-92.
[33] Kramish, RAND Report RM-1896, *op. cit.* n. 3., p. 63.
[34] U.S. House of Representatives, Committee on Un-American Activities, *Hearings Regarding Shipment of Atomic Materials to the Soviet Union*, 81st Congress, 1st and 2d sessions, December 1949-March 1950 (Washington, 1950), p. 940.
[35] *Ibid.*, p. 942.
[36] *Ibid.*, p. 1044.

Atomic Energy Commission did not become aware of this shipment for five years.[37]

Of far greater value than uranium metal or oxides supplied from the United States and Canada was the Soviet capture of the Auer A.G. plant at Oranienburg, just outside Berlin, together with German uranium metal and oxides. The Auer plant produced uranium metal for the German atomic program.[38]

SOVIET URANIUM MINING IN SAXONY: WISMUTH A.G.

German uranium ore was mined in Saxony. As soon as American forces evacuated the Saxony area of East Germany, Soviet geologists prospected the old mines around Oberschlema. Subsequently, a corporation named Wismuth A.G. was formed to reopen the mines and develop the uranium content. The chief German adviser used by the Soviets for this project was a Nazi named Schmidt, a former mine inspector and an expert on the Saxony mines. Released from a Soviet concentration camp for this purpose, Schmidt was provided with an excellent salary and privileges on the understanding that the mines were to come into active production.

By 1951 there were ten producing groups of mines within the Wismuth corporation comprising a total of between 65 and 70 individual uranium mines. (See Figure 18-1.) In addition there were subsidiary organizations for the construction of mining equipment, a warehouse for technical equipment, a uranium processing point at Aue, and auxiliary units for equipment of repair, lumber, assay, and other mining operations. Electrical equipment, compressors, and electric pumps were supplied by former East German companies.[39]

A German mining engineer, Hans Scherbel, has described the working conditions for the 300,000 Germans who worked around the clock in these mines: "The equipment was incredibly primitive. The shaft had no elevator. You had to climb 250 feet down on ladders. The miners had to make this climb twice daily."[40] Concerning construction of a new shaft at the Filzteich pond at Schneeberg to mine a pocket of high-grade ore, Scherbel comments that the operation was conducted "in a manner that can only be described as criminal.

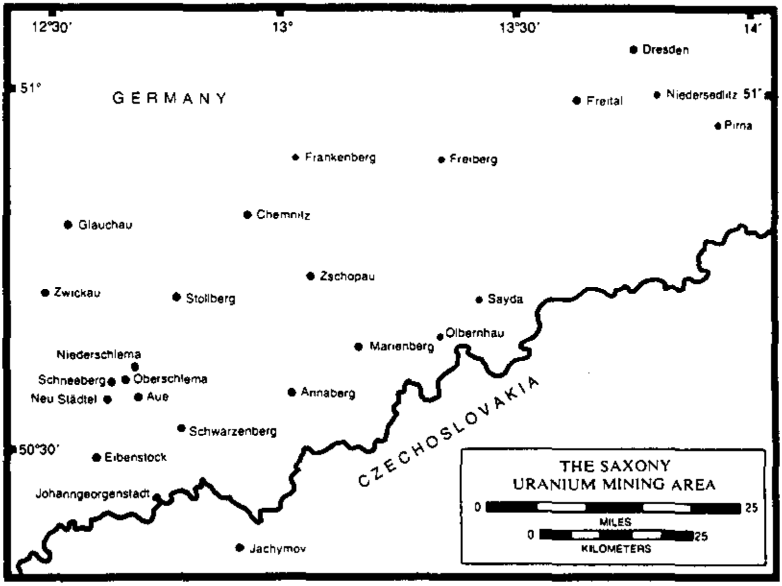
[37] *Ibid.*, p. 969.

[38] Irving, *The Virus House*, p. 250, says the plant was bombed "and completely destroyed." Reference to the U.S. Strategic Bombing Surveys suggests that few of these "completely destroyed" plants were in fact put out of action for long. Reference to the bombing records would determine the state of the plant as occupied by the Soviet forces.

[39] See Nikolai Grishin, "The Saxony Uranium Mining Operation (Vismut)" in Robert Slusser, ed., *Soviet Economic Policy in Postwar Germany* (New York: Research Program on the U.S.S.R., 1953), p. 127. This is an excellent description of the Soviet uranium mining operations in Saxony as of 1950.

[40] "The Secret Mines of Russia's Germany," *Life*, XXIX, 13 (September 25, 1950), 83.

Figure 18-1 THE SOVIET URANIUM MINES IN SAXONY



Source: Robert Slusser, ed., *Soviet Economic Policy in Postwar Germany* (New York: Research Program on the U.S.S.R., 1953), p. 137. Map data are from annex 1, pp. 154-55.

A diagonal shaft had been driven from the surface downward under the pond ... floods periodically swept through the shafts below."[41]

The reopening of the mines was successful, and output increased from 135 tons of ore in 1946 to about 900 tons in 1948; the output stabilized at this figure, and after processing was shipped to the U.S.S.R.

THE FIRST SOVIET REACTOR

The feasibility of a nuclear chain reaction was demonstrated at the University of Chicago in 1942; the Soviets had no need, therefore, to duplicate initial American work. The first Soviet reactor had the same functions as the fourth U.S. reactor at Hanford, i.e., to test materials and produce limited quantities of fissionable material. A. Kramish has pointed up the technical similarities between the first Soviet PSR reactor and the Hanford reactor, concluding that

[41] *Ibid.*

a reactor physicist would deduce that "the Soviet reactor was practically a carbon copy of the American 305 reactor built at Hanford during the first phases of the Manhattan Project."[42] (See Table 18-2.)

Table 18-2 COMPARATIVE CHARACTERISTICS OF THE AMERICAN HANFORD AND SOVIET PSR REACTORS

	Hanford 305	*First Soviet reactor (PSR)*
Start-up date	1944	1947
Power	10 watts	10 watts
Diameter	18-20 feet	19 feet
Lattice Spacing	8½ inches	8 inches
Loading	27 tons of uranium	25-50 tons of uranium*
Rod diameter	1.448 inches	1.2 to 1.6 inches

Source: A. Kramish, *The Soviet Union and the Atom: The "Secret" Phase*, RAND Report RM-1896, p. 64.

*Soviet estimate.

Kramish also points out that the Soviet **PSR** reactor was completed many years before the declassification of data on the Hanford 305 reactor and observes that "the similarity of construction is interesting. Is it coincidental, or were details on the 305 reactor obtained through espionage?"[43]

The first Soviet power reactor (VAM-1), as distinct from a materials testing reactor, began operation in June 1954, and was promptly claimed as the world's first atomic power station.[44] This was not an altogether accurate statement; the first nuclear reactor to generate electric power was operated in the United States in 1951. The first full-scale power reactor was the Calder Hall unit in England, which began operation in October 1956 with a reactor generating ten times more power than the 5-MWe net capacity of the Soviet 1954 reactor. The first authentic industrial reactor, the Shippingport pressurized water reactor, was built in the United States in 1958.

The original 5-MWe Soviet power reactor VAM-1 was the only Soviet power reactor from 1954 until 1964. In that year two more power reactors came into operation, the AMB-1 graphite water reactor of 100 MWe and the VVPR-1 pressured water dual-purpose reactor of 210 MWe. Therefore, although they had an extensive program employing 31,400 persons, the Soviets in 1965 had only three power reactors in operation generating a total of 315 MWe. By way of comparison, France in 1965 had five power reactors generating 350 MWe and the United Kingdom was far ahead with nine reactors generating

[42] Kramish, RAND Report RM-1896, *op. cit.* n 3, p. 64.

[43] *Ibid.*, p. 65.

[44] For a brief description see G. Ostroumov, *Pervaia v mire* (Moscow, 1956).

1395 MWe. Germany and Italy had no reactors at all in 1960, but Germany by 1965 had one reactor generating 50 MWe and Italy had three generating 607 MWe. This comparative development is of some interest in view of the early Soviet start in generation of electric power by use of atomic energy and the claims made for atomic energy in the early 1950s by Soviet scientists. (See Table 18-3.)

Table 18-3 COMPARATIVE DEVELOPMENT OF ATOMIC POWER REACTORS

	Net installed capacity 1960		*1965*		
Country	*Plants*	*MWe*	*Plants*	*MWe*	*Manpower employed in nuclear energy at 1965*
Soviet Union	1	5	3	315	31,400
France	3	85	5	350	37,500
Germany	—	—	1	15	9,676
Italy	—	—	3	607	3,500
United Kingdom	3	373	9	1395	38,632

Source: John W. Shartall, *Atomic Handbook* (London: Morgan, 1965), pp. 9, 13-14.

The position was even more distinctive at the end of 1969, when a map in *Pravda*[45] pinpointed only four operating atomic power reactors in the Soviet Union, with none under construction. This total obviously includes the original three brought into production between 1954 and 1964 together with the Siberian dual-purpose reactor brought into production sometime after 1965. This may be compared with developments in the United States, where in June 1969 a total of 13 power reactors were in operation and another 79 were on order or under construction.[46]

It appears that Soviet atomic energy development has been held back by lagging development of instrumentation and computers. The history of atomic reactors and digital computers is intertwined. Development for both began at about the same time during World War II and considerable support was given to computer development by early atomic energy researchers; the AVIDAC at Argonne, the ORACLE at Oak Ridge, and the MANIAC I at Los Alamos were products of this early cooperation.[47] By 1959, "over 300 nuclear reactor codes had been programmed in the United States for digital computers,"[48] including such major problem areas as burn-up, age diffusion equations, and kinetic responses of reactors. Soviet backwardness in computer technology is noted elsewhere.[49]

[45] *Pravda*, November 14, 1969.
[46] *Business Week*, June 14, 1969.
[47] Ward C. Sangren, *Digital Computers and Nuclear Reactor Calculations* (New York: John Wiley & Sons, 1960), p. 3.
[48] *Ibid.*, p. 10.
[49] See p. 318 below.

The 1963 U.S. atomic energy delegation to the Soviet Union had an unparalleled opportunity to see Soviet atomic development at first hand; the delegation report substantiates the evidence of Soviet technical weakness in atomic energy.[50]

For example, the delegation reported: "Equipment in the hot cells, such as viewing devices and manipulators, was not as good as that found in equivalent U.S. installations."[51] The delegation also reported: "An example of Soviet instrumentation was a transistorized television camera in a radiation cell. This was the only piece of completely transistorized equipment that the delegation saw during the trip."[52]

Only one project, the 70-GeV proton synchrotron then under construction at Serpukhov, appeared to strike the delegation as outstanding:[53]

> The delegation formed a generally favorable impression of the project and personnel. The plant layout appeared to be sound, and factory-made equipment looked as if it were of high quality, e.g., canned rotor pumps. Standard field construction, however, was of a poorer caliber. For example, the masonry work was not done as carefully as might be expected. The few examples of stainless-steel welding seen, however, looked competently done.
>
> On the whole, the project seems well conceived and is being executed with adequate competence.[54]

Inasmuch as the Serpukhov operation was singled out for comment, a brief study was undertaken of the origins of the Serpukhov equipment.

CERN ASSISTANCE FOR THE SERPUKHOV PROTON SYNCHROTRON

The European Center for Nuclear Research (CERN) was established in Geneva, Switzerland, in 1954 to provide for nuclear research collaboration among European countries. On July 4, 1967, an agreement was signed in Moscow relating to scientific and technical cooperation between CERN and the Soviet Union for construction and operation of a 70-GeV proton synchrotron at Serpukhov. It was to be capable of the highest energy acceleration in the world. Discussions concerning the possibilities of such collaboration had been initiated

[50] Further evidence for the 1950s is in Medford Evans, *The Secret War for the A-Bomb* (Chicago: Henry Regnery Company, 1953)

[51] *Atomic Energy in the Soviet Union*, Trip Report of the U.S. Atomic Energy Delegation, May 1963 (Oak Ridge, Tenn.: AEC Division of Technical Information, n.d.), p. 25.

[52] *Ibid.*, p. 7.

[53] *Ibid.*, pp. 54-55. Concerning the preinjector for the 70-BeV machine, the delegation observed: "This was perhaps the most interesting and surprising piece of equipment of the tour."

[54] *Ibid.*, p. 65.

by Victor F. Weisskopf while he was director general of CERN in the mid-1960s.[55]

The main features of the technical-assistance agreement were as follows:[56]

1. CERN provides a fast-ejection system for the Serpukhov accelerator which becomes the property of Serpukhov; "CERN will be responsible for the design, construction, testing, and installation of the system (including its magnets, their vacuum tanks, and the associated supplies and controls), and for commissioning the vast ejected proton beam at the accelerator."
2. CERN provides radio-frequency particle separators which will be used at Serpukhov, "and will be responsible for the design, construction, testing, and installation of these items of beam line equipment and for commissioning at the accelerator."

   The Soviets for their part agreed to make available necessary technical information to build the extraction system and the separators, and also to establish at Serpukhov the buildings and supplies of electricity, cooling water, etc., and generally provide services such as workshops and stores. Also the U.S.S.R. has the responsibility to operate the accelerator and provide the beams which are necessary for the program.
3. CERN has the right to propose a succession of electronics experiments to be incorporated in the experimental program and the 70-GeV machine.
4. CERN Institute for High-Energy Physics in Switzerland will collaborate in bubble-chamber physics, and Soviet scientists will join teams working at CERN "in preparation for the start of bubble-chamber physics at Serpukhov."

In October 1966 the French Government agreed to send to Serpukhov a large hydrogen bubble chamber (with a volume of 6000 litres) developed at the Saclay Laboratory in France. Under the agreement, French scientists were to participate in the bubble-chamber experiments with Soviet scientists.[57] This provision is interesting in light of the comment of the U.S. delegation report that "only one specific item of experimental equipment was mentioned, namely, a large hydrogen bubble chamber."[58] The report did not state the origin of the bubble chamber.

Two factors bring Western assistance to Serpukhov into focus: first, the technical complexity and cost of these machines increase with size; and second, because of its technical complexity the Soviets would have been unable to build the Serpukhov unit without CERN assistance. Indeed the Soviets started

[55] *CERN Courier* (Geneva), VII 7 (July 1967), 23. V. F. Weisskopf was among the small group of physicists who in 1939 made the historic and voluntary agreement to restrict publication of information concerning nuclear developments. At present (1969) Weisskopf is chairman of the High-Energy Physics Advisory Panel of the Atomic Energy Commission.

[56] *CERN Courier*, VII, 7 (July 1967), 23.

[57] *Ibid.*, p. 122.

[58] *Atomic Energy in the Soviet Union*, *op. cit.* n. 51, p. 77.

excavation for a 6-GeV machine at Erevan in 1960 and only completed it in 1967, a little before the 70-GeV Serpukhov unit started. At that time the most powerful accelerator in the United States was the 15-GeV proton synchrotron at the Argonne National Laboratories in Chicago; the CERN machine of 24 GeV started in 1959, and then the largest Soviet installation, at Dubna, was rated 10 GeV.

Therefore Western techniques and instrumentation enabled the Soviets to claim the most powerful high-energy accelerator in the world.[59] Although such machines are generally regarded as basic research units, it has been argued by physicists in the high-energy field that accelerators do have a technical spillover effect of some magnitude. For example, R. R. Wilson in the 1968 Richtmyer Lecture acknowledged the assistance given by the accelerator to the nuclear power industry and noted also,

> ... the kind of unexpected but immediately practical developments that accompany any intensive technological activity ... the high-power transmitting tube ... fast pumps ... high-vacuum techniques ... particle counters ... flip-flop circuits.[60]

In a survey of Soviet technology the field of atomic energy poses a paradox of some magnitude.

General Groves's opinion in 1945 was that the Soviet Union would require 15 to 20 years to construct an atomic bomb. This view is supported by such diverse sources as Klaus Fuchs and this study. The Soviet Union in fact required four years to achieve a "nuclear explosion."

Today we find that while the Soviet Union has some first-class scientists—the physicist Lev Artsimovich is one whose name comes to mind—it is obviously weak in converting nuclear science into practical systems. We see the evidence in restricted development of power reactors, Western observations of Soviet project instrumentation, assistance required for the Serpukhov proton synchrotron, and the backwardness in computer technology.

Given this relative technical backwardness both in 1945 and today, the paradox is in the Soviet Union's ability to achieve an advanced nuclear weapons capability. This is not an economic question of how resources were shifted but a question of engineering capability. It is therefore suggested as a working hypothesis that even in nuclear weaponry, in the development of controlled thermonuclear reactions and all fields of nuclear science and technology requiring extensive computer backup and instrumentation, there has been a large—and yet unrecorded—transfer of equipment and technology from the West.[61]

[59] The existence of the Serpukhov machine also gave U.S. scientists a useful means to prod Congress into appropriating $250 million for the 200-GeV unit under construction at Weston, Illinois, in 1970.

[60] *CERN Courier*, *VIII*, *7 (July 1968)*, *156-57*.

[61] This chapter is restricted by the limited open data available on most aspects of atomic energy. It should be viewed as little more than a preliminary to the study of the transfer of Western assistance to the Soviet nuclear program.

CHAPTER NINETEEN

Western Origins of Soviet Railroad Locomotives

While there is little question that the Soviet railroad system has made gigantic strides since the early 1930s, there was still a high degree of technical dependence on the West at the end of the 1960s.[1]

As of 1960 more than 31,000 steam locomotives were still in use in the Soviet Union. This was considered undesirable (despite the excellent working characteristics of the locomotives), and efforts were directed to the electrification of high-density lines and the use of diesel-electric locomotives on low-density lines. Gas turbines and diesel-hydraulic locomotives were in an experimental stage. The 1960 U.S. Railroad Delegation concluded on the basis of its observations that this motive equipment "showed no radical departure from familiar designs but is rather an adaptation or copy of designs of engines and components found in the United States and Western Europe—without regard for patent considerations."[2]

Special-purpose cars were rarely used, customers being enjoined to conform their requirements to standard box, flat, tank, gondola, or refrigerator cars. Although many of these were two-axle units, they were being replaced by four-axle units. As far as signals and communications are concerned, the 1960 delegation commented: "Observations confirmed that the systems in service in the United States during the years from about 1930 to 1945 have been reproduced and manufactured for use on the Soviet railroads."[3]

A number of wagon and locomotive construction and repair plants were removed from Saxony and Thuringia to the U.S.S.R. in 1945-46. The wagon

[1] See Sutton I and II for data concerning early Western technical transfers.

[2] Association of American Railroads, *Railroads of the U.S.S.R.*, Report on the Visit of the United States Railroad Exchange Delegation to the Soviet Union during June 1960 (Washington, n.d.), p. 9. The wide use of foreign locomotives as late as 1962 may be gauged from an observation by J. N. Westwood, on leaving Sebastopol: "As the train moved out through the suburbs it was easy to fancy that this was not Russia but Czechoslovakia, for it was only after several miles that I saw a Russian-built locomotive. Not only were the passenger trains Skoda-hauled but switching and local freight were in the care of new Czech-built 750-hp diesel switchers (class ChME2)." *Trains* (Milwaukee, Wis.), July 1962, p. 44.

[3] *Railroads* ..., *op. cit.* n. 2, p. 11. See Sutton II, pp. 205-6, for assistance of Union Switch and Signal Company (Subsidiary of Westinghouse Electric) in the 1930s.

construction plants at Stassfurt and near Halle were partly removed to the U.S.S.R.; also in Saxony, the Gotha wagon-building plant was about 60 percent removed and the Ilmenau works was completely removed. In Thuringia the Wurzen plant was partly removed; Waggon- und Maschinenbau A.G. (Wumag) at Görlitz was also partly removed and Waggon- und Maschinenfabrik A.G. at Bautzen was about 50 percent removed to the U.S.S.R.[4] However, the more important present-day Russian locomotive and car construction plants are enlarged Tsarist plants or units built in the 1930s rather than transferred German plants.

AMERICAN ORIGINS OF DIESEL-ELECTRIC LOCOMOTIVES

By 1960 the Soviet locomotive construction industry had produced three basic diesel-electric locomotive models in addition to several prototypes (Table 19-1). The three basic production models were based on U.S. locomotives—on American Locomotive Company (Alco), General Electric, and Fairbanks-Morse designs. During World War II a considerable number of U.S. diesel-electric locomotives were shipped to the U.S.S.R. under the Lend Lease program. These locomotives ultimately became prototypes for postwar Soviet models; they included the Alco (Soviet Type Da) and the standard Baldwin (Soviet Db).[5]

Table 19-1 DIESEL-ELECTRIC LOCOMOTIVES IN THE SOVIET UNION FROM 1944 to 1965

Soviet class	*Weight, tons*	*Dates in use*	*Western origins*
		Foreign construction	
Da	—	1943	Alco
Db	—	1943	Baldwin Locomotive
		Soviet construction based on foreign basic design	
TE-1	124	1947	Alco-Da class
TE-2	85	1950-56	Modified TE-1(Alco-Da)
TE-3 (standard)	126	1956-	Fairbanks-Morse engine

Source: J. N. Westwood, *Russian Locomotive Types*, (Bristol: W. Norman, 1960).

The Soviet TE-1, for which production started in 1947 and continued until 1950, was based on an imported Alco-G.E. diesel-electric road switcher that

[4] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951).

[5] U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).

was first delivered to U.S. customers in 1941. Although designed primarily for road service, it was similar in basic design to a yard-switching locomotive. The 1000-hp diesel engine operated at 740 rpm, and was turbocharged by the Buchi system; the electrical equipment for the engine was built entirely by General Electric, and included the main traction generator, auxiliary generator, and four G.E. 731 traction motors with Type P control equipment and Westinghouse air-brake equipment.[6] The Soviet-built version of this Alco model (i.e., the Da type) had three truck bogies (like the Alco unit delivered under Lend Lease) and a D-50 six-cylinder four-stroke diesel engine of 1000 hp. About 300 such TE-1 models were still in service in 1960.[7]

The TE-1 was followed by the TE-2, which first appeared in 1948 with series production from 1951 to 1956. About 1100 were still operating in 1960. The D-50 diesel engine and generators were the same as in the earlier TE-1.

In 1950 design started on a more powerful locomotive—the TE-3 freight (and TE-7 passenger version)—with a prototype appearing in 1953 and series production started in 1956. This locomotive had a 2000-hp ten-cylinder engine (the 2D 100) based on the Fairbanks-Morse opposing piston design. Today the TE-3 and the TE-7 are the standard Soviet freight and passenger diesel electric locomotives.[8]

The TE-3 locomotive unit has been described by an American railroad delegation as containing

> . . . a 2000-hp opposed piston type normally aspirated diesel engine with ten cylinders operating at 850 rpm. This engine appears to be very similar to the Fairbanks-Morse diesel engine used in the United States.[9]

It is normally used as a two-unit consist providing a total of 4000 hp with a passenger service modification (the TE-7).

We may conclude, then, that in the 1960s Soviet diesel-electric locomotives were based on U.S. models of the 1940s; there had been no major improvement in design in Soviet models over their earlier American predecessors.

Soviet hydraulic-electric locomotives are of Austrian and German origin. In 1956 the U.S.S.R. imported some Voith (Austrian) 200-hp switchers, and in 1957 some 400-hp units (Soviet class MG-2) with Voith transmission and Jenbach mechanical units and engine. These were supplemented in 1962 with further imports of German 4000-hp Henschel Werke units with Maybach engine

[6] The Alco-G.E. road switchers are described in *Railway Mechanical Engineer* (Philadelphia), February 1942, pp. 62-66.

[7] *Railroads . . . , op. cit.* n. 2.

[8] For technical details of Soviet diesel-electric locomotives see K.A. Shishkin *et al., Teplovoz TE-3* (Moscow, 1969), which contains numerous construction diagrams and details. For electrical equipment on the 2TE-10L, TEM-2, and TE-3 see *Elektricheskoe oborudovanie teplovozov* (Moscow, 1968).

[9] *Railroads . . . , op. cit.* n. 2, p. 47.

and Maybach-Mekydro transmission. Soviet production began in 1962 at Kaluga with 4000-hp units obviously based on these Austrian and German prototypes. Other experimental hydraulic-electric units, the TGM-10 (1200 hp) and the T-106 (4000 hp) were built at Bryansk and Lugansk, respectively.[10]

The Soviet gas turbine that was in the experimental stage in 1960 used the body of the TE-3 2000-hp diesel-electric,[11] whereas gas turbine locomotives in the United States are specially designed overall as gas turbine locomotives. It would be reasonable to surmise that the Soviet unit was merely a test bed for an engine rather than the prototype of a gas turbine locomotive.

Table 19-2 ORIGINS OF ELECTRIC LOCOMOTIVES IN USE IN THE SOVIET UNION, EARLY 1960's

Class	*Rated output*	*Weight, tons*	*Year first built*	*Builder of mechanical equipment*	*Builder of electrical equipment*
			Foreign Construction		
NO	2490 kw	132	1954	Skoda (Czechoslovakia)	Skoda
chS1	2285	85	1957	Skoda (Czechoslovakia)	Skoda
F(T)	4550	138	1959	Schneider-Alsthom, SFAC (France)	S.W.; Jeumont
FP(TP)	4550	131	1960	Schneider-Alsthom, SFAC (France)	S.W.; Alsthom; Jeumont
K	4730	138	1961	Krupp (Germany)	Siemens-Schukert
chS2	3430	120	1961	Skoda (Czechoslovakia)	Skoda
			Domestic Construction		
VL 22m	2340	132	1947	Tbilisi	Tbilisi
VL 23	3070	138	1952	Novocherkassk	Novocherkassk
VL-8 (N8)	4065	180	1953	Novocherkassk	Novocherkassk
VL-60 (N60)	4065	138	1959	Novocherkassk	Novocherkassk
VL-10 (T8)	5070	184	1961	Tbilisi	Tbilisi
VL-62 (NO-VL 61)	4065	138	1961	Novocherkassk	Novocherkassk
VL-80 (N80)	6050	184	1961	Novocherkassk	Novocherkassk

Source: Adapted from *Worlds Railways*, 1964-65, (London: Odhams Press, 1965), p. 240.

[10] W. M. Keller, "What We Saw in Russia," *Railway Age* (Chicago), July 11, 1966, p. 15. "Q. Are their hydraulic locomotives on the order of the Krauss-Maffei or do they have their own design? Keller: They're similar to the Krauss-Maffei."

[11] *Trains*, July 1960, p. 27.

FOREIGN PROTOTYPES OF ELECTRIC LOCOMOTIVES

From the beginning of the 1930s to the present, Soviet electric-locomotive manufacture and prototype design has been based almost completely on Western models acquired from all countries making advanced designs. According to J. N. Westwood,[12] however, the Soviets have had considerable technical problems with domestic locomotives based on such foreign designs and therefore the railroad sector continues to be heavily dependent on COMECON and Western technical assistance.

The most common electric locomotives in 1960 were the VL-22 and VL-22m of which almost 2400 were in operation. These can be traced directly to the General Electric S class imported in 1932, according to Westwood: "It is possible to trace elements of the present VL-23 design back to the American engines delivered 32 years ago, and in outward appearance type S is almost indistinguishable from the later VL-22m."[13] Also, about 150 types VL-19 and VL-19m, based on a Soviet design of the early 1930s and built after World War II, were still in operation in the early 1960s.

The other standard electric locomotive of the period 1945 to 1960 was the N class, the prototype of which was produced at Novocherkassk in 1953; the locomotive was mass-produced at Novocherkassk after 1955 and at Tbilisi after 1958. About 310 were in operation by 1960.[14] These locomotives, although acceptable to Soviet customers, were backward by Western standards; an AARR report, for example, isolated obsolescent use of tape insulation on the traction motors:

> While a few traction motors of comparable nature may possibly still be in use in America, none with this type of insulation had been built for railroad use for twenty-five years or more.[15]

The wide application of outdated practices in 1960 may be noted from the observation that standardized traction motors—the latest DP type—are used in Classes VL-22, VL-22m, VL-19, and NO electric locomotives, as in all the main locomotive classes. Moreover, import of foreign component parts for electric locomotives (for example, mercury rectifiers from Japan under the

[12] J. N. Westwood, *Soviet Railways Today* (New York: Citadel Press, 1964), pp. 46-59, has an excellent description of electric locomotive development, its origins and current problems. Westwood considers that production of the basic N-60 and N-80 models was premature: "The fundamental problem of railway electrification in the U.S.S.R. is that at a time when more and more line is rapidly being electrified, there are no completely satisfactory locomotives in operation." (p. 58).

[13] *Ibid., p. 46.*

[14] Association of American Railroads, *A Report on Diesel Locomotive Design and Maintenance on Soviet Railways*, (Chicago: AAR Research Center, September 1966), p. 80.

[15] *Ibid.*, p. 74.

1956 trade agreement) supports the argument that the Soviets lag in domestic abilities.

One advantage of import of electric locomotives for line haul use is that imports are of greater technical sophistication and give better performance than domestically produced models. Westwood gives the power-to-weight ratio for several Soviet and foreign locomotives. The Soviet N 60, for example, has a ratio of 28.1 kw of power per ton of weight compared with 32.6 for the imported French T class electric locomotives; similarly, the Soviet VL-23 has a ratio of 22.8 compared to the Czech ChS2 with a ratio of 33.0. Thus Soviet electrics are decidedly heavier for their power output.[16] Imports also provide the basis for further Soviet technical development and, through comparative performances, afford us a measurement of domestic technical lag.

[16] J. N. Westwood, "Russian Railroading Revisited," *Trains*, July 1962, p. 46. See also Novocherkasskii elektrovozostroitel'nyi zavod, *Elektrovoz VL 60 k* (Moscow: Transport, 1969).

CHAPTER TWENTY

Western Origins of Aircraft and Space Technology

AIRCRAFT DESIGN AND ENGINE TECHNOLOGY

During World War II the Soviets produced 115,596 aircraft and Lend Lease delivered to the U.S.S.R. an additional 14,018.[1] The Russian-produced aircraft were mainly obsolete prewar types and most were one-engine wood and canvas models with inferior engines. Domestic production was assisted, however, by a high degree of production specialization. The only Soviet dive bomber, the Stormovik (IL-2), was in production at three plants; each plant produced about the same number of IL-2s but no other aircraft. Fighter production was concentrated on the YAK-3, the YAK-2 and YAK-6 being advanced trainer versions. The YAK was produced in six widely scattered plants producing only YAK aircraft at rates of between 65 and 400 per month.

Two-engined bomber production included the PK-2 (based on the French Potez), at two plants, and the IL-4 at three plants, only one of which (Komsomolsk) produced other aircraft. The LI-2 (or Douglas DC-3) transport was produced only at Tashkent, and the PO-2 (or De Havilland Tiger Moth) was

[1] R. H. Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969). According to U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945), Lend Lease deliveries of aircraft to the Soviet Union from June 22, 1941, to September 20, 1945, were as follows:

Fighter planes	*Quantity delivered*	*Bombers*	*Quantity delivered*	*Cargo planes*	*Quantity delivered*
P-40	2,097	A-20 (light)	2,908	C-46	1
P-39	4,746	B-25 (medium)	862	C-47	707
P-47	195	B-24 (heavy)	1 (force-landed in Siberia)	O-52 Observation	19
				Advanced Trainers	82
P-63	2,400			PBN Navy Patrol planes	137
				PBY-64	48

produced only at Kazan. Training aircraft (YAK-6s) were produced at three locations and the UT-2 advanced single-engined trainer at two locations.

Thus Soviet aircraft production was concentrated on a comparatively few simple types, each for a single function only. Most plants concentrated on the production of a single model, although several plants were usually involved with the production of the important types.

Lend Lease was of great assistance in the development of the Soviet aircraft industry. For example, Henry Wallace after his visit to the important Komsomolsk aircraft plant commented as follows:

> The aircraft factory in [Komsomolsk], where Stormovik bombers were being built, owed both its existence and its production to the United States. All the machine tools and all the aluminum came from America.... It looks like the old Boeing plant at Seattle.[2]

However, according to General G. A. Tokaev:[3]

> The aircraft industry was lagging well behind the West owing to constant political interference, political purges, and the general low level of technical efficiency. Consequently, at the end of World War II the Soviets had not produced a single jet engine or guided missile.

Work in 1945 and 1946 involved nothing sensational from the design viewpoint and in effect consisted in mastering the German aircraft industry that was developed from 1941 to 1943. The years immediately after 1946, however, were to show a remarkable expansion in the industry, an expansion achieved by utilizing German and some British technical assistance in an expert manner. Technical assistance from the West entered through two main channels—first from the United Kingdom and particularly through transfer of the Rolls-Royce Nene, Derwent, and Tay engine technologies; and second (and a much larger flow) from Germany via the transfer of the wartime German aircraft industry to the Soviet Union.

The postwar Soviet aviation and space industries have their roots in German World War II aircraft and rocket developments. In 1945 the Germans had a large and relatively undamaged aircraft and rocket manufacturing industry that had been dispersed under threat of continued Allied bombing toward the eastern regions of Germany—that area later occupied by the Soviets (Figure 20-1). Over two-thirds of this productive capacity fell intact into Soviet hands[4] and

[2] Quoted by Werner Keller, *Ost minus West=Null* (Munich: Droemersche Verlagsanstalt, 1960), p. 265.

[3] G. A. Tokaev, *Soviet Imperialism* (New York: Philosophical Library, 1956), p. 56.

[4] The writer has calculated the capacity in terms of 1944-45 output as 68 percent of the assembly capacity, although this figure varies by type of aircraft produced.

Figure 20-1 LOCATION OF THE GERMAN AEROENGINE PLANTS AT THE END OF WORLD WAR II.



Source: U.S. Strategic Bombing Survey, Aircraft Industry Survey, Figure VII-2, based on data from the German Air Ministry.

was largely, but in some cases not immediately, transported to the U.S.S.R. These transfers included development and experimental work, but most important they also included complete production lines for aircraft engines, equipment, and the V-2 missile. Consequently in both aircraft and rocket industries we can trace Soviet developments directly to German wartime research and development work and production methods.

Accurate information concerning this transferred productive capacity and technology comes as a result of an unusual sequence of events which itself is still subject to debate. In 1945 American and British armies swept 200 miles into what is now the Soviet Zone and met the Soviet armies on the Elbe-Mulde river line rather than on the zonal frontiers earlier agreed upon. Very little, if any, machinery was removed by the West before this area was surrendered to the Soviet armies, although dozens of CIOS, BIOS, FIAT, U.S. Army, and U.S. Navy teams had scoured the factories in the occupied areas assessing German technical developments.[5] The intelligence results were published in several hundred detailed technical reports. As some Allied teams were examining German plants only days before the Soviets took over, we have accurate, detailed accounts of the equipment and technical information that came under Soviet authority.

The technical information flowed first to the Central Institute of Aerohydrodynamics (TsAGI) and then to design institutes in Moscow, where it was allocated to various Soviet design teams working closely with deported German engineers and technicians. German technology was converted into experimental work, and after choice of design production was carried out at associated production units. The Mikulin design team at Plant No. 300, for example, worked on the Mikulin turbojet and was associated for production purposes with the Tushino Plant No. 500, Moscow Aircraft Engine Production Plant No. 45 (which produced the Rolls-Royce Nene engine from 1948 to 1956), Kharkov Plant No. 75, and a plant associated with the Gorki automobile plant and known as Plant No. 466. In this way, Soviet-German experimental and design teams were located at specific factories, but the design reproduction and experimental stages normally were kept apart from the production process.

These flows of technology will be examined as follows: (a) the flow of aircraft engine technology and production facilities from Germany and the United Kingdom, (b) airframe manufacturing and design capacity, which came almost entirely from Germany (although B-29 bomber technology came from the United States), and (c) space technology, which, again, came largely from Germany.

[5] Reports were issued later by CIOS (Combined Intelligence Objectives Committee), BIOS (British Intelligence Objectives Committee), and FIAT (Field Information Agency Technical).

The German Aircraft Engine Industry In The Soviet Zone

The capacity of the German aircraft engine industry was more than adequate for the German aircraft program in the first years of the war, and its production schedules were maintained almost until the end in 1945. The basic design, development, and production companies were Junkers, Daimler-Benz, and BMW. These companies licensed production to additional firms, particularly in the case of Junkers and Daimler-Benz; BMW licensed only to Klockner in Hamburg. The largest single unit in the German Air Ministry expansion program was the Ostmark plant in Vienna, Austria, which covered an area of 3,000,000 square feet. This plant, although begun in 1941, did not produce engines until May 1943 and by the end of the war it had produced only 3000 engines in all.[6]

Daimler-Benz operated 10 aircraft engine plants (see Table 20-1). The largest plant was Genshagen near Berlin, which had produced a total of 30,000 aircraft engines by the end of World War II and in December 1944 was operating at a rate of 700 engines per month. In 1945 part of the principal plant at Genshagen was moved to a gypsum mine in Heidelburg to set up what was called the Goldfischwerke.[7] In all, 2500 machine tools were moved to the Goldfisch works. The Soviets acquired the greater part of both the Genshagen main plant in Berlin and the Goldfisch underground plant at Heidelburg; according to G. E. Harmssen, all of the machine tools at Genshagen were removed to the U.S.S.R. and 80 percent of the Goldfisch underground plant was removed to the U.S.S.R. at the end of 1945, under U.S. Operation RAP.[8] Total production of all Daimler-Benz plants in 1944 was 28,669 aircraft engines; since 16,794 of these were produced in plants located in the future Soviet Zone, it is clear that the Soviets gained control of the greater part of aircraft engine production of Types 603, 605, and 610.[9]

Daimler-Benz produced only reciprocating aircraft engines; gas turbines were produced by Junkers and BMW. The BMW 003 gas turbine was actually in production in 1945 and a total of 450 had already been built when the war ended.[10] Production facilities established for the 003 were much greater than

[6] U.S. Strategic Bombing Survey, *Aircraft Division Industry Report*, 2d edition (Washington, January 1947), Report no. 4, p. 96.

[7] *Ibid.*, p. 28.

[8] G. E. Harmssen, *Am Abend der Demontage: Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen 1951), p. 102; and Germany, Office of Military Government, (U.S. Zone), Economics Division, *A Year of Potsdam: The German Economy Since the Surrender* (n.p.: OMGUS, 1946), p. 36.

[9] For further information see BIOS Report no. 35: *Report on Visit to Daimler Benz, at Stuttgart-Unterturkheim.*

[10] CIOS Report no. XXX-80: *Bavarian Motor Works-A Production Survey.*

the production total indicates, however; the German program envisaged a production of 2500 per month by September 1945 from Harz Mountain area occupied by the Soviets.[11] These plants, built underground at Eisenach and Zuhlsdorf, were removed to the Soviet Union.[12] Moreover the Munich plant of BMW, with a production of 500 engines at the end of 1944, was removed to the Soviet Union under Operation RAP.[13]

Similarly, the Junkers turbojet was of special interest to the Soviets. By March 1945 approximately 6000 of these engines had been built, although the German Air Ministry was beginning to favor production of the BMW 003 for technical reasons. The Junkers 004 was in production at three centers in 1945—at Mäldenstein across the river from Dessau in the Soviet Zone (not examined by either the British or the American intelligence teams), at Kothen about 20 miles southwest of Dessau, and at Nordhausen in the V-1 and V-2 factories. Junkers was also producing the 012 engine with a similar layout to the 004, and an 11-stage axial compressor and a thrust of seven thousand pounds. The 022—a propeller version of the 012—was in the project stage and designed to attain 500 miles per hour.[14]

Table 20-1 REMOVAL OF MAIN GERMAN AIRCRAFT ENGINE PLANTS IN 1945-46

Type of engine	*Location produced*	*Total production 1939 - 1944*	*Total production Dec 1944*	*Disposal of plant in 1945*
Daimler-Benz (603)	Stettin	3582	250	Probably removed to U.S.S.R.
Daimler-Benz (601,603,606)	Berlin, Marienfelde	—	65	Not known
Daimler-Benz (601,605,606,610)	Bussing (Brunswick)	13,805	—	Not removed to U.S.S.R.
Daimler-Benz (601,605)	Henschel (Kassel)	13,119	600	Not removed to U.S.S.R.
Daimler-Benz (605)	Manfred Weiss (Budapest)	1,189	—	Probably removed to U.S.S.R.
Daimler-Benz (605)	Steyr	1,885	65	Probably removed to U.S.S.R.
Daimler-Benz (603)	Prague	311	76	Probably removed to U.S.S.R.
Daimler-Benz (603)	Austria (Ostmark)	2,890	77	Probably removed to U.S.S.R.
Daimler-Benz (601,605,606,610)	Genshagen	30,833	700	100 percent removed to U.S.S.R.

[11] *Ibid.*, p. 62.
[12] Harmssen, *op. cit.* n. 8, no. 78.
[13] *Op. cit.* n. 8, p. 36.
[14] CIOS Report no. XXX1-66; *Notes on Aircraft Gas Turbine Engine Developments at Junkers, Dessau and Associated Factories.*

Table 20-1 (cont.)

Type of engine	*Location produced*	*Total production 1939 - 1944*	*Total production Dec 1944*	*Disposal of plant in 1945*
Daimler-Benz (601,605,606,610)	Goldfisch underground (Heidelburg)			80 percent removed at end of 1946
BMW (801)	Allaco-Munich*	17,529	526	82 percent removed at end 1946
BMW (801)	Klockner (Hamburg)	4,206	150	Not removed to U.S.S.R.
BMW (801)	Spandau (Berlin)	5,695	326	Probably removed
BMW (132)	Eisenach	4,099 } plan 2500 month by September '45	—	100 percent removed to U.S.S.R.
BMW (323)	Zuhlsdorf	3,227 }		100 percent removed to U.S.S.R.
Junkers (004,012)	Mäldestein (Dessau)	—	—	100 percent removed to U.S.S.R.
Junkers (004)	Kothen	—	—	100 percent removed to U.S.S.R.
Junkers (004)	Nordhausen	—	—	100 percent removed to U.S.S.R.
Junkers (003)	Magdeburg	—	—	100 percent removed to U.S.S.R.

Sources: U.S. Strategic Bombing Survey, *Aircraft Division: Industry Report*, Number 84 (January 1947), Table VII-1; *A Year of Potsdam* (n.p.: Office of Military Government for Germany [U.S. Zone], Economics Division, 1947) p. 36; G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), p. 102.

**Note*: BMW Argus and Franck plants excluded.

The Junkers company had extensive engine manufacturing facilities in the Soviet Zone. The Dessau aircraft design and production plant produced the regular Junkers engines and design work on the 012. There was also a Junkers engine plant at Magdeburg, and a great deal of development work on the 003 gas turbine was handled by underground shops there. The Junkers company also operated the rear portion of Tunnel No. 2 at the Nordhausen underground facilities.[15]

[15] CIOS Report no. XXX1-36: C. L. Fay, *Junkers Aircraft and Engines Facilities*, May 1945.

TRANSFER OF GERMAN TECHNICIANS AND TECHNOLOGY TO THE U.S.S.R.

Continuing the pattern established with the absorption of Junkers technology after the Treaty of Rapallo in 1922, the main channel of aircraft engine production facilities for the U.S.S.R. was from East Germany to Aircraft Plant No. 1 at Kuibyshev. This plant was established essentially with Junkers facilities transferred from Germany and using Junkers engineers, designers, foremen, and test pilots. The central function of the plant was to convert the promising German jet technology into the first Soviet jet fighters and bombers.

The aircraft industry was not removed immediately to the Soviet Union, however. Soviet designers like Tupolev and Gurevitch first visited German aircraft factories and examined prototypes and production methods. The Junkers company organized for this purpose an exhibition of German secret aircraft projects and arranged for tours of inspection of the industry.[16] Equipment was then removed under the program of OKBs (Osoboye Konstruktorskoye Byuro); for example, OKB No. 1 was at the Dessau plant of Junkers.

Nor were the German technical personnel immediately removed to the Soviet Union.[17] The bulk of the German engineers and scientists were moved by train to Russia on the night of October 22-23, 1946—in what was probably the largest mass movement of scientific brains in the history of the civilized world.[18] Engineers and scientists were not given contracts or other written agreements; they were divided into small groups of about 15 persons, and about 30 Russian engineers were attached to each German nucleus for study and work. The Russian groups were changed with some rapidity, and each project was handled by stages—the draft stage, the technical project stage, and finally the presentation stage. Whenever a project was almost complete it was canceled by the Soviets and the related drawings, papers, biographies, and technical material were turned over. Duplicate work was undertaken by separate all-Russian groups some distance from the location of the original German pilot groups; in addition German groups were put in competition one with another.[19]

Often the complete working environment of the German specialists was removed to the U.S.S.R., according to Keller:[20]

> Engineers and draftsmen found the same desks lying ready for them which they

[16] *Flying* (New York), 51, 5, (November 1952), 15.

[17] V. L. Sokolov, "Soviet Use of German Science and Technology, 1945-1946" (New York: Research Program on the U.S.S.R., 1955; Mimeographed Series no. 73) argues that the removal program was carried out hastily; this is not completely in accord with other evidence.

[18] *Aviation Week* (New York), 62, 14 (May 9, 1955).

[19] *Ibid.*

[20] W. Keller, *op. cit.* n. 2, p. 336.

had used in Dessau, Oranienburg, Halle, or Leipzig. They were able to find their old drawings and tracings, technical reports, neatly tied up with labels bearing cyrillic lettering.

Most German designers and engineers in the aeroengine industry were sent to Kuibyshev.[21] They came largely from the Junkers and BMW plants; no less than 800 engineers and technicians came from these two companies alone in 1946.[22] Among the members of the BMW contingent was Kurt Schell, former head of the BMW rocket laboratory, and engineers Winter, Kaul, Schenk, Tietze, Weiner, and Muller.[23] The Junkers group led by Walter Baade was the most important. Not only was Dr. Baade formerly chief engineer of Junkers; he had previously worked for ten years in American aeronautical plants and so was fully familiar with American methods of aircraft construction. With Dr. Baade was a group of engineers including Freundel, Haseloff, Wocke, Elli, Lilo, Rentel, Hoch, Beer, Antoni, Reuss, Heisig, and Hartmann. The Junkers engine team in the Soviet Union was headed by Dr. Scheibe, who designed the Junkers P1 turbine; he was assisted by engine designers Gerlach and Pohl, who at Dessau had been in charge of the engine testing department. Also in this group were Steudel and Boettger and a large number of personnel from the turbojet department, including engineers, foremen, and skilled workers.[24] Another prominent designer, Ernst Heinkel, worked in the Soviet Union at the Kalinin Experimental Station.[25]

The Junkers plant itself was rebuilt at Kuibyshev, "almost exactly" as it had stood in Leipzig.[26]

Development Of The First Soviet Jet Engine

The use of German engineers to develop Soviet jet engines fell into three stages. The first stage included the reproduction of the Junkers 004 and the BMW 003 jet engines removed to the Soviet Union with their production equipment. The 004 became the Soviet RD-10, and the BMW 003 was produced as the Soviet RD-20 on a stop-gap basis until more advanced designs came along.[27] (See Table 20-2).

[21] *Ibid.*
[22] *Aviation Week*, 66, 14 (April 8, 1957), 53.
[23] *Aeronautics*, (London), April 1952, p. 46.
[24] *Ibid.*
[25] *Ibid.*
[26] *Flying*, 51, 5 (November 1952).
[27] *Aviation Week*, April 8, 1957, p. 54.

Table 20-2 ORIGINS AND UTILIZATION OF SOVIET JET ENGINES

Engine	*Thrust, lb*	*Weight, lb*	*Max. rpm*	*Compressor*	*Used on*	*Western origins*
RD-10	2,200	1,650	8,700	Axial	MIG-9 YAK-17	Junkers 004
RD-20	2,250	1,375	10,000	Axial		BMW 003
RD-45F	5,000	1,612	12,500	Centrifugal	MIG-15 IL-28	Rolls-Royce Nene
RD-500	3,600	1,280	14,700	Centrifugal	YAK-23	Rolls-Royce Derwent
VK-1 (Klimov)	6,000	1,930	—	Centrifugal	IL-28	Rolls-Royce Tay
VKIA	7,590	1,960	—	Centrifugal	IL-20 MIG-15 MIG-17	Rolls-Royce Tay
VK-2	5,950	—	—	Centrifugal	MIG-15	Rolls-Royce Tay
VK-2JA	6,850	—	—	Centrifugal	MIG-17	Rolls-Royce Tay
VK-2R	7,500	2,650	—	Centrifugal	—	Rolls-Royce Tay
VK-5	8,690	—	—	Axial	MIG-19 YAK-25	—
AM-2 (Mikulin)	6,000	4,250	—	Axial	—	Junkers 022
AM-3	19,000	5,000	—	Axial	Badger Bison	Brandner
AM-5						
MIK-205	10,000	3,000	—	Axial	—	(Junkers-BMW team)
MIK-205R	13,000	3,900	—	Axial	—	(Junkers-BMW team)
AM-9 M-209	14,850 22,000	5,500	—	Axial	TU-104 Fishpot	(Junkers-BMW team) (Junkers-BMW team)

Sources: Text; *Aero/Space Engineering*, October 1959, pp. 45-50; H. Hooftman, *Russian Aircraft* (Fallbrook, Calif.: Aero Publishers, 1965); W. Keller, *Ost Minus West=Null* (Munich: Droemersche Verlagsanstalt, 1960), pp. 341-42, 348-49; C. L. Fay, *Junkers Aircraft and Engine Facilities*, CIOS No. XXXI - 36, p. 7.

The first project given to the German design groups was a Soviet specification for a 3000-hp jet engine; essentially this was a development of the Junkers 012 turbojet, which was at the design stage in Germany at the end of World War II. By 1947 the Junkers 012 had been developed as a 12-burner assembly, but operating inefficiencies and two blade failures canceled development of this engine in 1948.[28] The next project specification given to the German designers was for a 6000-hp turboprop to attain a speed of 560 miles per hour at sea level. Essentially, this engine was developed from the Junkers 022 turboprop engine, with the same general design and characteristics as the 012 but

[28] *Ibid.*

modified to provide geared turbine drive to contrarotation propellers.[29] By 1949 the Brandner design teams had essentially met the Soviets' specification and immediately set to work on yet another detailed specification—a power plant with 12,000 hp in contrast to the 6000 hp developed by the Junkers 022. The first (unsuccessful) attempt at this specification was to couple two Junkers 002 power plants together.

Finally, the Type K turboprop was developed by the Junkers-BMW Team as a 14-stage compressor and five-stage turbine engine; it was a logical development from the German engines under development in the latter stages of World War II. The Type K engines produced by the mid-1950s power the Soviet four-engine bombers (TU-20 Bear) with four MK-12M turboprop engines of 12,000-hp capacity, and the civilian version, the Rossiya.

The AM series (after Mikulin) developed from the work of a Junkers-BMW team in the U.S.S.R. under engineer Brandner. The most powerful end result of this design, the AM-3, was seen in 1958 by an American engineer whose comment was "The engine is not an outstanding power plant, being of simple design of very large diameter and developing about 15,000 pounds thrust with 8 compression stages."[30] It is currently used in the TU-104 "Camel," which was developed from the TU-16 ("Badger").

Rolls-Royce Nene And Derwent Turbojets

In 1946 the Soviets bought 55 Rolls-Royce centrifugal compressor-type turbojets—25 Nenes and 30 Derwents. These Rolls-Royce engines, simple and well suited to Soviet mass production methods, introduced the Soviets to the use of a centrifugal turbojet; Russian turbojets up to that time were of the axial-flow type based on German designs.

Two versions of the Rolls-Royce engines were produced at Engine Plant No. 45 near Moscow beginning in 1948 and continuing at least until 1956. The plant was toured in 1956 by U.S. Air Force General Nathan Twining, who noted that it contained machine tools from various countries including the United States and Germany, and had 3000 workers engaged in producing the Rolls-Royce Nene.[31]

The American counterpart in 1951 to this Rolls-Royce engine was the Pratt & Whitney J-42 Turbo-wasp, based on the Nene but not then in quantity production.[32] Thus when the Korean war broke out in 1950 the Russians had thousands of improved Nene engines in service powering MIG-15s, whereas the U.S.

[29] CIOS XXXI-36, *op. cit.* n. 15, p. 7.
[30] *Ordnance*, May-June 1958, p. 1084.
[31] *Aviation Week*, July 2, 1956, p. 29.
[32] *Aviation Week*, June 11, 1951, p. 16. See also *The Times* (London) April 28, 1953, p. 9c.

Air Force had only a few hundred F-86A Sabres with comparable engines. The Soviets had also been able to solve certain turbine blade problems that were still puzzling Rolls-Royce and Pratt & Whitney engineers.[33]

By 1951 the Soviets had two versions of the original Rolls-Royce Nene in production quantities. The first version, the RD-45 that powered an early MIG-15, was a direct copy of the original Nene and delivered 5000 pounds of thrust. The second version of the RD-45 delivered 6000 pounds of static thrust at sea level and 6750 pounds of thrust with water injection.

Significant improvements were made by the Russians in the original design:

> Principally the changes involved the combustion chambers, which have 15 percent greater area, and the turbine blades which are longer and of wider chord. Comparison with the earlier Nene dimensions shows the blade is one-half inch longer and one-fourth inch wider in chord. Blade profile is still similar.
>
> Tailpipe area is reported 30 percent greater than that of the original Nene. The scale-up of internal gas passages was accomplished, however, with no increase in the 50-in. overall diameter of the original Nene.
>
> Other refinements [are]: an additional ring of perforations just aft of the primary zone of the combustion chambers for increased dilution of air; insertion of reinforcement rings in the liner perforation in the hot zone of the combustion chambers; increased gage of metal used in hot zone and liner; improved duplex fuel nozzle.
>
> The refined Soviet engine weighs about 2000 lb as compared to 1715 lb for the original Nene. Specific fuel consumption is given as 1.14 lb fuel/lb thrust/hr. The engine analyzed did not incorporate afterburning. It was noted that tailpipe diameter and length were sufficient to utilize a short afterburner which would boost total thrust a calculated 1000 lb additional.[34]

The turbine blades in the Soviet RD-45 engines were made of a stainless steel alloy of the Nimonic 80 type while the burner liner and swirl vanes were made of Nimonic 75. Parts of the Nene sold to Russia in 1948 were fabricated from Nimonic alloys—"Nimonic" being the registered trademark of Henry Wiggin and Company of Birmingham, England. Both Nimonic 75 and Nimonic 80 were developed by Mond Nickel about 1940, and their specifications had been earlier published by the Ministry of Supply in the United Kingdom. There are considerable difficulties in the production of Nimonic alloys, and such difficulties could be surmounted only with the practical know-how accumulated by Wiggin.[35]

Several engines from captured MIG-15s were evaluated by the United States Air Force, and reports were prepared by engineers of Pratt & Whitney Aircraft

[33] *Aviation Week*, March 12, 1956, p. 264.
[34] *The Aeroplane* (London), August 1, 1952, p. 163.
[35] *Ibid.*

Division of United Aircraft Corporation, the Wright Patterson Air Force Base, and Cornell Aeronautical Laboratory.[36]

The RD-45 (Nene) was produced not only in Moscow but also at Magadan from 1951, and at Khabarovsk, at Ufa Plant No. 21, and at Kiev Plant No. 43 from 1951 until sometime after 1958.

Soviet Acquisition Of Four-Engine Aircraft

During World War II the United States was unwilling to send heavy four-engine bombers to the Soviet Union under Lend Lease. Although in April 1944 General John R. Deane recommended U.S. approval of Russian requests for heavy bombers, the War Department refused on the grounds that the Soviets could not train a bombing force prior to the spring of 1945 and that certain special equipment for such bombers was in short supply.[37]

The official Lend Lease report on war aid therefore lists Russian acquisition of only one four-engine bomber (a B-24 that force-landed in Siberia), although the Soviets were in fact able to acquire four others. One of these was acquired in July 1944 when a U.S. bomber ran low on fuel after a raid against Mukden in Manchuria and landed at Vladivostok; two others—B-29s—landed at Vladivostok during the war, both having run short of fuel while on bombing raids over Japan; the fourth, a B-17 Flying Fortress, crash-landed in Siberia in December 1944 and its crew was rescued by Red Army forces. The Soviets retained all four aircraft.[38]

The Soviets then started work on the Tu-4 four-engine bomber and the Tu-70 civilian transport, and in 1946 Amtorg attempted to purchase from the Boeing Aircraft Company a quantity of B-29 tires, wheels, and brake assemblies. The attempt was unsuccessful, but nevertheless when in 1947 the Soviets produced the Tupolev Tu-70 it was immediately identified as a virtual copy of the B-29. The similarity was described in *Boeing Magazine*:[39]

> The famed Boeing 117 airfoil that the Tu-70 is sporting is an exact replica of the Boeing B-29 wing. Along with the wing are the *Superfortress* nacelles: outline, cooling air intake, auxiliary air scoop, cowl flaps and inboard and outboard fairings. The cabin cooling air inlet in the wing leading edge between the body and the inboard nacelle is the same. The trailing edge extension on the flap between the inboard nacelle and the side of the fuselage are also identical, according to the evidence provided by the photographs.

[36] For a summary of these examinations see *Product Engineering* (New York), August 1952, pp. 194-95.

[37] Jones, *op. cit.* n. 1.

[38] *Boeing Magazine* (Seattle), February 1948; *Flying*, 42, 6 (June 1948) 28; *New York Times*, December 24, 1944, 12:3.

[39] *Boeing Magazine*, February 1958.

> The Tupolev Tu-70 uses the Twenty-nine's main landing-gear structure as well as its fairings and doors. The nose gear also appears to be that of the *Superfortress*, with the upper trunnion located closer to the body contour of the Tu-70 than on the Boeing bomber.
>
> The tail surfaces of the Russian transport also come direct from the Boeing engineering department. On comparison it is apparent that the vertical tail and the dorsal outline as well as the leading edge of the rudder are the same on the two planes. The rudder of the Tu-70 appears to end at what would be the top of the tail gunner's doghouse on the *Superfortress*. The shape of the stabilizer and the elevator is the same on the two ships, and the transport also uses the inverted camber of the B-29's tail.
>
> Propellers of the Tupolev Tu-70 appear to be original B-29 props, less cuffs. The hubs are characteristic of the Hamilton-Standard design. Boeing engineers also report that the drift meter installation of the Russian transport looks like that of the *Superfortress*, and the pitot head type and location match.
>
> Tupolev did, however, design a new fuselage for the transport. It sits higher on the wing of the Tu-70 than does the fuselage of the B-29, and the fuselage is larger in diameter and a little longer (119 feet as compared to 99 feet). While the transport has a new fuselage, it retains the bomber nose, including the bombardier's plate-glass window.

An interesting question, not discussed in the late forties, was the manner by which the Soviets were able to advance from their inability to produce four-engine bombers to their ability to produce a workmanlike design requiring an extensive period of research and flight testing. Even if the designs were available, jigs and dies to put the plane into quantity production also were required. The 18-cylinder Wright engines for the B-29 had been extremely difficult to manufacture even in the United States, and had required several years to reach the desired standard of reliability. Further, the Soviets had no apparent experience in the production of four-engine bombers; the wartime Tupolev PE-8 was generally considered not to be a successful design. Moreover we know from Douglas Aircraft files that in 1940 the Soviets had enormous difficulties in putting the much simpler DC-3 twin-engine transport plane into production and repeatedly came back to the Douglas Aircraft Company for aluminum sections, parts, and technical advice.[40] There is an unknown element of some magnitude (also found in other technical areas, such as atomic energy) concerning the ability of the Soviets to produce in the brief span of three years between 1944 and 1947 a usable copy of the complex B-29 U.S. four-engine bomber.[41]

[40] See Sutton II: *Western Technology . . 1930 to 1945*, p. 234.

[41] A possible explanation appears in the German intelligence material. It will be remembered that Vice President Henry A. Wallace on his visit to Komsomolsk Aircraft Factory No. 126 in 1944 commented that the plant looked like the Boeing Plant in Seattle (above, p. 255). The German intelligence report on Komsomolsk Plant No. 126 indicates that in October 1943 the plant was producing the Boeing B-17, and makes the notation that it was receiving materials from the United States.

Another German intelligence report lists no fewer than 371 four-engine aircraft from the

The German Contribution To The Aircraft Manufacturing Industry

The major design units of the German wartime aircraft industry were removed to Podberezhye, about 90 miles north of Moscow,[42] and included most elements from Junkers, Siebel, Heinkel, and Messerschmidt. Professor Walter Baade of Junkers continued development of the Ju-287K (as the EF-125) after moving to Podberezhye and followed this with the T-140 and T-150 bombers—jets capable of carrying an atomic bomb and, according to one report, out-performing the U.S. B-47.[43] There were 11 major Junkers plants in the Soviet Zone and six of these are known to have been completely removed to the U.S.S.R., including the main Otto Mader works two miles east of Dessau (where Professor Baade had been located) in addition to the Aschersleben, Bernburg, Leopoldshall, and Schönebeck plants.[44] We know the condition of some of these plants at the end of World War II. Aschersleben was a fuselage building plant in process of changing over to the production of the He-162; its instrument storeroom was "virtually intact" and was placed under military guard by the U.S. Army until the Soviets were able to take it over.[45] Bernburg was intact. Leopoldshall had been "badly damaged."[46] The condition of the Schönebeck plant is not known.

In 1944, the outstanding German rocket designer Sanger was working the Sanger-Bredt project to develop a long-range rocket aircraft. Former Russian General G. A. Tokaev recalls that in 1947 he was summoned by Stalin to a Moscow conference concerning the project:

United States in stock in the Soviet Union at November 1944. (This contrasted to the five presumed to be in the Soviet Union at that time). This stock allegedly consisted of 119 B-17 Flying Fortresses, 129 Consolidated B-24 Liberators, 81 C-56 Lockheed Lodestar, and 42 C-54 Douglas Skymasters.

The German intelligence reports, if correct, would go far to explain the production capability question outlined above. If indeed the Soviets were producing B-17 bombers during World War II at Komsomolsk, then this would be with U.S. Lend Lease assistance, and such assistance might well have given the Soviets sufficient production background and experience to produce B-29 bombers by 1947. However, if the German data are correct, the official U.S. reports are erroneous.

According to Anthony Kubek (quoting Isaac Don Levine), the Soviets obtained blueprints of the B-36 from the United States; see Kubek's *How the Far East Was Lost*, (Chicago: Regnery, 1963), p. 46.

[42] Keller, *op. cit.* n. 2, p. 336.

[43] Sokolov, *op. cit.* n. 17, p. 31. Methods used to get Baade to the U.S.S.R. are described in *Flying* 51,5 (November 1952), 15. This article also describes the German development of the Type 150 for the U.S.S.R. Also see Irmgard Grottrup, *Rocket Wife* (London: Andre Deutsch, 1959).

[44] Harmssen, *op. cit.* n. 8.

[45] CIOS XXX1-36, *op. cit.* n. 15, p. 7-13.

[46] *Ibid.*

> A thorough examination of the Sanger Project would prove invaluable, partly because it might enable us to produce a super-plane, but far more importantly because of the experience such research would give our scientists in solving related problems and preparing a base for future activities. In other words, by mastering Sanger's theories our experts would be able to begin where he had left off.[47]

A group of Soviets was already working on the concept, as was a group of Germans under Dr. Lange. Stalin then signed a draft decree (reprinted in Tokaev's book) instructing a commission to "direct and coordinate work" in piloted and rocket planes "and the Sanger project"; for this purpose "a commission" was sent to Germany.[48] Despite such high-level efforts, however, Professor Sanger was never captured by the Soviets.

A particular gap in Soviet technology in 1945 was in modern fighter aircraft. Dr. Siegfried Gunther and Professor Benz, both developers of German fighter aircraft, were moved to the U.S.S.R. Gunther had been chief designer for Heinkel and a designer of jet fighters since the late 1930s, while Benz designed the German HE 162-Volksjager jet fighter that achieved over 500 mph in 1944.

Among the Soviet acquisitions in Saxony was the Siebel works at Halle, where the experimental rocket-powered research aircraft DFS 346 (equivalent of the Bell X-1 and X-2 and the Douglas X-3) was in final assembly; this work was continued at Halle on behalf of the Russians until October 1948, when it was moved to the OKB-2 combine at Podberezhye with workers from the Junkers, Heinkel, and Siebel plants.[49] Flight testing of the versions built in the U.S.S.R. was begun in early 1948 using a Lend Lease North American Mitchell B-25 bomber and later a Boeing B-29 Superfortress as mother aircraft. The first test pilots were German, later replaced by Russian pilots.[50]

The MIG-15 used in Korea was powered by various versions of the Rolls-Royce Nene engines (see Table 20-2) and came from the same source as the U.S. F-86 fighters—German World War II aircraft.[51] Armament was the German Rheinmetal-Borsig feed for a MK-108 gun, but in general the MIG-15 had far less equipment than the comparable U.S. plane.

The aircraft manufacturing facilities removed from Germany contained unique equipment. Two German Wotan presses of 15,000 tons were removed and

[47] G. A. Tokaev, *Stalin Means War* (London: Weidenfeld and Nicolson, 1951), p. 100 See also *Flying*, 53, 4 (October 1953), 22, 61.

[48] Tokaev, *op. cit.* n. 47, p. 158.

[49] *Interavia* (Geneva), VIII, 5 (1953), 256-57. This article has much detail, including drawings of the Germano-Russian DFS-346. See *Flying*, 46, 1 (January 1950) for details of Soviet development of Me-163 and similar plants into mass production facilities.

[50] *Interavia*, VIII, 5 (1953).

[51] For details see *Aviation Week*, July 7, 1952, pp. 10-15; for welding techniques see *Aviation Week*, November 2, 1953, pp. 46-47, and for structural details see *The Aeroplane*, August 1, 1952, pp. 160-62. Also see M. Gurevich, "How I Designed the Mig 15," *Aero Digest*, (Washington, D.C.), July 1951, pp. 17-19.

at least four copies were made and others developed from these presses.[52] Aircraft equipment plants included the former Nitsche plant at Leipzig, used in the U.S.S.R. to manufacture curve potentiometers, and the Karl Zeiss plant, used for position finders, wind-tunnel parts, and various precision instruments. It was estimated that in 1954 this segment of German industry supplied between 65 and 75 percent of Soviet radar equipment and precision instruments.[53]

In sum, about two-thirds of the German aircraft industry with its top designers and many technicians and engineers established the postwar Soviet aircraft industry. Attention was focused first on designs for military use and these then were adapted, sometimes rather crudely, for civilian use; in fact some Russian civilian aircraft have complete military subassemblies.[54]

Gradually, by the 1960s, the Soviets attained some design independence, but whether the resulting aircraft were successful or not—at least in economic terms—is doubtful. The MIG-21s sold to India were plagued with maintenance and structural problems.[55] It was reported that a Scandinavian Airlines delegation that examined the Tu-104 concluded that a Western commercial line could not afford to fly them if given away "for free" because of high operating costs.[56] In the mid-1960s we find evidence of a pattern that was also established in other industries–a report of a joint French-Soviet project to build an airliner, the fuselage to be supplied by the French and the engines by the Soviets.[57]

THE SOVIET SPACE PROGRAM

Historically, the Russians have had a great interest in rockets. Pyrotechnic rockets were manufactured in the seventeenth and eighteenth centuries, and Russian literature on rockets dates from that period. Signal rockets were used by the Russian Army as early as 1717. Russian theoretical development stems from the work of K. E. Tsiolkovskii, whose papers, beginning in 1903, investigated atmospheric resistance, rocket motion, and similar problems. This work was continued in the Soviet Union during the twenties and thirties (meanwhile close observation was kept on the work of Robert H. Goddard in the United States and Hermann Oberth in Germany). In 1928 Tsiolkovskii wrote that the value of his contribution had been in theoretical calculations, however, and that nothing had been achieved in practical rocket engineering. Some years later, in 1936, V. F. Glushke designed and made a prototype rocket engine,

[52] *American Aviation*, (Washington, D.C.), 19, 1 (June 6, 1955).
[53] *Ibid.*
[54] *Aviation Week*, April 2, 1956, p. 31.
[55] *Aviation Week*, November 4, 1963, pp. 33-34.
[56] Hans Heymann, Jr., *The Soviet Role in International Aviation*, RAND Report no. RM-2213 (Santa Monica, December 4, 1957), p. 6.
[57] *New York Times*, October 16, 1966.

the ORM-65; this rocket used nitric acid and kerosene as a propellant. The Russians later developed the ZhRD R-3395, an aircraft jato rocket using nitric acid and aniline as a propellant (during the early 1930s Dupont had provided technical assistance and equipment for the construction of large nitric acid plants).[58] And during World War II, Soviet rockets used "Russian cordite," which was 56.5 percent nitrocellulose; the nitrocellulose was manufactured under a technical-assistance agreement made in 1930 with the Hercules Powder Company of the United States. Finally, under Lend Lease, 3000 rocket launchers and large quantities of propellants were shipped from the West to the U.S.S.R.

German Rocket Technology At The End of World War II

The major assistance to Soviet rocket ambitions undoubtedly came from Germany at the end of World War II. This assistance may be summarized as follows:

1. The testing sites at Blizna and Peenemunde were captured intact (except for Peenemunde documents) and removed to the U.S.S.R.
2. Extensive production facilities for the V-1 and V-2 at Nordhausen and Prague were removed to the U.S.S.R.
3. The reliability tests from some 6900 German V-2s were available to the Soviets—a major prize.
4. A total of 6000 German technicians (but not the top theoretical men) were transported to Russia and most were not released until 1957-58.

The German weapons program was in an advanced state of development in 1945. About 32,050 of the V-1 "flying bomb" weapons had been produced in the Volkswagen plant at Fallersleben and at the underground Central Works (Mittelwerke) at Nordhausen.[59] In addition, 6900 V-2 rockets had been produced—6400 at the underground Mittelwerke at Nordhausen and 500 at Peenemunde.[60] Rocket fuel facilities had been developed in the Soviet Zone: liquid oxygen plants at Schmeidebach in Thuringia and at Nordhausen, and a hydrogen peroxide plant at Peenemunde.[61]

The Germans undertook two and one-half years of experimental work and statistical flight and reliability evaluation on the V-2 before the end of the war. There were 264 developmental launchings from Peenemunde alone.[62] In

[58] See Sutton II, pp. 100-101.
[59] U.S. Strategic Bombing Survey, *op. cit.* n. 6, p. 114a.
[60] *Ibid.*, p. 120a.
[61] *Ibid.*, p. 121
[62] D. K. Huzel, *Peenemunde to Canaveral* (Englewood Cliffs, N. J.: Prentice Hall, 1962), pp. 128-29.

February 1945 it was decided to abandon Peenemunde, and the base was left intact; papers and personnel were removed after some deliberation:

> To whom, the Russians or the Americans, would fall this treasure of engineering research and knowledge? It was more than just a question of who would catch us first, because we still had some element of choice. We had, in point of fact, already exercised this choice by moving West away from the Russians.[63]

Thus it was that 400 top Peenemunde people were at Garmisch-Partenkirchen at the end of the war. Of these about 118 later went on to the U.S. rocket program. The data, hidden in the Harz Mountains, were transferred to the Aberdeen Proving Grounds.[64]

Mittelwerke at Nordhausen was visited in June 1945 by U.S. Strategic Bombing Survey teams who reported that the enormous underground plant could manufacture V-Is and V-2s as well as Junkers 87 bombers. Twenty-seven tunnels—a large proportion of the plant—were used to manufacture V-2s. The plant was well equipped with machine tools and with "a very well set up assembly line for the rocket power unit."[65] Its output at the end of the war was about 400 V-2s per month, and its potential output was projected at 900 to 1000 per month. The team commented: "Jigs and fixtures developed for the fabrication of fuselages and tail units were excellently conceived, consisting of copper-lined jigs permitting stilus spot welding of the steel sheets and parts used in this design."[66] The Nordhausen plant was removed completely to the U.S.S.R.

The United States and Britain were less successful in gaining access to German rocket testing sites in Poland. The Sanders Mission reached the Blizna test station only after considerable delays in Moscow,[67] and when they got there they found equipment had been removed "in such a methodical way as to suggest strongly to the mission's leader that the evacuation was made with a view to the equipment being reerected elsewhere."[68]

The Sanders Mission accumulated one and one-half tons of rocket parts and readied them for shipment to the West. The parts included:

> a complete steel burner unit; the framework for a radio compartment; a rear fin significantly providing for a wireless aerial; and numerous radio and servo-mechanical components. Of great importance was the finding of a forward fuel

[63] *Ibid.*, p. 150

[64] *Ibid.*, p. 222.

[65] U.S. Strategic Bombing Survey, *Inspection Visits to Various Targets: Special Report* (Washington, 1947), p. 13.

[66] *Ibid.*

[67] D. Irving, *The Mare's Nest* (London: William Kimber, 1964), p. 278.

[68] *Ibid.*, p. 285.

tank, whose capacity was estimated at 175 cubic feet, sufficient to contain 3900 kilogrammes of alcohol.[69]

Unfortunately, when the mission reached home it was found that the rocket fragments had been intercepted by the Soviets:

> The rocket specimens which they had crated up in Blizna for shipment to London and the United States were last seen in Moscow; the crates were indeed duly freighted to the Air Ministry in London, but were found to contain several tons of old and highly familiar aircraft parts when they were opened. The rocket specimens themselves had vanished into the maw of the Soviet war machine.[70]

Many German rocket technicians (as distinct from the top theoreticians in German rocketry) went or were taken to the Soviet Union. The most senior was Helmut Groettrup, who had been an aide to the director of electronics at Peenemunde; 200 other former Peenemunde technicians are reported to have been transferred as well.[71] Among those from other sites were Waldemar Wolf, chief of ballistics for Krupp; engineer Peter Lertes; and Hans Hock, an Austrian specialist in computers. Most of these persons went in the October 22-23 haul of 92 trainloads comprising 6000 German specialists and 20,000 members of their families. Askania technicians, specialists in rocket-tracking devices, and electronics people from Lorenz, Siemens, and Telefunken were among the deportees, as were experts from the Walter Raketentriebwerke in Prague.

The Balance Sheet On German Rocket Technology

It is possible to make a reasonably accurate estimate of what the Soviets did—and did not—gain from German World War II rocket work. Their prize was considerable in material terms: the Blizna site in Poland (subject of the abortive Sanders Mission), the Peenemunde facilities (but not the documents),

[69] *Ibid.*

[70] *Ibid.* This is inconsistent with Ambassador W. Averell Harriman's report to the State Department in Washington. Harriman stated that after a "firm but friendly letter to the Deputy Chief of the Red Army General Staff [pointed out] that neglect to consider U.S. Army proposals was giving the impression that the Red Army did not want to cooperate; the Red Army made more favorable and quicker decisions, one of which was that when Anglo-American technical experts were finally allowed to visit German experimental rocket installations in liberated Poland, they were given the most complete collaboration and attention." U.S. State Department Decimal File 711. 61/9-2944: Telegram, September 29/44.

[71] For material on these transfers see A. Lee, *The Soviet Air and Rocket Forces* (New York: Praeger, 1959), pp. 229-40; Albert Parry, *Russia's Rockets and Missiles* (London: Macmillan and Company, 1960), pp. 113-31; and V. L. Sokolov, "Soviet Use of German Science and Technology, 1945-1946" (New York: Research Program on the U.S.S.R., 1955), Mimeographed Series no. 72.

the main production facilities at Nordhausen, all Berlin production facilities, and various rocket manufacturing plants in Germany and Prague went completely to the Soviets. In terms of physical facilities, the West got the documents from Peenemunde and the Nordhausen area together with only a sample selection of rockets from Nordhausen. But as far as personnel was concerned, the best went west. The von Braun group was determined to go west; only Groettrup and several thousand technicians went east.

In sum, the Soviets got production facilities and the technical level of personnel. The West got the theoretical work in the documents and the top-level German scientists and theoretical workers.

With true Bolshevik determination the Soviets concentrated talent and resources into a rocket program; the result was *Sputnik*—which came to fruition in 1957, just at a time when it was essential for strategic reasons for the U.S.S.R. to convince the world of its prowess and technical ability. The nations of the West, too, had integrated their acquired top-notch theoreticians and wealth of documentary material into developmental programs—but with less zeal. They had undertaken the British tests at Cuxhaven and the U.S. work at White Sands, but the real propaganda prize had slipped from their grasp.

It is impossible to say which side received "the most." In the long run, however, because of the indigenous strength of the Western industrial systems it is probable that the West gained less from the German work.

German Origins Of Soviet Rockets And Missiles

It is not surprising in view of these technical acquisitions that the postwar rocket and missile industry in the Soviet Union had strong roots in and orientation toward German developments.

The most important Soviet missile developments have taken place with respect to intermediate- and intercontinental-range missiles. In essential features these have been developed from the German V-2, and up to 1959 the developments were attained with German assistance. (See Tables 20-3 and 20-4.)

Although the original V-2 had only 28,400 pounds of thrust, this was improved to 78,000 pounds in the Soviet T-1. Then by grouping the T-1 and T-14A rockets that had been developed in a German-Soviet effort into two- and three-stage versions, the Soviets formed the T-3, T-3A T-3B, and T-4 missiles. The T-3 three-stage ballistic missile became operational in 1960 and was designed to carry a thermonuclear warhead and to travel 5000 miles.

In addition the Soviets adapted the German Rheinbote and R-4/M air-to-air rockets as well as the antiaircraft Wasserfall rocket.[72] The German air-surface

[72] Aviation Week, January 14, 1952, pp. 37-41.

Table 20-3 SOVIET ROCKETS AND THEIR GERMAN V-2 ORIGINS

Liquid fuel models, with thrust in lb		*Stages*	*Western origin*
V-2	28,400	Single stage	Captured German V-2
R-10,	41,500	Single stage	Improved V-2 } Developed from V-2
T-1,	78,000	Single stage	Improved R-10 } Developed from V-2
T-1A,	99,000	Single stage	Improved T-1 } Developed from V-2
T-2.	78,000 268,000	Two stage	R-10(V-2) plus R-14A (German-Soviet effort)
T-3.	78,000 268,000 440,000	Three stage	R-10(V-2) plus R-14A
T-3A.	78,000 268,000 520,000	Three stage	R-10(V-2) plus R-14-A
T-4.	52,800 180,000	Two stage	V-2 plus two R-10 (German Sanger concept)
Golem-1,	120,000	n.a.	n.a.
Golem-2,	242,000	n.a.	n.a.

Sources: Alfred J. Zaehringer, *Soviet Space Technology,* (New York: Harper & Brothers, 1961), p. 75; U.S. Senate, Committee on Aeronautical and Space Sciences, *Soviet Space Programs, 1962-65; Goals and Purposes, Achievements, Plans, and International Implications,* Staff Report, 89th Congress, 2d session (Washington, December 1966).

Table 20-4 SOVIET MISSILES AND THEIR GERMAN ORIGINS, IN 1960

Soviet missile	*Description*	*German origin*
M-100	air-to-air; early version unguided, later infrared guidance	Developed in U.S.S.R. under Boris von Schlippe
M-1	2-stage surface to air; liquid-fueled	Developed from Walther-KHW-109-509 (or the Rheintochter)
T-44	Boost glide bomber	Sanger-Bredt antipodal bomber
Golem-1	Underwater to surface	German A-12 underwater

Sources: RAND Corp. Report T-33: Volursus, *The Secret Weapons of the Soviet Union* (Santa Monica, February 1964), pp. 3-4; *Missiles and Rockets* (Washington, D.C.), July 20, 1959, pp. 172-6.

rockets HS-293 and FX 1400 also were taken over.[73] By early 1954 some German technicians had been separated from Soviet rocket work, and return of the main group started in 1958. Even today, however, East Germany supplies the U.S.S.R. with rocket fuel, electrical equipment, and guidance and control equipment, although this role probably is not decisive.

Asher Lee sums up the transfer of German rocket and missile technology:

> ... the whole range of Luftwaffe and German Army radio-guided missiles and equipment fell into Russian hands. There were the two Henschel radar-guided bombs, the Hs-293 and the larger FX-1400 ... the U.S.S.R. also acquired samples of German antiaircraft radio-guided missiles like the X-4, the Hs-298 air-to-air projectile with a range of about a mile and a half, the Rheintochter which was fitted with a radar proximity fuze, and the very promising Schmetterling which even in 1945 had an operational ceiling of over 45,000 feet and a planned radius of action of about twenty miles. It could be ground- or air-launched and was one of the most advanced of the German small-calibre radio-guided defensive rockets; of these various projectiles the Henschel-293 bomb and the defensive Schmetterling and Hs-298 (the V-3) are undergoing development at Omsk and Irkutsk ... Soon they may be going into production at factories near Riga, Leningrad, Kiev, Khabarovsk, Voronezh, and elsewhere.

Other plants in the same areas produced improved radar based on the Wurzburg System; the airborne Lichenstein and Naxos systems were reported in large-scale production in the 1950s.

U.S.-Soviet Technical Cooperation In Space

In 1955 as German technicians began returning home, the United States started to make approaches to the Soviet Union on the question of technical cooperation in space;[74] indeed, in the ten-year period between December 1959 and 1969, the United States made 18 individual initiatives. Any acceptance by the Soviets would of course have supplemented their gains from German assistance.

In December 1959 NASA Administrator T. Keith Glennan offered assistance in tracking Soviet manned flights; on March 7, 1962, President Kennedy proposed an exchange of information from tracking and data acquisition stations, and on September 20, 1963, the President proposed joint exploration of the moon, an offer later repeated by President Johnson. There was no Soviet response

[73] Parry, *op. cit.* n 71, p. 119; see Chapter 8, "The German Role in Russian Rockets." See also A. Lee in *Air University Quarterly Review* (Montgomery, Ala.), Spring 1952, p. 14.

[74] U.S. Senate, Committee on Aeronautical and Space Sciences, *NASA Authorization for Fiscal Year 1970*, (Hearings, 91st Congress, 1st session, May 1969 (Washington, 1969), pt. II, p. 635.

to these offers. There followed a series of proposals from NASA itself: on December 8, 1964, the administration proposed an exchange of teams to visit deep-space tracking and data acquisition facilities; on May 3, 1965, NASA suggested joint communications tests via the *Soviet Molniya I*; on August 25, 1965, NASA, at the request of President Johnson, asked the Soviet Academy of Sciences to send a high-level representative to the launching of *Gemini VI*, and on November 16 of the same year NASA inquired once again about joint *Molniya I* communications tests. Four more U.S. offers were made in 1966: in January NASA inquired about cooperation on Venus probes; on March 24 and May 23 Administrator James Webb suggested that the Soviets propose subjects for discussion; and in September Ambassador Arthur Goldberg again raised the question of tracking coverage by the United States for Soviet missiles. None of these suggestions was taken up. The U.S. emphasis on assistance in tracking coverage is interesting because this constitutes a Soviet weak area.

The unwillingness of the Soviets to cooperate is exemplified by their response to the U.S. National Academy of Sciences proposal in March 1967 that the Soviets provide *Luna 13* soil meter experiment data in advance of normal world reporting "in return for comparable data from future flights in the Surveyor series."[75] The Soviet data were indeed forwarded—but only after they had been reported at the International Committee of Space Research (COSPAR) meeting in London.

Further offers were made in March, April, June, October (twice), and December 1967 with no Soviet response.

Similar efforts elsewhere have met with the same negative results. For example, COSPAR, aware of the possibilities of planet contamination, noted that an "extremely costly effort has been made by the United States to ensure that its probes do not contaminate the planets." COSPAR has "repeatedly" made efforts to obtain similar information from the Soviets "so that the adequacy of Soviet techniques can be exposed to the judgment of the world scientific community."[76] Over the entire ten-year period the Soviets have provided only generalized assurances, and while there was general agreement that Soviet rocket stages had impacted the planets, "no assurances of any kind have been forthcoming regarding sterilization or diversion from the planets."[77]

The only agreement for an exchange of information came in June 1962 after President Kennedy's initiatives; there were limited projects then that appear to have achieved mediocre success. An agreement to exchange meteorological information was made but "to date [1969] the Soviet data have not been operationally useful to us."[78] No exchange of data on magnetic field mapping took

[75] *Ibid.*
[76] *Ibid.*
[77] *Ibid.*
[78] *Ibid.*

place between 1962 and 1969, and although arrangements have been made for exchange of ground-based data "these have not been completely successful either."[79] Cooperative communications using the U.S. passive satellite *Echo II* were completed in February 1964: "The Soviets received communications only, declining to transmit. Technical difficulties of this experiment limited the results received." In space biology and medicine, a U.S. team spent two years putting together material, while the Soviet side has failed to respond.

A direct Washington-Moscow bilateral circuit for the exchange of meteorological information went into effect in September 1964. Without interruption since September 1966, the United States has transmitted to Moscow cloud analyses for one-half the world and selected cloud photographs. Although the Soviets launched a total of seven weather satellites between 1964 and 1969 "there have been numerous interruptions in the transmission for data, at one time for a period of four months."[80] Further, because of insufficient coverage by Soviet satellites, the Soviet data have been limited, often of marginal quality and received after the period of maximum usefulness. It is probable in the light of these results that the Soviet space program is far less technically advanced than has been generally believed, and fear of disclosing this backwardness inhibits the Soviets from taking advantage of superior U.S. technology.

We may conclude that although the Soviets produced large quantities of aircraft during World War II these were for the most part elementary wooden models with inferior piston engines.[81] No jet engines or advanced reciprocal engines had been produced by the end of the war, and Russian aircraft plants were heavily dependent on Lend Lease supplies, equipment, and technology.

During 1945-47 about two-thirds of the extensive German wartime aircraft and missile industry was transferred to the Soviet Union, including designers, engineers, plans, models, equipment, and complete production lines. The most important categories were Junkers and BMW jet engines, with production lines and teams of German engineers used in the late 1940s and 1950s to advance this jet engine technology. This was supplemented by the purchase of 55 Rolls-Royce engines in 1947 which became the prototypes for another group of Soviet jet engines. Soviet jets and turboprops in the early sixties were descendants of these German and British engines.

Although some aircraft are direct copies of Western machines (for example, the Tu-4 bomber and the Tu-70 civilian version in many ways duplicate the Boeing B-29), some design independence is recognizable from the mid-1950s

[79] *Ibid.*
[80] *Ibid.*.
[81] Sutton II, Chapter 14.

onward, although this is not of an advanced nature and dependence is still a factor.[82]

Soviet rockets and missiles can be clearly traced to German V-2 technology and transferred production capabilities; this observation applies also to air-to-air and underwater missile weapons.

[82] A popular but reasonably accurate account of Soviet backwardness in space and aviation in 1958 is Lloyd Mallan, *Russia and the Big Red Lie* (New York: Fawcett, 1959). This is based on a 14,000-mile, almost unrestricted trip to interview 38 Soviet scientists. Mallan's conclusions, amply supported by photographs, are generally consistent with the material presented here. Some of the more interesting items: the Remington Rand UNIVAC computer was used to illustrate an article in *Red Star* on Soviet computers (with captions translated into Russian) (p. 16); Soviet computers had such primitive characteristics as cooling by air blowing over the tubes (pp. 17, 20, and 24); calculations for the Lunik trajectory were done by use of a hand calculator made in Germany, not a computer (p. 26); the major equipment at a Soviet tracking station was an aerial camera that could be purchased at a war surplus store in the United States for $80 (p. 30); primitive cross-hair techniques were in use (p. 34); there was a General Electric radio telescope at Byurakan Observatory (p. 44); Mallan saw Soviet copies of the U.S. Navy space suit (p. 56-57) and the nose-cone spring release from the Viking rocket (p. 86); German rocket launchers were used (p. 95); there were copies of the C-123, Convair, B-29 (pp.112-120); numerous B-29 parts were used on the Tu-104, which had no servomechanisms and thus required brute force to fly; there were no radarscopes on the IL-18 (despite its radome nose, presumably false, p. 121); the ZIL-111 had a Cadillac gold V on the radiator, and the Moskvitch proved to be a copy of the West German Ford Taunus (p. 135).

CHAPTER TWENTY-ONE

Western Construction of the Soviet Merchant Marine

SHIPYARD FACILITIES IN THE SOVIET UNION

Soviet shipyard facilities, in 1944 mostly Tsarist yards, were supplemented after World War II by reparations equipment from Germany (see Table 21-1) and import of shipbuilding equipment from the West, particularly from Finland, the United Kingdom, and Germany.

Table 21-1 SHIPYARDS REMOVED FROM GERMANY TO THE U.S.S.R. IN 1945-46

Name of yard	*Location*	*Extent removed to U.S.S.R.*
Deutsche Schiffs-und Maschinenbau A.G. (Deschimag)	Bremen	Complete [a]
Deutsche Schiffs-und Maschinenbau A.G. (Valentin)	Bremen	Complete [a]
Schiffswerft und Maschinenfabrik	Dresden-Laubegast	Part only [b]
Schiffswerft Uebigau	Dresden-Uebigau	Part only [b]
Schiffswerft Rosslau	Saxony-Anhalt	Complete [b]
Neptunwerft Rostock	Rostock	Part only [b]

Sources: [a] Germany, Office of Military Government (U.S. Zone), Economics Division, *A Year of Potsdam* . . . (n.p.: OMGUS, 1947), p. 36; [b] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik (Bremen: F. Trüjen, 1951),* pp. 101-2.

Shipyards at Bremen in the U.S. Zone of Germany were completely removed to the U.S.S.R. on a priority basis under U.S. Operation RAP.[1] The German submarine yards at Bremen and Stettin, including the torpedo and fire-control manufacturing plants, were also completely dismantled and shipped to the U.S.S.R., together with engine manufacturing plants and some "4000 submarine experts and construction supervisors."[2]

[1] See p. 26.
[2] U.S. Naval Institute, *Proceedings* (Annapolis, Md.), October 1945, p. 1225.

This is of great significance, as the German submarine of 1945 was quite different from the submarine of 1943; the later units were streamlined, with revolutionary engines enabling a tripling of underwater speed.[3] These German facilities became the nucleus of Soviet postwar construction of submarines and naval ships.

In 1954 this German equipment was supplemented by extensive purchases of shipbuilding equipment in the United Kingdom and Belgium. Under the January 1954 Soviet-Belgian trade agreement a total of $100 million in ships, floating cranes, and marine boilers was to be supplied from Belgium during the years 1955-57.[4] Large orders also were placed in the United Kingdom for shipbuilding equipment. For example,

> Soviet orders are being placed for shipbuilding equipment, Messrs Fielding and Platt having recently secured a £2¼ million contract for hydraulic equipment, including joggling presses and large forging and flanging presses.[5]

Moreover, Finnish deliveries to the Soviet Union for the latter half of the decade of the 1950s contained, among other equipment, five floating docks and 25 floating cranes and electric bridge cranes.[6]

These equipment deliveries were in addition to the extensive use of foreign shipyards—and this particularly applies to Finland and Poland—to build up the Soviet merchant marine. Many yards in Western Europe have since about 1951 had a large proportion of their tonnage on Soviet account, and a few yards have produced almost entirely for the Soviet Union. For example, in 1954 in the Netherlands the De Schelde, Kononklijke Mij N.V. yards in Flushing produced 100 percent of their output on Soviet account. In Belgium in 1954 the shipyard Boel et Fils S.A. produced 20 percent of its output on Soviet account. In Finland in the same year the two major yards Wärtsilä-Koncernen A/B (Sandvikens Skeppsdocka) and Wärtsilä-Koncernen A/B (Crichton-Vulcan) produced 50 and 64 percent, respectively, of their output on Soviet account. In the same year in Sweden Oskarshamns Varv A/B at Oskarhamn built 25 percent of its output on Soviet account. And in the same year in the United Kingdom the yards of William Gray and Company, Ltd., at West Hartlepool produced 20 percent of their output on Soviet account.

In addition, foreign government-owned yards have produced ships on Soviet account. For example the Howaltdwerke in Kiel, Germany, is owned by the German Government and has been a major source for Soviet ships.[7]

[3] *Ibid.*

[4] Raymond F. Mikesell and Jack N. Behrman, *Financing Free World Trade with the Sino-Soviet Bloc* (Princeton: Princeton University Press, 1958), Appendix.

[5] *The Motor Ship* (London), XXXIV, 408 (March 1954), 549.

[6] U.N., *Treaty Series*, vol. 240 (1956), p. 202.

[7] Gunnar Adler-Karlsson, *Western Economic Warfare, 1947-1967* (Stockholm: Almquist and Wikesell, 1968), p. 94. *Merchant Ships: World Built* (Southampton: Adlard Coles, annual).

CONSTRUCTION OF THE SOVIET MERCHANT MARINE

The total tonnage in the Soviet merchant fleet at July 1967 was 11,788,625 gross registered tons. Of this total, only 34.4 percent (4,058,427 gross registered tons) was built in the Soviet Union; the balance of 7,730,198 gross registered tons was built outside the Soviet Union.[8]

The largest single supplier of shipping to the Soviet Union has been Poland, a country that was not even a shipbuilder before 1950. During the period 1950-66 Poland supplied 379 ships totaling 1,454,314 gross registered tons, to the Soviet merchant marine. Table 21-2 illustrates the number of Polish ships built on Soviet account in each year during that period and gives their gross tonnage. It may be observed that the average size of these ships increased quite significantly at the beginning of the 1960s, when "hundreds" of technical-assistance agree-

Table 21-2 MERCHANT SHIPS BUILT IN POLAND ON SOVIET ACCOUNT FROM 1950 to 1966

Year	*Number of Ships built*	*Gross registered tonnage*	*Average size built, GRT*
1950	1	1946	1946
1951	—	—	—
1952	21	36,036	1716
1953	28	46,657	1666
1954	24	43,240	1800
1955	31	46,470	1499
1956	35	61,295	1751
1957	30	53,985	1799
1958	29	61,876	2133
1959	19	86,887	4573
1960	19	122,053	6424
1961	12	52,808	4400
1962	21	134,991	6428
1963	31	167,806	5413
1964	24	159,228	6634
1965	23	175,191	7617
1966	31	203,845	6576
Totals	379	1,454,314	

Source: Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

[8] Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966). The reader should also examine *Soviet Merchant Ships 1945-1968* (Havant, England: K. Mason, 1969), for detailed material. It should be noted, however, that that survey includes only about 2500 ships, whereas this section is based on the Soviet Register at July 1, 1967, i.e., it considers a total of 5551 ships.

ments between Polish shipyards and West European manufacturers of shipbuilding equipment came into operation;[9] from an average gross tonnage of about 1600 tons in the early 1950s, the average Soviet ship built in Polish yards in the mid-1960s was between 6500 and 7500 tons.

The largest Free World suppliers of ships to the Soviet fleet have been Japan and West Germany. In 1955-56 West Germany supplied 32 ships with an average tonnage of about 3000 gross registered tons. Thereafter orders dribbled down to one and two ships per year until 1964, when seven ships of 4700 tons each were delivered, and 1965-66, when eight ships of an average of 16,000 tons were delivered from West Germany to the Soviet Union. Japanese orders have been concentrated in the years 1962 to 1966 and comprise numerous 22-23,000-ton tankers.

Among socialist countries, Yugoslavia is a prominent supplier of ships to the Soviet Union; in 1965 Yugoslavia built 11 ships of two types (11,000 tons and 15,000 tons) and in the following year supplied another ten ships (also 11,000 and 15,000 tons). Most of these Yugoslav ships have Burmeister & Wain diesel engines.[10]

Construction in Soviet shipyards has concentrated on standard ships. One such standard ship is the *Leninskii Komsomol*,[11] a dry cargo ship of 12,000 gross registered tons and generally comparable to the U.S. "Mariner" class; i.e., it is a conventional design ship of a type known throughout the world. This type of vessel has also been ordered on Soviet account in Japan, Yugoslavia, Finland, and Poland.

Another standard dry cargo freighter is the 12,500-dwt class built at Nikolaev with engines based on Burmeister & Wain design; this "Poltava" class became well known in 1961 as a missile carrier to Cuba.

SOVIET OIL TANKERS AND WESTERN DIESEL ENGINES

The Soviet merchant marine is heavily dependent not only on Western shipyards but on foreign marine diesel engine technology.[12] A quantitative expression of additions to the Soviet tanker fleet in 1964-65, i.e., those tankers under construction at the very end of the period under consideration, illustrates the point.[13] In those years a total of 541,201 gross registered tons of tankers was added and the construction origin of this segment was as follows:

[9] John D. Harbron, *Communist Ships and Shipping* (London, 1962), p. 196. The Soviets have also made hard currency available to the Poles for purchase of Western equipment for ships built in Poland on Soviet account. *Ibid.*, p. 109.

[10] See A. Sutton, "Soviet Merchant Marine," U.S. Naval Institute, *Proceedings*, January 1970, for Western construction of merchant ships on Soviet account.

[11] Registr Soyuza SSR, *op. cit.* n. 8, no. 1602.

[12] See chapter 17.

[13] This is the segment of the fleet contained in Supplement No. 1 to the Soviet Register. Registr Soyuza SSR, *op. cit.* n. 8.

Hulls built in U.S.S.R.		236,358 gross tons	(or 43.6 percent)
Hulls built in Eastern Europe:			
Yugoslavia	167,803		
Poland	13,218	184,881 gross tons	(or 34.1 percent)
Bulgaria	3,860		
Hulls built in Free World:			
Finland	13,439		
Japan	75,390	119,962 gross tons	(or 22.2 percent)
Italy	31,133		
			99.9 percent

In general these vessels had main engines manufactured in the country of hull construction; therefore the geographic distribution of engine construction is about the same in percentage terms. However, almost all the Soviet-built propulsion units (229,530 tons) were steam turbines. If we consider only that portion of tanker fleet additions equipped with diesel propulsion units, the distribution is as follows:

Main diesel units built in U.S.S.R.	1.7 percent	(5,372 gross tons)
Main diesel units built in Eastern Europe	59.8 percent	(186,337 gross tons)
Main diesel units built in Free World	38.4 percent	(119,962 gross tons)
	99.9 percent	(311, 617 gross tons)

If we make a further analysis and examine diesel engines by country of *design* (not construction) origin (most East European manufacturers have technical-assistance agreements with Western diesel engine manufacturers; all Yugoslav diesels in this segment, for example, have Burmeister & Wain main diesels), then the percentages are:

Main diesels designed in U.S.S.R.	1.7 percent	(5,372 gross tons)
Main diesels designed in Eastern Europe	1.7 percent	(5,318 gross tons)
Main diesels designed in Free World	96.5 percent	(300,981 gross tons)
	99.9 percent	(311,671 gross tons)

The most numerous class of Soviet tankers in a fleet of 300 such vessels[14] is the "Kostroma" class of 8229 gross registered tons. Between 1953 and 1961 about 58 were built in this class, which is a close copy of the U.S. wartime T-2 tanker;[15] about 17 of these have Skoda engines imported from Czechoslovakia and the remainder have a similar engine which is manufactured at Russky Diesel in Leningrad. According to J. D. Harbron,[16] the "Kostroma"

[14] *Ibid.*, at July 1967. See Statistical Note to this chapter for detailed data on 242 (out of 300) tankers built after World War II.

[15] Harbron, *op. cit.* n. 9, p. 151.

[16] *Ibid.*, p. 154.

class in the early sixties was fully occupied in supplying oil to Cuba and in Soviet naval supply work.

The remaining tankers can be divided for analysis into three groups—large tankers in excess of 13,000 tons, medium tankers of about 3300 gross registered tons, and small tankers of less than 1772 tons. Analysis of these three classes is contained in the Statistical Note to this chapter (see pp. 295-302) and includes a breakdown by foreign and Soviet domestic production.

About two-thirds of large tankers in the Soviet tanker fleet as of July 1967 had been built outside the Soviet Union; of a total of 129 such tankers, only 25 had been built in the Soviet Union and all these were powered by steam turbine rather than diesel engines. Soviet construction falls into two classes: one class, of 21,255 gross registered tons, includes seven vessels built between 1959 and 1963, and the other class, of 32,484 gross registered tons, includes the remaining 18 tankers built between 1963 and 1966. All other Soviet tankers over 13,000 tons were built abroad. Italy built six of 20,000 and 31,000 gross registered tons; Holland built two of 16,349 gross registered tons; Poland built seven of a standard class of 13,363 gross registered tons; Yugoslavia built 15 of a standard tonnage (15,255 tons); Japan built 20 tankers of between 22,000 and 25,000 tons; and the remaining two tankers were a Polish-built standard vessel with East German engines and a Yugoslav-built tanker of 17,861 tons with a Swedish engine. This comprised the total Soviet tanker fleet in excess of 13,000 tons—and 67.5 percent in tonnage terms had been built abroad.

There were 76 tankers in a medium category (3300 and 3820 gross registered tons). Of these only 15 were completely built in the Soviet Union; however, the class does contain one unusual characteristic—a group of 22 tankers with Soviet diesel engines but built in Bulgaria. The largest group was built in Finland—28 of 3300 tons with hulls from Finnish shipyards and Danish engines. The remaining vessels in this group constituted a few built in Finland with Finnish engines, three built in Finland with Swedish engines, and two tankers built completely in Japan.

The last group of tankers comprised 89 vessels, all of less than 1772 gross registered tons, 70.8 percent built outside the Soviet Union. The largest group built inside the Soviet Union comprised 20 small tankers of between 756 and 802 gross registered tons, for use in the Caspian Sea. Another group of nine tankers of 1775 gross registered tons had hulls built in the Soviet Union but Czechoslovak Skoda engines. The largest group of small tankers built outside the Soviet Union comprised 33 tankers of between 260 and 305 gross registered tons, with both hulls and engines built in East Germany. A group of thirteen tankers of 1117 tons was built in Finland on Soviet account in 1954-55 and powered with Swedish engines.

Therefore it may be seen that as of July 1967 about two-thirds of Soviet tankers had been built outside the Soviet Union, and the foreign-built segment

included almost all tankers in excess of 13,000 tons. Even two-thirds of the smaller tankers, including those for use in the Caspian Sea and for coastal use, were built abroad rather than in the Soviet Union. Further, a number of the tankers built in the Soviet Union had engines manufactured abroad, imported into the U.S.S.R., and then installed in hulls built in Soviet yards.

MODERNIZATION AND EXPANSION OF THE SOVIET FISHING FLEET

Between 1945 and the late 1960s the Soviet fishing fleet was modernized and greatly expanded; between 1945 and 1961 about 3500 modern large and medium trawlers and refrigerator ships were added to the fleet.[17] The program started in the early fifties when orders were placed for prototype fishing vessels in the Netherlands, Sweden, Finland, Denmark, Japan, and, more significantly, in the United Kingdom and Germany.

The Soviets' first step in 1954 was a $20 million order for 20 modern fishing trawlers, placed with the United Kingdom firm of Brooke-Marine, Ltd., of Lowestoft.[18] In this connection, a U.S. Congressional report[19] notes:

> From the specifications they received, the British engineers learned that the Russians were still designing their trawlers pretty much as they were designed 20 years earlier. They seemed to have no knowledge of what went into the making of a modern fishing trawler....[20]

The series of 20 Brooke-Marine trawlers embodied the latest in world technology, and "after they were turned over to Russia, the new trawlers were distributed as prototypes among the shipyards of the U.S.S.R., Poland, and East Germany, and large-scale production of large, efficient, oceangoing fishing vessels was launched in earnest in the Soviet bloc."[21]

The first vessel in the class—the side-set trawler *Pioner*—was launched and delivered in 1956. Its equipment was of the most advanced type: Donkin & Co., Ltd., of Newcastle-on-Tyne supplied a partially balanced streamlined rudder actuated by means of electrohydraulic steering gear; an electrically driven windlass, installed by Clarke-Chapman & Co., Ltd., was capable of lifting two improved Hall stockless bower anchors from 260 feet at a rate of 30 feet

[17] U.S. Senate, Committee on Commerce, *The Postwar Expansion of Russia's Fishing Industry*, Report by the Fisheries Research Institute, 88th Congress, 2d Session, January 1964 (Seattle: University of Washington, 1964), p. 6.

[18] *Commercial Fisheries Review* (Washington, D.C.), 16, 5 (May 1, 1954), 68.

[19] U.S. Senate, *op. cit.* n. 17, p. 7.

[20] *Ibid.*

[21] *Ibid.* For details of equipment on Soviet trawlers see Yu. Kostyunin, *Rybolovnye traly* (Moscow, 1968).

per minute; the ventilating-heating system was by R.B. Stirling & Co., Ltd.; and the insulation, of "very high standard throughout," was by Darlington Co., Ltd.

The most up-to-date navigation aids were installed by Brooke-Marine, Ltd.—a Redifon radio apparatus, Pye sound reproduction system, Bendix echosounding gear, a Revometer, Browne standard and steering compasses, and an eight-way batteryless telephone communication system by Telephone Manufacturing Co., Ltd. The refrigeration plant was built by L. Sterne & Co., Ltd., of Glasgow with automatic controls by Malone Instrument Co., Ltd., and the fish meal plant by Farrar Boilerworks, Ltd. The main engine was a four-stroke, eight-cylinder diesel-type KSSDM by Mirrlees, Bickerton & Day, Ltd., developing 950 shp at 255 rpm. The whole ship was specially strengthened for ice work.[22]

In all, 20 ships were built to this specification by Brooke-Marine, Ltd., for the Soviet Union. (See Table 21-3.)

In 1954 the Scottish shipbuilder John Lewis & Sons, Ltd., of Aberdeen designed an advanced fishing vessel, the *Fairtry*, which was hailed in the trade

Table 21-3 TRAWLERS SUPPLIED BY BROOKE-MARINE, LTD TO THE U.S.S.R. IN 1956-59

Soviet register	*No.*	*Name*	*Gross registered tons*	*Date supplied*
2855	PT-200	*Pioner*	684	1955
2856	PT-201	*Akula*	684	1956
2857	PT-202	*Muksun*	685	1956
2858	PT-203	*Karas*	684	1956
2859	PT-205	*Sokol*	684	1956
2860	PT 207	*Sever*	684	1957
2861	PT-208	*Vostok*	685	1957
2862	PT-209	*Ug*	685	1957
2863	PT-210	*Zapad*	685	1957
2864	PT-211	*Tunets*	685	1957
2865	PT-212	*Rion*	685	1957
2866	PT-213	*Stavrida*	685	1957
2867	PT-214	*Shongui*	685	1957
2868	PT-215	*Kotlas*	685	1957
2869	PT-215	*Okun*	685	1957
33	—	*Adler*	685	1958
2158	—	*Pelamide*	685	1958

Source: Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

[22] Data from *The Shipbuilder and Marine Engine-Builder* (London), February 1956, p. 1179.

literature as one of the most interesting ships to have been built in recent years[23] and subsequently became the basis of the Soviet "Pushkin" class. The *Fairtry* resulted from experimental work that had been going on since 1947. It was the largest trawler built to that time and the first specially designed and constructed for stern trawling and for complete processing of the catch on board. The *Fairtry* had a gross registered tonnage of 2605 with a main propulsion unit built by Lewis Doxford—a four-cylinder oil engine capable of developing 1900 bhp.[24]

This advanced design was used by the Russians for their main postwar class of trawlers. The Soviets placed an order in the Howaldtwerke shipyards in Kiel, West Germany, for 24 trawlers based on the *Fairtry* design, and these trawlers of 2500 gross tons were built on Soviet account between 1955 and 1958.[25] The 24 German-built prototypes became the basis for the Soviet "Pushkin" class of stern trawlers, first launched in the spring of 1955, and the other 23 German-built units followed in the next several years.

After being tested in operation the "Pushkin" class became the prototype for a Soviet-built version—the "Maiakovskii" class; the "Maiakovskii" vessels of 3170 gross registered tons were of the same overall dimensions as the "Pushkin" class. Two years later work began in Poland on a modified version of the same trawler, the "Leskov" class of 2890 gross registered tons and of similar dimensions to the "Pushkins" and the *Fairtry*.

There is also an East German version of the *Fairtry* known as the "Tropik" class, of 2400 gross registered tons; the first craft in this series, launched in East Germany in July 1962, was specially built for operation by the Soviets in tropic areas.

Table 21-4 ORIGINS OF SOVIET STERN TRAWLERS AS OF 1965

Soviet trawler class	*Design based on*	*Original prototype order*	*Number of copies*
"Pushkin" 2,470 GRT	U.K. *'Fairtry'*; prototype built in W. Germany	24	—
"Maiakovskii" 3,170 GRT	U.K.*'Fairtry'*	—	60
"Leskov" 2,890 GRT	Polish modification of U.K. *'Fairtry'*	20	—
"Tropik" 2,600 GRT	East German version of U.K.*'Fairtry'*	—	65 (to 1965)

Sources: Commercial Fisheries Review (Washington), May 1, 1954; and author's calculations based on Soviet sources.

[23] *The Shipbuilder and Marine Engine-Builder*, September 1954, p. 541.
[24] *Ibid.*, pp. 541-44.
[25] *Commercial Fisheries Review*, 16, 5 (May 1, 1954), 69.

Therefore the numerous Soviet stern trawlers are based on a single British vessel, the most advanced of its type when first produced in 1954. (See Table 21-4.)

FISH FACTORY SHIPS, MOTHER SHIPS, AND REFRIGERATED FISH TRANSPORTS

In 1959 an order for 11 "Severod Vinsk" class mother ships was placed with the Polish Government shipyards in Gdansk. The ships were delivered between 1959 and 1962 with a gross registered tonnage of 11,500; their function is to serve as supply and base ships for Soviet trawler fleets.

The "Zakharov" class, based on the "Severod Vinsk" design, performs the functions of processing fish as well as the service functions of a mother ship; it is also equipped to manufacture fish meal and oil from wastes obtained during the canning operations. It was built at the Admiralty yards at Leningrad between 1960 and 1963. The "Zakharov" class ships have a daily canning capacity of 1600 cases, and one version receives fish from an accompanying fleet of medium fishing trawlers (SRTs) or from 12 motor boats carried on board (the motor boats are of a special Japanese Kawasaki design for catching king crabs with angle nets).

There are also about a dozen classes of refrigerator transport vessels, some of which have equipment for quick-freezing fish.

Table 21-5 ORIGINS OF REFRIGERATOR FISH CARRIERS AND PRODUCTION REGRIGERATOR TRANSPORTS

Class	*Built*	*GRT*
"Bratsk"	*East Germany*	*2,500*
"Tavriia"	*Soviet Union*	*3230*
"Pervomaisk"	*Denmark*	*3300*
"Sevastopol"	*Soviet Union*	*5525*
"Skryplev"	*Denmark*	*4700*

Sources: Commercial Fisheries Review (Washington, D.C.), Nov. 1964 supplement, pp. 11-12; Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

These refrigerated transport vessels have been built partly in the Soviet Union and partly abroad on Soviet account. (See Table 21-5.) The "Bratsk" class of refrigerated vessels, built in East Germany with a gross registered tonnage of about 2500 to carry a crew of 91 with a 40-day cruising capacity, was built after 1960 for the Soviet merchant fleet. The vessels have equipment installed in the East German yards of Stralsund Volkswerft, comprising freezing and refrigeration plant with two freezer machines, four air-blast freezing tunnels, packing departments, refrigerating machines, and refrigerating holds. Capacity

is about 1800 cubic meters, permitting storage of about 800 tons of frozen fish.

Another class, built completely in the Soviet Union, is the "Tavriia" class (3230 gross registered tons), which performs the same function as the "Bratsk" class. Another is the "Pervomaisk" class built in Denmark on Soviet account and with Danish engines; these vessels are of about the same tonnage as the "Tavriia" class and about the same overall length, and there is in general a distinct similarity between this Danish class and the "Tavriia" class.

The largest class of refrigerator vessels is the Soviet-built "Sevastopol" of 5525 gross registered tons and about 430 feet in overall length, with a capacity to handle 100 metric tons of fish per day with equipment consisting of eight air-blast freezing tunnels each 39 feet long and related storage of five holds of 5400 cubic meters each; total capacity is 2700 metric tons of fish.

Finally, there is the "Skryplev" class, designated as refrigerator transports but actually factory ships with a capability of freezing fish and preparing fish meal and oil. These ships of 4700 gross registered tons and overall length of about 300 feet were built in Denmark in the early 1950s.

SOVIET OCEANOGRAPHIC AND RESEARCH VESSELS

In 1967 there were approximately 71 research and oceanographic vessels in the Soviet fleet. The origin of about one-half of these vessels has been traced. None of those traced originated in the Soviet Union.[27]

Several research ships have been built in East Germany on Soviet account. For example, the *Okeanograf* was built in East Germany in 1956 and has Buckau-Wolf diesel engines; the *Poliarnik,* built in East Germany in 1952, also has Buckau-Wolf engines; the *Akademik S Vavilov,* built in East Germany in 1949, has a 350-hp Buckau-Wolf diesel engine; the *Zemchug* of 422 tons, built in East Germany in 1950, also has a Buckau-Wolf 300-hp engine; similarly, the *Topseda* of 239 tons, built in East Germany in 1950, has a Buckau-Wolf 300-hp engine.

Some research vessels have been built in Finland. For example the *Professor Rudovits* of 626 tons was built in Finland in 1950, and has Finnish engines. The *Zaria*, built in Finland in 1952, has an East German 300-hp engine.

Holland built a large 12,000-ton research vessel, the *Ob*, in 1953 with a 7000-hp diesel-electric engine made by Schelde-Zulzer.

China built several research vessels for the Soviet Union in the mid-1950s and fitted them with East German Buckau-Wolf engines. For example, the *Pervenets* (442 gross registered tons) was built in 1956 in China. Some prewar

[26] *Commercial Fisheries Review*, 26, 11A (November 1964), Supplement.

[27] A list of these vessels is in U.N., Food and Agricultural Organization, *Research Craft Conference* (Seattle, 1968), pt. 2.

vessels also appear to have been converted for oceanographic use; for example the *Vitiaz* (5710 gross registered tons), built in Germany in 1939 with a Krupp reversible two-cycle engine of 3600-hp, was converted sometime in the 1950s for oceanographic use.

Finally, in 1966 Poland agreed to build ten advanced oceanographic research vessels for the Soviet Union. These are ice-strengthened to the highest classification in the Soviet Registry, 282 feet long, 45-foot beam and 15-foot draft with a displacement of 3735 metric tons, and propelled by two Sulzer diesels each of 2400 hp with variable-pitch propellers.[28]

Perhaps the most notable feature of Soviet oceanographic vessels is their navigation and echosounding equipment. This appears to have originated in large part in the West, although we have data for only about 20 of the approximately 70 ships in the Soviet oceanographic research fleet. For example the *Vitiaz*, the converted 1939 German 5700-ton vessel, has the following equipment:

Navigation:
2 gyrocompasses (Course 3 and Course 4)
3 magnetic compasses (2 track, 1 main)
1 Gauss-25 hydraulic log
1 electromechanical log
2 radiolocators (Don and Neptun)
1 Kelvin-Hughes navigation log
2 radio direction finders (Millard)
2 long-distance meteorological stations

Echosounders:
2 Kelvin-Hughes (10,000-meter)
2 Kelvin-Hughes (4500-meter range)
1 Kingfisher fishlocator

The *Ob*, built in Holland in 1953, similarly has Western equipment:

Navigation:
4 gyrocompasses
2 magnetic compasses
1 Gauss-25 log
2 Zarnitsa and Neptun radar

Echosounders:
2 Kelvin-Hughes (MS 26)
2 Nippon Electric L-5, 2000-meter range

Vessels built in East Germany on Soviet account also have been fitted with Western equipment. For example, the *Zemchug* has Nippon Electric echosounders; the *Akademik Vavilov* has echosounders made by Kelvin-Hughes and Nippon Electric; the *Poliarnik* has Nippon Electric echosounders; the *Sevastopol* has echosounders made by Hughes (type MS 26) and Nippon Electric.

So far as navigation equipment is concerned, we find similar use of Western equipment. For example, the *Okeanograf* built in East Germany in 1956 has a Thomson-type manual mechanical sounding instrument; the *Akademik Vavilov*,

[28] *Undersea Technology* (Washington, D.C.), May 1967, p. 67.

built in East Germany, has a Nippon Electric navigation sounder; the *Professor Rudovits* has a Lyth magnetic compass.

Therefore we may conclude that Soviet oceanographic research vessels are heavily dependent on Western sources, particularly for their instrumentation, even though this instrumentation has been indirectly acquired through East European socialist countries.

So far as underwater sea laboratories are concerned the Soviets are somewhat backward. An article in the U.S. Naval Institute *Proceedings* on the Russian sea lab[29] reviews the Russian *Sadeo-2* and concludes:

> Quite noticeable under various Soviet programs revealed to the West, is that living or working depths have been no more than 100 feet.... One can only speculate on the apparent Soviet backwardness in this field.

By contrast, the United States had vessels operating to a depth of 36,000 feet at that time (1969).

WESTERN ORIGINS OF SOVIET ICEBREAKERS

Before World War II the Soviet Union had only two or three icebreakers (built in Europe between World War I and the mid-1920s). Three modern icebreakers were transferred to the Soviet Union in the early 1940s under Lend Lease. Secretary of the Navy James Forrestal attempted to have these icebreakers returned in 1946, and in a memorandum to the State Department requesting institution of recovery proceedings Secretary Forrestal commented:

> Of particular importance are the three CRs or icebreakers identified as:

U.S. Name	U.S.S.R Name
Northwind	*Severny Veter*
Southwind	*Admiral Makarof*
Westwind	*Severny Polus*

> These are high-powered icebreakers of the most modern design, sister ships (except in armament) of the two now in commission in the U.S. Coast Guard and of two others under construction and completing for the Navy. The importance of an adequate number of high-capacity icebreakers in supporting any operations in the frigid zones cannot be overemphasized. Three-sevenths of the total war production of this type are held by the U.S.S.R.[30]

The Soviet Register of 1966 lists icebreakers with characteristics similar

[29] U.S. Naval Institute, *Proceedings*, July 1969, pp. 113-15.
[30] U.S. State Dept. Decimal File 861.24/5-646.

to these Lend Lease vessels. Soviet Register No. 38, for example, is the *Admiral Makarov* (U.S. *Southwind*); however, this icebreaker is listed as built in the Soviet Union in 1941 with an engine built in the Soviet Union in 1939.[31]

In the early 1950s the Soviets contracted with the Wärtsilä Kon. Sandvikens shipyards in Finland for a series of 3000- and 9000-ton icebreakers with diesel-electric engines manufactured by Wärtsilä Kon. Crichton-Vulcan at Abo in Finland. These icebreakers are listed in Table 21-6.

Table 21-6 ICEBREAKERS BUILT IN FINLAND ON SOVIET ACCOUNT FROM 1955 TO 1959

Name	*Year built*	*Gross registered tons*
Kapitan Belusov	1955	3710
Kapitan Voronin	1955	3419
Kapitan Melekhov	1956	3377
Murtaya	1958	2720
Moskva	1959	9165

Sources: Lloyd's Register of Shipping, 1965; *Registr Soyuza SSR, Registrovaya kniga sudov soyuza SSR 1964-1965* (Moscow, 1966); A. C. Hardy, *Merchant Ships: World Built* (Southampton: Adlard Coles, 1960).

Then in 1960 the Soviets produced the *Lenin*, an atomic icebreaker that was followed by a series of ten icebreakers adopted from earlier Finnish designs. The *Lenin* was launched in December 1957 as the world's first atomic icebreaker. Its reactors were reported as three and one-half times larger than the first Soviet reactor, which generated 5000 kw in June 1954. The main turbines were manufactured at the Kirov plant in Leningrad, the electric motors at the Electrosila plant, also in Leningrad; and the main generators were manufactured at KHEMZ in Kharkov, a plant originally designed and built by the General Electric Company. All together, some 500 Soviet plants contributed to the construction of the *Lenin*.[32]

In 1958 an equally large icebreaker, the *Moskva*, was supplied by Finland to the Soviet Union; this icebreaker has Siemens-Schuckert propulsion machinery and the same company made most of the electrical equipment.[33] When it was launched in January 1959 at Helsinki, the *Moskva* was the largest icebreaker built in Finland for the Soviets, with eight Sulzer engines generating 22,000 hp.

Between 1961 and 1967, the Soviets launched a series of ten standard icebreakers named *Ledokol-1* to *Ledokol-10*.[34] This series has diesel-electric motors

[31] *Jane's Fighting Ships*, 1969-1970, lists the "Wind" class as returned to the United States in 1951.

[32] U.S. Naval Institute, *Proceedings*, November 1959, p. 142.

[33] American Society of Naval Engineers, *Journal* (Washington, D.C.), May 1959, p. 337.

[34] These are listed in the Soviet Register under different names; for example *Ledokol-1* is the *Vasily Pronchishchev*.

and is remarkably similar in dimensions to the series of icebreakers built for the Soviet Union in Finland in the 1950s.

Table 21-7 COMPARISON OF SOVIET "LEDOKOL" CLASS AND EARLIER ICEBREAKERS SUPPLIED FROM FINLAND

Characteristic	*Soviet "Ledokol" class*	*Finnish "Karhu" class*
Overall length, feet	222.1	224.0
Breadth, feet	59.25	55.7
Depth, feet	27.23	28.10
Draught, feet	19.1	19.0
Propulsion	Diesel-electric	Diesel-electric (7500 shp)
Displacement, tons	—	3,370

Source: Lloyd's Register of Shipping, 1965; Registr Soyuza SSR, *Registrovaya kniga sudov soyuza SSR 1964-1965* (Moscow, 1966); A. C. Hardy, *Merchant Ships, World Built* (Southampton: Adlard Coles, 1960).

It is a reasonable assumption that the Soviet series of standard icebreakers is based on the earlier Finnish designs. (See Table 21-7.)

Thus in icebreakers, a class of ship where the Soviets have requirements considerably greater than any country except perhaps Canada, apart from the single atomic icebreaker *Lenin* there is a dependence on designs originating in Finnish shipyards or on icebreakers built in Finland and the United States.

Construction of the Soviet merchant fleet constitutes a sector for which precise and accurate information is available—more so than for any other sector. The problem has been to distill the information into a succinct and meaningful pattern.

In broad terms, up to July 1967 65.6 percent of the Soviet merchant fleet was built completely (hulls plus engines) outside the Soviet Union. In terms of propulsion units, the most common engine is the marine diesel—and of these, just under 80 percent were built outside the U.S.S.R., but even those built in Soviet plants were derived from foreign designs, particularly Burmeister & Wain of Denmark and Skoda of Czechoslovakia.

Marine tonnage built inside the U.S.S.R. is of standard types, often based on Western prototypes, as in the cases of icebreakers, the "Kostroma" class tanker, and the "Pioner" class fishing trawler. In other cases, e.g., in oceanographic vessels, equipment is largely of Western origin and construction. Apart from the *Lenin* atomic icebreaker there is no vessel in the Soviet merchant marine that represents indigenous Soviet innovation.

Table 21-8A ORIGINS OF MAIN ENGINES IN SOVIET MERCHANT SHIPS ADDED TO FLEET BEFORE 1930

	1929	*1928*	*1927*	*1926*	*1925*	*1924*	*1923*	*1922*	*1921*	*1920*	*PRE-1920*	*Total*
Germany	1	3	4	—	4	3	4	2	6	4	6	37
United States	—	—	—	—	—	—	—	—	1	1	25	27
Holland	—	—	—	1	—	—	1	1	3	—	7	13
Denmark	—	—	—	1	—	—	—	—	—	—	—	1
U.S.S.R.	1	4	1	—	—	—	—	—	—	—	3	9
Finland	—	—	—	—	—	—	—	—	—	—	2	2
United Kingdom	1	—	—	1	—	—	1	—	—	2	17	22
Sweden	1	—	1	1	—	—	—	—	—	—	1	4
Japan	—	—	—	—	—	—	—	—	—	—	5	5
France	—	—	1	—	—	—	—	—	—	—	—	1
Others	—	—	—	—	—	—	—	—	—	1	5	7
Totals	4	7	7	4	4	3	6	3	11	8	71	128

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8B ORIGINS OF MAIN ENGINES IN SOVIET MERCHANT SHIPS ADDED TO FLEET BETWEEN 1930 AND 1940

	1930	*1931*	*1932*	*1933*	*1934*	*1935*	*1936*	*1937*	*1938*	*1939*	*1940*	Total
United Kingdom	—	—	1	—	1	—	3	—	1	1	—	7
Germany	7	4	2	—	—	3	2	4	3	17	2	44
Norway	—	—	—	—	—	—	—	—	1	—	—	1
U.S.S.R.	3	4	6	5	1	3	1	3	2	1	—	29
Denmark	—	1	1	1	—	—	2	2	—	—	—	7
Holland	—	1	—	—	—	—	—	—	—	—	—	1
Finland	—	—	—	1	—	1	—	—	2	—	—	4
Japan	—	—	—	—	—	—	1	1	—	—	—	2
Sweden	—	—	—	—	—	—	—	—	—	—	—	1
United States	—	—	—	—	—	—	—	—		1	—	1
TOTALS	10	10	10	7	2	7	10	10	9	20	2	97

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8C ORIGINS OF MAIN ENGINES IN SOVIET MERCHANT SHIPS ADDED TO FLEET BETWEEN 1941 AND 1945

	1941	*1942*	*1943*	*1944*	*1945*	*Total*
United States	1	13	48	14	2	78
Germany	5	3	14	7	—	29
Norway	2	3	2	—	—	7
Sweden	—	—	1	—	—	1
United Kingdom	—	1	—	—	1	2
Finland	1	—	—	1	6	8
Hungary	—	1	—	—	—	1
Denmark	—	—	—	1	—	1
Holland	—	—	—	1	—	1
Others	—	—	—	1	—	1
Totals	9	21	65	25	9	129

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8D CONSTRUCTION OF THE SOVIET TANKER FLEET FROM 1951 TO 1967

	Hull and engine built in U.S.S.R.	*Hull and/or engine built outside U.S.S.R.*	*Total added to tanker fleet*	*Percentage built outside U.S.S.R.*
1951	8,229	1,113	9,342	11.9
1952	8,229	14,618	22,847	65.0
1953	24,687	16,570	41,257	40.1
1954	77,798	4,468	82,266	5.4
1955	65,077	20,721	85,798	24.1
1956	60,337	46,820	107,157	43.7
1957	59,532	54,109	113,641	47.6
1958	18,556	35,502	54,058	65.7
1959	90,066	24,663	114,729	21.5
1960	93,707	105,827	199,534	53.0
1961	31,074	56,397	87,471	64.5
1962	42,510	178,879	221,389	80.8
1963	87,693	179,055	266,748	67.1
1964	164,205	328,265	492,470	66.6
1965	132,872	242,201	375,073	64.6
1966	234,235	145,857	380,092	38.4
1967	—	41,833	41,833	100.0
Totals	1,198,807	1,496,898	2,695,705	55.6 percent average

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965 (Moscow, 1966).*

Table 21-8E FOREIGN CONSTRUCTION OF MARINE DIESEL ENGINES FOR THE SOVIET TANKER FLEET, 1951-JULY 1967

	Total installed in Soviet tankers	*Foreign*	*Percentage foreign-built*
1951	2	1	50
1952	7	6	86
1953	16	13	81
1954	14	4	28
1955	17	8	47
1956	25	14	56
1957	33	19	58
1958	17	9	53
1959	16	4	25
1960	15	3	20
1961	11	6	54
1962	21	18	86
1963	16	11	68
1964	22	19	86
1965	21	18	86
1966	22	12	55
1967	7	4	57
Totals	281	169	60

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8F DESIGN ORIGINS OF MARINE DIESELS USED IN THE SOVIET TANKER FLEET, 1951-JULY 1967

Manufactured in U.S.S.R.			*Year*																
Model	*Specification*	*Total*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*
Russki Diesel	8 x 300/500	53	—	—	—	1	2	6	9	8	4	6	4	3	4	3	1	1	1
	8 x 430/610	47	1	1	3	9	7	4	5	0	8	6	1	—	—	—	—	2	—
	6 x 250/340	5	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2	2	—
Bryansk	5 x 500/1100	8	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	5	2
Total Manufactured in U.S.S.R.		113	1	1	3	10	9	11	14	8	12	12	5	3	5	3	3	10	3
Manufactured outside U.S.S.R.																			
Model	*Specification*																		
Polar (Nydqvist & Holm)	6 x 300/500	2	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Polar	6 x 345/580	2	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	8 x 500/700	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Skoda	8 x 430/610	25	—	—	1	—	3	5	6	3	—	—	—	—	—	3	2	2	—
Burmeister & Wain	5 x 500/1100	33	—	—	—	—	—	—	—	3	4	2	4	8	4	5	2	—	1
	6 x 740/1600	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	8 x 740/1600	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	7	—
	(Yugoslav license)																		
Deutz (?) E. Gern.	6 x 240/360	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	8 x 240/360	35	—	—	8	—	3	8	13	3	—	—	—	—	—	—	—	—	—
Sulzer (Span. lic)	5 x 480/700	4	—	—	—	—	—	—	8	—	—	—	1	3	—	—	—	—	—
Sulzer (Jap. lic)	9 x 900/1550	18	—	—	—	—	—	—	—	—	—	—	—	5	4	7	2	—	—
	6 x 480/700	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—
	6 x 760/1550	8	—	—	—	—	—	—	—	—	—	—	—	2	2	—	1	1	2
Atlas	6 x 340/570	12	—	3	3	4	2	—	—	—	—	—	—	—	—	—	—	—	—
Fiat (Italy)	9 x 900/1600	6	—	—	—	—	8	—	—	—	—	—	—	—	—	1	8	1	—
Stork (Holland)	8 x 750/1600	2	—	8	—	—	—			—	—	—	1	1	—	—	—	—	—
	6 x 360/480	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Total manufactured outside U.S.S.R.		169	1	6	13	4	8	14	19	9	4	3	6	18	11	19	18	12	4
Total marine diesels in tanker fleet at July 1967		281	2	7	16	14	17	25	33	17	16	15	11	21	16	22	21	22	7

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8G CONSTRUCTION OF SMALL TANKERS (1772 GRT AND LESS), 1951-67

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
U.S.S.R. hull and Czechoslavakia engines 1,772 tons	—	—	—	—	—	—	—	—	—	—	—	—	—	3	2	4	—
U.S.S.R. 756-802 tons	—	—	—	—	—	—	6	—	4	5	—	—	1	—	2	2	—
Finland 1,081 tons	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sweden 1,145 tons	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Finland hull Sweden engine 1,117 tons	—	3	3	4	3	—	—	—	—	—	—	—	—	—	—	—	—
G.D.R. hull and engines 260-305 tons	—	—	8	—	3	7	12	3	2	—	—	—	—	—	—	—	—
Bulgaria hull G.D.R. engine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1
Poland hull Spain engine 1,333 tons	—	—	—	—	—	—	—	—	—	—	—	1	3	—	—	—	—
Total	1	5	13	4	6	7	18	3	6	5	1	3	1	3	4	8	1
Foreign-built	1	5	13	4	6	7	12	3	—	5	1	3	0	0	0	2	1
Percentage	100	100	100	100	100	100	66	100	—	100	100	100	0	0	0	25	100

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8H

CONSTRUCTION OF MEDIUM CLASS TANKERS
(3300-3820 GRT), 1954-67

GRT		*1954*	*1955*	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*TOTAL*
3737	Soviet-built 8 x 300/500	1	2	3	1	—	—	—	—	—	—	—	—	—	—	7
3821	Soviet-built 8 x 300/500	—	—	—	3	4	1	—	—	—	—	—	—	—	—	8
	Bulgarian hull USSR engine 8 x 300/500	—	—	—	—	—	3	3	2	3	4	4	1	1	1	22
	Soviet hull Danish engine	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
3300	Finnish hull Danish engine	—	—	—	—	3	3	2	3	6	4	4	3	—	—	28
3360	Finnish hull Finnish engine	—	—	—	—	—	—	—	—	—	—	1	1	—	1	3
3259	Finnish hull Swedish engine	—	—	—	—	—	—	—	—	1	—	—	1	—	—	3
3470-90	Japanese hull Japanese engine	—	—	—	—	—	—	—	—	—	—	—	2	—	—	2
3120	Swedish hull Danish engine	—	—	—	—	—	—	—	1	1	—	—	—	—	—	2
	Total	1	2	4	4	7	8	5	6	11	8	9	8	1	2	76
	Foreign-built hulls & engines	—	—	1	—	3	3	2	4	8	4	5	7	—	1	38(50%)

Source: Calculated from Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

Table 21-8I CONSTRUCTION OF LARGE TANKERS (13,000 TONS AND OVER), 1959-67

	1959	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	
U.S.S.R. hulls, steam turbines 21,255 GRT	1	2	1	2	1	—	—	—	—	
U.S.S.R. hulls, steam turbines 32484	—	—	—	—	2	5	4	7	—	
Italy (hull & engine) 20,659 GRT	—	1	—	—	—	—	—	—	—	
31,295 GRT	—	—	—	—	1	3	1	—	—	
Holland (hull & engine) 16,349 GRT	—	1	—	—	—	—	—	—	—	
Poland (hull & engine) 13,363	—	—	—	2	2	—	—	1	2	
Yugoslavia 15,255	—	—	—	—	—	—	8	7	—	
Japan (hull & engine) 22-5,000	—	2	—	5	4	7	2	—	—	
Poland hull; GDR engine 13,218	—	—	—	—	—	—	1	—	—	
Yugoslavia hull; Sweden engine 17,861 GRT	—	—	1	—	—	—	—	—	—	
Total	1	6	3	9	10	15	16	15	2	77
Foreign-built	0	4	2	7	7	10	12	8	2	52
Percentage	0	66	66	77	70	66	80	53	100	67.5

Source: Calculated from Registr Soyuza SSR, *Registrovaya Kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

CHAPTER TWENTY-TWO

Western Assistance to the Machine Tool Industry

The Soviet Union is a major volume producer of machine tools. In 1964 the industry's production was about three-quarters, by value, of U.S. production of machine tools, slightly greater than the production of West Germany and equivalent to the combined machine tool output of Great Britain, Japan, and France.[1]

Historically, the increase of machine tool output has been significant. In 1928 the Soviet Union produced only 2000 metal cutting tools, and this output increased to 38,400 in 1945, 156,000 in 1960, and about 200,000 in 1967.[2] However, output does not tell the whole story; this flood of machine tools is by and large of simple construction with numerous quality defects. One observer has described the Soviet machine tool industry as follows:

> . . . the bulk of current models turned out by the Soviet industry approach in make-up, speeds, rate of feed, etc., the U.S. models made during the late 1930s and during World War II. Since then the United States has made considerable advance in machine tool technology.[3]

Problems in machine tool quality are described in several sources. J. A. Gwyer in particular has listed excerpts from Soviet literature on problems of quality and reliability in the industry.[4] Lack of high-quality raw materials, reliability services, accurate instrumentation, trained Soviet technicians, and similar factors have led to major problems in quality control.

Another commentator, P. H. Ponta, a member of the U.S. Machine Tool Delegation to the Soviet Union in 1965, reported that although in general Russian

[1] Data in *American Machinist* (New York), January 18, 1965, p. 133.

[2] *Strana Sovetov za 50 let: Sbornik statisticheskikh materialov* (Moscow, 1967), p. 83.

[3] J. A. Gwyer, "Soviet Machine Tools," *Ordnance*, (Washington, D.C.), November-December 1958, p. 419.

[4] J. A. Gwyer, "Soviet Quality and Reliability Programs at the Crossroads," *R.S.Q.C. Conference Transactions 1968*, March 26, 1968. Also see Appendixes I, II, and III to U.S. Senate, Committee on the Judiciary, *Export of Strategic Materials to the U.S.S.R. and Other Soviet Bloc Countries*, Hearing Before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws, 87th Congress, 1st session, Part I, October 23, 1961 (Washington, 1961).

:chnical ability was "impressive," he found poor quality of workmanship, ery bad material handling, and an extreme neglect of cleanliness and order. Ie suggested that the answer to the question of how the large output of Soviet 1achine tools can be absorbed lay in the fact that Soviet tools had a shorter verage life than those made elsewhere, and this information, coupled with /hat is known about the scarcity of spare parts, implies earlier replacement 1an would be normal in the West. An article in *Stanki i instrument* (Moscow) 1 1965 also points out considerable problems involved in manufacturing machine ools and suggests ways in which these problems can be overcome.[5]

Soviet imports today are not quantitatively as significant as domestic produc- ion, although they have been in the past.[6] Lend Lease was a major supplier, roviding over $465 million worth of machine tools in addition to about the ame amount of related engines, industrial equipment, electrical equipment, nd machinery not normally included under the category of machine tools.[7] The major machine tool-related categories sent to the U.S.S.R. under Lend ease included:

Machine tools, rolling mills, drawing machines	$404,697,000
Welding machinery, testing and measuring machinery, metal working machinery	15,199,000
Cemented carbide cutting tools, metal cutting tools	45,042,000

In 1965 the U.S.S.R. imported 6503 machine tools. Of these, 2249 came rom Czechoslovakia, where the largest heavy machine tool manufacturer is he former Skoda company (which has a technical-assistance agreement with Simmons Machine Tool, an old, established machine tool manufacturer of New York.[8] However, the relatively small quantity belies the value of these more ecent imports. The average unit value of Soviet imports of machine tools is wice that of exports.[9] By importing prototypes of advanced machines from he West the Soviets can, with little effort, keep abreast of world developments n this field. Thus, although the Soviets may lag by a few years at any one ime, the effect over the long run is to keep Soviet machine tools more or ess on an equivalent basis to current world technology.

[5] *American Machinist*, July 19, 1965.

[6] "It is a fact that some 300,000 of the very finest high-output machine tools were purchased abroad from 1929 to 1940, tools manufactured by the best companies all over the world." G. Anisimov, "The Motive Forces of Technological Progress in the U.S.S.R. at Its Present Stage of Development," *Problems of Economics*, (New York), III, 1 (May 1960), 18.

[7] U.S. Dept. of State, *Report on War Aid Furnished by the United States to the U.S.S.R.* (Washington: Office of Foreign Liquidation, 1945).

[8] See p. 84 below.

[9] *Vneshniaia torgovlia SSSR za 1965 god* (Moscow, 1966).

SOVIET ACQUISITIONS IN GERMANY

The prize machine-building plant removed by the Soviets from Germany was in the British Zone—the Dusseldorf plant of Schiess-Defries. It was the most important German manufacturer of heavy machine tools; the firm was noted for "crankshaft turning equipment, tool and cutter grinders, horizontal borers, gear cutters, gun boring equipment, universal milling machines, plane milling machines, heavy lathes, slotting machines, forging machines, equipment for railway shops, and special machine tools of the largest size."[10]

Two important tool manufacturers in the U.S. Zone were also removed to the U.S.S.R.—Hahn & Tessky and the Esslingen firm of Bohner & Koehle, manufacturers of aircraft presses.[11]

Toward the end of World War II, the greater part of German industry was moved eastward to avoid its being bombed. Accordingly, when the war ended there was a concentration of machine tool and equipment manufacturers in the provinces of Saxony, Thuringia, Mecklenburg, and Brandenburg, all later to be occupied by the Soviet forces. The greater number of the 636 machine tool companies in the area had equipment removed to the Soviet Union.[12] Unlike other industrial sectors, removals seem to have been complete: probably over three-quarters of the companies were 100 percent stripped of their equipment and the remainder were 80 or 90 percent stripped.

Fortunately (for the purposes of this study), a number of the larger machine tool manufacturing units, particularly those in Leipzig, were visited by CIOS (Combined Intelligence Objectives Subcommittee) teams just before the Soviet occupation; consequently, we have an accurate record of their condition and equipment capability at the time of the Soviet occupation.

One of the largest machine tool plants on the continent, Pittler Werkzeugmaschinenfabrik A.G. in Leipzig, was completely removed to the Soviet Union. This plant was earlier visited by both CIOS and U.S. Strategic Bombing Survey teams. The manufacturing program as of May 1945 consisted primarily in the production of turret lathes and automatic lathes, and the CIOS team reported

[10] U.S. Foreign Economic Administration, *U.S. Technical Industrial Disarmament Committee on the German Machine Tool Industry* (T.I.D.C. Project no. 11; Washington, 1945), p. 43. One observer suggested an interesting reason for the removal of this important plant from the British Zone to the Soviet Union: "This company *was* Germany's greatest producer of large type machine tools such as planers, lathes, and boring mills. They were [i.e., the company's plant was] completely dismantled, including machine tools and buildings, by the Russians. I learned from an authoritative source that this action was induced and approved by the British representative then in charge, who was the principal competitor of the Scheiss Company." F. H. Higgins Collection, Item 1, Memorandum to Director, Industry Division, p. 5 (Hoover Institution Special Collections, Stanford University).

[11] Germany, Office of Military Government (U.S.Zone), Economics Division, *A Year of Potsdam: The German Economy Since the Surrender* (n.p.: OMGUS, 1946).

[12] G. E. Harmssen, *Am Abend der Demontage; Sechs Jahre Reparationspolitik* (Bremen: F. Trüjen, 1951), pp. 95-102.

that the Pittler plant was "very modern" and "only slightly damaged by bombing"; the treating department was reported to be excellent and the stockrooms well filled with finished parts. The manufacturing methods appeared to be efficient, and the smaller turret lathes built in large quantities were assembled on a conveyer system.[13] Unfortunately the survey teams gave no estimate as to productive capacity, but they did indicate that, with materials on hand, 800 machines could be completed within a six-month period, which suggests a minimum capacity of 1600 machines per year.

Another company visited by a CIOS team was Kirschner A.G.–later completely removed to the Soviet Union. Kirschner was "one of the largest manufacturers of woodworking machinery on the continent."[14] The company produced a comprehensive range of woodworking equipment, including horizontal log-band mills and high-speed vertical saw frames for saw mills, as well as equipment for wood pattern shops such as band saws and a special coal-cutting machine.

Another machine tool plant removed completely to the Soviet Union was that of Werkzeugmaschinenfabrik Arno Krebs of Leipzig. This company manufactured plane and universal knee and milling machines in the following ranges: working surface of table from 8-1/2 by 26 inches up to 12 by 47-1/4 inches, longitudinal travel from 13 to 36 inches, cross travel from 4-3/4 to 13-1/2 inches, vertical travel from 11-1/2 to 19-1/2 inches. In addition, two types of hand-lever milling machines were manufactured.

The Köllmann-Werkzeugfabrik GmbH of Leipzig was 75 percent removed to the Soviet Union. This was not strictly a machine tool plant, but specialized in the manufacture of all types and sizes of gears up to 36 inches in diameter. It was a modern plant in excellent condition, with a machine shop containing 25 Gleason bevel gear generators, 27 gear grinders, and batteries of gear shapers, hobbing machines, and milling and grinding machines, together with a large number of other machines for manufacturing gears. There was also an excellent heat-treatment department with electric furnaces. The CIOS team commented: "The excellence of this particular plant has to be seen to be appreciated."[15]

The Köllmann-Werke A.G., Zahnräder- und Getriebebau of Leipzig was 75 percent removed to the Soviet Union. This company was a manufacturer of gears, with a modern plant built in 1935. In commenting on it the CIOS team reported: "The plant is in excellent condition, has a large number of Maag gear grinders, as well as other first-class equipment to manufacture precision-type aircraft gears."[16]

[13] See CIOS Report no. XXVIII-10; Andress. *et al.*, *Machine Tool Targets*, Leipzig, pp.5-6, for lists of standard turret lathes, high-speed turret lathes, single-spindle automatic screw machines, and single-spindle and multispindle automatic machines manufactured by Pittler in 1945.

[14] *Ibid.*

[15] *Ibid.*

[16] *Ibid.*, p. 13.

Other companies moved included August Meiselbach, which was 95 percent removed to the Soviet Union; Meiselbach was a manufacturer of stocks and dies for use in public utilities.

Kleim und Ungerer of Leipzig, which manufactured sheet feeders for the printing trade, had 83 percent of its equipment removed to the Soviet Union. The plant contained a single-spindle automatic feeder, a drilling machine, and a stock of small turned parts. During the war it produced test machines for Junkers aeromotors and various parts in subassemblies for elevating antiaircraft guns.

A woodworking machine tool company completely removed to the U.S.S.R. was Deutsche Holzbearbeitungsmaschinenfabrik Jacob & Eichorn, a small firm manufacturing woodworking machines such as circular saws, band saws, planing machines, and jointing machines.

Conrad Modrach of Gera, a manufacturer of commercial shears, croppers, presses, and bending machines, was completely removed to the U.S.S.R., as was G. Weissken, also of Gera, a manufacturer of tool and cutter grinders and small lathes.

An overall indicator of the magnitude of plant removals in the machine tool industry is contained in Table 22-1, which lists eight plants removed to the U.S.S.R. (and approximate extent of removals) together with their ranking by the Foreign Economic Administration in 1944. Only those classified as of outstanding importance are included.

Table 22-1 GERMAN MACHINE TOOL MANUFACTURERS OF "OUTSTANDING IMPORTANCE"* REMOVED TO THE SOVIET UNION IN 1945-46

Percentage removed	*Name of manufacturer*	*Location*	*Main product*
100	Hille-Werke A.G.	Dresden (Soviet Zone)	Relieving lathes, multispindle drilling machines, thread millers, jog borers, diamond and fine borers, honing machines, drilling machines, radial drills.
50	Magdeburger Werkzeugmaschinenfabrik A.G.	Magdeburg (Soviet Zone)	Auto multicut lathes, turret lathes, gun-boring equipment, machinery for aircraft and propeller construction (Junkers plant)
100	Werkzeugmaschinenfabrik Hermann Pfauter	Chemnitz (Soviet Zone)	Tool and cutter grinders, gear cutters, gear hobbers, thread hobbers, long-cut milling machines, thread milling machines
Not known	Billeter & Kluntz	Aschersleben (Soviet Zone)	Surface grinders, ball and face grinders, planers, openside planers

Table 22-1 (cont.)

Percentage removed	*Name of manufacturer*	*Location*	*Main product*
Not known	Franz Braun A.G.	Zerbst (Anhalt) (Soviet Zone)	Lathes, frontal lathes, planing machines, drill presses, thermoplastic molding presses
100	Pittler Werkzeug-maschinenfabrik A.G.	Leipzig (Soviet Zone)	Single-spindle bar autos, multispindle bar autos, multispindle auto machines, turret lathes, die heads, hydraulic pumps, automatic screw machines
100	E. Reinecker A.G.	Chemnitz (Soviet Zone)	Relieving lathes, crankshaft, grinding machines, universal grinders, internal grinders, spline grinders, gear grinders, thread grinders, tool and cutter grinders, surface grinders, ball and face grinders, gear cutters, thread millers, tooth rounding machines, jog borers, plant milling machines, tap and twist drill making, small tools, measuring instrument horizontal milling machines
100	Schiess-Defries	Düsseldorf (British Zone)	See text

Source: U. S. Foreign Economic Administration, *U. S. Technical Industrial Disarmament Committee on the German Machine Tool Industry,* Study of Interagency Committee on the Treatment of the German Machine Tool Industry from the Standpoint of International Security (Washington, 1945), TIDC Project no. 11.

* These are firms identified by the FEA as "of outstanding importance either by volume of output or by monopoly of production of a significant item."

IMPORTS AND EXPORTS OF MACHINE TOOLS FROM 1946 TO 1966

An examination of imports and exports of metal-cutting tools (specifically forges, presses, and the subgroup of mechanical and hydraulic presses) is suggestive of limited Soviet machine tool capabilities.

Firstly, imports of the major category of metal-cutting tools (Soviet foreign trade classification Group 100) have significantly increased in absolute terms since 1946. The year 1946 reflects heavy "pipeline" Lend Lease imports and is therefore abnormal; imports valued at less than 20 million rubles a year in the late 1940s, when the Soviets were absorbing Lend Lease and German reparations machine tools, are replaced by annual imports of 70–80 million rubles in the early 1960s. In specialized fields such as forges and presses we find proportionately greater import.

On the other hand, exports over the long run show a fairly consistent trend and average less than half of Soviet imports. In forges and presses we find that exports are minute (between one-sixth and one-eighth of imports), with none at all in the category of hydraulic presses. These figures reflect the overall composition of Soviet machine tool exports (simple lathes and shapers to underdeveloped countries—Cuba, India, China, Mongolia, and the newer African nations) and imports (sophisticated equipment for prototype use and specialized production machinery from advanced countries—U.K., West Germany, Japan, and U.S.A.). (See Table 22-2.) The exception to this rule is trade with East Germany and Czechoslovakia, which comprises large imports and exports.

Table 22-2 SOVIET IMPORTS AND EXPORTS OF MACHINE TOOLS FROM 1946 TO 1966 (in million rubles)

Year	*Metal cutting tools Stanki metallorezhushchie (Group 100)*		*Forge and press equipment Kuznechno-pressovoe oborudovanie (Groups 101-103)*		*Mechanical and hydraulic presses (Subgroups 10103-10123)*	
	Imports	*Exports*	*Imports*	*Exports*	*Imports*	*Exports*
1946	40.3	0.4	4.9	0	2.3	—
1947	16.3	1.3	3.9	—	1.8	—
1948	5.8	3.1	2.4	0.3	1.5	—
1949	5.5	10.1	1.6	0.6	0.5	—
1950	13.7	19.2	2.0	0.8	0.8	—
1951	12.8	17.5	4.6	2.0	2.8	—
1952	13.5	22.7	4.3	2.9	2.7	—
1953	27.3	27.9	13.6	3.9	5.4	—
1954	25.4	13.8	14.8	2.3	7.4	—
1955	21.9	6.5	21.0	1.5	13.7	—
1956	25.8	7.8	24.3	1.1	17.0	—
1957	28.9	7.0	25.9	1.6	16.7	—
1958	38.9	13.9	31.4	2.3	21.3	—
1959	41.5	16.7	32.4	2.6	21.5	—
1960	56.7	12.9	34.4	4.7	19.2	—
1961	62.5	17.2	37.5	5.0	22.1	—
1962	73.1	25.1	42.1	5.7	24.3	—
1963	78.5	25.7	43.0	5.3	24.1	—
1964	86.7	27.6	49.0	3.3	20.6	—
1965	83.1	39.5	36.2	4.7	18.3	—
1966	76.2	57.2	32.2	7.4	13.7	—

Source: Vneshniaia torgovlia SSSR: Statisticheskii sbornik, 1918-1966 (Moscow, 1967), pp. 76-79 (exports), 98-101 (imports).

DUPLICATION OF WESTERN MACHINE TOOLS

Prewar practice continued after the war—much of Soviet machine tool design was derived from Western origins. In 1953 it was reported by an Austrian engineer who had returned from the U.S.S.R. after working in the Sverdlovsk machine tool plant (where he had access to the plant records) that in 1953

the Soviet Union was still operating "a good deal" with Lend Lease tools.[17] It was noted that the latest model U.S. and European machine tools were acquired despite export control laws, and these were sent to "copying offices" and there stripped, analyzed, and tested, and "exact duplicates [were] made."[18] About 30 to 35 such copying offices existed in 1953 at various machine tool plants, each specializing in a particular type of foreign machine tool. For example, all foreign lathe models went to Plant No. 115 at Novosibirsk, all foreign shaper models went to Plant No. 64 at Gorki, and all foreign hydraulic press models went to Plant No. 101 at Kurgan. In February 1953, Plant 101 was working on a 150-ton hydraulic press originally made by Merklinger in Germany.[19]

Thus in 1957 it was reported that the Leningrad large jig borer had been copied from the Hydroptic SIP (optical coordinate jig borer) and an American trade journal commented: "The machine ... so closely resembles its West European counterpart that even the Sverdlov plant manager calls it the Leningrad SIP."[20] The Sverdlov Plant im. Lenini also specialized in Keller-type copying machines.[21]

Consideration of the foreign origin factor in machine tool production brings the Soviet achievement of gigantic runs of machine tools into focus. This point can be illustrated by a consecutive reading of statements by three independent observers concerning one Soviet machine tool plant—Ordzhonikidze in Moscow. Each statement is by itself an accurate but incomplete description of the plant; taken together, however, the statements point to a significant deduction.

The first description of the plant is by a highly qualified U.S. observer utilizing Soviet literature:

> Machine-Tool Manufacturing Plant im. S. Ordzhonikidze (Stankostroitel'nyy zavod im. Ordzhonikidze)—hence referred to as the Moscow Plant im. S. Ordzhonikidze. The plant, one of the largest in the U.S.S.R., specialized in the production of: automatic transfer lines, unit machine tools, radial drills, boring machines, assortment of automatic and semiautomatic lathes. The equipment installed in this plant is not modern by any means. As of 1 January 1956, 23.7 percent of metal-cutting machine tools was less than ten years old, 71.3 percent ten to twenty years old, and 8.1 percent more than twenty years old. Only 1.5 percent of all installed metal-cutting machine tools were represented by automatic and semiautomatic machines. Presses constituted 1.1 percent of all machine tools. During the 1951-55 period, the plant built 18 automatic transfer machines, in 1957 seven machines, and planned for 1958 an output of 16 machines.[22]

[17] *Iron Age* (Middletown, N.Y.), December 17, 1953.
[18] *Ibid.*
[19] *Ibid.*
[20] *American Machinist*, February 25, 1957, p. 179.
[21] *Ibid.*, p. 181.
[22] J. Gwyer, private communication to author.

The second description is recorded by an American visitor to the plant:

> Ordzhonikidze specializes in making boring equipment. Most of the manufacturing equipment in the plant was foreign-made and has not been modernized, although in some areas the operations looked quite good. Here we saw many American machine tools such as Gardner grinders, different types of Cincinnati machines, King vertical lathes, Gray planers, and many other familiar types. Some were of fairly new vintage. Although many machines in this plant appeared to be old they were still in very good condition, all were running.[23]

The third report, also by an on-the-spot observer, confirms the predominance of foreign equipment:

> In the plant itself, most of the items are imported—some are prewar and others wartime acquisitions. Very few of the machines we saw in this plant seemed to be postwar. Among those noted were two Butler planers and a whole battery of medium-sized Billeter & Klonz machines. There was a Kendall & Gent miller; a small Cincinnati (British-built); a Beliot-Gray planer-miller (this one one of the few postwar machines); a fairly elderly large Giddings & Lewis floorplate horizontal boring machine; Milwaukee millers; a Girards radial and a Wotan grinder.[24]

There is some reference to Russian-built machines: "In the turret lathe section we noticed quite a few copies of Warner & Swazey machines, but we did not see any Russian-built copying lathes."[25]

The first statement establishes the age of the equipment; the second and third statements identify its Western origins and make it clear that in this plant at least, production, including production of automatic transfer machines, is based on equipment imported from the West. *In other words, the machines that build the machines originated in the West.*

By their own admission, the Soviets imported 300,000 top-flight foreign machine tools between 1930 and 1940.[26] Add to this the large quantities received under the Nazi-Soviet pact, Lend Lease, German reparations removals from the occupied countries, and continuing imports since World War II, and it becomes apparent that the military and industrial machine-building industries of the Soviet Union could well be relying heavily on imported equipment. This supposition is supported by the nature of many of the machine tools imported—larger specialized automatic mass-production units.

[23] Nevin L. Bean, "Address Before the Detroit Chapter of the National Society of Professional Engineers," Detroit, February 22, 1956 (Dearborn: Ford Motor Co., News Dept.) pp. 8-9.

[24] *American Machinist*, November 19, 1956.

[25] *Ibid.* The Russian-built machines included also a horizontal boring machine and large- and medium-size planers.

[26] See p. 304 n. 6 above.

The substitution of numerically controlled machine tools for hand-controlled machine tools was indisputably the most important metal-machining innovation in the period 1945 to 1960. In the United States numerically controlled tools became commercially available in the early 1950s, and by the end of the decade there were probably several thousand in commercial use. Apart from substantially improving quality of product and operating control, numerically controlled tools allow substantial savings in both capital and labor.

Their introduction into the Soviet Union has been very slow, however: only two prototypes had been produced there by 1960, and at that time it was projected that only several hundred would be in use by 1965.[27] It is then more than possible that the numerically controlled units displayed at various exhibitions abroad are "one-off" items built for the purpose. For example, J. O. Ellison examined one exhibit model, a Model 1062 shaft-turning lathe that was automated and tracer-controlled, and published his conclusion in the trade journal *American Machinist*.[28] He described this model as a hybrid variation of a family of lathes based on the 1K62. It was the hybrid nature of the model that led Ellison to the conclusion that it was a compromise and therefore not "very salable in the United States"; Ellison added that "the most lasting impression I have of the demonstration aside from the technical points is that the Russians were very good showmen."[29]

BALL BEARING MANUFACTURE CAPABILITY

Ball bearings, of course, constitute a vital part of almost all machines and of numerous other products, including military weapons systems.

It was previously indicated that ball bearing plants in the U.S.S.R. had been equipped from the United States. One U.S. firm, the Bryant Chucking Grinder Company of Springfield, Virginia, was a prominent supplier in the 1930s and 1940s, while Italian and Swedish firms also have contributed a large proportion of the Soviet ball bearing production capacity.[30] Soviet dependence on the West for ball bearing technology came to a peak in the years 1959-61. The Soviets required a capability for mass production, rather than laboratory or batch production, of miniature ball bearings—80 percent of whose end uses are in weapons systems. The only company in the world that could supply the required machine—the Centalign B—on a commercial basis was the Bryant Chucking Grinder Company. The Soviet Union had no mass-production capabil-

[27] U.S. Congress, Joint Economic Committee, *Dimensions of Soviet Economic Power*, Hearings, 87th Congress, 2d session, December 10 and 11, 1962, p. 137.

[28] November 20, 1959, pp. 98-100: "Russia Exhibits Automated Lathe."

[29] *Ibid.*, p. 98.

[30] See Sutton, I: *Western Technology ... 1917 to 1945*.

ity whatever, and its miniature ball bearings were either imported or made in small lots on Italian and other imported equipment.

In 1960 there were 66 Centalign machines in the United States. Twenty-five of these machines were operated by the Miniature Precision Bearing Company, Inc., the largest manufacturer of precision ball bearings; 85 percent of Miniature Precision's output went to military applications. In 1960 the U.S.S.R. entered an order with Bryant Chucking for 45 similar machines. Bryant did not immediately accept the order but consulted the Department of Commerce; the department indicated willingness to grant a license and Bryant therefore accepted the order. The Commerce Department's argument for granting a license turned on the following points: (a) the process achieved by the Centalign is only a single process among several required for ball bearing production; (b) the machine can be bought elsewhere; and (c) the Russians can make ball bearings.[31] The Department of Defense, however, entered a strong objection to the export of the machines on the following grounds:

> In the specific case of the granting of the export license for high-frequency grinders manufactured by Bryant Chucking Grinder, after receiving the request for DOD's opinion from the Department of Commerce, it was determined that all of the machines of this type currently available in the United States were being utilized for the production of bearings utilized in strategic components for military end items. It was also determined from information that was available to us that the Soviets did not produce a machine of this type or one that would be comparable in enabling the production of miniature ball bearings of the tolerances and precision required. A further consideration was whether machines of comparable capacity and size can be made available from Western Europe. In this connection, our investigation revealed that none was in production that would meet the specifications that had been established by the Russians for these machines. In the light of these considerations it was our opinion that the license should not be granted.[32]

The Inter-Departmental Advisory Committee on Export Control, which includes members from the Commerce and State departments as well as the CIA, overruled the Department of Defense opinion and "a decision was made to approve the granting of the license."[33] The Department of Defense made further protest and demanded proof as to the capability of either the U.S.S.R. or Western Europe to produce such machines. No such proof was forthcoming.

The following summarizes the various objections of the Department of Defense, as then outlined by the official concerned:

[31] This section is based on U.S. Senate, Committee on the Judiciary, *Export of Ball Bearing Machines to Russia*, Hearings, 87th Congress, 1st session (Washington, 1961). There are three parts to these Hearings; they provide a fascinating story of one Soviet attempt to acquire strategic equipment. See also the Soviet "machine tools Case of 1945"; a microfilm of documents on this case has been deposited at the Hoover Institution.

[32] U.S. Senate, *op. cit.* n. 31, pp. 267-68.

[33] *Ibid.*

In resumé, the following actions were known to me regarding the transaction of this export license:

(a) I expressed dissatisfaction and suggested that the Department of Defense not concur in the initial request of the Department of Commerce.

(b) The official member of the Department of Defense in this connection concurred and, at a series of meetings of the Advisory Committee on Export Control, spoke against the proposal that an export license be granted.

(c) The Deputy Assistant Secretary of Defense, Supply and Logistics, after reviewing some of the circumstances, requested that I do whatever was possible to stop the shipment of these machines.

(d) A letter was transmitted from the Office of the Secretary of Defense to the Secretary of Commerce, approximately November 1, 1960, saying it [*sic*] spoke to the Department of Defense and requesting a further review.

(e) At two meetings where the matter was reviewed, the Department of Defense maintained nonconcurrence in the shipment of the equipment.

As of this writing I am still convinced that it would be a tragic mistake to ship this equipment.[34]

The reference to a "tragic mistake" refers of course to the known fact that miniature ball bearings are an essential prerequisite for missile production. Granting the license would give the U.S.S.R. a miniature ball bearing production capability equal to two-thirds that of the United States.

The relevance of the case for our study is twofold. First, it illustrates clearly a manner by which the Soviets have acquired a substantial productive capability, even for difficult technologies, very quickly. Second, as the case was uncovered only by accident (an official of the Miniature Precision Ball Bearing Company brought the matter to the attention of Congress), it implies that much "technical leakage" in the sensitive areas of atomic energy and weapons systems may well have gone undetected.

COMPUTING, MEASURING, AND PRECISION INSTRUMENTS

The Soviet Union has always had considerable technical difficulties producing computing, measuring, and precision instruments. Initial production of elementary adding machines in the early thirties was poor in quality and suffered from numerous deficiencies; in particular, early models had parts of nontempered steel and gear teeth were wearing out after just two weeks of operation.[35] The most common Soviet calculating machines today are direct copies of Western models; for example, the "Felix," the subject of the above complaints and the first machine produced in the U.S.S.R., was still in production in 1969

[34] *Ibid.*

[35] *Za industrializatsiiu* (Moscow), August 7, 1930.

and is by far the most common Soviet machine. It is a copy of the Brunsviga 1892 model, apparently without even the modifications introduced into Western models in 1927.[36] The full keyboard calculator of the 1930s—the KSM—is a copy of the Monroe. Punched-card machinery is Hollerith, although at one time a technical-assistance agreement was made with Powers. Campbell suggests, with justification, that the postwar Riazan machine works is the German Astrawerke which was transferred to the U.S.S.R. Other German plants, including the Archimedes and the cash register plant at Glasshütte, were also moved to the U.S.S.R.[37]

In the 1960s, a continuing widespread use of the abacus in the Soviet Union made the Soviets worry about their image abroad—it hardly seemed consistent with the age of cosmonauts and atomic icebreakers. It was this concern that led to an agreement in 1966 with Olivetti of Italy to establish two office equipment plants in the U.S.S.R. under a $60 million contract, one for the production of typewriters and one for the production of calculators and other office machinery.[38]

Several of the most important precision instrument manufacturers in Germany were moved to Russia at the end of World War II. The Zeiss works at Jena, manufacturers of optical and scientific instruments including micrometers, optical comparators, angle measuring equipment, and gear testers, was moved completely to Minino, near Moscow. There with three top German experts, Dr. Eitzenberger, Dr. Buschbeck, and Dr. Faulstich, the new plant developed detector and remote-control equipment, including radio-controlled recording gear and rocket guidance equipment.[39] The Askaniawerke A.G. at Berlin-Friedeman, a very important manufacturer of scientific equipment including optical measuring components such as lenses and prisms, was also moved to Russia. The Siemens & Halske plant at Siemens Stadt in Berlin (with its electron microscopes) was removed, and its top staff members were given work in Russia. The three A.E.G. electron microscopes at the K.W. Institut in Berlin also were removed to Russia.[40]

In the 1960s technical acquisition in the precision instruments field continued

[36] See, for example, S. R. Ivanchenko, *Schetnye mashiny i ikh ekspluatatsiia* (Moscow, 1968), pp. 42, 68, for data concerning the Felix as produced in the 1960s. Compare to *Encyclopedia Britannica* (1958 edition), vol. IV, p. 552 and the Western Brunsviga. For further details see R. W. Campbell, "Mechanization of Cost Accounting in the Soviet Union," *American Slavic and East European Review* (Menasha, Wis.), February 1958. Campbell ascribes the early Soviet arithmometers to the 1874 Russian Odner machine produced in St. Petersburg during World War I; however the design of the Odner is different from the Felix, although based on the same principles.

[37] *Wall Street Journal*, December 16, 1966, 7:3. For data on the Soviet-Olivettis see K. A. Borob'ev, *Konstruktsiia, tekhnicheskoe obsluzhivanie i remont bukhgalterskoi mashiny "Askota" klassa 170* (Moscow, 1969).

[38] Werner Keller, *Ost minus West=Null* (Munich: Droemersche Verlagsanstalt, 1960), pp. 283, 357, 365.

[39] BIOS Final Report no. 485: R. G. Allen, *German Filtration Industry*, pp. 18-18a, 22.

[40] *New York Times*, September 13, 1964.

with foreign purchases. It was reported in 1964 that "recent Soviet purchases cover a vast range from office equipment to camera shutters."[41] The firm of Rank-Xerox sold $3.7 million worth of its equipment, and the Japanese company Copal Koki signed a contract to supply producing facilities and know-how for a "sophisticated electric eye camera shutter."[42] Thus there has been a steady flow of instruments and precision equipment into the Soviet Union through the means of trade. The exception to Soviet inability in the field appears to be the various Soviet medical stapling instruments licensed by the United States Surgical Company and patented in the United States.[43]

In the period 1929 to 1940 the Soviets purchased 300,000 foreign machine tools, while its own output was concentrated in simple drilling machines and bench lathes of a standard type based on Western prototypes. These were supplemented by almost $400 million worth of Lend Lease machine tools.

Twelve very large machine tool plants were removed from Germany at the end of World War II—including the important Schiess-Defries and Billeter & Kluntz (Aschersleben) plants. These acquisitions have been supplemented by continuing and substantial imports from the West, greater in both quantity and unit value than Soviet exports of machine tools to underdeveloped areas.

"Copying offices," each specializing in a particular type of machine tool, have widely duplicated Western imports. Apart from "one-off" items for exhibition and to impress foreign visitors, Soviet machine tools are duplicates of foreign models, with occasional slight variations to adapt them to special Soviet conditions. In numerically controlled machine tools—certainly the most important innovation in the period under discussion—only a few prototypes were produced in the U.S.S.R. by the early 1960s, compared to several thousand in use in the United States.

The "U.S. ball bearing case of 1961," which brought to light a Soviet attempt to import the equivalent of two-thirds the U.S. capacity for producing miniature ball bearings (mainly used in missiles), suggests not only that there is a major lag on the part of the Soviet machine tool industry but that the Soviets are in a position to acquire even the latest and most significant of Western innovations in this field.

In the allied fields of computing, measuring, and precision instruments a like phenomenon was observed: a general backwardness and dependence on

[41] *Ibid.*

[42] *Ibid.*

[43] For example, U.S. Patent 3,078,465 of February 26, 1963. Sales from this license appear to have been insignificant; in the six-month period ending September 30, 1963, the United States Surgical Company paid only $495.00 in license fees. Direct sales to the Instrument Specialties Company were a little better, but not much—five sales totaling $2,892.62 in six months. See Supplemental Registration Statement (Pursuant to Section 2 of the Foreign Agents Registration Act of 1938) as filed in Department of Justice, Washington, D.C.

the West for modern technology acquired by purchases from such firms as General Electric–Olivetti (Italy), Rank–Xerox (U.K.), and Japanese firms.

Thus it is concluded that Soviet innovation in the field of machine tools and allied industries is almost non-existent (only hybrid machine tools have been isolated as Soviet innovations). Technological advance is gained by importing prototypes for copying, or where problems have been encountered in domestic copying, batches of specialized production machines are imported (as evidenced, for example, in the attempted acquisition of Centalign-B and tape-controlled machines).

CHAPTER TWENTY-THREE

Western Origins of Electronics and Electrical Engineering Technology

SOVIET COMPUTER TECHNOLOGY IN THE 1960s

The first generation of computers, developed from U.S. work in World War II, was based on the vacuum tube, and by present-day standards is slow (with only 2500 operations per second), of very limited capacity, and relatively bulky with about 2000 components per cubic foot. The second-generation computer, based on the transistor rather than the bulky vacuum tube, entered the U.S. market during the 1950s. With this development, speed was increased by a factor of ten, to 25,000 operations per second, and the transistor developed by Bell Telephone in 1948 brought component density up to 5000 components per cubic foot. By 1960 about 5000 second-generation computers were in use in the United States and had completely replaced the first-generation computer. Indeed even some early second-generation units had been removed from service by 1959.

The third generation of computers, based on microcircuits, was introduced commercially in 1961 and again increased both speed and capacity by a factor of ten. The third-generation IBM 360 system has 30,000 components per cubic foot, can handle 375,000 operations per second, and reduces the cost per 100,000 computations from $1.38 in first-generation machines to about 3.5 cents.[1]

Such, then, is the nature of the computer revolution in the Western world. The computer in Soviet technology, on the other hand, was still a relatively insignificant factor in the late sixties, behind not only the United States but Western Europe and Japan. Even first-rate scientific institutions have lacked advanced machines. For example, the main atomic energy research institute in the U.S.S.R., directed by famed physicist Igor Kurchatov, used the first-generation computer at the Academy of Science for calculations on uranium

[1] *Fortune*, September 1966, p. 120. An excellent study of the Western origins of Soviet computers appeared after this manuscript was completed: Richard W. Judy, "The Case of Computer Technology" in Stanislaw Wasowski, ed., *East-West Trade and the Technology Gap* (New York: Praeger, 1970). Judy's study is longer and more detailed than the section included here. There is a substantial unity between his conclusions and those of the author; for example, Judy states, "Computer technology in the Soviet Union is virtually entirely imported from the West"; and "literally all significant technological innovations [in the field] have occurred in the West."

burnup—at a time when the comparable Argonne Laboratories in the United States had two second-generation computers.[2]

There are several reasons why the Soviets were late in starting computer production and why their computer technology has lagged behind that of the West. These factors have been discussed in some detail by Richard W. Judy.[3] By 1957 the party journal *Kommunist* pointed out that "a number of firms are engaged in the production of electronic digital computers in the U.S.A., England, the Federal Republic of Germany, and France," and went on to suggest that a socialist economy could utilize electronic computers with even greater effect than capitalist economies. It was suggested that current deficiencies in planning, caused by the large number of manual calculations required, could be overcome by the use of electronic computers capable of operating with an enormous input and handling this input at a high rate of speed. In particular, *Kommunist* urged, the use of computers should be extended from the scientific field into the planning and management of industry.[4]

But if the Soviet dispute over the use of cybernetics in general was resolved, Soviet progress in the field of computer technology remained notably weak. At the end of the 1950s the United States had about 5000 computers in use while the Soviet Union had an estimated 120—about the same number as West Germany. Judging from the general characteristics of these Soviet computers as reported by well-qualified observers, the technology was well behind that of the West and barely out of the first-generation stage even as late as the 1960s.

The only Soviet computer in line production in 1960 was the URAL-I. It was followed by the URAL-II and URAL-4 modifications of the original model. With a prototype appearing in 1953 and series production beginning in 1955, the URAL-I had an average speed of 100 operations per second, compared to 2500 operations per second on U.S. World War II machines and 15,000 for large U.S. machines in the middle to late 1950s. Occupying 40 square meters of floor space, URAL-I contained 800 tubes and 3000 germanium diodes[5]; the storage units included a magnetic drum of 1024 cells and a magnetic tape of up to 40,000 cells, considerably less than U.S. machines. URAL-II and URAL-4 incorporated slightly improved characteristics.[6]

In the late fifties the Soviets also had about 30 to 40 BESM-type computers that were used primarily for research and development, including work on rockets and missiles.[7] The original version of the BESM had 7000 tubes; the later

[2] G. A. Modelski, *Atomic Energy in the Communist Bloc* (Melbourne, 1959), p. 97. In 1964 the Soviet Academy of Sciences received an Elliott Automation (General Electric subsidiary) Model 503 computer.

[3] See Judy, *op. cit.* n. 1, pp. 66-71.

[4] *Kommunist* (Yerevan), no. 7, 1957, pp. 124-27.

[5] Willis H. Ware and Wade B. Holland, *Soviet Cybernetics Technology. I: Soviet Cybernetics, 1959-1962*. (Santa Monica: RAND Corp., June 1963), Report no. RM-3675-PR, p. 91.

[6] *Ibid.*, p. 92.

[7] *Electronics* (New York), December 10, 1957.

version had 3000 tubes and germanium diodes. This computer had some features common to U.S. computers.[8]

Table 23-1 COMPARATIVE DATA ON SOVIET AND WESTERN COMPUTERS UP TO 1968

Name	*Operational date*	*Average speed operations per second*	*Storage capacity*
STRELA	1953	2000	None
BESM I	1953	7000-8000	1023 words
SETUN	1959	4000	81 words
URAL-I	1953	100	None
URAL-II	1960	5000	8192 words
BESM-6	1967	1 million	—
General Electric -Elliott, 503	Installed by G.E. in Moscow Academy of Sciences in 1964	—	2 million characters
English Electric System 4 (RCA technology)	Installed in U.S.S.R. in 1967	23.8 μsec	7.25 million characters
International Computers, Ltd. (U.K.) Model 1905E	Installed in U.S.S.R. in 1968	1.8 μsec	8 million characters

Sources: Soviet machines: Willis H. Ware and Wade B. Holland, *Soviet Cybernetics Technology: Soviet Cybernetics, 1959-1962* (Santa Monica: RAND Corp., June 1963), RM-3675-PR; Western machines: *Office Automation* (New York, 1962).

One observer has rated the BESM as follows: "One of the most impressive achievements of Soviet technology.... It cannot, however, properly be considered as a machine competitive with the IBM-701 or the IBM-704."[9]

The URAL series was manufactured at the Penza computing machine plant,[10] which in 1959 was in series production of URAL-I and preparing to change over to URAL-II. Production methods then were reported to be the same as those in the United States.[11] On the other hand, Soviet computers were far less efficient; the STRELA, for instance, was reported to have only a ten-minute mean free time between errors, while U.S. machines in the fifties normally operated eight hours without error.[12]

A Soviet business data electronic tabulator, the TAT-102, designed primarily for mechanical accounting, statistical calculations, and planning, was developed in the late 1950s and is quite similar to the IBM 604 electronic data-processing

[8] Ware and Holland, *op. cit.* n. 5, pp. 85-91.
[9] Nevin L. Bean, "Address before the Detroit Chapter of the National Society of Professional Engineers," Detroit, February 22, 1956 (Dearborn: Ford Motor Co., News Dept.), p. 11.
[10] Ware and Holland, *op. cit.* n. 5, p. 83.
[11] *Ibid.*, p. 84.
[12] *Control Engineering* (New York), V, 11 (November 1958), 77.

machine. A machinability computer, the VPRR, designed to determine operating conditions for metal cutting tools, also was developed; it closely resembles the Carboloy machine developed by General Electric Company in 1955.[13]

Software has been copied from U.S. equipment. For example Willis H. Ware comments:

> We were shown about 40 card punches. About half of these were 90-column machines and the other half 80-column machines; all were generally similar to United States designs.... We also saw a 500-card per minute sorter which closely resembled a corresponding American product. It has electromechanical sensing of the holes and a set of switches for suppressing specific row selections as in American sorters.[14]

Backwardness in computer technology[15] has led (as in other fields) to imports from the Western world. Imports of computers from the United States were, until very recently, heavily restricted by export control; in 1965 only $5,000 worth of electronic computers and parts were shipped from the United States to the Soviet Union, and only $2,000 worth in 1966. In 1967 such exports totaled $1,079,000, and this higher rate of export of electronic computers has been maintained since that time.[16]

Business relations between International Business Machines Corporation (IBM) and the Soviet Union go back into the 1930s. In August 1936 IBM was advised that in the future all its business would be handled directly with Uchetimport (Bureau for the Import of Calculating Machines and Typewriters) rather than through Amtorg, the Soviet representative agency in the United States. According to E. F. Schwerdt, the Moscow representative of IBM,[17] this rather unusual business arrangement was due to Soviet dissatisfaction with IBM leasing arrangements and to a desire to purchase rather than lease IBM equipment. To avoid losing the business IBM proposed an arrangement under which the Soviets would establish a separate corporation whose sole business would be the import of IBM machines for rent to Soviet organizations at the uniform rental fee (in other words, Uchetimport in effect became an IBM agency); 30 percent of the royalties were payable to IBM with a guaranteed minimum annual payment. IBM was willing to maintain a technical servicing staff in the U.S.S.R. to be paid by the Soviets.[18] The precise amount and nature of IBM computer sales to the Soviet Union since World War II is not known, but it is known that after World War II IBM sales to the Communist world

[13] *Control Engineering*, V. 5 (May 1958).
[14] Ware and Holland, *op. cit.* n. 5, p. 85.
[15] The BESM-6 machine was installed at Dubna in 1967 but is not in general use.
[16] U.S. Dept. of Commerce, *Export Control* (Washington, D.C., issued quarterly). These figures calculated from data contained in various issues for the years 1966-68.
[17] U.S. State Dept. Decimal File, 861.602/279.
[18] *Ibid.*

came "almost entirely from [IBM's] Western European plants," partly because the U.S. equipment operates on 60 cycles whereas Russian and European equipment operates on 50 cycles.[19]

The earliest Western computer sale that can be traced is a Model 802 National-Elliott sold by Elliott Automation, Ltd., of the United Kingdom in 1959.[20] (Elliott Automation is a subsidiary of General Electric.) By the end of the sixties Soviet purchases of computers had been stepped up in a manner reminiscent of the massive purchase of chemical plants in the early sixties. In the last days of 1969 it was estimated that Western computer sales to all of communist Europe, including the U.S.S.R., were running at $40 million annually and these were in great part from subsidiaries of American companies.[21] In 18 months during 1964-65 Elliott Automation delivered five Model 503 computers to the U.S.S.R., one for installation in the Moscow Academy of Sciences;[22] the Elliott 503 ranged in price from $179,000 to over $1 million, depending on size, and has a 131,000-word core capacity. By the end of 1969 General Electric–Elliott automation sales to communist countries were four times greater than in 1968 and this market accounted for no less than one-third of General Electric–Elliott's computer exports.[23] Another General Electric machine, this time a Model 400 made in France by Compagnie des Machines Bull, also was sold to the U.S.S.R.; and Olivetti–General Electric at Milan, Italy, was also a major supplier of G.E. computers to the U.S.S.R. In 1967 the Olivetti firm delivered $2.4 million worth of data-processing equipment systems to the U.S.S.R. in addition to the Model 400 and the Model 115 machines already sold.[24] The Model 115 is a G.E. information processing system, but has a wide range of applications. It can be used as a free-standing tabulating unit or as a peripheral subsystem to other G.E. units.

In sum, General Electric has sold through its European subsidiaries from 1959 to 1970 a range of its medium-capacity business and scientific computers, including the fastest of the 400 series, which can be used either individually or as a group.

Perhaps of greater significance are English Electric sales, which include third-generation microcircuit computers utilizing Radio Corporation of America technology. In 1967 English Electric sold to the U.S.S.R. its System Four machine with microcircuits. This machine incorporates RCA patents[25] and is similar to the RCA Spectra 70 series.

[19] *Wall Street Journal*, May 10, 1966. Thomas J. Watson, chairman of IBM, was in Moscow in October 1970 with four IBM engineers to discuss the nature of continued IBM assistance to the U.S.S.R.
[20] *Electrical Review*, (London), no. 165, p. 566.
[21] *Business Week*, December 27, 1969, p. 59.
[22] *Wall Street Journal*, June 18, 1965.
[23] *Business Week*, December 27, 1969, p. 59.
[24] *Wall Street Journal*, February 7, 1967, 14:3.
[25] *The Times* (London), January 24, 1967.

The largest single supplier of computers to the U.S.S.R. has been International Computers and Tabulation, Ltd., of the United Kingdom, a firm whose technology is largely independent of U.S. patents. In November 1969, for example, five of the firm's 1900 series computers (valued at $12 million) were sold to the U.S.S.R.[26] These are large high-speed units with integrated circuits, and without question they are considerably in advance of anything the Soviets are able to manufacture in the computer field. These machines are certainly capable of utilization in solving military and space problems.

AUTOMATION AND CONTROL ENGINEERING

Given the Soviet backwardness in computer technology, it is pertinent to examine briefly the nature and extent of Soviet achievement in the important fields of automation and control engineering.

The Russian application of the word automation is much wider than in the West; in the U.S.S.R. it can include such elementary control systems as automatic level controls and water pumping stations. In the Western definition, automation designates only advanced mechanization (mainly cyclical operations), automatic control, regulation, and direction work, including self-optimizing operations and the concomitant utilization of computers.

The Moscow Congress of the International Federation of Automatic Control held in June and July 1960, provided an excellent opportunity for examination of the state of automation in the Soviet Union at that time. It was the first such congress, and it brought together 1111 delegates from 29 countries, with the U.S.S.R. being represented by 397 persons, the U.S.A. by 137, the United Kingdom by 78, and a large number in attendance from European socialist countries. In a period of four and one-half days some 275 papers were read.

The general impression gained by British and American delegates to the conference was that the papers presented and the visits made did not support the general understanding of Soviet achievements in space research and nuclear engineering. For example, Professor H. H. Rosenbrock commented as follows:

> It was difficult at first to set this in perspective. The known Russian achievements in theory and in the guidance of rockets did not at first accord with the elementary state of automation in some of the factories that were seen and with the shortage and out-of-date design of tools such as analog and digital computers.[27]

[26] *Business Week*, December 27, 1969. The 1900 series has numerous models and the company has not announced the model numbers of the machines shipped; models vary greatly in speed and capacity.

[27] H.H. Rosenbrock, "A Report of Symposium on Automatic Control," Institution of Mechanical Engineers, (London), 1960.

Similarly, a British delegate, D. C. Rennie, made the following comment:

> The consensus ... from the British delegation was that we saw nothing to support the tremendous achievements of the U.S.S.R. in space research and nuclear engineering. It would appear that the U.S.S.R. has poured much of its resources into these fields.
>
> We did not see anything that would justify the opinion that the U.S.S.R. is ahead of the West. In endeavoring to gauge the potential of any organization, it is usual to examine carefully the base of the pyramid supporting the spearhead. In fact, the "base" appeared to be missing. For example, the computers we saw were far behind those in the West. The instrument engineering in the factories was inferior to comparable Western equipment. The equipment and components being developed in the Institute of Automation at Kiev, one of the largest and most important in the U.S.S.R., were far behind the latest techniques in Britain and the U.S.A. It must be stressed that these opinions are based only on what we saw. It is conceivable that much of their later developments were carefully withheld. The writer is of the opinion that this was unlikely. Conversation with individual Russian engineers gave a strong impression that they were being open.[28]

One of the key institutes in the field of automation is, as Rennie indicated, the Institute of Automation in Kiev, which employs some 2000 persons working in 40 laboratories in addition to experimental workshops and pilot plants. It was of this facility that Dr. H. H. Rosenbrock commented: "This, incidentally, was the first time in Russia that I saw a transistor; all the other equipment, amplifiers and so on, was valve equipment."[29]

The papers presented at the conference confirm the rather skeptical outlook brought back by Western delegates concerning the level of Soviet achievements in automatic control systems. One conference paper, by General Electric engineer E. W. Miller on the "Application of Automatic Control Systems in the Iron and Steel Industry," aroused considerable interest and the author was cross-examined by the Russian engineers present for more than an hour. A British delegate commented that from the discussion it was obvious that the Americans were far ahead of the Russians in this field.[30]

The paper that followed Miller's, one on a similar topic by a Russian engineer (V. I. Feigin on "Automation of a Reversing Mill"), also suggests a much lower level of technology in the U.S.S.R. For example, the system Miller described controlled 12 parameters whereas the Soviet system controlled three parameters. Although the Russian paper took an hour to present, a delegate

[28] Private, unpublished report by D. C. Rennie, London, Eng.: "Report on Moscow Congress of the International Federation of Automatic Control," June 27-July 7, 1960, p. 1. Typescript supplied by author.

[29] Rosenbrock, *op. cit.* n. 27, p. 55. The 1963 U.S. Atomic Energy Delegation observed only one piece of transistorized equipment during the whole visit.

[30] Rennie, *op. cit.* n. 28, p. 12.

commented that at the end there were no questions or comments from the floor. The next Russian paper, also on a similar topic, was canceled.

The following day, on June 28, 1960, a paper by D. A. Patient of Baird and Tatlock (on "Techniques for the Automation of Sampling and Chemical Analysis") induced considerable Russian cross-questioning. However, the subsequent paper by M. Brozgol, a Soviet engineer (on "The Automation of Electric Drives"), was described by the British delegate as being in "the widest terms." The same observer reported that Western delegates "found it extremely difficult to pin the Russians down to giving precise information in one or another particular field," and that "the author of [the 'Electric Drives'] paper stated in response to a direct question that if he had been reporting today, he 'would have mentioned things which had been developed more recently.' " When pressed for further information he was not prepared to give it.[31]

Attempts by Western conference delegates to visit particular plants were not successful. H. H. Rosenbrock commented:

> No visits were arranged during the conference to chemical plants or process plants in general. I tried hard while I was over there to visit a chemical plant; but obviously I was not persuasive.[32]

Another delegate, W. D. Elliott, commented: "Although I tried for five days I was not able to get to see a computer institute."[33]

It may be justifiably concluded, then, that Soviet automation and control engineering is not in an advanced state. This conclusion is entirely consistent with earlier conclusions concerning the elementary nature of Soviet computers in the 1960s and the necessity to purchase IBM, General Electric, and RCA technology to fill a sizable technological gap. Given the fundamental place of these technologies in weapons systems, this conclusion raises serious questions concerning the origins of Soviet military computers and control mechanisms. This question is discussed in chapter 27; at this point the hypothesis is put forward that Soviet military capabilities also are from the West.

THE NATURE OF GERMAN TRANSFERS IN THE ELECTRICAL INDUSTRY

The technical nature of the transfers from the German electrical industry at the end of World War II provide a plausible explanation for current Soviet backwardness in control instrumentation and computers. The Germans did not

[31] *Ibid.*, p. 14.
[32] Rosenbrock, *op. cit.* n. 27, p. 55.
[33] *Ibid.*, p. 57.

work on computer technology—facilities for the production of industrial control instrumentation were not in evidence among the numerous plants and equipment shipped to the U.S.S.R. from Germany.

In prewar Germany the electrical equipment manufacturing industry was heavily concentrated in the Berlin area. Although there was a slight movement away from Berlin as a dispersal measure under the threat of Allied bombing, eastern Germany was by the end of World War II the most important location for the electrical industry. This is confirmed by several sources. In a report from Dr. Fritz Luschen to Albert Speer in March 1945, in the last days of World War II, it was reported that since 1943 the industry had been dispersed to a great extent to Silesia and other eastern areas, and the Soviet advance had led to "severe inroads on manufacturing space and development workshops."[34] It was pointed out by Dr. Luschen that although in February 1945 the reduction in floor space was only 7.8 percent, "this trifling percentage is no index of the significance of the loss, since the most important and specialized manufacturing development facilities of the entire electrical industry had been installed in the East."

Furthermore, large stocks of electrical equipment had been lost, including, for example, 100 repeater stations and radar equipment. The Luschen report goes on to indicate that Berlin therefore had increased in importance and at the end of the war included about 50 percent of the German electrical industry. This reasoning was shared by the U.S. Strategic Bombing Survey team:[35]

> A study of the electrical equipment industry in Germany would have been concentrated in the Berlin area had the region been available for investigation. This is inevitable since there is no other area in Germany which is comparable in size and importance within the province of electrical equipment. The Russian occupation forces in the area did not permit American personnel to enter their zone of occupation at the time the survey was made.

This concentration in Berlin and eastern Germany enabled the Soviets to acquire probably 80 percent of the 1944-45 German electrical industry. As we have already seen, this came about, paradoxically, because of the Allied advance to the Elbe. The Soviets occupied the whole of Berlin and removed the electrical plants from all Berlin zones;[36] then when the frontiers were adjusted on July 1, 1945, the Soviets occupied and proceeded to dismantle the electrical industry of Saxony, Thuringia, and Brandenburg, which had been evacuated by U.S. forces.

[34] U.S. Strategic Bombing Survey, *German Electrical Equipment Industry Report*, 2d edition (Washington, Equipment Division, 1947), Report no. 48.

[35] *Ibid.*, p. 8.

[36] *Ibid.*, p. 9: "Investigation of plants in the Berlin area at the present time [July 1945] would not yield satisfactory results, as key electrical equipment plants have been removed from Berlin by the Russians."

What did the Soviets acquire in East Germany? About 65 percent of the facilities removed were for the production of power and lighting equipment (about one-quarter), telephone, telegraph, and communications equipment facilities (just under one-third), and equipment for the manufacture of cable and wire (about one-tenth).[37] The remainder consisted of plants to manufacture radio tubes, radios,[38] household electrical goods and batteries, and military electronics facilities for such items as secret teleprinters and antiaircraft equipment.

A large number of wartime military electronic developments were made at the Reichspost Forschungsinstitut (whose director went to the U.S.S.R.), and these developments presumably were absorbed into Soviet capability, including television, infrared devices, radar, electrical coatings, acoustical fuses, and similar equipment.[39]

Thus although 80 percent of the German electrical and military electronics industries was removed, the Soviets did not gain computer or control instrumentation technologies developed after World War II.

WESTERN ASSISTANCE TO INSTRUMENTATION SYSTEMS

The computer is the heart of modern control instrumentation. There is no available evidence that direct Western assistance was provided for the early Soviet computers, STRELA, BESM, and URAL, although the components, tubes, diodes, and later transistor technologies came from Germany (the reparations removals) and from postwar purchases of electrical equipment. There is, however, a great deal of Western design influence, and some equipment is copied from American models.[40]

At the 1955 Russian exhibit of nuclear instrumentation in Paris it was noted that Russian instrumentation was second to the U.S. "qualitatively and quantitatively" and overall "several years behind the U.S. on techniques." The items exhibited were largely copies; only one photomultiplier was exhibited and the "RCA people say [it] is a copy of [an] early RCA multiplier" (complete

[37] *Ibid.* For figures on distribution of production from 1943, see *ibid.*, p. 14.

[38] See p. 334 below. Removal of at least one radio equipment plant was somewhat delayed: "Of a certain radio-valve plant the Russians seized 50 percent of all the machines and transferred them to Russia. Then they ordered the management to build new machinery in order to keep up production. When the new machines were built and run in, they were seized and taken to Russia. This happened once again and when the plant had reached full production again, it was transferred to Russia, lock, stock, and barrel, including management, engineers, foremen, key workers, and the families of the male and female workers." *Aeronautics* (London), July 1951, pp. 35-36.

[39] U.S. Strategic Bombing Survey, *op. cit.* n. 34, contains a summary of the German wartime military electronics developments; see pp. 67-72.

[40] See p. 319.

with the RCA pinched neck). The pocket dosimeters "seemed similar to Argonne design."[41]

At about the same time a review by a "top German scientist" based on interviews of German electronics engineers returning from the U.S.S.R. concluded that the engineers were returned because the Soviets had nothing more to learn from them; the Soviets were said to "always have working models of the latest U.S. equipment,"[42] and were at that time testing the latest U.S. Tacan navigation system. The Loran system was later copied as the Luga system.[43] Another observer, Dr. W. H. Brandt of Westinghouse, noted that Soviet coil winding techniques were parallel to those of the U.S. in World War II,[44] and that the Soviets apparently were having problems manufacturing transistors. The American trade journal *Control Engineering* reported a few years later (in 1958) a visit by a delegation in industrial instrument design:

> We saw many examples of dial-type laboratory precision resistance decades, Wheatstone bridges, Kelvin bridges, and precision potentiometers, as well as portable bridges and potentiometers. Designs were strongly reminiscent of American designs. A few of the dial-type instruments used switching contact designs normally associated with German precision apparatus.[45]

However, N. Cohn of Leeds & Northrup commented: "Not all units were copies, and the Russians were proud of design advances—from their point of view—of their own." He then added:"We saw an assembly for measuring 10 to 100 percent relative humidity using wet and dry bulb resistance thermometers and a self-balancing computing circuit, originally developed in this country in the 1920s."[46]

An exhibit of Russian electronic test equipment in New York in 1959 provided another opportunity for preliminary observations on this sector of the electronics industry.[47] Unfortunately no opportunity was given visitors to observe the instruments in operation; consequently it was not possible to compare specifications with performance. In microwave test equipment, the design appeared adequate but the specifications were "so much poorer than ours."[48] It was observed that many instruments were copies, but one unique item was shown—a compact calibrating signal generator packaged into a compact unit. David Packard noted that a couple of instruments were "without question" copies of instruments originally developed by Hewlett Packard Company.[49]

[41] *Nucleonics* (New York), September 1955, pp. 12-13.
[42] *Aviation Week*, (New York), April 16, 1956, p. 75.
[43] Institute for the Study of the U.S.S.R. *Bulletin* (Munich), V (December 1956), 13.
[44] *Aviation Week*, April 9, 1956, p. 68.
[45] *Control Engineering*, November 1958, pp. 65-80.
[46] *Ibid.*, p. 74.
[47] *Electronic Design* (New York), August 17, 1960, pp. 50-70.
[48] *Ibid.*
[49] *Ibid.*

This backwardness in electronics was still apparent in 1960. The American trade journal *Electronics* illustrated Soviet space components and their U.S. counterparts, and noted the bulky and obsolescent nature of Soviet components—without printed circuits and using conventional military-type cables and plugs for space work.[50] The journal cited an example of an ionization detector and amplifier used in the 1961 U.S. moon shot in one package six inches long and the comparable Soviet instruments in *Sputnik III*—two packages about two feet long.[51]

Where the Soviets are operating modern systems, the origins can be traced to the West. For example, in 1966 an instrument-landing system valued at $280,000 was installed at the Sheremetyevo Airport in Moscow—the international airport—by Standard Cables & Telephone, Ltd., a subsidiary of International Telephone and Telegraph Corporation (ITT) of New York.[52]

In 1967 Le Matériel Téléphonique S.A. of Paris, France, another subsidiary of ITT, was awarded a contract to equip an all-purpose telephone information center in Moscow. The contract was for the manufacture and supply of telephone switching apparatus to give callers information on weather, time, and cultural events. Although the system was large—employing 500 operators and using advanced microfilm techniques—it seems unusual that this kind of system would still be bought in the West.[53]

SOVIET RADIO AND TELEVISION RECEIVERS

In late 1953 the U.S. Air Force Technical Intelligence Center made an "intensive scrutiny" of two Soviet television sets, the Muscovite and the Leningrad, and concluded that Soviet circuitry and design trailed that of U.S. practice by about ten years. The Muscovite T-1 small 7-inch screen television introduced in 1948 as the first Soviet television set was a "direct copy of a 1939 German receiver." It was capable of picking up only the single Moscow channel, and its performance was described as "mediocre." The follow-on unit was the Leningrad T-2 built in East Germany to Soviet specifications for sale in the

[50] *Electronics*, November 25, 1960, p. 43.

[51] *Ibid.*

[52] *Wall Street Journal*, May 10, 1966. Thus the pilot on the first Soviet flight to the United States was able to claim: "Captain Boris Yegorov said that the efficiency of traffic flow around Moscow was a good deal better than it was around New York, which has been suffering exasperating traffic delays. 'In Moscow, everything is on time,' said the captain after his own flight had to circle New York for an hour and 35 minutes and had come within 10 minutes of having to turn back to Montreal." *San Jose Mercury* (San Jose, Calif.) August 28, 1968.

[53] *Wall Street Journal*, July 31, 1967, 7:2. However, Soviet telephone equipment appears to be of the 1920s era; for example see chart compiled by L. T. Barnakova, entitled *Oborudovanie gorodskikh telefonnykh stantsii* (Moscow, 1966).

U.S.S.R.; this set, with an 8-inch screen, could pick up only the Leningrad station with a performance rated as "fair."[54]

The first color television project is claimed by the Soviet engineer I. Adamian for 1925.[55] In March 1965, however, the Soviets made an agreement with France to utilize the French color television system SEKAM in the Soviet Union.[56] This system, with circuits covered by Radio Corporation of America patents,[57] is used in the Soviet color television receivers Rubin-401, Raduga-4, and Raduga-5.[58]

IMPORT OF POWER STATION EQUIPMENT

Although Soviet literature stresses the ban that was placed on imported equipment for electrical generation in 1934,[59] there has in fact been considerable import of complete power stations and equipment for power generation, particularly during and just after World War II. Robert Huhn Jones estimates that the $167 million worth of electrical-plant shipments under Lend Lease were roughly equal to the capacity of the Hoover Dam or the combined generating capacity of the states of New Jersey, Connecticut, and New York.[60] Up to 1944 these deliveries constituted 20 percent of the increment in Russian wartime power capacity and were in addition to substantial shipments from the United Kingdom and Canada—sufficient to produce 1,457,274 kw of power.[61] The program provided complete stations (this accounted for the high construction cost of $144 per kw):

> ...[Western firms are] shipping the Russians equipment down to and including wiring for the plant's lighting system, leaving out only such items as light bulbs, freight or passenger elevators, metal stairways, and the like. Powerwise we send the Russians everything a complete station requires.[62]

Between 1942 and 1946 the United Kingdom shipped eight complete power

[54] *Product Engineering*, (New York), 1953, pp. 200-1.
[55] *Nauka i zhizn'* (Moscow), no. 6, 1965, p. 7.
[56] *Ibid.*
[57] *Wall Street Journal*, March 23, 1965, 3:2.
[58] A. Bartosiak, *Sistema tsvetnogo televideniia SEKAM* (Moscow, 1968). Dependence on foreign transistors is implicit in such publications as V. F. Leont'ev, *Zarubezhnye transistory shirokogo primeneniia* (Moscow, 1969) and G. G. Sitnikov, *Tranzistornye televizory SShA i Yaponii* (Moscow, 1968).
[59] P.S. Neporozhnii, *Electrification and Power Construction in the U.S.S.R.* (Jerusalem: Israel Program for Scientific Translations, 1966), p. 76.
[60] Robert Huhn Jones, *The Roads to Russia* (Norman: University of Oklahoma Press, 1969), p. 225.
[61] *Ibid.* A few of the units shipped were old and inefficient, such as, for example, the Consolidated Edison plant from Long Beach, California, shipped in 1943. See also Sutton II, pp. 167-68.
[62] *Electrical World* (Manchester, Eng.), August 19, 1944, p. 102.

stations to the U.S.S.R. (four of 10,000-kw, two of 12,000-kw, and two of 25,000-kw capacity[63]), as well as a mixed power-district heating plant.[64] In 1954 two large contracts were concluded, one with R. A. Lister & Company, Ltd., for 90 diesel generating stations of 410 kw each, at a cost in excess of $4 million, and the other and still larger contract with the Brush Group of companies for diesel generating sets, turbines, and transformers valued in excess of $12 million.[65] Motors and alternators were supplied by Crompton Parkinson later in the same year,[66] and in 1958 a 1000-kw gas turbine (Mark TA) was supplied by Ruston and Hornsby for mobile generator use.[67] In addition, large quantities of control instrumentation have been supplied by British firms —for example, an order for 100 starters from Brookhirst Switchgear, Ltd., in 1946[68] and large quantities of power cable and wire from Crompton Parkinson and Aberdare Cables, Ltd.[69]

Other countries have supplied similar equipment. For example, in 1947 the Swedish subsidiary of General Electric supplied a complete power station for delivery in 1949-52 at a cost of $2 million.[70] In addition there was movement of electrical power generating equipment from Germany to the U.S.S.R. under reparations, e.g., the Gensdorf plant,[71] and the removal of the generators from Siemens-Halske works in Berlin to the Elektrosila plant in Leningrad.[72]

THE INCREASE IN ELECTRICAL GENERATING CAPACITY

The only Western delegation to have visited the Soviet Union and returned to give glowing reports of Soviet technical achievements—and also to predict that the Soviet Union would surpass the United States within a foreseeable time period–was the 1960 U.S. Senate power industry delegation.[73] This delegation report was significantly different from that of two other U.S. electrical industry delegations[74] and to some extent from that of the Canadian Electric Power Industry Delegation.[75]

[63] *Electrical Review* (London), vol. 140 (1947), 442.
[64] *Ibid.*, vol. 135 (1944), pp. 764-70.
[65] *Ibid.*, vol. 154, (1954), p. 480.
[66] *Ibid.*, vol. 155 (1954), p. 290.
[67] *Ibid.*, vol. 163 (1958), p. 22.
[68] *Ibid.*, vol. 139 (1946), p. 941.
[69] *Ibid.*, vol. 155 (1954), pp. 290, 330.
[70] *Ibid.*, vol. 140 (1947), p. 986.
[71] See p. 29.
[72] Keller, *Ost minus West=Null* (Munich, 1960), p. 283.
[73] U.S. Senate, Committees on Interior and Insular Affairs and Public Works, *Relative Water and Power Resource Development in the U.S.S.R. and the U.S.A.*, Report and Staff Studies, 86th Congress, 2d session, May 1960.
[74] A Report on U.S.S.R. Electric Developments, 1958-1959 (New York: Edison Electric Institute, 1960).
[75] *Report of Visit to U.S.S.R. by Delegation from Canadian Electric Utilities, May 14 to June 2, 1960* (Toronto: September 9, 1960).

The Senate delegation report suggested that the Soviet Union was catching up with the United States in the production of electric power; that in 1961 it was constructing large hydroelectric dams faster than the United States; and that it had not only caught up with the Western world in hydroelectric engineering but "... in fact they are actually preeminent in certain specific aspects of such development."[76] The Senate committee that heard the report therefore recommended a massive U.S. Federal program and a study of planning "on a national basis."[77] On the other hand, the Edison Electric Institute report noted in distinct contrast:

> The economic problems facing the Soviet Union ... are vast and complex. Even assuming the [electrification] goal is reached, however, it is worth remembering that in 1965 the United States should have a total capability of 245 million kilowatts, and the present 123-million-kilowatt gap between Russian and American electric power capability will have increased by some 10 million kilowatts.[78]

The Canadian delegation noted "good" power equipment, impressive plans and organization, and "outstanding" transmission and hydraulic generation, but "their achievements in thermal generation and atomic power generation were not particularly impressive."[79]

Electrification of Russia has of course been a prime goal of the Soviets.[80] However, progress has not been as substantial as planned and certainly not as substantial in absolute terms as in the United States. The United States in 1950 had a total generating capacity of 82.8 million kw, including 18.7 million kw, or about one-quarter of capacity, generated from hydropower sources. In 1958 this total had increased to 160.7 million kw (30.1 million kw in hydropower), and in 1967 to 269.0 million kw (48.0 million kw by hydropower). In comparison, the Soviet total in 1950, after installation of the Lend Lease power station and heavy equipment imports of the 1940s, was 19.6 million kw (of which 3.2 million was from hydropower sources); this increased to 53.4 million kw in 1958 (10.9 million kw from hydropower) and 131.7 million kw in 1967 (24.8 million from hydropower).

The total generating capacity in the United States increased by 77.9 million kw between 1950 and 1958, compared with an increment of 33.8 million in the U.S.S.R. in the same period. During the next decade, 1958 to 1967, the United States increased its total generating capacity by 108.3 million kw and the U.S.S.R. by 78.3 million kw.[81] (See Table 23-2.)

[76] U.S. Senate, *op. cit.* n. 73, p. 1.
[77] *Ibid.*, p. 7.
[78] *A Report on U.S.S.R. Electric Power Developments, op. cit.* n. 74, p. 19.
[79] *Report of Visit to U.S.S.R. ..., op. cit.* n. 74. Further information on methods of construction may be obtained from "Excerpts from a Contractor's Notebook," kindly supplied by Dan Mardian of Phoenix, Arizona, and deposited in the Hoover Institution Library.
[80] See Sutton I, pp. 201-6.
[81] See Table 23-2.

Table 23-2 COMPARATIVE INCREMENTS IN ELECTRICAL POWER CAPACITY IN THE UNITED STATES AND THE U.S.S.R., 1950-67

Capacity	*Year*	*United States (million kw)*	*Increments*	*U.S.S.R. (million kw)*	*Increments*	*Gap U.S./U.S.S.R.*
Total electric	1950	82.8	—	19.6	—	63.2
power generation	1958	160.7	77.9	53.4	33.8	107.3
capacity	1967	269.0	108.3	131.7	78.3	137.3
Hydroelectric	1950	18.7	—	3.2	—	15.5
power generation	1958	30.1	11.4	10.9	7.2	19.2
capacity	1967	48.0	17.9	24.8	13.9	23.2

Sources: U.S. Bureau of the Census, *Statistical Abstract of the United States*, 1969 (Washington, 1969), p. 511; *Narodnoe khoziaistvo SSR* 1967 (Moscow, 1968).

The gap between U.S. and U.S.S.R. generating capacity therefore increased between 1958 and 1967. The difference was 107.3 million kw in 1958, and this difference had increased to 137.3 million kw in 1967. The gap in hydroelectric power, where the Soviets have placed particular emphasis, increased from 19.2 million kw in 1958 to 23.2 million kw in 1967. Increasing the relative gap in generating capacity is not an effective way of "catching up" with the United States.

There are other indications that the position of the Soviets is worsening. At the end of the sixties the United States had more than 70 atomic generating stations on order while the Soviets, with only three or four such stations built and none reported under construction,[82] appeared to be having difficulties with their construction. There is no indication that in the generation of electricity by the use of steam (thermal) plants the Soviets have generated any above-normal efficiency operations. Claims are made concerning the size of turbogenerators and that, for example, in 1960 several 200,000-kw units had been installed. The first U.S. 200,000-kw unit was installed in 1929.[83] The reported fuel consumption in 1958 was 0.97 pound per kw-hr compared with 0.90 pound in the United States, and the Eddystone unit under construction in the United States in 1960 was planned for fuel consumption of 0.60 pound per hour.[84]

The Soviet emphasis has been on the production of standardized facilities using reinforced and prefabricated concrete units in the buildings. In this connection it should be noted that a great deal of General Electric and Metropolitan-Vickers technical assistance was provided for thermal units in the 1930-40 period, and in 1944 a U.S. consulting firm—Ebasco Services, Ltd., under instructions from Lend Lease—prepared a set of drawings and specifications for standardized designs using the metric system. These designs made "extensive" use of rein-

[82] See *Pravda*, November 1969.
[83] *A Report on U.S.S.R. Electric Power Developments*, *op. cit.* n. 74, p. 8.
[84] *Ibid.*

forced concrete adapted to Russian conditions.[85] In addition, a number of power stations were equipped from the United States, Canada, and Britain at the end of and just after World War II.[86]

Lags in Soviet computer technology are clearly apparent throughout the period under discussion and have been compensated for by imports from IBM, General Electric-Elliott, English Electric, and International Computers, Ltd. This computer lag has in turn resulted in a major weakness in automation and control engineering, even in fields such as iron and steel where the Soviets have undertaken extensive research work.

These lags fit the pattern of transfers from the German electrical equipment industry at the end of World War II. The factories transferred then were largely for the manufacture of power and communications equipment, not computers and control equipment. In the field of communications equipment, for example for aircraft landing systems and color television, the Soviets utilized Western technology in the late 1960s.

As the gap between U.S. and Soviet electrical generating capacity is increasing—the gloomy forecasts of a Senate subcommittee notwithstanding—it is considered that the Soviets are well behind the United States. In atomic generating stations the Soviets were considerably behind in the late sixties, with only three or four stations built compared with 70 built or under construction in the United States.

[85] L. Elliott, "Steam Plant Designed for Russia under Lend-Lease," *Electrical World*, December 23, 1944, pp. 69-71.

[86] For detailed information on current standard thermal stations, see P. S. Neporozhnii, *Spravochnik stroitelia teplov ykh elektrostantsii* (Moscow, 1969).

CHAPTER TWENTY FOUR

Western Assistance to Consumer Goods Industries

Consumer goods, the neglected sector under Soviet planning, contains a great diversity of products and technologies too numerous to discuss in detail in a single volume. To illustrate the problems of the sector, however, this chapter provides an in-depth examination of a single food industry, sugar beet production and refining, followed by a more or less cursory description of Western assistance to other consumer goods industries.

Sugar production was chosen as a case study because in the Soviet Union beet sugar refining is an old, established industry, larger in its productive capacity than in any other country, and consequently an industry in which the Soviets have had both the opportunity and the incentive to develop an indigenous technology. There was prerevolutionary Russian innovation and development in the industry; indeed, the Russians claim, probably with justification, that the first beet sugar plants were established in Russia. Indigenous innovative activity was continued in the industry after the October Revolution, and in 1928 two refining processes were planned. Innovative activity thereafter appears to have virtually ceased—it is unlikely that the Soviets would conceal any development in this sector—and we find that by the late 1950s the two 1928 refining inventions were still under development and the industry itself was based on foreign technology, either imported or duplicated. These developments may profitably be considered in more detail.

The first beet sugar mill in Russia, and the first in the world, according to P. M. Silin, was founded in Tula Province in 1802.[1] In the same year

[1] P. M. Silin, *Tekhnologiya sveklosakharnogo i rafinadnogo proizvodstva* (Moscow, 1958); translated as *Technology of Beet-Sugar Production and Refining* (Jerusalem: Israel Program for Scientific Translations, 1964), OTS 63-11073, p. 4. All references are to the translated version, which is more readily available in the United States. The first beet sugar mill in the United States was built in 1838 at Northampton, Mass.; it failed. The first successful U.S. beet sugar factory was not established until 1870 at Alvarado, California; see R. A. McGinnis, ed., *Beet-Sugar Technology* (New York: Reinhold Publishing Corp., 1951). The accuracy of the claim to Russian priority in sugar extraction from beets depends on how completely the story is told. It is true (as indicated in Silin) that a beet sugar extraction plant was constructed in the early 1800s in Russia. However, this was done with the aid of government subsidies as part of a Russian Government program to introduce foreign farming skills into Russia. Tsar Alexander I sent recruiting officers to Germany, and there is little question

Ya. S. Esipov developed the lime method of juice purification, a method later adopted throughout the world, and there followed in 1834 Davydov's development of the diffusion method of sugar extraction from beets. In 1852, Ivan Fomenko introduced at the Balakleya sugar mill the method of boiling massecuite for sugar crystallization, and two years later engineer M. A. Tolpygin developed the method of purifying sugar in a centrifuge by using steam and thus began what became widely known abroad as "Russian sugar washing." As Silin commented in 1958: "This advanced Russian method is now used in all sugar mills of the U.S.S.R. and was adopted by the American beet sugar industry."[2]

In 1890 Shcheniovskii and Pointkovskii created a new design for a continuous separator. In 1907 Ovsyannikov developed continuous crystallization of sugar, and in 1910 he was the first to apply continuous saturation. This work suggests, then, a respectable history of technological development in the field. However, Silin, who lists these Russian inventions and innovations, fails to list any major innovation after 1917. It is unlikely that the opportunity would have been missed had such innovation existed, as glorifications of Soviet technology are found throughout Silin. Silin's sole specific claim for more recent Soviet achievement is contained in the following sentence: "No other country can compete with the U.S.S.R. as to the volume of published scientific and technical material on sugar production."[3]

The following section examines Soviet beet sugar processes stage by stage, with particular reference to the origin of processes in use in Soviet sugar beet plants at about 1960.

COMPARATIVE TECHNOLOGY IN BEET SUGAR PLANTS

The flow diagram of a U.S. beet sugar refining plant is not unlike that of a typical Soviet plant (Figure 24-1).[4] To bring out the comparison the major stages of the refining process are examined in detail. These are:

1) beet washing equipment,
2) the cell method of diffusion,
3) predefecation,
4) thickeners,
5) filter presses,
6) evaporators,
7) centrifugals, and
8) crystallizers.

that German experiments in the extraction of sugar from beets came to their attention. See W. Keller, *Ost minus West=Null*, (Munich: Droemersche Verlagsanstalt, 1960), pp. 160-61; McGinnis, pp. 1-2; and Silin, pp. 4-5.

[2] Silin, *op. cit.* n. 1, p. 4.

[3] *Ibid.*, p. 9.

[4] See, for example, McGinnis, *op. cit.* n. 1, p. 134.

Comparison of Soviet and Western sugar beet washing units suggests that Soviet designers not only adopted Western designs but attached a name of their own to a design that differs little, if at all, from the Western progenitor. The Dobrovolskii beet washing unit with a Baranov stone catcher is identical to the Dyer beet washer and sand trap.[5] Priority of invention in this case is clearly with Western inventors and Soviet units show few variations from pre-1940 U.S. units. (See Figures 24-2 and 24-3.)

Silin's description of the Dobrovolskii unit applies equally to the operation of the Dyer unit:

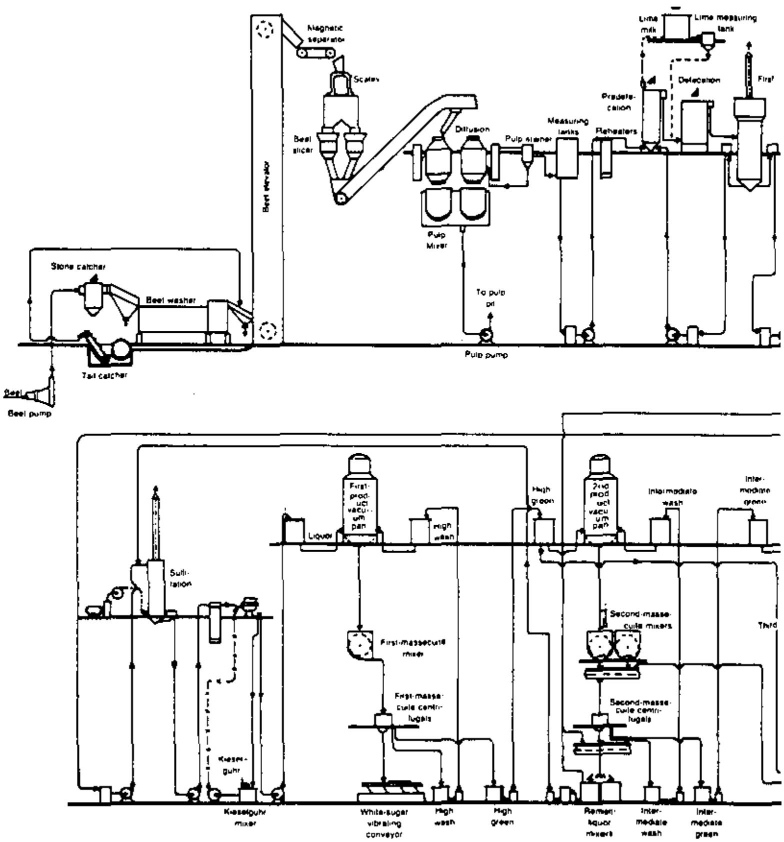
> The Dobrovolskii washing unit consists of three compartments, the first of which is the most important. The beets move along a perforated false bottom placed above the floor of the washer. Dirt passing through the screen accumulates on the solid bottom from where it is periodically removed through drain hatches (a). The arms are arranged spirally, closer to each other in the first half of compartment I than in the second. The increased number of arms increases agitation, intensifies rubbing of roots against one another and hence improves washing. Since water level is high and the arms are fully submerged, the water surface over the arms remains calm. This very important feature permits the straw to float up to the surface and to be removed through an overflow drain together with the dirty water (left side of section CD). [See Figure 24-3.] Thus the washer acts as an additional trash catcher. . . . Compartments II and III act as stone catchers. They are fitted out with revolving paddles mounted on a shaft placed above the shaft of compartment I. The paddles rake up the beets from compartment II and send them over the partition into compartment III.[6]

Beet lifting wheels (which follow the washing units) used in the Soviet Union are almost exact replicas of the Stearns-Roger beet feeders; the only difference is in the shape of the flumes.[7]

Diffusion is the initial process by which sugar in impure form is extracted from sugar beets. Soviet cell-type diffusers are clearly of Western design, although there is a claim to indigenous research work in rotary diffusers. Priority of invention for rotary diffusers is claimed for the Soviet engineer Mandryko (1928) who, together with engineer Karapuzov, carried out extensive investigations in the 1930s "of all types" of rotary diffusers at the im. Karl Leibknecht plant.[8] Another Soviet claim is that a rotary diffuser "appearing like a prototype of the present BMA tower diffuser," was tested as early as 1928 by Professor Sokolov.[9] Silin adds that "at present" (i.e., 1960) an improved model of a Sokolov diffuser is being tested and further developed. Another vertical diffuser,

[5] *Ibid.*, p. 132.
[6] Silin, *op. cit.* n. 1, p. 100.
[7] Compare Silin, *op. cit.* n. 1, p. 96, with McGinnis, *op. cit.* n. 1, p. 129.
[8] Silin, *op. cit.* n. 1, p. 174, quoting A. S. Epishin, *Sakharnaya promyshlennost'*, no. 8 (1953), 14.
[9] Silin, *op. cit.*, n. 1, p. 174.

Figure 24-1 FLOW SHEET OF TYPICAL SOVIET BEET SUGAR PLANT



Source: P.M. Silin, *Technology of Beet-Sugar Production and Refining* (Jerusalem: Israel Program for Scientific Translations, 1964), appendix 1.

Figure 24-1 (cont.)

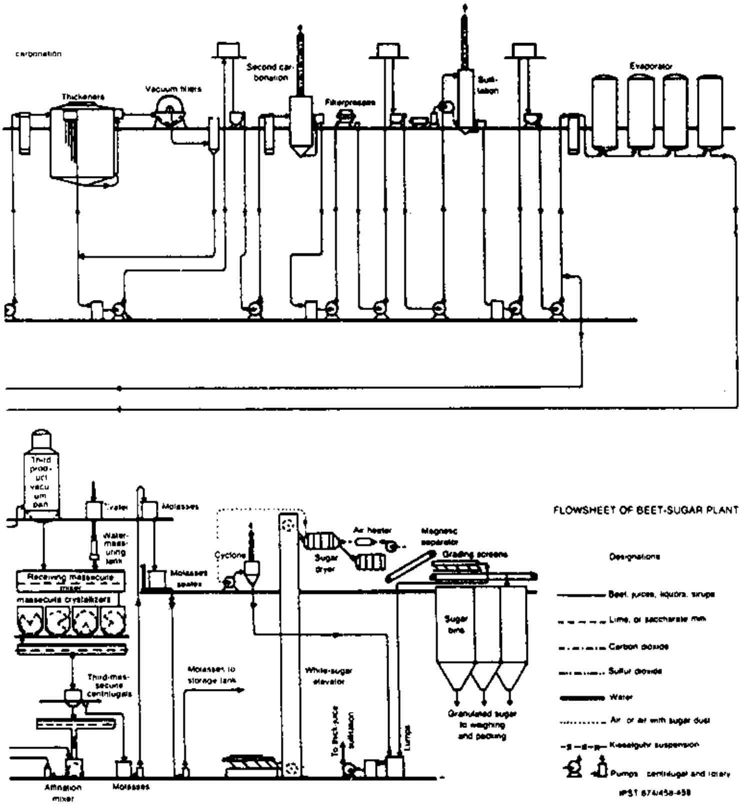
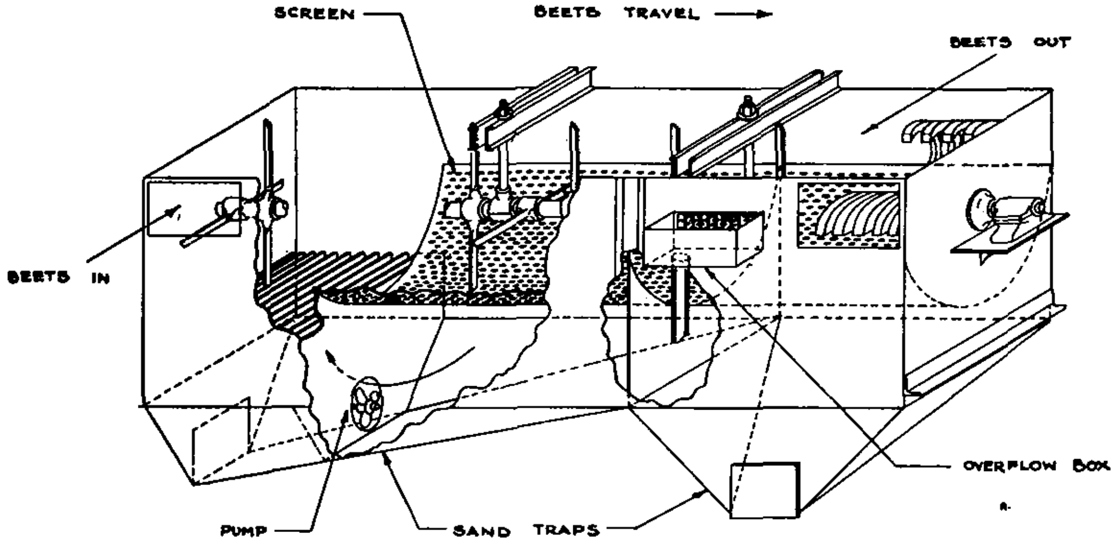


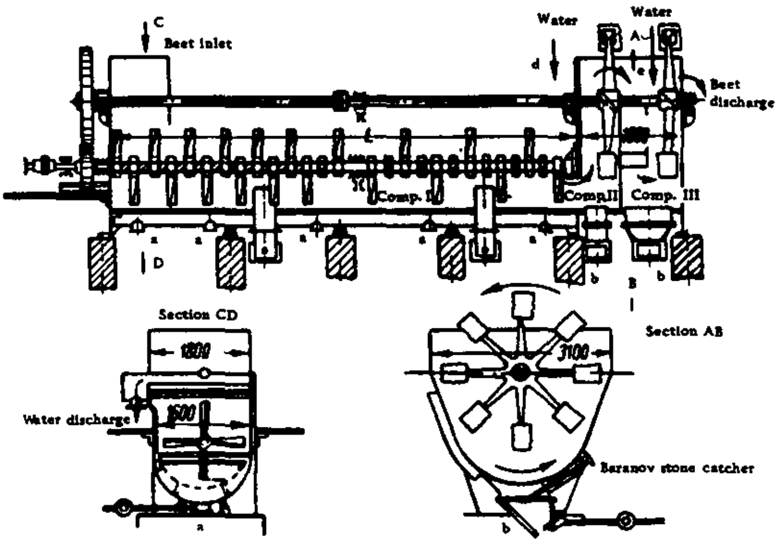
Figure 24-2

THE DYER BEET WASHER



Source: R.A. McGinnis, ed., *Beet-Sugar Technology* (New York: Reinhold, 1951), p.132.

Figure 24-3 THE DOBROVOLSKII BEET WASHER UNIT



Source: Silin, p. 100.

developed by engineer Kundzhulyan, "was in operation at the Zherdevka sugar factory for a number of years."[10]

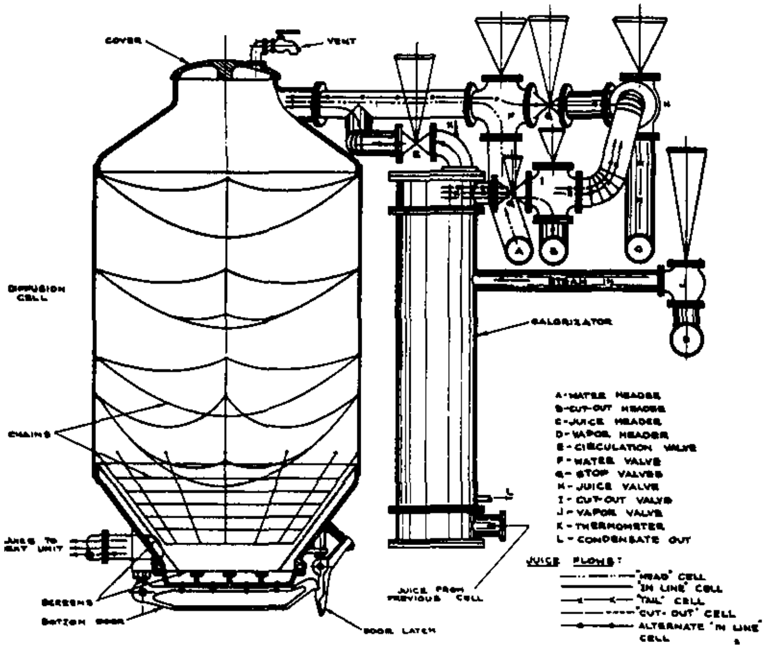
There is no reason why these Soviet claims should not be accepted as accurate. It is probable that diffuser designs were developed and tested in Soviet factories from 1928 onward, but *what is striking is that no Soviet designs are in production or use today; neither is such a claim made.*[11] In fact the Sokolov model "tested as early as 1928" was still being tested in the 1960s.

The most common diffusion operation used in Soviet beet sugar factories is a duplicate of the Roberts cell. These cells are normally used in 12-cell batteries installed in two rows of six cells each. Figure 24-4 shows the cross-sectional elevation of a Robert cell, and Figure 24-5 shows the similar construction of a Soviet diffusion cell.

In the last two decades, world practice has been to utilize rotary continuous diffusers rather than cell-type diffusers and it was recently proposed to install approximately 200 continuous diffusers in the Soviet Union. The most common

[10] *Ibid.*, p. 175.
[11] *Ibid.*, p. 174.

Figure 24-4 CROSS SECTIONAL ELEVATION OF A ROBERTS CELL



Source: McGinnis, p. 155.

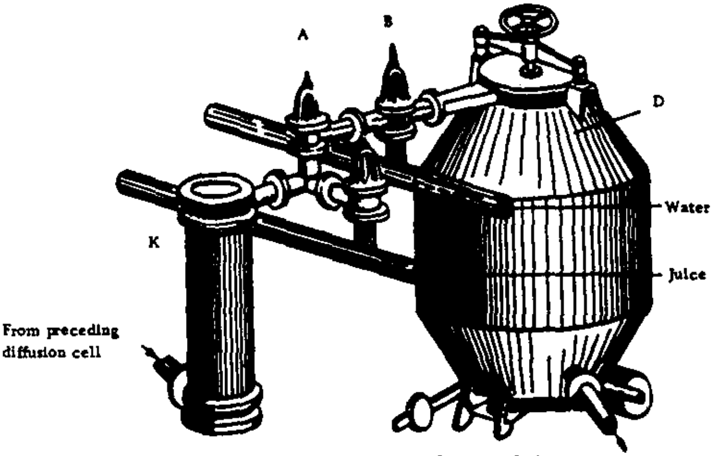
type, the RT (Rotary Tirlemont), is in use in about 80 plants in the world, including ten in the Soviet Union. This process, developed by the Belgians, was first installed in the Tirlemont plant in Belgium.

Although the Soviets claim priority of invention for the rotary diffuser and also for the BMA diffuser (manufactured by Braunschweig Maschinenbau Anstalt), they appear to use rotary continuous diffusers only on an experimental basis (apart from the ten Belgium-type continuous diffusers already mentioned). It therefore appears that although work was done in the late 1920s and the 1930s on continuous diffusers, the Soviet sugar industry is today completely dependent on foreign models for this method of beet sugar extraction.

Equipment for the predefecation and first carbonation process in the Soviet Union is carried out in a vertical tank developed by the Central Scientific and Research Institute for the Sugar Industry (TsINS).[12] This is apparently of Soviet design and is widely used in Soviet sugar factories; however, Silin points

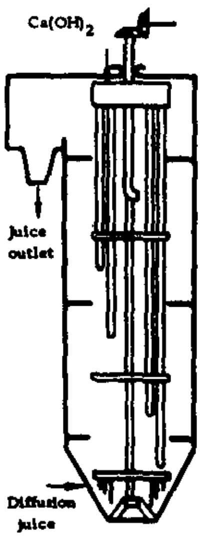
[12] *Ibid.*, p. 195.

Figure 24-5 SOVIET DIFFUSION CELL



Source: Silin, p. 120.

Figure 24-6 Ts INS PREDEFECATION TANK



Source: Silin, p. 195.

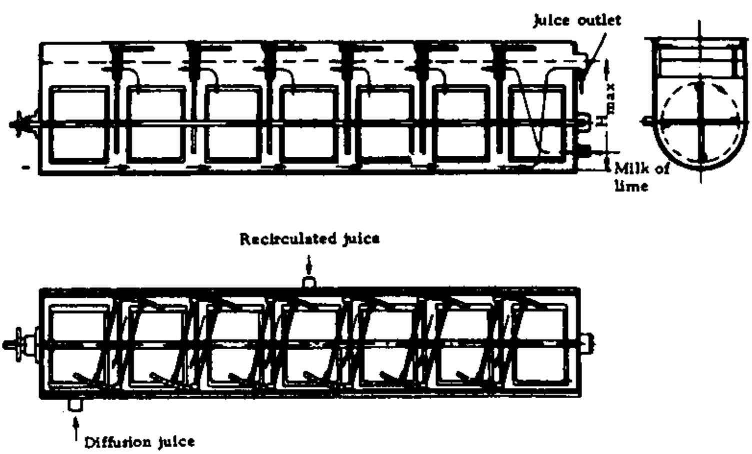
out that foreign-made equipment, and particularly the Brieghel-Müller predefecator, is easier to control and gives a more consistent alkalinity gradient. For example, he comments:

> In other predefecators, the milk of lime enters at a number of given points, creating each time a momentary excess of lime. These points tend to become centers of harmful overliming. The Brieghel-Müller apparatus is free of this defect.

It is notable (Figures 24-6 and 24-7) that the TsINS predefecation tank has the defect described and therefore by Silin's criterion would be inferior to the foreign Brieghel-Müller defecator.

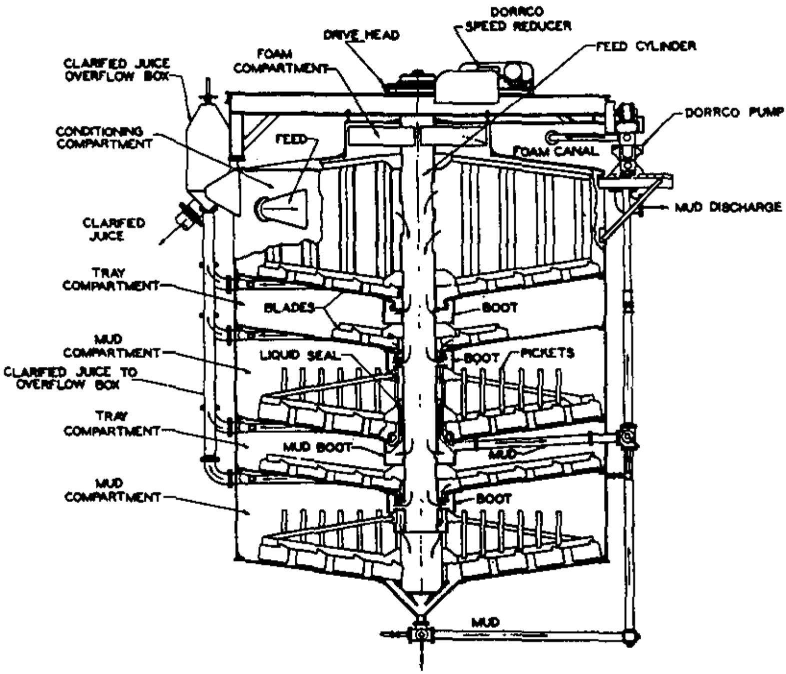
As for the mud-thickening stage, Silin states that of the many types of mud thickeners available in the world, the Dorr-type multicompartment type is particularly widely used in the Soviet Union. It consists of a large cylindrical tank with a slightly conical bottom, filled with first combination juice. Four horizontal trays within the tank divide it into five compartments revolving on a central hollow shaft which carries arms acting as scrapers. Figure 24-8 illustrates the Dorr multifeed thickener while Figure 24-9 illustrates the multicompartment thickener made by the Rostov machine-building plant. Note that the Rostov thickener is an almost exact copy of the Dorr thickener unit. The only Soviet innovation claimed for this stage of refining is one by engineer Shugunov; this innovation apparently improved and speeded up the operation of the thickener by discharging the concentrated muds separately from each compartment and

Figure 24-7 BRIEGHEL-MÜLLER PREDEFECATOR



Source: Silin, p. 245.

Figure 24-8 DORR MULTIFEED THICKENER



Source: McGinnis, p. 248.

by feeding each compartment with a suspension of exactly the same concentration.[13] The Dorr multifeed thickener has an arrangement similar to that claimed by Shugunov.

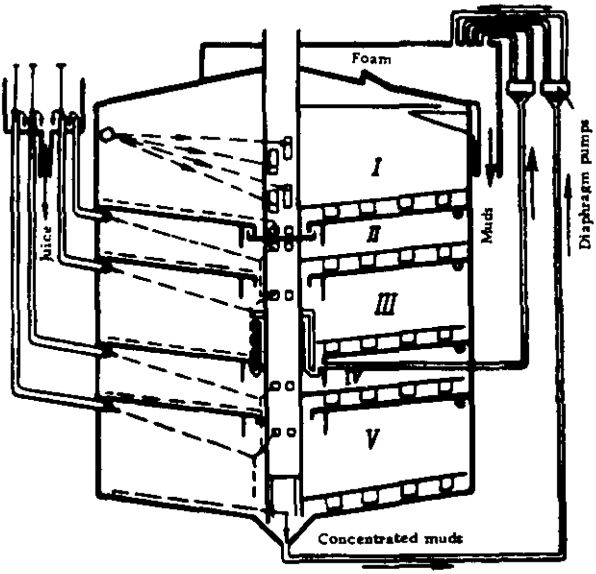
Filtration is required to separate the sediment from the liquid. This is done by using a filter press, and the common filter press in the Soviet Union is the Abraham type.[14] The Soviet filter press is of the standard type; i.e., the sides of the frames and the plates are fitted with lugs that support them on two guide bars. The carbonated juice with the precipitate is then pumped into the frames through ports connected with the extension holes. It is claimed that Soviet engineers, notably Gritsenko of the Kagarlyk sugar plant, have improved the operation of the Abraham filter press.

The next stage on the flow sheet is that of evaporation. The standard evaporator used in the Soviet Union is the single-pass TsINS evaporator, which

[13] *Ibid.*, p. 219.

[14] *Ibid.*, p. 211.

Figure 24-9 ROSTOV MACHINE-BUILDING PLANT MULTICOMPARTMENT THICKENER



Source: Silin, p. 218.

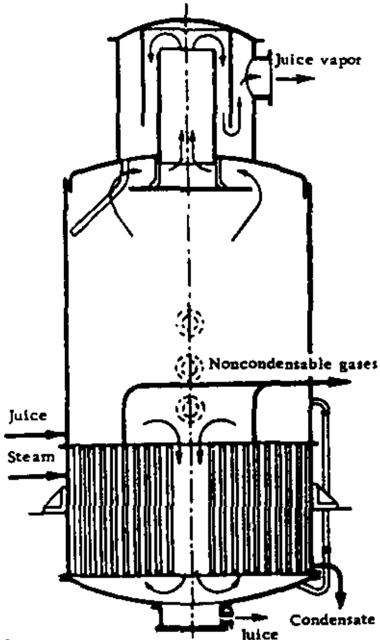
is described by Silin as "similar to the Roberts evaporator, but [having] longer tubes."[15] Figures 24-10 and 24-11 show that the two units are of very similar construction; i.e., each is a closed cylindrical steel boiler with a steam chest at the bottom part of the boiler. In both units, vertical heating tubes are rolled into the holes of the perforated tube sheets and steam is introduced into the space between the tube sheets and so heats the vertical boiling tubes. The juice vapor rises to the top and is conducted outside the evaporator in both cases. It is quite clear that the Soviet single-pass evaporator is based on the Robert evaporator.

The production of white sugar consists in separating the sugar crystals from the mother liquor by centrifugal force. The most common type of centrifugal separator is the Weston type, which is also used in the Soviet Union.[16]

The final process in beet sugar refinement is that of crystallization, which is achieved by spinning of the second massecuite; the object of this process

[15] *Ibid.*, p. 274.
[16] *Ibid.*, p. 312-13.

Figure 24-10 ROBERTS-TYPE EVAPORATOR



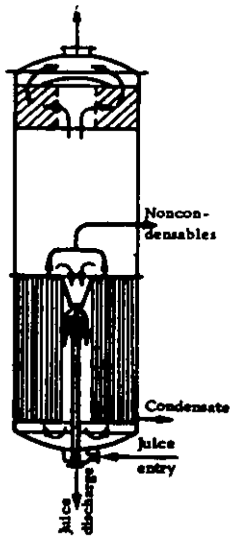
Source: Silin, p. 273.

is to obtain the highest possible yield of sugar in the form of crystals. For crystallization, the second massecuite is mixed in a mixer crystallizer while its temperature is gradually lowered. The standard Western crystallizer is shown in Figure 24-12, and the Soviet mixer crystallizer is shown in Figure 24-13. The principle in both pieces of equipment is the same.

Thus it may be seen from comparison of individual pieces of equipment within sugar manufacturing plants in the Soviet Union with similar pieces of equipment in the West that, first, there is very little if any Soviet innovation; and second, by and large Soviet equipment more or less exactly replicates Western equipment. It is also obvious that much thought, preparation, and investigation have gone into examination of Western processes to choose the most suitable process and equipment for Soviet conditions.

Consistent with these findings concerning Soviet innovation in the beet sugar refining industry are the known major infusions of Western technical assistance and equipment for the industry. In the 1920s German firms reequipped and

Figure 24-11 SOVIET CONSTRUCTION EVAPORATOR



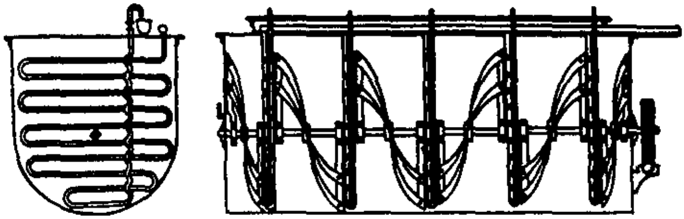
Source: Silin, p. 273.

Figure 24-12 CRYSTALLIZER BY SUGAR AND CHEMICAL MACHINERY, INC.



Source: McGinnis, p. 358.

Figure 24-13 SOVIET CRYSTALLIZER



Source: Silin, p. 319.

brought back into operation the numerous Tsarist-era sugar plants.[17] This aid was supplemented in the early 1930s by technical assistance from the United States.[18] At the end of World War II a number of sugar plants were removed from Germany to the U.S.S.R., including 14 complete plants (for example, Zuckerfabrik Bach at Stöbnitz, Zuckerfabrik GmbH at Zörbig in Saxony-Anhalt, and the Vereinigte Zuckerfabriken GmbH at Malchin, Mecklenburg).[19]

In the postwar years sugar plants were built in Czechoslovakia on Soviet account—for example, two were shipped to the U.S.S.R. in 1955.[20] In the late 1950s and the 1960s extensive purchases were made in the United Kingdom and in Germany. What is more, an order for $4.2 million worth of sugar beet equipment was placed in 1959 with Booker Brothers, Ltd., McConnell & Company, and Vickers-Armstrongs (Engineers), Ltd.[21] This was followed in 1960 by an order to Vickers & Booker, Ltd., for two complete sugar plants to be located in Moscow and the Ukraine valued at $22.4 million and each capable of handling 5000 tons of sugar beet per day.[22] In 1961 Eimco (Great Britain), Ltd., supplied eight rotary vacuum filters, four five-compartment tray thickeners, and two filtration plants for $392,000.[23] Then in 1968 Vickers & Booker, Ltd., supplied a total of $23.8 million worth of beet sugar processing equipment to equip two complete plants—one of which was to be built by Vickers & Booker.

[17] See Sutton I, p. 235; and *Die Chemische Fabrik* (Weinheim, Ger.), I, 42 (October 17, 1928), 615.

[18] Amtorg, *Economic Review of the Soviet Union* (New York), IV, 23 (December 1, 1929), 428.

[19] G. E. Harmssen, Am Abend der Demontage; Sechs Jahre Reparationspolitik (Bremen: F. Trüjen, 1951).

[20] *Czechoslovak Economic Bulletin* (Prague), no. 293 (February 1, 1955).

[21] *East-West Commerce* (London), VI, 5 (June 4, 1959), 14.

[22] *Chemistry and Industry* (London), February 6, 1960, pp. 154-55. It is presumed that Vickers & Booker, Ltd., is a joint company formed by Booker Brothers and Vickers-Armstrongs (Engineers), Ltd.

[23] *Chemistry and Industry*, July 15, 1961, p. 1087.

WESTERN ASSISTANCE FOR FOOD-PACKING PLANTS

There has been consistent and substantial Western technical assistance for Soviet food-packing and canning operations since the 1920s. For example, in the 1930s at the Kamchatka salmon canneries it was reported,

> All the machinery "down to the nuts and bolts" was American and most of it had been made in Seattle. Makers included the Smith Cannery Machine Co. [and] the Troyer-Fox Co. (Continental Can subsidiary or affiliate), and the lighting installations had been made by Fairbanks-Morse.[25]

In the Kamchatka canneries at that time there were also about 14 Americans working in various positions to train Russians and supervise operations.[26] The American consulting engineer for the Kamchatka salmon canning industry was Alvin L. Erickson, who lived in Vladivostok for about three years in the early thirties, supervising the 15 central canneries that had been established since 1930. These were equipped with the "finest machinery and accessories": according to Erickson most were superior to the average West Coast or Alaskan cannery, " . . . while some of them are in installation equal to any in the world."[27] Two of the canneries had been equipped with the latest vacuum-type machinery, each with four lines and a maximum capacity of 9000 cases per day. The industry also acquired 20 modern trawlers which were in charge of an English superintendent, and some German engineers were employed in installing new equipment.[28]

An even more comprehensive food processing contract was that received by the Chicago Kitchen Company, which supplied six architects for six months to design the Soviet community kitchens. This group prepared the detailed plans for 11 model community kitchens which were then duplicated by the Soviets.[29]

In the 1950s and 1960s the purchases of complete plants continued. It was reported in 1957, for example, that

> Mather & Platt, Ltd., Manchester, holds two contracts for the U.S.S.R. including canning lines for fresh peas and also canning lines to handle both fresh peas and runner beans. All these lines are complete, i.e., they start with viners, into

[24] *Wall Street Journal*, March 30, 1967, 20:6.

[25] U.S. State Dept. Decimal File 861.5017/Living Conditions/709, Report no. 689. See also /589 and 861.7186/1, Tokyo, August 31, 1933. The State Department in Washington made the notation, "The memorandum is not of great interest."

[26] U.S. State Dept. Decimal File 861.5017/Living Conditions/709.

[27] U.S. State Dept. Decimal File 861.5017/Living Conditions/701.

[28] *Ibid.*

[29] U.S. State Dept. Decimal File 861.5017/Living Conditions/371. This group had the rare privilege of working in OGPU installations.

> which the complete peas plant is fed, and finish with packaging machinery which labels the cans, packs the required number into a case, and then seals the flaps of the case.[30]

A year later Yugoslavia concluded contracts with the U.S.S.R. to provide seven processing plants to manufacture tomato puree, the contract being valued at $440,000.[31] This continued an earlier contract for 12 complete tomato puree processing plants and was subsequently followed by a contract for yet another nine plants valued at $770,000.[32] It would not be unreasonable to suppose that Yugoslavia and Italy have provided the greater part of the Soviet tomato puree manufacturing capacity.

In 1967 the Italian firm of Carle & Montanari of Milan supplied equipment for a plant to be erected at Kuibyshev for the manufacture of 80 to 100 tons per day of chocolate and powdered cocoa, packed and ready for sale. The contract was valued at $10 million.[33] In the same year another Italian firm, S.p.a. Tecmo (Tecnica Moderna) signed a contract valued at $6.4 million to build and equip a plant at Stupino to produce cardboard packaging; the plant's capacity was to be 60,000 tons per year of containers for use in automatic food packing lines.[34]

However foreign assistance apparently is not always utilized industry-wide after it is attained. For example, the 1963 U.S. dairy delegation visited milk and dairy products processing plants, and one observer noted:

> Based on about 27 years of milk plant experience in this country [i.e., the United States], I must say that [the Soviets'] processing equipment, in terms of bottle washers, holding tanks, clarifiers, pasteurizers, final bottling, and capping equipment, are many years behind that which we are permitted to use in this country.[35]

Considering that ten years earlier, in 1954, the Soviet Union purchased from U.D. Engineering Co., Ltd. (a United Kingdom firm and a subsidiary of the dairy chain United Dairies, Ltd.) milk bottling and processing equipment to a total of $3 million, the conditions encountered in 1963 by the U.S. dairy delegation are somewhat surprising.[36]

[30] *East-West Commerce*, IV, 4 (April 3, 1957), 11.
[31] *East-West Commerce*, V, 1, (January 3, 1958), 13.
[32] *Ibid.*
[33] Communication from Embassy of Italy, Washington, D.C.
[34] *Wall Street Journal*, November 14, 1967, 12:4.
[35] Unpublished report by George D. Scott, vice president of Ex-Cell-O Corp.: "Dairy Exchange Delegation to Russia, July 7, 1963-August 2, 1963"; typescript supplied by Dairy Society International, Washington, D.C. The delegation interpreter had the following parting words for Mr. Scott at the Moscow airport: "Mr. Scott, now that you have personally visited several of our great cities in the Soviet Union, and have learned the *truth*, I hope when you return to America, you will try to incite your people to a revolution against the tyranny of your capitalistic system." Report, p. 13.
[36] *The Times* (London), March 24, 1954, p. 4d. For further information see, V. P. Prityko and V. G. Lungren, *Mashiny i apparaty molochnoi promyshlennosti* (Moscow, 1968).

THE WEARING APPAREL INDUSTRY IN 1960

In the early 1960s the clothing industry of the Soviet Union, according to well-qualified U.S. observers, was very backward. In fact it might be concluded from reports of these observers that in terms of organization, methods, and equipment the industry had not advanced very much from Tsarist times.

In mid-1963 the United States sent a garment industry exchange group to the Soviet Union, and the report made by one member of that delegation, Alexander Lerner, President of Phoenix Clothes, Inc., of New York, is a perceptive account through the eyes of an expert observer.[37] After the delegation had visited several clothing factories, Lerner's general conclusion was:

> The production equipment, in my estimation, is very antiquated . . . they are very backward in their supervision and pressing equipment. In their handling of production, they are as far back as 30 to 50 years. . . . [38]

The report then elaborates and supports this summary statement on a plant-by-plant basis. The delegation toured the Central Scientific Research Institute of the Sewing Industries and viewed films of new equipment in operation in the various factories. These films, however, did not show machines at work, and Lerner comments:

> After all this information was given to us, I was very anxious to see some of these machines in operation. We saw some of them at the different factories, but they did not accomplish in action what [I anticipated from what] I saw in the films. Many of the machines [shown in the films] I did not see at all.[39]

Similarly, the Indian Textile Delegation noted that although a great deal of development work was apparently under way in the research institutes they did not see models or systems actually in operation.[40]

The first factory visited by the American group was No. 16 in Moscow, founded before the Revolution. One of the Institute machines viewed was for pressing cuffs and collars by a hot-iron method using a spray of water and no steam—a method described in the report as "very obsolete." At this factory the sewing machinery as a whole was 20 to 40 years old, with perhaps 10 percent of it less than five years old. The second factory visited was No. 2 in Moscow, manufacturing men's suits and slacks. About 80 percent of the machinery here was 30 to 40 years old and the balance, less than five years

[37] Acknowledgement is due Mr. Alexander Lerner for his courtesy in making a copy of his report available. The complete report has been deposited in the Hoover Institution Archives.

[38] Lerner report, p. 1.

[39] *Ibid.*, p. 3.

[40] *Textile Industry in U.S.S.R. and Czechoslovakia.* Report of Indian Productivity Team (New Delhi: National Productivity Council, November 1962), Report no. 19, pp. 42-43.

old, of Russian, German, and Hungarian manufacture. There was no steam pressing because "they had no way of making steam." The plant operated on a straight-line system:

> We visited their cutting rooms and [were] astounded to see their manner of cutting. They were using two-, three-, and four-suit markers.... Also, even though this wasn't heavy fabrics, they were only laying it up 14 double spread and less. They had a tremendous amount of cutters and spreaders for this operation. There were three spreaders to each table.

Lerner then mentions the low quality of Soviet clothes:

> I see now why the clothing is being delivered so badly [in] quality of workmanship. It is simply atrocious. Where they could use automation, they are using the most obsolete methods. I have been in the clothing business for over 35 years and I have never seen such pressing and finishing of garments.[41]

The next plant visited—the Kishinev—was more modern, an improvement over the Moscow plants with only 65 percent "antiquated" equipment and 35 percent less than five years old. The methods were better; while two-, three-, and four-suit markers were still in use, the cutting heights were greater—30 high, and slacks 50 layers high—and there were two, not three, spreaders per table. The Smitrnov-Lastochkin plant in Kiev had antiquated machinery—about 80 percent old and 20 percent more recent machines. The Ukraine factory, also in Kiev, had similar equipment and methods. Finally, the Volodarsky clothing factory in Leningrad was visited, and the systems, machines, and methods there were found to be similar to those of the plants previously toured.

On its return to Moscow for a promised look at the equipment making machines for clothing plants, the delegation was informed that the plant was closed. A visit to a Moscow woolen mill was substituted. This plant was over 100 years old but its machinery was installed after 1917; up to the mid-1950s it had used all American equipment; some of its more recent machines had been built in Tashkent. The delegation reported: "The looms are 10 years old and all German-made. They have ordered 50 percent of their new looms from Sweden."[42]

On the basis of this report by skilled observers it may be concluded that not only was the Soviet wearing apparel industry backward in 1961; it was heavily dependent for its current production on imported equipment.

The manufacture of boots and shoes is a consumer sector for which the Soviets apparently have been unable even to reproduce Western manufacturing equipment. In 1928 the Lenin shoe factory was equipped with foreign machines[43]

[41] *Ibid.*, p. 7.
[42] *Ibid.*, p. 18.
[43] Amtorg, *Economic Review of the Soviet Union* III, 6 (March 15, 1928), 104.

that had been supplied in addition to the concession arrangements previously described.[44] In the early 1930s foreigners apparently acted as supervisors of such plants. For example, in 1932 Max Korr, an American, was under a 300-rubles-per-month contract as superintendent of a shoe factory in Grozny making boots for the Red Army.[45]

More recently, in 1968, 20 complete shoe production lines for plants in Leningrad, Moscow, and Kiev were purchased for $5.6 million from British United Shoe Machinery Company of London (a subsidiary of United Shoe Machinery Corporation of the United States). This order included 2100 machines to produce shoes by the cemented-sole process, and the equipment was installed by British engineers.[46]

In addition, large orders for shoes have been placed abroad. In January 1967 the Lotus Company of the United Kingdom received an order for $2.8 million worth of men's and women's shoes;[47] a few weeks later the Cooperative Wholesale Society reported the largest single order it had ever received from the U.S.S.R.—80,000 pairs of women's shoes, which was 50 percent more than the previous year's order.[48] The British Shoe Corporation also announced a $490,000 order for 100,000 pairs of women's shoes.[49] Simultaneously, Japanese firms sold to the U.S.S.R. 1.2 million square feet of "Clarino"—a Japanese-developed "breathing synthetic material."[50]

[44] See Sutton I, p. 231.
[45] U.S. State Dept. Decimal File 861.5017/Living Conditions/505.
[46] *Wall Street Journal*, March 12, 1968, 27:5.
[47] *The Times* (London), January 8, 1967.
[48] *The Times* (London), January 20, 1967.
[49] *Ibid.*
[50] *The Times* (London), January 11, 1967.

PART III

Implications and Conclusions of the Study

CHAPTER TWENTY-FIVE

Innovation in the Soviet Union

The purpose of this chapter is to summarize verifiable Soviet innovation and to determine the degree of indigenous innovation that has taken place in the Soviet Union relative to the import of foreign innovation. Hopefully this summary will throw some light on the organic capability of the Soviet society to innovate. We may first usefully sum up the innovations found to be truly of Soviet origin.

The first volume of this series isolated several unsuccessful attempts by the Soviets to develop their own technologies. Tractor production in the mid-1920s provides an excellent example.[1] Although these attempts failed, there is no question that considerable effort and resources were placed behind such innovative experiments.

In the period covered by the second volume,[2] the years 1930 to 1945, rather surprisingly we do not find continuation of early efforts; rather we see an abandonment of domestic innovation, but not of basic research effort, and the substitution of wholehearted adoption of foreign techniques. This policy led to the widespread practice of copying and duplication, so that by 1945 Soviet industry was a more or less haphazard copy of Western, predominantly American, technology. The major exceptions to this rule were to be found in Ramzin's "once-through" boiler (which, however, had been abandoned by 1945), the turbodrill, and several machine gun and weapons designs. The weapons designs originated with copies of Western guns, but by 1945 the Soviet stress on the military sector had provided some indigenous Soviet military capability—although Soviet technology was still woefully backward in areas such as fire control and radar. The U.S.S.R. was able to concentrate effort in this field by virtue of free import of Western advances in the general industrial sectors, thus releasing scarce design and engineering talent resources for military work.

In the period covered by this volume (1945-65) we find several groups of indigenous innovations, although obviously the hypothesis that there has been an absence of self-generated innovation is generally supported.

Two questions now arise: what is the nature of these groups of indigenous

[1] See Sutton I, pp. 133-35.
[2] Sutton II.

Soviet innovation? Why have they appeared in only a few fields, and not generally throughout the industrial structure?

SOVIET INVENTION IN THE WORLD MARKET

Table 25-1 contains a list (from an official Soviet source) of *all* Soviet foreign licensing agreements in force at January 1967.

Table 25-1 COMPLETE LISTING OF SOVIET PATENT AND LICENSE AGREEMENTS IN FORCE OUTSIDE THE U.S.S.R. AS OF JANUARY 1967

Country	*Number of Agreements*	*Description of Soviet Invention Transferred*
United States	17	16 agreements for suture instruments
		1 agreement for procedures for producing liquid cores and mold mixtures
Canada	1	Prosthesis of the forearm with bioelectrical control
United Kingdom	3	Computing device for calculating the number of sheets in a stack of paper (sheet counting machine)
		Prosthesis of the forearm with bioelectrical control
		Machine for wire cell bundling at iron and steel plants
Denmark	1	Liquid core and mold mixtures; procedure for producing cores and molds thereof
Italy	5	Universal system of industrial pneumoautomatic elements
		Optimalizing pneumatic controller
		Liquid core and mold mixtures; procedure for producing cores and molds thereof
		Electrodes for arc welding and building up of gray and high-strength cast iron
		Mill for cold rolling of tubes
Norway	1	Liquid core and mold mixtures; procedure for producing cores and molds thereof
France	18	Continuous steel casting plant
		Electro-pulse machine tool for processing to size of conducting materials, model 4733
		Device for automatic control of electrode rod gap
		Device for automatic selection and adjustment of optimal electrode rod gap, model 3P
		Rotary unipolar pulse generators
		High-frequency unipolar pulse generator
		Carbon-graphite material for measuring electrodes, grade
		Machine tool for processing shaped articles made of graphite-containing materials, measuring electrodes predominantly, model MA-459

Table 25-1 (cont.)

Country	Number of Agreements	Description of Soviet Invention Transferred
		Method for electroslag welding and metal buildup and the device for carrying out the above method (apparatus A-372 and A-501)
		Liquid core and mold mixtures; procedures for producing cores and molds thereof
		Method of producing the drug Luteneurin
		Universal system of industrial pneumoautomatic elements
		Optimalizing pneumatic controller
		Evaporative cooling plant for open hearth and heating furnaces
		Powder-cored wires
		Laminated material for resistors and high-precision potentiometer
		Electroslag remelting of metals and alloys in water-cooled mold and equipment for its realization
		Method of continuous neutralization of grease and oil in soap-alkaline medium
Federal Republic of Germany	5	Electrodes for arc welding and surfacing of gray and high-strength iron
		Powder wires agreements for 3 turbodrills
Switzerland	1	Method of dimecarbine production
Sweden	3	Method for electroslag welding and metal build-up and the device for carrying out the above method (apparatus A-372 and A-501)
		Liquid core and mold mixtures; procedure for producing cores and molds thereof
		Method for production of hydrogen peroxide with concentration up to 45 percent by weight
Japan	6	Continuous steel casting plant
		Method for preparation of fine-granulated components for the manufacture of the artificial building material silicalcite
		Electrodes for cold welding and buildup welding of gray iron
		Electroslag remelting of metals and alloys in water-cooled mold and equipment for its realization
		Digger shield for tunneling in weak ground, 3.6-meter diameter
		Mechanized composite mining units (Tula for complete mechanization of coal mining operations)

Source: Letter from Litsenzintorg (Licensintorg), Moscow, February 18, 1967.

In brief, this listing presents the sum total of Soviet invention that had the proven potential of competing in the world technical marketplace as of January 1967. It is not a list of adopted invention, i.e., innovation, but only

of that Soviet invention which had possibilities of commercial adoption in the face of competing world technical developments. It is therefore an accurate comparative guide to the originality of Soviet invention, particularly as Party injunctions have been to sell Soviet technology abroad wherever possible. Table 25-2 summarizes the information contained in Table 25-1 on a country-by-country basis and indicates the degree of duplication of licensing agreements and the narrowness of the technical areas covered.

Table 25-2 SUMMARY OF SOVIET FOREIGN LICENSING AGREEMENTS AS OF 1967

		Technologies			
Country	Number of agreements	Suture instruments and apparatus	Liquid cores and molds	Welding techniques	Other
United Kingdom	3	—	1	—	2
Denmark	1	—	1	—	0
Italy	5	—	1	1	3
Canada	2	1	—	—	1
Norway	1	—	1	—	0
U.S.A.	17	16	1	—	0
France	18	0	2	4	12
F.R.G.	5	—	—	1	4
Switzerland	1	—	—	—	1
Sweden	3	—	1	1	1
Japan	6	—	—	2	4
	62	17	8	9	28

Source: Derived from Table 25-1.

The country having the largest number of agreements was France, with 18. The United States was second with 17, and of these 17, 16 were with U.S. Surgical, Inc., for suture instruments and one was for a core and mold mixture process with Heppenstal.[3]

As we have pointed out, these 62 licensing agreements constitute Soviet inventions that had potential on the world market at 1967. They do not constitute innovations, as the existence of a licensing agreement does not necessarily imply a technology's application in practice. Apart from the small number of such licensing agreements, analysis discloses some rather remarkable features. Of the 62 total, 17 were for medical suture instruments (there are duplicates, as

[3] Examination of Soviet technico-economic literature suggests there was a remarkable lack of substantive innovation—or even invention—in the late 1960s. See, for example, the numerous reports in the monthly *Biulletin' tekhnikoekonomicheskoi informatsii* (Moscow), and various appeals in *Pravda* for a higher technical level of invention and innovation. Pure scientific discovery was somewhat more satisfactory but hardly reflected the proportion of Soviet resources it absorbed.

the same machine may be licensed to more than one country) and another nine licenses were in the field of welding metals. Thus more than one-third of the agreements related to the extremely narrow and specialized aims of joining together either human tissue or metals. The next largest category is licensing in seven countries of a process for producing liquid core and mold mixtures.

In sum, a close look at these 62 licensing agreements reveals a remarkable paucity of Soviet invention to compete with the hundreds of thousands of processes licensed on the world market.

INDIGENOUS INNOVATION IN WEAPONS TECHNOLOGY

Soviet innovation presents a paradox: an extraordinary lack of effective indigenous innovation in industrial sectors is offset—so far as can be determined within the limits of open information—by effective innovation in the weapons sectors, although some weapons development is akin to "scaling-up" innovation (see pp. 362-64).

As far back as the 1930s some indigenous innovation was achieved in such weapons as machine guns and tanks.[4] Such development has become much more noticeable in recent years. A recent weapons innovation in which Russian engineers appear to have conquered a problem unsolved in the U.S. Navy is that of ship-borne radar. Although the U.S. Navy has done a great deal of work in radar control of ship-launched or shore-launched missiles, it remained for the Soviet Styx missile, in the fall of 1967, to sink the Israeli destroyer *Elath* at a distance of more than 12 miles with three shots, thus demonstrating dramatically the effectiveness of a radar-guided surface-launched anti-ship missile. The U.S. Navy had abandoned research because ship-borne radar in such a missile must lock onto a target ship and deliver guidance commands; these commands tend to be swamped by "sea clutter," i.e., spurious signals reflected from the water when radar operates at a flat angle. Obviously, Russian technicians were able to overcome the problem.[5]

We may deduce from this and similar examples that weapons innovation can be successfully achieved by a centralized bureaucracy. This is because weapons innovation is predicated upon well-defined objectives. Military planners, unlike economic planners, can estimate fairly accurately what the next technological stage will be for a given weapon and can define a technical objective for that weapon in clear terms. Work toward such a preordained objective can proceed along well-established lines. Moreover, military technology developed toward a specific objective can be pretested to determine whether it fulfills its objective.

[4] See Sutton II, pp. 240-45.

[5] *Business Week*, November 29, 1969, p. 32.

By contrast, economic innovation has no such clearcut technical objectives, and it does not lend itself to such pretesting. Effective innovation in industrial sectors results from the positive interaction of a myriad of complex forces; it can be realistically tested only in a market situation wherein the market itself determines its success or failure. Soviet central planning cannot anticipate key variables because it lacks the information network of a free market. Moreover the system provides little incentive to explore the unknown: central planning necessarily places its emphasis on known technology, not on revolutionary technology. Therefore innovation in the nonmilitary sectors is likely to be imported from market economies.

Thus the Soviets can achieve adequate weapons innovation—given the existence of a reasonably effective back-up industrial structure—while failing miserably in the economic area of industrial innovation.

Western creation of a viable Soviet industrial structure is therefore also a Western guarantee of a viable Soviet weapons system. This Western economic support ensures that weapons systems may be developed and brought into production because the output of the industrial sector is the input of the military sector, which, unlike the industrial sector, has a proved capacity for self-generated innovation.

SCALING-UP INNOVATION

Review and analysis of Soviet technical achievements outside those offered for export and weapons systems leads to the conclusion that many such other achievements are better described as technical progress attained by means of scaling up Western technologies. This conclusion may be best explained by considering in broad outline the categories in which the Soviets have made indigenous achievements and the relationships between these superficially dissimilar technologies.

Soviet indigenous technical progress is concentrated in three industrial sectors: iron- and steelmaking (but not steel rolling), electricity generation and high-voltage transmission, and rocket technology. It may be noteworthy that each of these three technologies was at one time or another pushed by dominant party personalities: Stalin, as his name implies, favored the iron and steel industry; Lenin of course was the force for the electrification of Russia; and Khrushchev was a force behind the development of rocket and space technology.

Soviet work on blast furnaces has been toward the development of larger volume furnaces and the application of new techniques to the classic process. In open-hearth steelmaking the lines of technical progress are somewhat more complex. In the words of one commentator: "Many things have contributed to the good results obtained by the Soviets on their open hearths, but I feel

that the hot-metal spout and the basic roof setup are unique, and probably very important."[6]

Soviet advances in electricity generation have impressed many observers. In 1960 a subcommittee of the U.S. Senate noted that the Soviet power program produced the largest hydroelectric stations in the world—yielding the greatest amounts of electricity from the largest generators connected by the longest transmission lines operating at the highest voltage.[7] It was also noted that while in 1960 the heaviest U.S. transmission lines were 345 kv, the Russians then operated 400-kv lines. These were being stepped up to 500 kv and plans called for use of alternating-current transmission up to 1000 kv and direct-current transmission at 800 kv. The subcommittee concluded:

> It is to the Russians' credit that, building on the experience in technology acquired, they have now caught up with the rest of the world in the general field of hydroelectric development. In fact they are actually pre-eminent in certain specific aspects of such development.[8]

In point of fact, this Senate assessment was somewhat overstated. It was based on only a few observations, in themselves accurate but not sufficiently extensive to warrant the broad conclusions reached.

In rocket technology the Soviets first absorbed the German technology and then, after about 1960, went ahead on their own with more powerful rockets, in effect a scaling up of the original German rockets.

There is a common denominator in each of these seemingly unrelated industrial sectors where the Soviets have made indigenous advance. In each case the Soviets started with a basic Western technology—indeed a classic technology—that was well established and had a strong technical literature. The blast furnace dates from the eighteenth century, and the open-hearth furnace from the nineteenth century. In electricity generation the Soviets adopted the Kaplan and Francis runner systems, and of course long-distance electricity transmission was started in the 1920s. In rockets the Russians have a strong historical interest, but in practical technology they started with the relatively advanced German technology of World War II, and above all they had the reliability trial data from 5700 German tests.

Therefore the essence of each case in which the Soviets have made indigenous advance is that they first acquired and mastered a known and classic technology. In each case the considerable power of the Communist Party chose the industrial

[6] K. C. McCutcheon, "Open Hearth Shops of the U.S.S.R." *Journal of Metals* (New York), November 1958, p. 725.

[7] U.S. Senate, Committees on Insular Affairs and Public Works, *Relative Water and Power Resource Development in the U.S.S.R. and the U.S.A.*, Report and Staff Studies, 86th Congress, 2d session (Washington, 1960), p. 2.

[8] *Ibid.*, p. 1.

sector for allocation of resources, and indigenous technical progress in each case has been in effect a logical scaling up of an original classic Western technology.[9]

In each case the process technology has a precise technical framework and is capable of expansion in size. For example, in blast furnaces Soviet designers concentrated on increase in cubic volume or on specific developments, such as high top pressure, to increase output from a given volume. The same applies to open-hearth steel furnaces, which at a very early date the Soviets expanded in size to 500 square meters. In electrical generators we find the Soviet effort concentrated on an increase in generation capacity, and in transmission lines we find effort concentrated on increase in voltage transmitted.

Not all Soviet scaling-up efforts are so logically conceived as those cited above. Sometimes they are neither technically nor economically practical; sometimes size for its own sake seems to be the desired goal. For example, Moscow has the tallest television tower in the world. With a full height of 1722 feet this structure comprises a prestressed concrete base 1260 feet high topped by a 462-foot antenna. Conic in profile, it is 196 feet in diameter at the base tapering to 26.5 feet at the top. Construction, which took ten years, was interrupted by a debate as to whether high winds would induce oscillations that would create a safety hazard. The tower is designed to withstand winds of 141 mph, although winds of that velocity occur only about once in 50 years in Moscow. In such a wind the tower will oscillate 32.8 to 36 feet, while it is designed for oscillations up to 42.6 feet.[10] What is the end result of this project? The tower increases television range in Moscow from 30 to 50 miles; hence the incremental benefit is an increase of 20 miles in range, a benefit that hardly seems to justify the costs and risks of the effort. On the other hand, Moscow *does* have the tallest TV tower in the world.

In a similar vein, at a 1960 chemical exhibition in Europe the Soviets introduced "what must have been the largest model of a chemical plant ever to appear at a European exhibition."[11] There was nothing novel about the plant itself; the model represented a well-established process for making synthetic rubber. But it was the largest model, and that constituted its novelty.

In each of the cases cited as representative of productive indigenous advance, there was an expansion in quantitative terms of a known classic technology. Consequently much Soviet advance actually falls within the category of technical progress acquired by the application of engineering and experimental resources to a given known technology. It is not innovation in the sense that innovation establishes new and formerly unknown technological horizons.

[9] "Scaling-up" innovation based on Western processes may be found in other sectors, e.g., in sulfuric acid production (1000-ton-per-day contact systems) and coke-oven batteries.

[10] *Engineering News-Record* (New York), December 1, 1966, p. 33.

[11] *British Chemical Engineering* (London), December 1960, p. 868.

AN OVERVIEW OF TECHNOLOGICAL ORIGINS

We may conclude with empirical justification that Soviet indigenous industrial innovation is limited to two types: (a) scaling up, and (b) the miscellaneous category exemplified by the suture, welding, and minor industrial applications licensed for world marketing in 1967 (see Table 25-1).

Obviously, so far as the Soviet economy is concerned, the more important of these types is scaling-up innovation, whereby the Soviets take a classic Western process and proceed by dint of investment, research, and development work to increase the size or capacity of the productive unit. The results of such technical scaling up may or may not meet the test of the Western marketplace; there is no recorded case of its export to the West. Only the second category has led to attempts to export to the West. The returns from these exports are infinitesimal compared with the resources and talent available within the Soviet Union.

It now remains to bring together the overall picture from 1917 to 1965. Table 25-3 identifies origins for technology in 14 major Soviet industrial sectors in each of the periods examined in the three volumes of this study. Where Soviet innovation is the main process in use, it is noted in capitalized italics. Table 25-3 then, is a final summary of the conclusions from the empirical examination of technology in the U.S.S.R. over the course of 50 years.

Of necessity it is a broad examination. There are indeed many thousands of industrial processes; Table 25-3 includes only the most important and, for purposes of further illustration, a select number of lesser importance. There is no question, for example, that drilling technology is fundamental to oil production or that pig iron production is fundamental to iron and steel production; however, of necessity, numerous less important processes for each industry are omitted.

Table 25-3 AN OVERVIEW OF TECHNOLOGICAL ORIGINS OF MAIN SOVIET INDUSTRIAL PROCESSES FROM 1917 TO 1965

No.	*Industrial Process*	*1917-1930*	*1930-1945*	*1945-1965*
	MINING			
1.	Underground equipment	German	U.S./German	U.S./U.K./German
2.	Excavation equipment	German U.S./U.K.	U.S.	U.S./U.K./German
3.	Crushers	U.S.	U.S.	U.S.
4.	Ore beneficiation	—	U.S./Swedish	U.S./German/French
5.	Sintering	—	U.S.	U.S.
	OIL INDUSTRY			
6	Drilling	U.S.	*SOVIET*	*SOVIET*

Table 25-3 (cont.)

No.	*Industrial Process*	*1917-1930*	*1930-1945*	*1945-1965*
7	Pumping	U.S.	U.S.	U.S.
8.	Pipelines: pipe	U.S./ German	U.S.	German/ Japanese
9.	Piplines: compressors	U.S./U.K.	U.S.	U.S./Swiss
10.	Refining and cracking	U.S./ German/U.K.	U.S.	U.S./French/ German/ Czechoslovak
	FERROUS METALLURGY			
11.	Pig iron	Classic blast furnace	Scaling-up	*SOVIET*/U.S./ German
12.	Steelmaking	Classic open hearth	Scaling-up	Austrian/ *SOVIET*
13.	Steel rolling: blooming	U.S./ German	U.S./ German	U.S./ German
14.	Steel rolling: wide sheets	U.S.	U.S.	U.S.
15.	Steel rolling: tubes	U.S./ German	U.S./	U.S.
16.	Continuous casting	U.S./ German	U.S./ German	German/ *SOVIET*
	NONFERROUS METALLURGY			
17.	Nickel smelting and refining	—	Canadian	Canadian/Norwegian
18.	Aluminum smelting and refining	German/ U.S.	U.S./*SOVIET*	*SOVIET*/U.S./ Czechoslovak
19.	Copper smelting and refining	U.S.	U.S.	U.S.
	CHEMICAL INDUSTRIES			
20.	Basic acids	U.S./German/ Italian	U.S. German	U.K.
21.	Basic alkalis	Tsarist/ U.S.	U.S./German/ U.K./Tsarist/ Swedish	U.S./German
22.	Fertilizers	Swedish/U.S./ German	Swedish	U.S./Belgian/ Dutch/Italian/ U.K./Japanese
23.	Synthetic fiber intermediates	French	French German	U.K./German/ U.S.
24.	Agricultural pesticides	—	—	U.K.
25.	Synthetic rubber	Tsarist	*SOVIET*	German/ U.S./U.K.
26.	Rubber tires	U.S./ German	U.S./U.K.	U.S./U.K. Italian
27.	Glass	U.S./ German	Belgian/ U.S.	U.K.

Table 25-3 (cont.)

No.	*Industrial Process*	*1917-1930*	*1930-1945*	*1945-1965*
28.	Cement mills	Danish/ German	Danish/ German	Danish/French German
29.	Coke byproducts	Tsarist	U.S./German	Scaling-up
30.	Pharmaceuticals	German	German/U.S.	U.S./Austrian
	MACHINE BUILDING			
31.	General technical assistance	German/U.K.	U.S./German	(None)
32.	Machine tools	German/U.S.	U.S./German/ U.K.	U.S./German
33.	Ball bearings	Swedish/Italian/ German	Italian/U.S.	U.S./Italian
34.	Instrumentation	U.S./German	U.S./German	U.S./German
	ELECTRICAL EQUIPMENT			
35.	General technical assistance	U.S./German/ U.K./German	U.S./U.K./	(None)
36.	Heavy electrical equipment	U.S./U.K./ German	U.S./U.K.	U.S./scaling-up
37.	Low tension equipment	U.S./Swedish/ French	U.S./German	German
38.	Instruments	German/U.S.	U.S./German	U.S./German
	COMMUNICATIONS			
39.	telephone	Swedish/French/ U.S.	Not investigated	French
40.	telegraph	Danish/U.K.	Danish	Not investigated
41.	radio	U.S.	U.S.	Not investigated
42.	television	—	U.S.(black and white)	French (color)/ German
43.	Computers	—	—	U.S./U.K.
	PRIME MOVERS			
44.	Steam boilers	Latvian/ German	*SOVIET*/U.S.	U.S./U.K./ German
45.	Internal combustion	U.S.	U.S.	U.S./German
46.	Diesel engines	German	German/U.K.	German/Danish/ U.S./Swiss
47.	Gas turbines	—	—	French
	AGRICULTURAL EQUIPMENT			
48.	Tractors	U.S./German	U.S.	U.S./U.K./ German
49.	Cotton pickers	—	U.S.	U.S.
50.	Seeding equipment	Tsarist	U.S.	U.S./German

Table 25-3 (cont.)

No.	*Industrial Process*	*1917-1930*	*1930-1945*	*1945-1965*
	TRANSPORTATION INDUSTRIES			
51.	Automobile and trucks	Tsarist/U.S./ Italian	U.S.	U.S./German/ Italian/French
52.	Railroad locomotives:			
53.	steam	Tsarist/ German/U.K.	Tsarist/U.S./ U.K.	*SOVIET*/U.S./ German
54.	diesel-electric	U.S./German	German	U.S.
55.	electric	German/U.S.	U.S./German	French/U.S.
56.	hydraulic	—	—	Austrian/ German
	SHIPBUILDING			
57.	Hull construction	German	75 percent foreign-built	66 percent foreign-built
	Engine design:			
58.	diesel	German	German	Danish/German/ Swiss
59.	steam turbine	U.K./U.S.	U.K.	Not known
60.	gas turbine	—	—	French
61.	Trawlers	—	U.K./French/ German	U.K./German
62.	Oceanographic equipment	—	U.S./German	U.S./Japanese
	AIRCRAFT			
63.	Aircraft	German	U.S./Italian	*SOVIET*(?)
	Aircraft engines:			
64.	internal combustion	U.S./German	U.S./French	—
65.	turboprop	—	—	
66.	pure jet	—	—	U.K./German
67.	Helicopters	—	*SOVIET*/Italian	*SOVIET*(?)
68.	Landing and communication equipment	Not investigated	U.S.	U.K./U.S.
	MILITARY INDUSTRIES			
69.	Explosives	German	U.S.	
70.	Poison gas	German	U.S.	
71.	Tanks	French/U.K./ Italian	U.S./U.K./ *SOVIET*	Data
72.	Machine guns	Tsarist/U.K.	*SOVIET*/ Finnish	classified
73.	Submarines	German	German/U.K.	
74.	Destroyers	—	Italian/French	
	CONSUMER INDUSTRIES			
75.	Clothing industries	Tsarist/U.S./ German	U.K./German	U.K./German/ U.S.
76.	Boots and shoes	Austrian/ Danish	Not known	U.K.

Sources: Column 1 — Sutton I: *Western Technology ... 1917 to 1930;* Column 2 — Sutton II: *Western Technology . . . 1930 to 1945*; Column 3 — Sutton III: *Western Technology . . . 1945 to 1965*.

Notes: (1) Multi-country listings indicate several technical origins, listed in order of relative importance. (2) In a few cases, as for example in the origin of steam locomotives in the 1930 to 1965 period, there has been Soviet adaptation of basic foreign or Tsarist-era designs; these entries are noted *SOVIET* first and foreign sources second.

The first column in Table 25-3 relates to the period 1917 to 1930. There was no Soviet innovation in this period, although there were, as described in the first volume, several attempts in tractors and synthetic rubber to establish Soviet products.[12] It should be noted that in this period the oil drilling industry was converted almost completely to the American rotary drilling technique.

The second column in Table 25-3 relates to the period 1930 to 1945. In this period Soviet innovation was identified in five of the 75 major industrial processes listed. Although the turbodrill used in oil-well drilling reportedly has German origins, the Soviets undoubtedly have worked on it extensively and the drill introduced in the 1930s may aptly be called a Soviet development; it replaced the rotary technique introduced in the 1930s and by the 1950s was handling the greater part of Soviet drilling. However, overheating and other technical problems led the Soviets to consider a return to rotary drilling in the 1960s. Smelting of alumina from nepheline is a process conducted only in the U.S.S.R. The original flow diagram and equipment for this process were designed by an American company,[13] but there undoubtedly has been some Soviet work. Synthetic rubber, butadiene SK-B, is a result of prerevolutionary Russian research effort, and production was developed under the Soviets. The Ramzin "once-through" boiler appears to be a Soviet innovation, as is the development of some machine guns.

There is no clearcut example in the 1930-45 period of a technology started and brought to productive fruition under Soviet guidance; each of the five examples cited above (except possibly the Ramzin boiler) had its origins outside the Soviet era. On the other hand, the conversion from pilot plant (or equivalent) to series production was achieved in the Soviet economy.

The last period (1945 to 1965) is of particular interest in that we find that several of the five "Soviet" processes adopted between 1930 and 1945 were partly supplanted by Western processes. SK-B was supplemented by Western synthetic rubbers produced with Western equipment. The Ramzin "once-through" boiler was limited to small sizes and Western models were introduced in larger sizes. In turbodrills we find the onset of technical problems and reconsider-

[12] See Sutton I, pp. 133 ff.; Sutton II, pp. 122 ff.

[13] See Sutton II, pp. 57-58.

ation of a Western method—rotary drilling. Only in machine guns and alumina from nepheline do we find continuation of a Soviet process started in the second and continued into the third period. In both of these cases we find some earlier Western influence: American flow diagrams and assistance in the early thirties for alumina from nepheline and the use of Western patents in machine guns.

In sum, it is possible to trace only a single industrial process (the turbodrill) which started, came to development fruition, and went through pilot-plant stages and then to series production without replacement by a later Western process, under the Soviet regime. But the turbodrill cannot stand the test of the Western marketplace (it was tested with this possibility in mind by Dresser Industries of Texas, and rejected). Synthetic rubber work was started under the Tsars and is today about 50 percent supplanted by non-Soviet developed synthetics.

Table 25-3 shows the origins of 75 major technologies in three time periods, or a total of 225 time slots with each slot describing the origins of a technology at one of the three time periods. This matrix is summarized in Table 25-4.

In the period 1917 to 1930 no major applied technologies originated in the U.S.S.R. In the period 1930 to 1945 only two such processes originated in the U.S.S.R., but in another five areas the Soviets developed and applied some major technology and we find both Soviet and Western processes used. In the period 1945 to 1965 three processes were of Soviet origin and again five technical areas used both Soviet and Western processes.

With these data expressed as a percentage of the total 75 time slots included in Table 25-3, we find that in the period 1917 to 1930 the percentage of Soviet technology was zero, that in 1930 to 1945 ten percent of the technologies examined had all or some Soviet components, and that in the period 1945 to 1965 eleven percent of all those major technologies examined had all or some Soviet components. It should be emphasized that this is the most favorable interpretation possible of the empirical findings. It could be argued, with accuracy, that Soviet processes in the 1930 to 1945 period were later replaced by Western origin processes, and that where both Soviet and foreign technologies are used the Soviet process is either relatively inefficient (the turbodrill) or used to a relatively small extent (steam boilers).

Table 25-4 SUMMARY STATEMENT OF THE ORIGINS OF SOVIET TECHNOLOGY FROM 1917 TO 1965

	Number of Major Technologies examined: 75 (in three time-slots)					
	1	*2*	*3*	*4*	*5*	*6*
Period	*Determined as all Soviet origin*	*Percentage of total examined*	*Determined as of both Soviet and Western origins*	*Percentage of total examined*	*Total (column 1 and 3)*	*Percentage of total*
1917 to 1930	0	0	0	0	0	0
1930 to 1945	2	3	5	7	7	10
1945 to 1965	3	4	5	7	8	11

Source: Table 25-3.

CHAPTER TWENTY-SIX

The Level of Technology in the Soviet Union

Given the conclusions of the previous chapter concerning lack of self-generated indigenous innovation in the Soviet economy, it must logically follow that the general level of technology in the Soviet Union at any one time is consistently behind that of the more advanced Western economies. That observation has been made by numerous observers and indeed appears to be valid. This chapter examines the proposition in more detail with respect to selected major technologies.

A prime source of observations concerning technical lags is to be found in the reports of industrial delegations sent to the U.S.S.R. under the technical exchange programs of the last decade.[1] During that period the only delegation to report on Soviet technology in glowing terms was one unskilled in technology—a U.S. Senate subcommittee, which reported on Soviet hydroelectric power developments—and this report was in distinct contrast to the impressions recorded by U.S. and Canadian electric power industry delegations.

In 1960 the Soviet Union in all sectors (apart from the area of rockets and guided missiles and other armaments for which resources had been concentrated) was well behind, even decades behind, both Europe and the United States. On the other hand, the delegations seem to agree that in general the Russian grasp of theory is excellent. The problem is not one of deficient individual ability but rather of the system's inability to convert theory into practical industrial operations; i.e., there is an engineering weakness, not a scientific one.[2]

In some industrial sectors which have seen no great change in technology in this century, Soviet imports of foreign technology essentially reflect a domestic mechanical engineering inability rather than a lack of innovation *per se*. For example, in the manufacture of internal combustion and diesel engines the basic technology has remained the same; improvements have been in the methods of manufacturing engines and the efficiency of the finished product. Table 26-1

[1] A collection of these reports has been assembled and deposited in the Hoover Institution Library.

[2] There are many other factors that contribute to this inability, of course, including misallocation of capital and a bureaucratic inertia. But the proximal technological factor appears to be an engineering weakness.

lists imports of engine manufacturing technology by the Soviet Union from the West from 1917 to 1970; these imports have been supplemented by even more numerous purchases of industrial machines and equipment. In sum, Table 26-1 analyzes the Soviet engine manufacturing capability. Imports do not reflect any great changes in levels of Western technology, but the acquisition of additional capacity does reflect improved manufacturing methods and more efficient engines and therefore suggests a weakness in Russian industrial engineering.

This industrial weakness is effectively hidden from both Soviet and Western eyes by the protective GOST identification. In the case of marine diesels, where we can match GOST identification to Western models (Table 26-2), we find that there probably are no Soviet-designed marine diesels, or at least no GOST numbers appear for marine diesels that do not have a foreign origin. Therefore if any Soviet marine diesels exist they have not been recorded in recent Soviet technical literature.

Table 26-1 TRANSFER OF ENGINE MANUFACTURING TECHNOLOGY (INTERNAL COMBUSTION AND DIESEL) TO THE U.S.S.R. FROM 1925 TO 1970

Date	*Agreement*	*Origin of Technology*	*Western technology transferred*
1926	Sulzer	Switzerland	Diesel manufacture
1926	M.A.N. diesel engines	Germany	Licensing of diesel engines
1929	Fiat S.p.A.	Italy	Truck engine manufacture
1930	Hercules Motor Co.	U.S.A.	Truck engine manufacture
1930	A. J. Brandt Co.	U.S.A.	Truck engine manufacture
1930	Ford Motor Co.	U.S.A.	Truck and automobile engine manufacture
1936	Budd Company	U.S.A.	Automobile engine
1944	General Motors Corp.	U.S.A.	Truck engine assembly
1944	Caterpillar Tractor Co.[a]	U.S.A.	Tractor diesels, KD17-40
1946	Kloeckner-Humboldt-Deutz	Germany	Diesel truck engines
1946	B.M.W.	Germany	Diesel engines
1946	Daimler-Benz	Germany	Diesel engines
1946	Steyr-Daimler-Pusch	Austria	Truck plant
1956	Skoda	Czechoslovakia	Engine manufacture
1959	Burmeister & Wain	Denmark	Marine diesels
1961	Transfermatic	U.S.A.	V-8 truck engine manufacture (U.S.)
1961	Perkins	U.K.	Small diesels
1968	Fiat S.p.A.	U.S.A.[b]	Engine manufacture
1968	Renault/Peugeot	France	Engine manufacture
1970	Renault/U.S. consortium	France/U.S.A.	3- to 11-ton tractors, truck trailers, off-the-road vehicles

Sources: Sutton I: *Western Technology . . . 1917 to 1930*; Sutton II: *Western Technology . . . 1930 to 1945*; *Washington Post*, March 14, 1970; *Business Week*, April 18, 197[illegible] and June 19[illegible] 1971; *Metalworking News* (New York), August 16, 1971; [a] Not by agreement with U.S. firm; [b] U.S. technology supplied indirectly.

Table 26-2 WESTERN MARINE DIESELS AND SOVIET *GOST* DESIGNATIONS

Soviet GOST identification	*Western firm or model*
6 ChSP 10.5/12.7	Cummins JMC 600
18 DN 13/2 x 18.4	Napier-Pielstik
6 ChN 15/19	Mercedes-Benz MB-846A
12 ChVN 17.5/20.5	Mercedes-Benz MB-820
20 ChVN 18.5/25	Mercedes-Benz MB-518
16 D V21.6/25/4	GMC 567 C
16 D VH 22.2/26/6	GMC 498
8 ChR 24/36	8 DV 136 Buckau-Wolf
18 Ch NV 20/45	VV 45-M.A.N.
6 Ch R 32/48	R 6 DV 148 Buckau-Wolf
6 D R 34/47	M 46 M-Polar-Atlas
12 Ch VRN 40/46	PC-SEMT Pielstik
8 ChN 38.1/45.7	KSDM 8 Mirrlees
6 ChRN 45/66	K6V 45/66 M.A.N.
6 DR 52/90	6 GZ 52/90 M.A.N.
6 DKR 55/100	D 55 Cegielski
DKRN 62/115	62 VTBF 115 B & W
DKRN 70/120	KZ 70/120S M.A.N.
DKRN 75/132	C 750S Fiat
DKRN 76/150	760/1500 VGSU Götaverken
DKRN 76/150	RSAD 76 Sulzer
DKRN 84/180	84 VTBF 180 B & W
DKRN 84/160	KZ 84/160 C M.A.N.
DKRN 85/170	850/1700 VGAU Götaverken
DKRN 90/155	RD 90 Sulzer
DKRN 90/160	C 900S Fiat

Source: V. A. Vansheidt, *Sudovye dvigateli vnutrennego sgoraniia* (Leningrad, 1962), pp. 538, 540.

In some processes we can determine the borderlines of the "engineering gap" quite clearly. For example, the Soviet Union purchased enormous synthetic fiber capacity in the West between 1956 and the late 1960s; indeed, almost all of its synthetic fiber capacity has been built by British, German, Dutch, Japanese, and Italian firms. However, the Soviets also pressed forward their own research in synthetic fibers, and a report published by the U.S. Army Quartermaster Research and Engineering Command disclosed that by 1960 the Soviets had developed at least 18 synthetic fibers, including three with no counterpart in the West. These three are Enant (a Nylon 7), Ftorlon (a fluorine with a copolymer), and Vinitron (a combination of nitrocellulose with chlorinated polyvinal chloride). Consequently, given the ability to purchase synthetic fiber capacity in the West, Soviet synthetic fiber research has been directed toward military uses—lightweight textile clothing highly resistant to chemicals and photodegradation, parachutes, ballistic applications, and so on. Thus the Russian

Nylon 7 (Enant), not produced in the Western world, has useful stress-strain properties and ultraviolet resistance. The Ftorlon, a fluorine-containing fiber, is reported to have good resistance to chemicals and a much higher strength than Teflon, the only such polymer available in the United States in fiber form. Vinitron is a new fiber that will not shrink in water and has good dye characteristics. This and similar Soviet work, including development of heat-resistant fibers from organosilica fibers,[3] suggests that in textiles at least there is no lack of ability up to the pilot-plant stage. Like observations can be made for other industries.

The weakness starts with the conversion from pilot-plant production to full-scale production. Therefore, in discussing levels of technology it is important to note that an industrial and engineering journal may report new Soviet technical developments and even pilot-plant or small-batch production; the important factor to determine is whether the process has been utilized on a continuous basis for large-scale production (not just series production) over a period of time (years, not months). It is in this area that we find substantive evidence of Soviet weakness and inability.

DIFFUSION OF TECHNOLOGY WITHIN A SECTOR

Given a reliance on foreign innovation, the extent and speed of domestic technological diffusion becomes of paramount importance. It was indicated earlier[4] that in the twenties, when a trust consisted only of one or two Tsarist-era plants, diffusion was not a major problem. A technical-assistance agreement was made with either the trust or a large and more technically advanced plant; foreign technique was then diffused among the relatively few plants, as often as not by foreign engineers. A single capable consulting engineer in a single plant might, depending on the process, provide considerable information and know-how in a matter of months; rarely did Soviet plants require more than a year to acquire a specific technology.

With the increase in the number of plants, however, a problem of diffusion has arisen. Information on foreign techniques is rapidly acquired and distributed; but foreign machinery and equipment cannot be purchased for all plants. A solution has been found in standardization and duplication,[5] but still there are institutional barriers to rapid diffusion.

These barriers may be exemplified in two areas of technology—numerically controlled machine tools and large presses. Numerically controlled machine tools are typical of the complex computer-based technologies for which the

[3] *The Hosiery Trade Journal* (Leicester, Eng.), February 1962, pp. 134-38.
[4] See Sutton I, p. 331.
[5] See Sutton II, pp. 291-99.

Soviets have not been able to achieve rapid diffusion. The advantages of acquiring the technologies are clear; the Soviet problem is one of inadequate inputs, i.e., computers and precision machinery:[6]

Innovation and Economic effects	*Extent of Diffusion in U.S.S.R.*	*In U.S.A.*
Substitution of numerically controlled for manually controlled machine tools in production of custom (unit)-built machines, machines produced in small batches, and in large-scale production requiring frequent changeovers of tooling and setups. Economic effects: a) Reduction of labor skill requirements b) Capital saving by 20 to 25 percent c) High flexibility in production d) Possibility of centralized planning and control of processes e) Substantially improved quality of products f) Possibility of producing products prohibitively expensive to produce by other methods.	Surprisingly slow progress. Though at least two prototype models, one point-to-point positioning and the other continuous-path, had been produced by 1959, the plan for 1960 called for only 180 units and that for 1959-65 for only several hundred. The relative meagerness of press discussions about actual experience in use suggests that use is still concentrated in the armaments sector.	NC machine tools represent the most important technological innovation in U.S. metalworking sector of the last decade. The industry started experimenting with the idea in late 1940s. The first NC machines became commercially available around 1954. At the time of the Chicago machine tool show in 1960, more than 60 firms were in the business. Since then the number of firms in the business of NC machine tools has grown steadily and most of the functional types of machine tools have been adapted to the system. As yet there are no statistics available on the number of the machines in use. Estimates vary from 1500 to as many as 3000 in the early 1960s.

In metal stamping we find two divergent rates of diffusion for technology relating to the same basic process; one technology has made substantial progress and the other has made very little. It is to be noted that Soviet large presses have evolved from German very heavy presses removed to the U.S.S.R. at the end of World War II. This technology amply supplies Soviet needs; hence it has been well diffused. On the other hand, automatic coil feed for sheet presses, although it is a development that goes back to the early 1920s, is largely a postwar innovation; here we find a Soviet deficiency based on inability to import units in sufficient numbers or to establish the technology within the U.S.S.R. This is a problem that could be overcome given sufficient direction of resources into developing Soviet versions of Western presses and feed equipment:[7]

[6] U.S. Congress, Joint Economic Committee, *Dimensions of Soviet Economic Power*, Hearings, 87th Congress, 2d session, December 10 and 11, 1962 (Washington, 1962), p. 137.
[7] *Ibid.*

Innovation and Economic effect	*Extent of Diffusion in U.S.S.R.*	*In U.S.A.*
Application of extra-heavy presses for stamping large sections of aircraft bodies and heavy machinery parts instead of riveting small stampings. Economic effects: a) Dramatic reduction of production cycle b) Marked metal savings c) Substantial improvements in quality of products d) Large labor savings	Substantial progress achieved in recent 2 or 3 years	For all practical purposes, the 35,000- and 50,000-ton presses manufactured by 1957 are considered more than adequate even today
Substitution of automatic coil and strip feed presses for sheet presses in mass-production industries. Economic effects: a) Marked metal savings b) Large labor savings in stamping c) Cost savings in steel mills because steel rolls are cheaper to manufacture than steel sheets	Thus far very little if any progress made because of deficient supply of presses	In U.S.A., automatic strip-feeding presses have been used for more than 40 years. In recent years phenomenal progress has been made in adapting the presses to wider strips, thicker gauges, and greater speeds. At this time automotive and household appliance industries are using presses with automatic feeds of steel coils up to 90 inches wide and ¼ inch thick

In casting operations, to take another example, the rate and extent of diffusion of technology have varied. In the substitution of mechanical sandslingers for hand sandpacking, common in the United States, diffusion in the U.S.S.R. is limited to establishments able to manufacture their own equipment. In the substitution of machine core making and molding for hand operations, there has been substantially greater productivity of machines in the United States, contrasted to "slow progress" in the Soviet Union; in 1957 the Soviet Union had only about 20,000 molding machines, most of which were "primitive pre-World War II type." In the application of carbon dioxide techniques and related processes there has been rapid diffusion in both the United States and the Soviet Union. In the introduction of resin-bonded shell molding and core making there was rapid introduction in the United States, which slowed down in 1960 owing to introduction of a competing hot-box method; in the Soviet Union there was "slow progress" owing to lack of equipment, thermoreactive resins, and fine-grained sand. In two innovations there was rapid progress in both the United States and the U.S.S.R.—pressure die-casting and semipermanent and permanent mold casting in ferrous and nonferrous industries.

In only one casting process has there been more rapid diffusion in the U.S.S.R. than in the United States—in investment casting, largely by the "lost-wax"

method. The restriction in the United States is due to the high cost of small operations and low levels of mechanization possible. The U.S.S.R. probably produced three times more by this method in 1958 than did the United States.

On balance the U.S.S.R. has a slow rate of diffusion brought about by equipment deficiencies and lack of necessary input materials. This completely contradicts the claim that central planning, in contrast to a "chaotic" market system, can foresee and plan for new material requirements. The history of innovative diffusion in the Soviet Union suggests that the market system is infinitely better able to provide new inputs to answer demands for innovative diffusion.

COMPARATIVE LEVELS OF TECHNOLOGY

The evidence presented in this study suggests that, as a result of the need to import foreign technology plus slow rates of technological diffusion, the general level of technology in the Soviet Union should be below that of the United States and the Western world. Certainly Soviet technological levels cannot be above or even generally on a par with those of the Free World in areas where the Soviets rely on foreign innovation. Although there are technologies specially designed by Western firms for the U.S.S.R., and even some examples of new Western processes introduced first in the Soviet Union by Western companies, these do not constitute a general rule—they are exceptions. The rule is that new technology is introduced first in the Western country and then after a time lag is made available to the U.S.S.R.

One OECD study[8] contains a table listing Soviet statements concerning relative technological levels of the U.S.S.R. and the West between 1959 and 1963. These statements form a useful starting point for consideration of comparative levels of technology.

The first of the groups where leadership is claimed is "high-speed aviation, space rockets, long-range rockets, atomic energy." This claim is not generally consistent with the data in this study. By the end of the sixties the Soviets had fallen behind the United States in rocket technology, although the United States started its major program only in 1957 rather than 1945. In atomic energy there is no question that the Soviets lag.[9] They have maintained general equality in high-speed aviation, but their aircraft are technically inferior in many respects (e.g., control systems) and have relatively high operating costs.

Leadership is claimed in steam turbines for the electrical industry, when parity would be a more accurate claim.

The leadership claim in the "extraction of oil" definitely is not supportable: the Soviet Union is today importing oil technology from Europe and the United

[8] E. Zaleski *et al.*, *Science Policy in the U.S.S.R.* (Paris, Organization for Economic Cooperation and Development, 1969), pp. 496-99.

[9] See p. 239.

States. Leadership is claimed in terms of "output per unit volume" of blast furnaces and open-hearth furnaces; this is acceptable,[10] and is a result of "scaling-up" innovation. Claims for priority in rolling mill technology are not acceptable, but a claim for electro-slag resmelting is acceptable on the basis of equality with the United States.[11]

A claimed priority in production of liquid paraffin is limited to pilot-plant production. The claim of leadership in automatic and semiautomatic welding machinery design is not supportable (in 1970)—although there has been some

Table 26-3 COMPARATIVE STATEMENTS ON SOVIET TECHNOLOGICAL LAGS AS OF 1970

Technology	*OECD Report*[a]	*Western industrial delegation*[b]	*Sutton*[c]
Coal mining—underground operations	—	Ten years behind[d]	Ten-year lag
Atomic energy	"Equal or in the lead"	"Competent," "lack of experimental equipment"[e]	10-to 15-year lag as of 1970
Blast furnaces	"Equal or in the lead" (1959)	No lag[f]	No lag
Steel rolling	"Equal or in the lead" (1959)	20- to 30-year lag	30-year lag
Ore beneficiation	"U.S.S.R. lagging" (1960)	"Patterned after early American models"[f]	20-year lag
Oil well drilling	"U.S.S.R. equal or in the lead" (1959)	—	Depth limitations
Pipeline compressors	—	"Far behind"[g]	20-year lag
Large-diameter pipe	—	"Far behind"[g]	20-year lag
Chemical engineering (all phases)	"U.S.S.R. lagging (1959)	—	Minimum 30-year lag

Sources: E. Zaleski *et al.*, *Science Policy in the U.S.S.R.* (Paris: Organization for Economic Cooperation and Development, 1969); [b] See text pp. 372 and 373; [c] See text pp. 369-70; [d] Private letter from Vasiliiy Strishkov, former Russian coal mining engineer, now with U.S. Bureau of Mines, Washington, D.C.; [e] *Atomic Energy in the Soviet Union*, Trip Report of the U.S. Atomic Energy Delegation, May 1963 (Oak Ridge, Tenn.: AEC Division of Technical Information Extension, n.d.); [f] *Steel in the Soviet Union*, Report of the American Steel and Iron Ore Delegation's Visit to the Soviet Union, May and June 1958 (New York: American Iron and Steel Institute, 1959); [g] "USSR Natural Gas Industry," Report of the 1961 U.S. Delegation to the Soviet Natural Gas Industry (n.p.: American Gas Association, n.d.).

[10] See p. 123.

[11] See p. 131.

Soviet development in the field.[12] Claims of engineering priority in four types of textile machinery are not acceptable.

In brief, the Soviets' claims of technological leadership were not generally consistent with the technical data presented in this study or with the reports made by Western industrial delegations and by individual Western observers. Table 26-3 compares the assessment made by different observers for a number of major technologies. The last column is a general assessment, based on the information available, of Soviet lags.

There is little question that behind continuing efforts to establish a paper priority for Soviet technology, particularly before politically aware audiences, is an acute knowledge that the substance of the claims is fragile. Only a superficial examination of Soviet claims is needed to reject many as absurd or inadequate; almost any technology can be asserted as superior to all others if care is taken to choose carefully the parameters of comparison.

In general, the level of Soviet technology is substantially behind that of the West except in those areas (blast furnaces, open-hearth furnaces, coke ovens, electrical generators, turbines) where scaling-up innovation based on classic Western processes has been successful.

[12] See p. 131.

CHAPTER TWENTY-SEVEN

National Security and Technical Transfers

The major conclusions presented by this study are that Western technology has been, and continues to be, the most important factor in Soviet economic development. The technical transfers that have fostered this development have continued over a period of 50 years. These observations will now be related to the declared hostility of the U.S.S.R. to the West since 1917, a hostility such that the United States alone apparently requires annual defense expenditures in excess of $80 billion (1969) to counter the threat.

That the Soviets have openly and consistently advocated the overthrow of Western democratic systems from 1917 to the present time is a fundamental starting point for the development of our national security policies. Rationality suggests, therefore, that either our policy regarding technical transfers to the Soviet Union is in error or our inflated annual defense expenditure is unnecessary. Either there is no valid rationale for much of our trade with the Soviets, i.e., for the main vehicle of technical transfers, or there is no valid rationale for defense against the Soviets. The two policies are incompatible.

The factors to be considered in highlighting this policy conflict are, first, the direct supply of military goods from the West to the U.S.S.R.; second, the supply of technology and equipment for Soviet production of military goods; third, the strategic implications of the technical transfers as seen by both the Soviets and the West; and fourth, the failure of Western export control and the reasons for that failure. Finally, analysis of these factors should conclude with a brief discussion of the relationship between technical transfers and national security in the light of this empirical study.

We are faced initially with the problem that the term "strategic" has a limited definition in the West. All technology, goods, and trade are strategic in the full sense of the word. Western definitions have been restricted, with obvious consequences. It is proposed to outline first some of the direct military transfers (i.e., those which would be militarily "strategic" by any definition) and then some indirect transfers applicable to military ends (but not strategic in the Western definition), and then to examine the spectrum of transfers in light of a more accurate definition of the term "strategic."

DIRECT SUPPLY OF MILITARY GOODS TO THE U.S.S.R.

Earlier chapters have described direct supply of weapons and other military supplies to the U.S.S.R. Before 1930 this was primarily a German transfer. The Red Army and Air Force were trained by German officers, using German equipment, and arsenals and plants for the production of weapons were established with German technical assistance and finance.[1]

In the 1930s Soviet sources of supply widened to include Great Britain and the United States for the early predecessors of Soviet tanks. The United States, for example, supplied the early tractor plants which doubled as tank-producing plants,[2] in addition to cartridge lines,[3] a nitrocellulose plant,[4] and military electronics.[5]

Lend Lease of course was a significant provider of weapons to the U.S.S.R.,[6] and numerous items supplied under Lend Lease became prototypes for later standard Soviet military equipment. For example, the BTR-40 Soviet armored personnel carrier of the 1950s is an almost exact copy of the U.S. M3 A1 scout car.[7] Although the skills of German scientists were used after the war to develop military electronics, including missile guidance systems, much technology in this field as well came from the United States. The Soviet search radar, for example, was based on U.S. Navy type SJ radar sets powered by magnetron tubes and received under Lend Lease.[8] Gun-laying radar was based on the British Mark II, and RUS I and RUS II radar units of the 1950s were based on Lend Lease supplies.

More recently, capture of the U.S.S. *Pueblo* provided the Soviets with electronic equipment 15 years ahead of anything they possessed at the end of the 1960s,[9] and persistent espionage in the United States has provided a steady flow of new military technologies.[10] In the famous 1962 Cuban missile crisis the ships used by the Soviets were fitted with extra-large hatches to carry missiles and were powered by engines manufactured by Burmeister & Wain in Copenhagen, Denmark.[11]

Finally, in 1970 the South African Air Force reported a Russian submarine taking on fuel from the Soviet tanker *Elgava*,[12] a vessel built in Sweden in

[1] See Sutton I: *Western Technology ... 1917 to 1930.*
[2] See Sutton II: *Western Technology ... 1930 to 1945.*
[3] *Ibid.*, pp. 237-38.
[4] *Ibid.*, pp. 246-47.
[5] *Ibid.*, p. 160-63.
[6] See pp. 3-11.
[7] *Ordnance*, (Washington, D.C.), January-February 1969, p. 396.
[8] J. M. Carroll, *Secrets of Electronic Espionage* (New York: Dutton, 1966), pp. 143-44.
[9] *Los Angeles Times*, February 8, 1968.
[10] For example, missile accelerometers: in Great Britain, the Lonsdale case revealed that the Soviets had been provided with the Decca Tracking System.
[11] *The Washington Post*, February 27, 1970, p. A14.
[12] *The Star* (Johannesburg), weekly air edition, February 20, 1971, p.1.

1961 and equipped with Danish engines. The South Africans also reported the Russian ship *Bakoeriani* in the Indian Ocean en route to East Africa with a naval patrol boat as deck cargo. The engines of the *Bakoeriani* are Burmeister & Wain models built at the Bryansk plant in the Soviet Union under the 1959 technical-assistance agreement between the Soviets and the Danish company.[13]

Thus by one means or another—and the greater part of the information on this topic is understandably classified—the Soviets have received a flow of Western technologies for direct military use from 1917 down to the present day.

TECHNOLOGY AND EQUIPMENT FOR THE PRODUCTION OF MILITARY GOODS

It is generally known that an automobile or tractor plant may be used to produce tanks and armored cars, military trucks, and other military vehicles. Indeed, one of the major conclusions reached by a U.S. interagency committee formed to study the war-making potential of U.S. and German automotive industries was that the motor vehicle industry has enormous military potential: "The Committee recognized without dissent that [Germany's] motor vehicle industry was an important factor in her waging of war during the period just ended."[14] On the basis of its findings, the committee recommended that the manufacture of complete automobiles in Germany be prohibited, that the manufacture of certain parts and subassemblies be "specifically prohibited," and that Germany "should not be permitted to retain in her possession any types of vehicles of particular military application, such as track-laying vehicles, multi-axle vehicles, etc."

The committee further listed more than 300 "war products manufactured by the automotive industry" based on a survey of the U.S. automobile industry.[15] Therefore after reviewing the U.S. and German automobile industries the U.S. Government was fully apprised of the industries' clear military potential. For reasons unknown, these conclusions apparently have been ignored with respect to the Soviet automobile industry, although by virtue of its Western origins (if for no other reason) the Soviet automobile industry is essentially no different from the U.S. or the German industry. It has the same capabilities and potentials.[16]

[13] *Ibid.*, p. 5.

[14] U.S. Foreign Economic Administration, *U.S. Technical Industrial Disarmament Committee to Study the Post-Surrender Treatment of the German Automotive Industry* (Washington, 1945), T.I.D.C. Project no. 12.

[15] *Ibid.*

[16] Shortly before this book went to press, the conclusions of the postwar interagency committee were brought to the attention of the Department of Commerce with specific reference to issue of export licenses for the Kama truck plant under construction in the U.S.S.R. in 1971 (see p. 203). The answer of the department was as follows: "The contribution an established

ıble 27-1 CIVILIAN AND MILITARY MODELS PRODUCED IN SOVIET AUTOMOBILE PLANTS, 1945-70

Plants	*Civilian models*	*Military Models*
oscow :IL)	ZIL 110, ZIL 111 passenger autos ZIL 127, ZIL 155 buses ZIL 150, four-ton truck ZIL 585, three-ton dump truck	ZIL 150 armored truck ZIL 151 armored truck ZIL 157 2.5-ton truck
ral Iiass)	Ural-ZIS-150, four-ton truck Ural-ZIS-5,	Ural-375T (6x6 wheeled) Ural-375 (tracked) Ural-375/BM-24, rocket launcher
oscow Small ar works IZMA)	Moskvich passenger auto	Moskva 402, 4-wheel drive cross-country Moskvich
orki ;AZ)	Pobeda and Volga M-21 passenger cars GAZ-69, medical vehicle GAZ-69 parts for assembly at Irkutsk, Odessa and Ulyanovsk	M-72 (4-wheel drive cross-country Pobeda) GAZ-46, Soviet jeep GAZ-47, amphibian personnel carrier GAZ-56, 1½-ton military truck GAZ-62, 1-ton truck (4-wheel drive) GAZ-69A, scout car GAZ-69, command car GAZ-69, Shmel rocket carrier
aroslavl YaAZ)	YaAZ-210, 12-ton truck YaAz-210E, 12-ton truck YaAz-210A, 12-ton truck YaAZ-210G and D tractor	Not known to be making military vehicles at this time
Iinsk MAZ)	MAZ-205, 5-ton truck MAZ-525, 25-ton dump truck MAZ-200, 7-ton truck MAZ-200B tractor	MAZ-57, ammunition carrier MAZ-63, gun tow MAZ-100, utility vehicle

Sources: Institute for Study of the U.S.S.R., *Bulletin* (Munich), III, 1 (January 1956); ,eo Heimann, "In the Soviet Arsenal," *Ordnance* (Washington, D.C.), January-February 968; *Kratkii avtomobil'nyi spravochnik*, 5th edition (Moscow, 1968).

automotive industry can make to the military potential of a country is recognized by the Department. This factor, along with other considerations, enters into the decision whether or not to issue any licenses authorizing exports of equipment to a plant such as Kama." Letter to writer from Rauer H. Meyer, director of the Office of Export Control, Department of Commerce, November 12, 1971.

The logical deduction from this official statement is that the findings of the interagency committee are known to and are accepted by the administration in Washington. Inasmuch as licenses for the Kama plant nevertheless have been issued (according to the same letter), we are forced to the conclusion that the administration is knowingly allowing the export to the Soviet Union of U.S. equipment with military potential. At the time of this writing, licenses for the Kama project had been issued to Satra Corporation, Cross Company, Ex-Cell-O Corporation, Swindell-Dressler, and (not confirmed) Giffel Associates, Inc., of Detroit.

The interagency committee's conclusions at the end of World War II concerning the military potential of the automobile industry are supported by data on the postwar output of the Soviet automobile manufacturing industry. Table 27-1 lists Soviet automobile manufacturing plants and their production of military vehicles in the 1960s. The Western construction of these plants has been discussed elsewhere in the study.

The vehicles produced at Gorki—to take one example from Table 27-1—are basically Ford Motor Company technology. The plant was erected by Ford in the early 1930s,[17] and additional foreign equipment has been installed since that time.[18] Among the numerous civilian and military models produced today by this Ford plant is the GAZ-69, in its civilian version a medical aid vehicle but in its military versions a one-ton military truck, a scout vehicle, a command car, and a rocket launcher. Examination of the construction details of the GAZ-69 vehicle confirm that it is a facsimile of American technology; the *Katalog detalei avtomobilei GAZ-69, GAZ-69A, YAZ-450, YAZ-450A, i YAZ-450D*[19] includes diagrams of the various parts of the GAZ-69, and these can be usefully compared to parts shown in American catalogs—particularly those of the Ford Motor Company. Comparison of the oil pump (p. 30), oil filter (p. 36), fuel pump (p. 46), carburetor (p. 48), mufflers (p. 57), and radiator (p. 66) will make the point. Variations are mainly in body construction. For example, pages 192-93 provide details of a door construction utilizing wood and a design more common in World War II German vehicles than in present-day American vehicles.

Thus individual parts and overall design of present-day Soviet military vehicles, including those used for weapons systems (e.g., the GAZ-69 Shmel rocket carrier) may be traced in the main to American automobile technology sent to the Soviet Union as normal trade for peaceful purposes.

The more recent U.S.–Volgograd (VAZ) technical-assistance contract of the late sixties for construction of the VAZ plant[20] affords an excellent illustration of the military capabilities of allegedly civilian units. The implications are clear despite the fact that only very limited data have been released. It is known that the engine to be produced by the U.S. equipment belongs to "the small and medium European size class (engine displacement, respectively, 73 and

[17] See Sutton I, pp. 246-49.

[18] As recently as spring of 1971 it was reported that the Gleason Company had been granted a license for supply of bevel gear production equipment for the Gorki plant. *Rochester Times-Union*, June 3, 1971.

[19] Moscow: Mashinostroenie, 1968.

[20] Although this agreement is commonly called the "Fiat deal", the Togliatti plant at Volgograd uses mainly (about three-fourths) American equipment; Volgograd is the Soviet name (i.e., presumably, VAZ), and the facility is more accurately called the "VAZ" or "U.S.-VAZ" plant.

85 cubic inches)."[21] This is approximately the 1500-cubic-centimeter class of engine.

Does such an engine have any military usefulness? This is an important question, since this single plant will have a capacity of 600,000 vehicles per year, or more than twice the 1968 Soviet production of automobiles.[22] In other words, by 1975 over one-half of the total Soviet automobile output will come from this single plant; three-quarters of the plant's equipment, and all of its key equipment, comes from the United States.

The military possibilities for such a small engine include use as the main engine on a special-purpose small military vehicle (like the American Jeep), or as a propulsive unit for a specially designed vehicle for carrying either personnel or weapons. The Soviet strategy is currently toward supply of wars of "national liberation." Small vehicles of the types mentioned constitute excellent means of transportation to replace the bicycle used in Vietnam.

Soviet interest in such small vehicles goes back to World War II. The GAZ-46 is the Soviet version of the U.S. Jeep, and we know that such a vehicle figures into Soviet strategic thinking. For example, General G. I. Prokovskii has commented on one advantage of the Jeep as a weapons carrier: "Even relatively powerful recoilless artillery systems can, at the present time [the late fifties], be mounted on light automobiles, without reducing the number of men who can be accommodated."[23]

It may be argued that a U.S. Jeep engine is more powerful than the engine to be built in the U.S.–VAZ plant; it is estimated that the U.S.–VAZ unit is about two-thirds as powerful as the Jeep engine. But it should be borne in mind that requirements may be quite different from those of the United States. In World War II, for example, the Soviets received about 6500 U.S. Airocobras and promptly discarded armor plate, machine guns, and instrumentation, thereby reducing the weight by 3000 pounds and significantly increasing the performance they desired.[24] If the Soviets can strip 20 percent of the weight from an airplane, could not the same ingenuity be applied to a land vehicle? Certainly the U.S.-VAZ engine offers opportunities to resourceful Russian military engineers.

However, Russian engineers have no particular need to be ingenious. A proven vehicle of excellent capabilities utilizing a 1500-cubic centimeter engine already exists—and the Soviets have all the performance and manufacturing data. During World War II the Germans developed the N.S.U. three-quarter

[21] U.S. House of Representatives Committee on Banking and Currency, *The Fiat-Soviet Auto Plant and Communist Economic Reforms*, 89th Congress, 2d session (Washington, 1967).

[22] *Ibid.*

[23] Major General G. I. Pokrovskii, *Science and Technology in Contemporary War* (New York: Praeger, 1959), p. 122. Accompanying Figure 14 in Pokrovskii's book is a photograph of a U.S. Jeep with mounted artillery weapons and inscription "U.S. 106-mm recoilless weapon mounted on Willys Jeep."

[24] *Aviation Week* (New York), July 7, 1952.

track vehicle which weighed 3100 pounds laden, including three men. The ground pressure was only 4.5 psi, and with a turning circle of 13 feet it was capable of 50 mph. The Germans found this tracked vehicle "invaluable in wooded country impassable to a vehicle of normal size."[25] The propulsion unit was a 1500-cc four-cylinder Opel engine developing 36 bp; this same engine later powered the Moskvitch 401 and the Moskvitch 402 (Moskva) military cross-country four-wheel drive version of the 401, produced at the MZMA in Moscow. In brief, there already exists a tested and usable military vehicle capable of transporting men or adaptable for weapons use and powered by a 1500-cc engine. Therefore the numerous statements by U.S. officials to the effect that the Volgograd plant would have no military capabilities would appear to be erroneous.[26]

In 1961 a dispute arose in U. S. Government circles over the "Transfermatic case"—a proposal to ship to the U.S.S.R. two U.S. transfer lines (with a total value of $5.3 million) for the production of automobile engines. In a statement dated February 23, 1961, representatives from the Department of Defense went on record against shipment of the transfer lines on the grounds that "the technology contained in these Transfermatic machines produced in the United States is the most advanced in the world," and

> So far as this department knows the U.S.S.R. has not installed this type of machinery. The receipt of this equipment by the U.S.S.R. will contribute to the Soviet military and economic warfare potential.[27]

However, this position was overturned by a new secretary of defense, Robert McNamara, in November 1961. McNamara explained his decision in response to an inquiry from a Congressional investigating committee:

> I concluded that the Defense Department should not oppose export licenses for the transfermatic machines in question....My decision was based solely on the merits of the case as I saw them, from the point of view of alternative sources and availability of comparable machinery, and was in no part dictated by political or other policy considerations.
>
> My decision in this case was based on my own knowledge of this type of machinery and of its alternative sources of supply....

[25] "Its dimensions and small turning circle make it possible to operate the vehicle in places, such as mountain tracks and forests, impossible for ordinary transport." *Automobile Engineer* (London), October-December 1945, p. 481.

[26] For example, Eugene V. Rostow, under secretary of state for political affairs, is quoted to the effect that the U.S. equipment for the plant "would not contribute in any way to Soviet military capability." U.S. House of Representatives, *op. cit.* n. 21, p. 42.

[27] U.S. House of Representatives, Select Committee on Export Control, *Investigation and Study of the Administration, Operation, and Enforcement of the Export Control Act of 1949, and Related Acts, (H.R. 403)*, Hearings, 87th Congress, 1st session, pt. 1, October 1961, p. 217.

> As you know, the transfermatic machines were not be be used for the manufacture of military vehicles, but rather for the production of medium-priced or high-priced passenger cars.
>
> Your letter asks whether I consulted with other knowledgeable persons before making my April decision on transfermatic machines. The answer is that I reviewed this case thoroughly myself. I did not consult formally with other automotive experts as I had had the benefit of recent and direct experience with the equipment concerned in private industry.[28]

These Transfermatic machines were in fact for the production of 225-hp truck engines;[29] they were considerably more powerful than the units supplied for the plant at Volgograd and certainly adaptable to military end use.

The final case to be cited in the automotive sector is unfolding as this book goes to press. In 1970, with a still relatively limited car-truck production capacity—and all of that derived from Western sources—the Soviets decided they were faced with an immediate requirement for a plant capable of producing 100,000 three-axle 8- to 11-ton trucks a year, the largest such plant in the world.

The initial Soviet approach was made to the Ford Motor Company, probably the only organization in the world capable of building such a unit with its own technical resources. There is no question that Ford was interested. A company delegation under the leadership of Henry Ford II went to the Soviet Union,[30] and at one point it appeared likely that Ford would build the plant for the Soviets on a nonparticipating basis. In May 1970, however, Secretary of Defense Melvin Laird questioned construction by an American company on the grounds that the trucks to be produced would have military end uses. Henry Ford commented at the time that Secretary Laird's contention was "not only highly misleading but appears to be a gratuitous attack upon my common sense and patriotism."[31] However no one advanced the argument that the proposed plant could not produce military trucks, and the participation of Ford Motor Company faded away.

In subsequent months the Soviets tried elsewhere. The Satra Corporation in New York, which has secured financing for the Soviets in other sectors, attempted to put together a consortium of U.S. bankers and manufacturers of

[28] *Ibid.*, December 1961, p. 474.

[29] *Ibid.*, October 1961, p. 217. William P. Bundy states the 225-hp figure but not the end use. In 1961 no Soviet passenger car had an engine anywhere close to 225 hp. For a similar and better documented example, see the final summary of the "ball bearing machines case" also of 1961: U.S. Senate, Committee on the Judiciary, *Export of Ball Bearing Machines to the U.S.S.R.*, Hearings, 87th Congress, 1st session (Washington, 1961). This is an extraordinary case—the committee called it "of life and death importance to America and the free world" (p. 1)—of an attempt to provide the Soviets with a capability for producing miniature ball bearings, almost all of which are used in missiles.

[30] *Business Week*, April 18, 1970.

[31] *U.S. News and World Report*, May 18, 1970.

truck and truck equipment.[32] In August 1970 spokesmen for Daimler-Benz in Germany, the largest truck builder in Europe, declared that the firm expected to conclude a contract to build a factory in the U.S.S.R. to produce 150,000 trucks a year in the 10- to 20-ton range.[33] In September 1970 it was the French Government-owned Renault firm which announced a contract for construction of the plant, which would be known as the "Kama" plant because of its location on the Kama River, and which would produce 150,000 diesel trucks annually. The French Government had assured financing of $127 million for seven years at 5.95 percent—an extremely attractive package.[34]

Mack Trucks, Inc., entered into some preliminary discussions in 1971 concerning the supply of technical assistance for the plant;[35] and in August 1971 the Department of Commerce granted an export license to the Swindell-Dressler Company of Pittsburgh for $162 million worth of equipment for the Kama foundry.[36] Another license, valued at $37 million, reportedly was granted at the same time to Giffels Associates, Inc., of Detroit,[37] although this report was still unconfirmed in late 1971.

The planned capacity of the Kama plant is greater than that of all U.S. heavy truck manufacturers combined. Three basic models are to be produced: a 260-hp tractor for a 20-ton semi-trailer; a 210-hp tractor for a 16-ton semi-trailer; and a 160-hp dump truck with a seven-ton capacity. All such civilian units have clear military utility. Moreover, always in the past the Soviets have used Western-built plants for military production as soon as the Western engineers have left for home—from the Ford-built Gorki plant onward. Given this consideration, it will be a trusting Western government indeed that accepts a Soviet commitment that this plant will not be used for military purposes.[38]

Chemical industries also are essential to modern warfare, and some of these

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[32] *Business Week*, August 29, 1970.

[33] *Ibid*.

[34] The provision of such favorable financing by a French government under President Georges Pompidou raises intriguing questions. The reader is referred to Henry Coston, *M. Pompidou, qui êtes-vous?* (Lectures Françaises no. 147/148, July-August 1969), and *Entre Rothschild et Moscou* (Lectures Françaises no. 146, June 1969), both published in Paris. Coston's arguments can only be described as extraordinary and should be read with some skepticism. Still, they have empirical support and the writer has not (as yet) been able to detect error in this factual support. There may be alternative interpretations, but Coston's charges will have to be answered at some point.

[35] *Business Week*, June 19, 1971, pp. 84-90.

[36] *Metalworking News* (New York), August 16, 1971.

[37] *Ibid*.

[38] For illustration of this point, see U.S. Senate, Committee on the Judiciary, *Soviet Political Agreements and Results*, 88th Congress, 2d session (3d revision; Washington, 1964), vol. 1, p. viii: "The staff studied nearly a thousand treaties and agreements ..., both bilateral and multilateral, which the Soviets have entered into not only with the United States, but with countries all over the world. The staff found that in the 38 short years since the Soviet Union came into existence, its Government had broken its word to virtually every country to which it ever gave a signed promise."

industries contribute directly to any war effort. For example, fertilizer plants can be converted to the manufacture of explosives. Illustrative of the fundamental assistance given in this sector for the development of military industries was the 1930s agreement by the Hercules Powder Company, Inc., to "communicate the secrets of production" of cotton linter, "prepare a complete design of a nitrocellulose plant for the production of 5000 tons yearly," provide drawings (by which the plant could be duplicated), send engineers, supervise installation of equipment and startup, train Russian engineers in manufacture of nitrocellulose and allow a "detailed study of nitrocellulose production" in Hercules' U.S. plants.[39]

This agreement was the basis of the Soviet explosives industry. Yet it was described by the company in a letter to the State Department as "apparently with the view of developing the production of nitrocellulose for peacetime arts."[40] Inasmuch as this letter was sent after informal discussion with Robert F. Kelley of the State Department, it has to be assumed that the department granted approval for Hercules to go ahead on the basis of full information. It is beyond the bounds of common sense to assume that either the State Department or Hercules was convinced that the application of this assistance would be limited to "peacetime arts."

Even in 1963 several congressmen objected strongly to the export of potash mining machinery to the U.S.S.R. on the grounds that potash could be used for explosives. However, the Department of Commerce took the position that potash "is used almost exclusively in the manufacture of potassium fertilizers."[41] Incendiary bombs require sulfuric acid; a process for the concentration of sulfuric acid was sent to the U.S.S.R. in the 1960s. One process for the manufacture of tear gas (used by North Vietnamese forces in South Vietnam) requires carbon tetrachloride and benzene; both products were shipped from the United States to the U.S.S.R. in the late 1960s.[42] Herbicides have the same chemicals as riot-control gases, and herbicides are among the volume imports by the U.S.S.R. from the U.S.A. Both the Japanese anthrax bomb plant at Harbin and the German Tabun plant were removed to the U.S.S.R. at the end of World War II.[43] Since that time the West has given indirect assistance to the Soviet chemical and biological warfare plants. For example, biological warfare requires refrigeration, and technical assistance has been provided for refrigeration; gelatin or synthetic polymers are needed to encapsulate biological warfare particles, and gelatin encapsulating apparatus has been shipped from the United States.

Textiles, of course, are war materials. This was clearly recognized during World War II, and the military end uses for textiles have expanded since that

[39] See Sutton II, p. 246.

[40] Letter from Hercules Powder Company, Inc., to State Department, July 2, 1930.

[41] U.S. Congress, House of Representatives, *Congressional Record*, 88th Congress, 1st session, 1963; vol. 109, pt. II.

[42] U.S. Dept. of Commerce, *Export Control* (Washington, D.C.), 1st quarter 1969 and 2d quarter 1967.

[43] Seymour M. Hersh, *Chemical and Biological Warfare* (Indianapolis: Bobbs-Merrill, 1968).

time. In 1943 the Pepperell Manufacturing Company, a major U.S. textile producer, described its wartime activities: the firm manufactured parachute cloth, airplane fabrics, and life rafts from nylon, uniforms from twill, and jungle hammocks from percale sheeting. Canton flannel was manufactured for shipment to the U.S.S.R. for use in leg and foot wrappings, oil filters, and gun patches. Pepperell even described sheets as "war supplies" and commented that cotton spindles are "weapons."[44]

Soviet uses of textiles are of course similar to our own, and indeed Yuri Krotkov comments that in the early 1960s women's nylon stockings disappeared suddenly from Moscow shops. Why? "Because Gosplan had used up all its reserves of nylon in supplying the defense plants."[45]

What is remarkable is the change in interpretation that has taken place over the last 20 years. In the 1940s automobile plants and textile plants manufactured "war supplies"; by the 1960s these plants could manufacture only "peace supplies." The problem really boils down to one of the Soviets' *intent*. Do they intend to use the technology to military ends? Some of the foregoing examples introduce an element of doubt. But if Soviet intent is in fact peaceful, then has the item no strategic implication? And might there not be circumstances under which peaceful intent could change?

One area in which we can precisely identify Soviet uses of Western-built products is that of shipping, since each vessel is unique and identifiable.

In the 1930s Western-built ships were used to transport political prisoners to Siberia. According to A. Dallin, the following ships were operated for that purpose by the NKVD: *Djurma* (built in Holland), *Minsk* (Germany), *Kiev* (Germany), *Igarka* (United Kingdom), *Komsomol* (United Kingdom), *Svirstroi* (United States), *Volkhovstroi* (United States), *Shatourstroi* (United States).[46] According to V. A. Kravchenko, the *Dalstroi* (Holland) also was used by the NKVD to transport political prisoners to concentration camps.[47] These vessels were all apparently intended for merchant duty when they were received.

Lest the reader argue that such movement was an internal matter and hence not relevant to military strategy, it should be stated that Western-built ships also have been used for overtly military purposes against the builders of the vessels. For instance, it is known that the Soviets have used about 100 vessels on the supply run from the Black Sea and Vladivostok to carry weapons, munitions, supplies, fertilizers, and so on to Haiphong (and earlier to the Cambodian port of Sihanoukville) to supply North Vietnamese actions in South Vietnam and Cambodia. The names of 96 of these vessels were obtained,[48] and Table

[44] Pepperell Manufacturing Company, *People of Peace at War* (Boston, 1943), p. 33.

[45] Yu. Krotkov, *The Angry Exile* (London: Heinemann, 1967), p. 92.

[46] A. D. J. Dallin and B. I. Nicolaevsky, *Forced Labor in Soviet Russia* (London: Hollis & Carter, 1947), pp. 128-29, 137.

[47] V. A. Kravchenko, *I Chose Justice* (New York: Scribners, 1950), pp. 290, 300.

[48] U.S. Senate, Committee on Banking and Currency, *Export Expansion and Regulation*, Hearings Before the Subcommittee on International Finance of the Committee on Banking and Currency, 91st Congress, 1st session (Washington, 1969).

27-2 lists the origins of their main engines. Of the 96 vessels, identification of main engines was possible in all but 12. Of the 75 diesel engines it was

Table 27-2 WESTERN ORIGINS OF MAIN ENGINES IN SOVIET SHIPS (96) USED ON THE HAIPHONG SUPPLY RUN

	Engines manufactured	
	in U.S.S.R.	*not in U.S.S.R.*
DIESEL ENGINES:		
Manufactured in the U.S.S.R. to Soviet design	0	
Manufactured in U.S.S.R. under license and to foreign design:		
Skoda (at Russky Diesel)	5	
Burmeister & Wain (at Bryansk)	8	
Manufactured outside U.S.S.R. to foreign design:		
Skoda		5
M.A.N.		11
Fiat		2
Burmeister & Wain (in Copenhagen and elsewhere under license)		8
Sulzer (Switzerland)		13
Lang (Budapest)		4
Görlitz (G.D.R.)		10
Lend Lease (United States)[a]		7
Non-Lend Lease (United States)[a]		1
Krupp (Germany)		1
Total diesel engine	13	62
STEAM TURBINES AND RECIPROCATING STEAM ENGINES		
Manufactured in U.S.S.R. to Soviet design	0	
Manufactured in U.S.S.R. to foreign design	1 (possible)[b]	
Manufactured outside the U.S.S.R.		
Canada[a]		1
U.S.A.[a]		3
United Kingdom[a]		1
Sulzer (Switzerland)		2
ZUT (Switzerland)		1
Total steam turbines	1	8

Grand total:		
	diesel engines	75
	steam turbines	9
		84
	not identified	12
		96

Source: U.S. Naval Institute, *Proceedings*, January 1970.

[a] Manufacture unknown.

[b] Possibly Sulzer steam turbine.

determined that 62 had been built outside the U.S.S.R. and 13 inside the U.S.S.R. The 13 domestic diesels were of either Skoda or Burmeister & Wain design, and only one steam turbine is listed as of possible Soviet manufacture and design.

The Burmeister & Wain technical-assistance agreement with the Bryansk plant has produced engines for numerous ships used by the Soviets for military purposes. Table 27-3 lists some Haiphong run vessels with Burmeister & Wain engines built at Bryansk.

Table 27-3 HAIPHONG RUN SHIPS WITH ENGINES MADE UNDER THE BURMEISTER & WAIN TECHNICAL-ASSISTANCE AGREEMENT OF 1959

Soviet Register no.		*Name*	*Tonnage*	*Type*	Engine *model no. (Burmeister & Wain)*
4776	1965	*Belgorod Dnestrovskiy*	11,011	—	B&W 774-VT2BF-160
5450	1967	*Berezovka*	10,996	Cargo	B&W 674-VT2BF-160
569	1964	*Bryanskiy Rabochiy*	11,089	Cargo	B&W 774-VT2BF-160
5492	1967	*Partizanskaya Slava*	10,881	Cargo	B&W 674-VT2BF-160
2127	1964	*Pavlovsk*	11,089	Cargo	B&W 774-VT2BF-160
2172	1963	*Perekop*	11,089	Cargo	B&W 774-VT2BF-160
2232	1963	*Polotsk**	9,500	Cargo	B&W 674-VT2BF-160
2268	1964	*Pridneprovsk*	11,089	Tanker	B&W 774-VT2BF-160

Sources: U.S. Naval Institute, *Proceedings*, January 1970.

**Lloyd's Register of Shipping*, 1970 (London) indicates built at Bryansk; Soviet Register indicates built in Denmark.

Quite apart from main engines, complete ships have been built in the West and utilized for military purposes. Table 27-4 gives a selected list of such ships known to have supplied material to North Vietnam, together with their Western origins.

Table 27-4 SHIPS KNOWN TO HAVE TRANSPORTED MATERIAL TO NORTH VIETNAM

			Place of construction	
Reg.No.	*Year of* Construction	*Name of ship*	*Hull*	*Engines*
M26121	1960	*Kura*(4084 tons)	West Germany	West Germany
M11647	1936	*Arktika*(2900 tons)	United Kingdom	United Kingdom
M17082	1962	*Sinegorsk* (3330 tons)	Finland	Sweden
M3017	1961	*Ingur*(4084 tons)	West Germany	West Germany

The *Ristna*, which was reported off Ghana in 1966 with arms for internal revolts,[49] is powered by M.A.N. six-cylinder engines (570-mm bore and 800-mm stroke) built in Hamburg.[50] During the Cuban missile crisis of 1962 Soviet ballistic missiles were carried to Cuba in the "Poltava" class of dry-cargo carrier. These have an exceptionally long No. 4 hatch (13.5 meters) enabling transport of intermediate-range missiles. The class consists of a number of vessels with common construction characteristics; thus details of one vessel, the *Poltava*, will make the point clear. The *Poltava* (Soviet registration number M-22600) is an 11,000-ton dry-cargo ship with engines constructed by Burmeister & Wain of Copenhagen, Denmark. The engines are two-cycle supercharged, six-cylinder diesel marine type, with a cylinder diameter of 740 mm and a piston stroke of 1600 mm; some vessels of the "Poltava" class have engines made in the Soviet Union but based on the Burmeister & Wain engine. The *Polotsk*, for example, has a Danish engine, but the *Perekop* has a Soviet-built B&W engine of the same type.[51]

In brief, there is a direct, identifiable military utilization by the Soviets of technologies, equipment, and products supplied by Western governments under the assumption that these items were for peaceful use.

What is more, there is evidence that there has been a considerable "leakage" of Western equipment under export control.[52] This, of course, is a different proposition from export of peaceful goods where reliance is placed on Soviet intent not to use these goods for military purposes. Where products are defined as "strategic" and still find their way in quantity to the U.S.S.R., there is a problem of ineffective administration.

THE FAILURE OF WESTERN EXPORT CONTROLS

The United States in the Export Control Act of 1949 and the Battle Act of 1951, and other Western nations under equivalent legislation, have attempted to restrict exports of "strategic" goods to the Soviet Union. In the United States the export of purely military goods is administered by the State Department while the export of "strategic" goods is vested in the Department of Commerce, although the State Department has a major influence in this area also. The Department of Defense may register objection to export of a specific item, but has been overruled on sufficient occasions with regard to strategic goods

[49] *Current Digest of the Soviet Press*, XIX (March 19, 1967), 35.

[50] Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-1965* (Moscow, 1966).

[51] *Ibid.*

[52] See chapter 7, "The Arms Runners," in J. B. Hutton, *The Traitor Trade* (New York: Obolensky, 1963). Hutton is a former Soviet agent who was employed in smuggling strategic goods. Since the book has an epilogue by W. Averell Harriman it is presumably authentic.

that its influence may be considered as greatly subordinate to that of the Stat and Commerce departments.

The provision of fast, large ships for Soviet supply of the North Vietnames will indicate the type of problem arising where export control has failed. Tw segments of the Soviet merchant marine were examined to determine the relation ship between Western origins and maximum speed of Soviet ships. It was antici pated that because of the NATO limitations on the speed of merchant ship supplied to the U.S.S.R. (reflected in export-control laws) the average spee of NATO-supplied ships would be considerably less than ships either supplie by East European countries to the U.S.S.R. or built within the U.S.S.R. itself The results of the analysis are as follows:

SEGMENT 1: AVERAGE SPEED OF SOVIET SHIPS USED ON THE HAIPHONG SUPPLY RUN
(42 ships)

Merchant ships with engines manufactured in Free World 14.62 knots
Merchant ships with engines manufactured in Eastern Europe 13.25 knots
Merchant ships with engines manufactured in Soviet Union 12.23 knots
(all built after 1951, i.e., after implementation of Battle Act).

SEGMENT 2: AVERAGE SPEED OF SOVIET SHIPS ADDED TO THE MERCHANT FLEET IN 1964-65
(392 ships)

Merchant ships with engines manufactured in Free World 14.93 knots
Merchant ships with engines manufactured in Eastern Europe 11.93 knots
Merchant ships with engines manufactured in Soviet Union 10.95 knots

The most obvious point to be made is that the average speed of Western supplied ships used by the Soviets in the Haiphong run was 2.4 knots (i.e. about 20 percent) above that of Soviet domestic-built ships used on the run This segment includes only those ships built after 1951 (i.e., after implementatio of the Battle Act with its stated limitation of speed and tonnage of ships supplie to the U.S.S.R.).[53] The second segment (ships added in 1964-65) indicate that the gap in speed between Western- and Soviet-built ships is widening—tha Western ships on the average are almost four knots, or 36 percent, faster tha domestic-built ships. We may conclude that not only has this discrepancy gon unobserved among export control officials, but whatever export-control principl is utilized is being eroded over time.

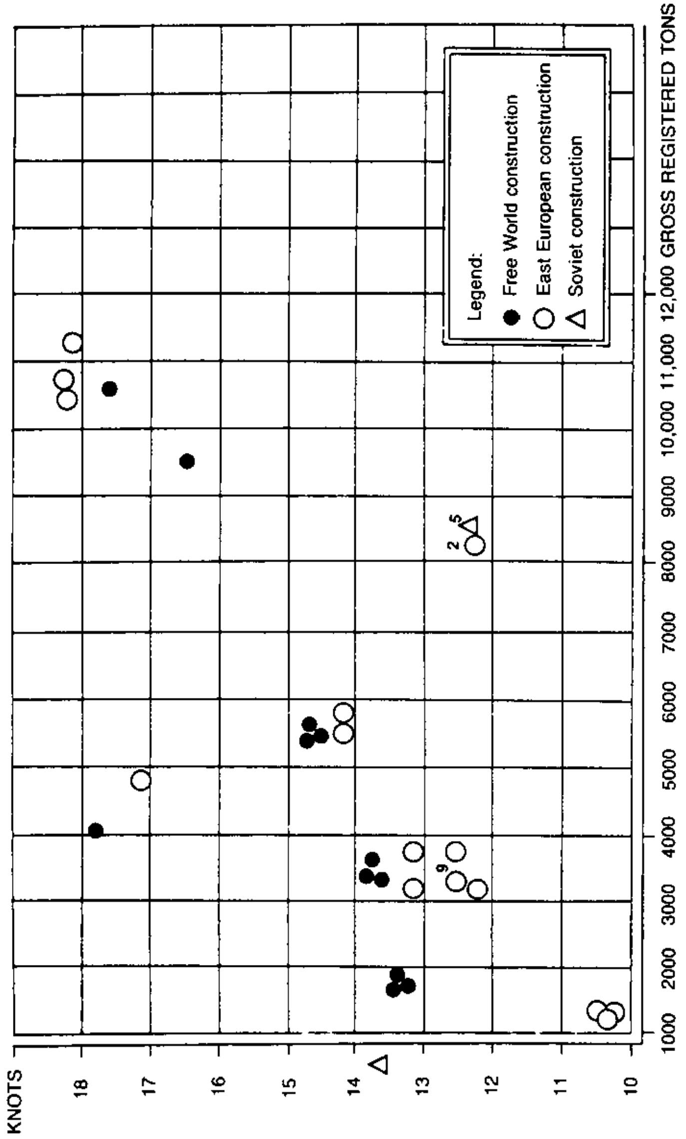
Figures 27-1 and 27-2 suggest that the lax administration applies also t weight limitations. Hence the faster, larger Soviet ships are from the Wes and the slower, smaller ships are from Soviet shipyards.

It is relevant to point out that under the CoCom provisions each natio

[53] Gunnar Adler-Karlsson, *Western Economic Warfare, 1947-1967* (Stockholm: Almquist & Wiksell, 1968), p. 93.

Figure 27-1

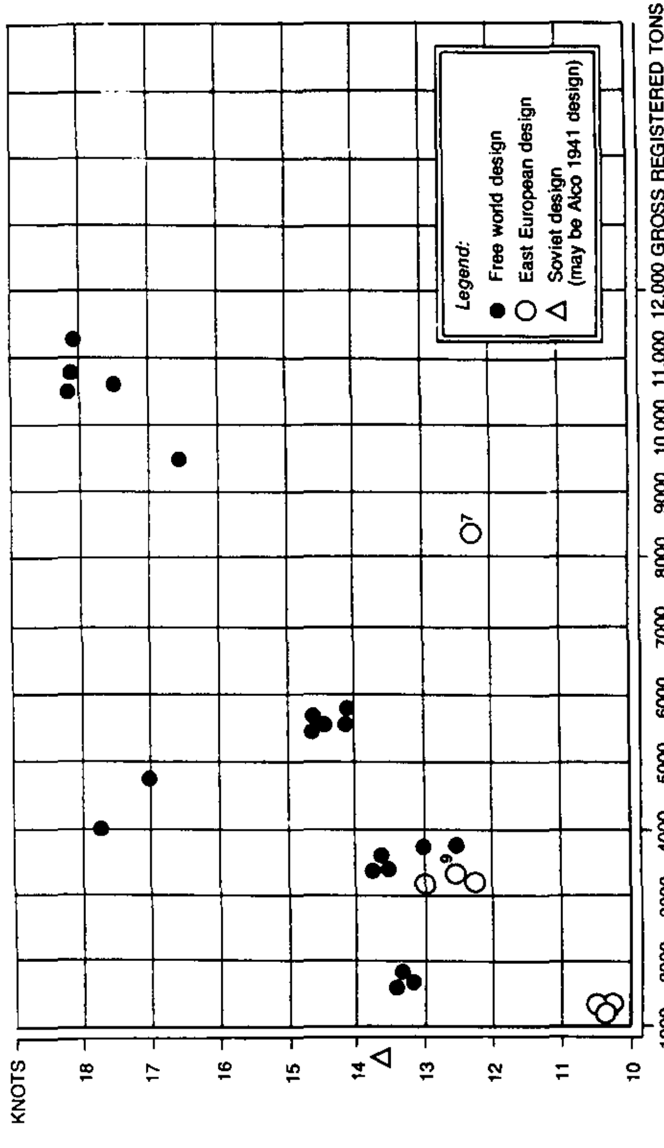
SOVIET SHIPS ON THE HAIPHONG RUN: CONSTRUCTION ORIGINS OF MAIN DIESEL ENGINES IN RELATION TO MAXIMUM SPEED AND TONNAGE



Δ[5] *Note:* small figure by side of box indicates number of vessels with this speed/tonnage characteristic

Figure 27-2

SOVIET SHIPS ON THE HAIPHONG RUN: DESIGN ORIGINS OF MAIN DIESEL ENGINES IN RELATION TO MAXIMUM SPEED AND TONNAGE



○7 *Note:* small figure by side of box indicates number of vessels with this speed/tonnage characteristic

participating in the embargo of strategic materials submits its own views concerning whether or not specific items should be shipped. There is also a unanimity rule. In other words, no item is ever shipped to the U.S.S.R. unless all participating nations agree that it should be shipped. Objection by any nation would halt the shipment. Douglas Dillon, former under secretary of state, has pointed out: "I can recall no instance in which a country shipped a strategic item to the Soviet bloc against the disapproving vote of a participating member of CoCom."[54]

It must therefore be presumed that U.S. delegates participated in, and approved of, export of ships of high average speed as well as marine diesel engines, and of the Burmeister & Wain technical-assistance agreement of 1959 for Soviet manufacture of large marine diesels—all later used against the United States by the Soviets in supply of North Vietnam. In summary, the evidence suggests that the U.S. delegates to CoCom knowingly allowed export of ships above the NATO speed and weight limits that were later utilized against the United States. This possibility clearly demands further investigation.

RELEASE OF RESOURCES, INDIRECT TRANSFERS, AND WESTERN SECURITY

The release of domestic resources is one of the most important effects of technical transfers from one country to another, and it may be the effect most difficult for the layman to appreciate. Whenever assistance is provided from outside the Soviet economic system internal resources are released, and by substitutions at the margin the Soviet Union is enabled to devote such released resources to political objectives of the system.

This substitution is of major importance to military objectives because while domestic resources are being devoted to military development the broader industrial base is being updated and fortified from abroad. The industrial base of any country is the prime determinant of its military strength and ultimately the determinant of success in military operations. The United States military does not produce its own weapons: research, development, and production are largely handled by private industry. It is the flexibility and efficiency of American private industry that is the basic resource on which the American military structure depends.

The Soviet military is equally dependent on Soviet industry. It has been estimated that between 70 and 75 percent of the annual Soviet military expenditure

[54] U.S. Senate Committee on the Judiciary, *Export of Strategic Materials to the U.S.S.R. and Other Bloc Countries*, Hearings Before the Subcommittee to Investigate the Administration of the Internal Security Act and Other Internal Security Laws, 87th Congress, 1st session, Part 1, October 23, 1961, p. 45.

goes to industry for the purchase of armaments.[55] The military has top priority, but its capabilities also reflect Soviet weaknesses brought about by the almost total absence of innovative effort. Flexibility and innovation for Soviet industry are imported from the West. Thus, ironically, the prime forces making for efficiency in Soviet military production are Western initiative and efficiency. This conclusion can be refuted only if it can be shown (a) that the transfers of innovation from the West do not take place and (b) that the Soviet military structure does not depend on the Soviet industrial structure for input materials.

Therefore, we cannot in the final analysis make any meaningful distinction between military and civilian goods. Every industrial plant directly or indirectly affords some military capability. It is the availability of Western technology that makes Soviet industry more efficient. The import of this technology releases resources for military efforts and also ensures that the Soviet industrial-military complex incorporates the latest of Western manufacturing techniques.

Nor can any meaningful distinction be made in the last analysis between technology exports to the U.S.S.R. and those to the other East European bloc countries. Recognition of political differences between Communist nations has led to Western policies based on such differences, and specifically to more favorable economic treatment of less hostile Communist countries. However, political differences among Communist nations have not led to any reduction in intra-bloc trade or transfers of technologies. Indeed, paradoxically, the Western reaction to polycentralism in the form of "more trade" has led to an increased transfer of Western technology to the Soviet Union. Processes and products embargoed for direct Soviet shipment are transferred to the Soviet Union indirectly through East European communist countries. There has been, then, an increase in transfer of technology to the U.S.S.R. as a result of the Western policies of the past two decades, policies based on erroneous assumptions concerning the extent to which polycentralism exists, and can exist, in the economic life of Eastern Europe.

As the acquisition of Western technology is a prime objective of all Communist nations, it must be further concluded that one effect on the West's response to its own interpretations of differing forms of communism in Eastern Europe has been to provide a more effective economic basis for fulfillment of Soviet foreign policy objectives. The international political objectives of Yugoslavia, for example, do not alter the fact that the Yugoslavs can and do supply the Soviets with such vitally needed items as advanced diesel engines, larger merchant ships, and copper electrical products. With their technical support to the U.S.S.R. the Yugoslavs are making a far more significant contribution to Soviet international aspirations than any possible purely political support would provide.

[55] Konstantin K. Krylov, "Soviet Military-Economic Complex," *Military Review* (Fort Leavenworth, Kans.), November 1971, p. 93.

A rational policy for any nation is one based on logical deduction from empirical observation. If a policy is based on erroneous information or on lack of facts, or if it is developed from accurate data by nonlogical, i.e., mystical, methods, the policy is not likely to achieve its objectives.

There is adequate reason to believe that Western policy toward the U.S.S.R. in the field of economic relations is based, first, on an inadequate observation of fact, and second, on invalid assumptions. In no other way can one explain the extraordinary statements made, for example, by State Department officials to Congress, by academic writers, and by 50 years of policies which prescribe first the establishment and then the continuing subsidy of a system that simultaneously calls forth massive armaments expenditures. Those countries which have been the prime technical subsidizers of the U.S.S.R. are also the countries with the largest expenditures on armaments against a presumably real threat from the Soviet Union.

The first requirement of a rational policy in economic relations between the Western world and any communist state is to determine the empirical facts governing both economic and strategic-military relations. These three volumes have established, from a precise technical examination, that the Soviet Union and its socialist allies are dependent on the Western world for technical and economic viability. At any time the West chooses to withdraw this technical and economic subsidy, the Soviet Union must either meet terms laid down by the West or effect within its own system the changes needed to achieve self-generated innovation. The major temporal and political demands of the second course suggest that the Soviet Union would come to terms. The West, then, has the option of taking major steps toward developing world peace.

To subsidize and support a system that is the object of massive military expenditures is both illogical and irrational. In other words, it calls into question not only the ability and the wisdom but indeed the basic common sense of the policymakers.

The choice therefore is clear: either the West should abandon massive armaments expenditures because the Soviet Union is not an enemy of the West, or it should abandon the technical transfers that make it possible for the Soviet Union to pose the threat to the Free World which is the *raison d'être* for such a large share of Western expenditures.[56]

[56] The numerous statements contrary to this conclusion do not stand up to penetrating analysis. For example, Assistant Secretary of State Nicholas de B. Katzenbach: "We should have no illusions. If we do not sell peaceful goods to the nations of Eastern Europe, others will. If we erect barriers to our trade with Eastern Europe, we will lose the trade and Eastern Europe will buy elsewhere. But we will not make any easier our task of stopping aggression in Vietnam nor in building security for the United States." U.S. House of Representatives, Committee on Banking and Currency, *To Amend the Export-Import Bank Act of 1945*. Hearings, 90th Congress, 1st session, April 1967, p. 64.

CHAPTER TWENTY-EIGHT

Economic Aspects of Technical Transfers

THE UNSTATED PREREQUISITE FOR CENTRAL PLANNING

The prolific literature on central economic planning published in this century contains no discussion—or even passing mention—of one apparently essential prerequisite: there must be systems not regulated strictly by central planning that are willing to provide technical services and productive units for the centrally planned system. A world of strictly centrally planned systems based on the Soviet model, or a single centrally planned world system, could not progress. It would choke on technical inertia. The Soviet state's dependence on the West was at least partly recognized by Lenin,[1] and it is effectively conceded by present-day Soviet leaders when they openly subscribe to advances in Western technology—not omitting, of course, politically necessary references to capitalism's "internal contradictions".

The outstanding achievement of central planning is its ability to realize substantial rates of growth through planned diversion of resources and efforts into chosen industrial sectors. Let us accept as a premise that over the course of 50 years Soviet growth rates in most sectors have been substantial. Iron and steel production is certainly one such sector: Russian pig-iron production was 4.2 million tons in 1913 and 70.3 million metric tons in 1966, while steel production was 4.3 million tons in 1913 and 96.9 million tons in 1966. Fertilizer production was 42,000 tons in 1913 and 6.9 million tons in 1966. Chemical fiber production was zero in 1913 and 458,000 tons in 1966.[2] Ship production totaled 1.75 million gross registered tons in 1914 and 11 million gross registered tons in 1967.[3]

In each case of exceptional rates of growth we find significant acquisition of Western technology at the start of the rise in growth; indeed, it is a matter of open record that increments in output were planned to be at least initially

[1] See for example, V. I. Lenin, *Selected Works*, J. Fineberg, ed. (New York: International Publishers, 1937), vol. 9, pp. 116-18.

[2] *Strana Sovetov za 50 let* (Moscow, 1967), p. 98.

[3] John D. Harbron, *Communist Ships and Shipping* (London, 1962), p. 140.

dependent on the West. The planned increment in production was achieved in a conscious manner, not by internal technical resources, but by the purchase of high-productivity advanced units in the West.

Could the Soviet system have attained high rates of growth in any single sector without outside injections of technology and capacity? The answer is: apparently not. At any rate, no example has been found of a sector in the Soviet economy achieving rapid rates of growth without technical injections from outside the system. The sector that has come closest to showing indigenous technical progress is the iron and steel industry, with Western technology first absorbed and then scaled up to provide massive increments in pig iron and raw steel output. However, with this sequence the sector's progress has been limited: full modern industrialization demands not only a balanced output of iron and raw steel but also of finished rolled products. Rolling is not subject to scaling-up innovation. One can quadruple the size of an open hearth or a blast furnace, but quadrupling the size of a blooming mill, and certainly a wide-strip mill, is technically impossible. The continuous casting process was seen as a way around the problems posed by the blooming mill, i.e., as a way to replace scaling up, but here, as we have seen, too-rapid introduction brought its own problems.

The logical conclusion, therefore, is that Soviet central planning absolutely demanded from the outset, and still demands, the existence of technically balanced systems from which it might leach new processes and purchase productive capacity. In the absence of such systems, it probably could not have made great technical progress.

THE FUNCTION OF IMPORTED TECHNOLOGY IN THE SOVIET SYSTEM

The basic problem of the Soviet economy is, as we have seen, its essentially static nature. The system apparently lacks internal dynamic factors that make for indigenous technical progress other than that attained by duplication of an existing technology. On the other hand, true technical progress involves the steady substitution of ever more efficient ways of combining resources and is the most significant factor in increasing standards of living.

The function of imported technology in the U.S.S.R. is therefore to provide the missing dynamic element of technical progress, or more specifically, to supply innovation. This is achieved in several sequential steps. First, at an early stage in a sector's development the productive units themselves are imported, i.e., the machines, the boilers, the production lines. This is followed by a second stage, that of duplication or copying of the most useful of the imported units, according to a standardized design. Long runs of standard units without

model change achieve the favorable growth rates noted. In certain sectors this may be followed by a third stage—adaptive innovation, i.e., scaling up. The Soviets have made excellent use of the scaling-up procedure in iron and steel and electricity generation. Such scaling up, however, cannot be applied in all sectors or in all basic technologies within a sector. As we have seen, it can be used in blast furnaces within limits, but not in rolling mills. It can be used in coke ovens within limits, but not in the production of precision machinery. It can be used in penicillin production, but not in radio-tube production. Thus the adaptive process of scaling up has significant limits.

So far as major indigenous innovation is concerned, we have seen that this is barely existent in the Soviet Union. There have been a few research achievements not found in the West (three synthetic fibers, for example), and some indigenous research has been placed into pilot production (as in the case of the Grinenko process). There is no case, however, of a large-scale productive unit based on self-generated indigenous Soviet technology. The Soviet technology that comes closest to this achievement is probably the turbodrill—but this technology is not comparable in its complexity to, say, automobile manufacturing, and in any case increasing demands for depth drilling have revealed turbodrill performance problems.

We can induce at least three contributions from technical transfer in addition to provision of technical modernization: the grant of economic flexibility (through release of resources), the grant of performance flexibility (because a standardized design is suitable for only a limited range of end uses), and the engineering contribution that inheres in foreign construction of large production units (those beyond available Soviet skills but not necessarily involving new technology).

Performance flexibility benefits may be noted in several of the sectors discussed in the study. One example can be seen with respect to marine boilers installed in Soviet ships between 1945 to 1960. All Soviet-made marine boilers are of one size and model. Flexibility for various requirements is achieved by importing boilers with nonstandard characteristics, e.g., unusual heating surfaces and working pressures. The existence of this phenomenon does not emerge from the trade and production statistics; its detection requires examination of the specifications for units produced and imported.

The engineering benefit, which is actually a variation of the flexibility contribution, is exemplified by the large number of complete plants bought abroad. It is also present in such acquisitions as refrigerator ships, where more complicated systems are purchased abroad and simpler systems are built inside the U.S.S.R.

THE SOVIET APPROACH TO IMPORT SUBSTITUTION

The Soviet approach to import substitution is of particular significance because in the Soviet Union the process results from more lengthy experience than

in any other socialist economy. It appears to fall into three distinct stages: first, import of foreign equipment; second, a period of comparative testing during which both foreign and domestic copies are used side by side; and third, the elimination of imports and sole reliance on domestic-produced equipment.

Although this three-stage categorization is generally supported by the information presented here, it is possible to document the process fully in only one equipment area—steam turbines. Data are needed over a period of time (to cover the three stages hypothesized) to cover all units acquired, built, and installed and to determine their precise identification. The only source of such complete information available outside the U.S.S.R. is the Soviet Register of Shipping.[4] Of 5500 entries described in that source, 47 merchant ships are found to have steam turbines as propulsion units (there are many more in the Red Navy); these turbines are identified by type, origin, and date of installation.

When these data are plotted, it may be seen that installations fall into the three distinct periods postulated when viewed in terms of origins: first, a period from 1953 to 1957 with only foreign purchases (no domestic manufacture): second, a period from 1957 to 1960 with both foreign purchases and domestic production of steam turbines; and third, a period after 1960 with only domestic manufacture. Although import of steam turbines after 1960 would not invalidate the case (indeed, the Soviets would want to investigate any new Western design developments), in this case none appear to have been imported in the final period under consideration.

THE OUTPUT OF ENGINEERING SKILLS

A superficial conflict with the findings of this study is posed by the apparent numbers of engineers graduated in the U.S.S.R. compared to those in the U.S.A. A Soviet source gives the following statistics for engineering degrees granted in the U.S.S.R. and the U.S.A. in 1950 and 1965:[5]

U.S.S.R.	37,000 (1950)	170,000 (1965)
U.S.A.	61,000 (1950)	41,000 (1965)

According to these figures, output of engineers with degrees has increased fourfold in the period 1950 to 1965, while that of the United States has fallen by one-half in the same period. There is, of course, a relationship between numbers of engineers and level of technology.

If the Soviets had a vigorous indigenous technology, little further attention would be paid to this finding. However, the quantity production of engineers

[4] Registr Soyuza SSR, *Registrovaya kniga morskikh sudov soyuza SSR 1964-65* (Moscow, 1966).

[5] *Strana Sovetov ...*, *op. cit.* n. 2, p. 231.

since the 1930s appears to be inconsistent with the findings of this study. Some probing indicates a reconciliation. A Russian engineer is not the same as a Western engineer, particularly an American engineer. Not only is the Soviet engineer's training and experience much narrower; his level of skills is far lower. Indeed, a Soviet "engineer" may not have as high a level of technical ability as a master mechanic or ship superintendent in the United States. Moreover there is no question that top-level technical graduates are siphoned into military work and the balance go into industry; this diversion coupled with the generally lower skills requirements greatly reduces the effectiveness of the large reservoir of engineers.

This conclusion is supported by reports from at least two delegations to the Soviet Union. Appendix 9 of the 1963 Indian iron and steel industry delegation report[6] cites the engineering force and its utilization at the steel works called Zaporozhstal. Of a total of 16,829 workers, 1367 were classified as "engineers." These "engineers" were working in such locations as the telephone exchange (12), stores (8), instrument repair shop (58), water supply station (5), building repair facilities (20), and scrapyard (19). Obviously they were not engineers by any Western definition. In the West any one of the above-named operations (with the possible exception of instrument repair) can function without a single degree-qualified engineer.

Another example may be found in the report of a USDA forestry delegation.[7] That delegation inspected the Bozhenko furniture plant in Kiev and found that the 1600 employees included 104 technical people, of whom 64 had university degrees. Quite clearly if the 64 technical-degree holders in this small furniture plant are placed according to their abilities, their level of skills must be extraordinarily low. In the West such a plant with a comparable output could operate efficiently without a single technical-degree holder and rarely would there be need for more than two or three. The Bozhenko furniture plant as described by the U.S. delegation (and shown in photographs published in the report) suggests a management problem of major significance. The descriptions and photographs together depict a plant with abysmally low levels of efficiency when compared with Western plants. The factory painting facilities (a brick wall outside the plant), the intraplant "transport" (a man pushing an overloaded and wobbly trolley), and the general assembly shop could not be found in Europe or the United States: state factory inspectors would close the plant down as a hazard for its workers. If such an institution employs 64 degree holders, the logical questions must be: What are they doing? What is their training? What is their supposed purpose in the plant?

There are numerous reports of poor construction in the Soviet Union—and

[6] *Iron & Steel Industry in the U.S.S.R. and Czechoslovakia; Report of Indian Productivity Team.* (New Delhi: National Productivity Council, March 1963), p. 253.

[7] U.S. Dept. of Agriculture, Forestry Service, *Forestry and Forest Industry in the U.S.S.R.*, Report of a Technical Study Group (Washington, March 1961).

construction quality is a fair indicator of engineering ability. This may be exemplified by a report in 1966 to the effect that a French construction company was negotiating to build "earthquake-proof apartment buildings in the battered Soviet city of Tashkent. Some 30,000 apartments built [previously] by the company in Tashkent survived earthquakes there earlier this year."[8]

In 1960 two Soviet engineers named Zolotarov and Shteingauz claimed a world record in building dams on soft ground, mentioning specifically the dams at Svir and Tsimlyansk.[9] Given the very low ratio of dams built to hydroelectric power potential in the U.S.S.R. and the major engineering problems of building on soft ground (indeed, the initial engineering effort usually is to locate bedrock for dam construction), some kind of training problem seems obvious.

Equipment down-time is also an indicator of quality control and engineering skills in the manufacturing process, and the evidence points to Soviet deficiencies in this sphere. For example, in 1955 some Russian tractor models averaged more than one month out of service for repairs: the STZ-NATI required a total of 56 days in 1955 for overall repairs,[10] and the DT-54 a total of 59 days. If a tractor is out of commission almost two months in a year for technical reasons, it is clearly a faulty product.

We may justifiably conclude that the number of degreed engineers in the U.S.S.R. is not a reliable indicator of the nation's engineering capability, and that the equivalent U.S. figure should include at least master mechanics, shop superintendents, and a large proportion of skilled foremen.

USE OF IMPORTS TO FULFILL PLANNING OBJECTIVES

Where planning objectives of increased output cannot be achieved by duplication or by scaling-up innovation, resort has to be made to imports. Necessarily, the processes acquired in this manner are frequently those whose development abroad required large investments in capital and skill.

Examination of Soviet import statistics for the period 1946 to 1966 indicates that while total import values increased (692 million rubles in 1946 to 7122 million rubles in 1966, or a tenfold increase over two decades), the import of machinery and equipment remained consistently at one-third of the total (197 million rubles in 1946 and 2308 million rubles in 1966). However, analysis of the expenditure components reveals that planning objectives and directives have been reflected in significant increases in imports in the affected sectors. For example, the program to build a merchant fleet got under way in the early

[8] *New York Times*, October 11, 1966.

[9] T. L. Zolotarev and Y. O. Shteingauz, *Hydroelectric Power Plants and the Main Trends in Their Development* (Jerusalem: Israel Program for Scientific Translations, 1963), p. 146.

[10] *Problems of Agricultural Economy* (collection of articles) (Moscow, 1958); translation: Washington, D.C., 1960, p. 155.

50s and the import figures reflect the calculations given elsewhere—that since then over two-thirds of the Soviet merchant fleet has been built in the West. Similarly, Khrushchev's call for a massive increase in chemical production in 1957 was accompanied by an immediate increase in chemical equipment imports, a nearly tenfold increase in ten years (from 22 million rubles in 1957 to 100 million in 1959 and an average import of just over 200 million rubles in the mid to late sixties.)"[11]

Internal shortages are also reflected in changing import figures. For example, the agricultural problems of the early 1960s resulted in massive imports not only of foreign wheat but also of foreign fertilizers and agricultural equipment (from 14 million rubles in 1961 to 62 million rubles in 1966).

Table 28-1 SOVIET IMPORTS BY SOVIET TRANSPORT CATEGORY FROM 1946 to 1966

Year	*Total imports (million rubles)*	*Machines and equipment (Groups 10-19)*	*Ships and equipment (Group 192)*	*Chemical industry equipment (Group 150)*	*Agriculture equipment and fertilizers (Groups 181, 342)*
1946	692.0	197.4	5.6	3.9	0.1
1947	670.3	119.1	3.9	1.5	0.2
1948	1106.6	99.0	5.4	0.9	0.1
1949	1340.3	193.4	23.6	1.9	1.7
1950	1310.3	281.7	25.8	1.7	6.2
1951	1791.7	372.0	33.9	6.4	0.4
1952	2255.5	486.2	71.6	9.3	0.2
1953	2492.1	684.8	106.7	18.3	0.3
1954	2863.6	875.4	201.7	23.0	0.5
1955	2754.5	832.8	237.5	22.1	6.4
1956	3251.4	805.8	273.8	19.3	6.1
1957	3544.0	846.4	215.5	22.1	13.0
1958	3914.6	958.1	214.7	45.5	10.7
1959	4565.9	1216.7	271.9	103.4	9.7
1960	5065.6	1507.7	340.4	167.0	8.6
1961	5344.9	1561.0	203.1	171.0	14.1
1962	5809.9	2020.6	332.9	141.8	24.8
1963	6352.9	2219.4	366.1	190.2	31.2
1964	6962.9	2398.5	483.9	186.4	53.1
1965	7252.5	2423.1	489.7	187.4	54.4
1966	7121.6	2308.4	493.7	208.0	62.8

Source: Vneshniaia torgovlia SSR: Statisticheskii sbomik, 1918-1966 (Moscow, 1967).

Imports provide, as has previously been noted, a degree of economic and technical flexibility to the Soviet Union; but in the cases noted above they provide more than flexibility—they provide the means for fulfilling key planning

[11] See Table 28-2.

objectives. The chemical industry plan, the synthetic fiber and rubber industry plans, and the automobile and merchant marine plans could not have been filled even by 10 percent if reliance had been solely on domestic abilities and resources.

These observations also provide a rational explanation for Soviet emphasis on domestic production of electricity, steel (simple construction sections rather than high-quality flat-rolled products), and building products such as cement and stone.[12] The perennial shortage of housing also suggests a diversion of construction material resources into other types of construction. Emphasis on the production of electricity, steel, and construction materials is consistent with massive import of foreign equipment and processes: the buildings to house imported process technology and equipment must be provided from domestic resources. Apart from the import of the steel-fabricated structure for the Stalingrad tractor plant in 1930 there is no known case of Soviet import of industrial building structures. These are built to a standard design in the U.S.S.R. from domestic materials.[13] The major inputs for industrial buildings are structural steel, plate steel, reinforcing rod, and cement. The planning emphasis on these products, then, is not founded in dogma but on practical construction demands. This also squares with observed Soviet postwar reparations practices; rather than removing fabricated steel structures (as the less experienced Western allies tried to do) the Soviets removed portable equipment and machinery of a high value-to-weight ratio. The building shell was erected in the U.S.S.R. and the equipment bedded down in its new location.[14]

THE "CATCHING-UP" HYPOTHESIS

An obvious benefit from the import of foreign technology is that it affords less developed countries the possibility of "catching-up" i.e., of establishing the basic means of production without enormous investment in research and development and long gestation periods. Presumably, when a nation attains a certain technological level of advancement it should be able to press ahead on its own.

This "catching-up" justification for basic technology import seems more logically applicable to ex-colonial areas, such as India, than to the Soviet Union.

[12] G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962).

[13] See Sutton II: *Western Technology ... 1930 to 1945*, p. 251.

[14] See Edwin W. Pauley, *Report on Japanese Assets in Manchuria to the President of the United States, July 1946* (Washington, 1946), for excellent photographs of Soviet removal practice; the remaining portions of the plant are those needing duplication in the U.S.S.R., i.e., the building shell, equipment made of fabricated sheet steel, and machinery with a low value-to-weight ratio.

In the first place, there is a widespread misunderstanding concerning the state of technical development in Tsarist Russia. Whatever may have been the backward nature of the Tsarists' social and political system, their technology was reasonably well advanced for the time; indeed there is evidence that by 1916 Tsarist Russia had industrial units on a scale and utilizing a technology equal to that anywhere in the world.[15] Further, pre-Revolutionary indigenous Russian innovation was apparent in the beet sugar industry, in aluminum smelting (Bayer), in synthetic rubber (Ostrimilensky), and in automobiles and aircraft (Sikorsky). While a great many of the skilled workers, the management personnel, and the technicians either emigrated or returned to the villages after the revolution, the physical structure of the Russian economy was largely intact when the Bolsheviks came to power.

Moreover, various injections of foreign technology have enabled the Soviet Union to "catch up" in the 1920s, in the early thirties (mid-thirties for aircraft and oil refining), during World War II, at the end of the fifties, and in the massive plant acquisitions of the sixties. Thus a temporary need for "catching up" is not a likely explanation for the continued Soviet reliance on imported technology. A more plausible explanaton is that there is some inherent inadequacy in the system which stifles indigenous industrial development. The Soviet system is forever "catching up," by virtue of its institutional structure. Foreign technology converts this static system into a viable system.

A generally observed benefit of foreign technology import is that it enables the recipient country to avoid research and development costs. This saving may indeed be substantial, but it is minute compared with another factor, i.e., the avoidance of expenditures on innovations that fall by the wayside, the so-called wastes of competition. To allow the market to select the most efficient method, or the several most efficient methods for the manufacture of any given product, several hundreds may be taken partway to production (i.e., through pilot-plant stage) and several dozens actually placed into production. The market is the final test of efficiency. This process is vital to the dynamic progress of a market system, and for this reason the wastes of competition are not wastes at all: if it is necessary for purposes of efficiency to allow rejected processes to fall by the wayside, it is just as necessary to a viable economy that they be introduced into the market in the first place.

There is a cost incurred in the development of these fallen processes, however, and it is one that can be avoided by importing technologies after they have passed through the discipline of a market economy. The Soviets have been remarkably adept at selecting processes, after the initial shaking down to two or three that have ultimately been determined by the foreign market place to be the most efficient. They chose the Ford automobile in the late 1920s (not Cord, Maxwell, or any of the hundreds of others that have since fallen by

[15] See Sutton I: *Western Technology ... 1917 to 1930*, pp. 183-84.

the wayside). They chose the Douglas DC-3 within a year of its inception—an aircraft that proved to be the most efficient air transport of its time. They chose the Rust cotton picker. They have shown a remarkable ability to appreciate the market economy in operation, to acquire full knowledge of competing processes, and to step in as soon as a particular process has shown itself to have advantages not shared by others. A Western firm that has had its process or equipment chosen by the Soviets should use the fact as an advertising slogan—for Soviet choice has been so remarkably accurate that it is almost a badge of acceptability.

Finally, the Soviet Union (or any other importer of technology) can avoid the long gestation periods of modern technologies. The Soviets acquired the wide-strip mill within a few years of its introduction in the West. It would have taken decades to reproduce the technology within the U.S.S.R. They acquired the German jet and turboprop engines at a time when they had themselves hardly mastered the manufacture of piston engines. They obtained in the late fifties and early sixties numerous complete chemical plants far beyond their own technical abilities and certainly not then duplicable in the Soviet Union in the foreseeable future. Such gains in time are vital to the fulfillment of Soviet ideology, which requires a dynamic technical front.

The gestation advantage comes out most clearly in those technologies which involve a high degree of construction skill and cannot be imported. Atomic reactors, for example, require a lengthy construction period, cannot be legally exported from the West, and demand a high degree of construction skill. After a flashy start in the 1950s the Soviets had only four reactors in operation in November 1969 (the same number as in 1965), which is a far cry from the impressive predictions advanced in the 1950s for atomic power development in a socialist system.

The Soviet economy is always a few years behind the West, but under censorship conditions this has presented no great problem. By a combination of careful concealment and clever promotion,[16] the Soviets have had little difficulty in presenting to foreign observers the facade of a vigorous, sophisticated technology.

[16] "In the developing countries of Asia and Africa, Soviet aid places great stress on modern scientific symbols. A nuclear research lab is set up in Cairo, a fully automatic telephone exchange in Damascus, a technological institute in Rangoon—these tokens of advanced technology are intended to convey an image of Soviet progressiveness in human discovery and inventiveness in the application of science to peaceful progress." Hans Heymann, Jr., *The U.S.S.R. in the Technological Race* (Santa Monica: RAND Corp., 1959), Report no. P-1754, p. 6.

CHAPTER TWENTY-NINE

Conclusions

EMPIRICAL CONCLUSIONS: 1917 TO 1930

The first volume of this study concluded that the Soviets employed more than 350 foreign concessions during the 1920s. These concessions, introduced into the Soviet Union under Lenin's New Economic Policy, enabled foreign entrepreneurs to establish business operations in the Soviet Union without gaining property rights. The Soviet intent was to introduce foreign capital and skills, and the objective was to establish concessions in all sectors of the economy and thereby introduce Western techniques into the dormant postrevolutionary Russian economy. The foreign entrepreneur hoped to make a normal business profit in these operations.

Three types of concessions were isolated: Type I, pure concessions; Type II, mixed concessions; Type III, technical-assistance agreements. Information was acquired on about 70 percent of those actually placed in operation. It was found that concessions were employed within all sectors of the economy except one (furniture and fittings), although the largest single group of concessions was in raw materials development. In the Caucasus oil fields—then seen as the key to economic recovery by virtue of the foreign exchange that oil exports would generate—the International Barnsdall Corporation introduced American rotary drilling techniques and pumping technology. By the end of the 1920s 80 percent of Soviet oil drilling was conducted by the American rotary technique; there had been no rotary drilling at all in Russia at the time of the Revolution. International Barnsdall also introduced a technical revolution in oil pumping and electrification of oil fields. All refineries were built by foreign corporations, although only one, the Standard Oil lease at Batum, was under a concessionary arrangement—the remainder were built under contract. Numerous Type I and Type III technical-assistance concessions were granted in the coal, anthracite, and mining industries, including the largest concession, that of Lena Goldfields, Ltd., which operated some 13 distinct and widely separated industrial complexes by the late 1920s. In sectors such as iron and steel, and particularly in the machinery and electrical equipment manufacturing sectors, numerous agreements were made between trusts and larger individual Tsarist-era plants and Western companies to start up and reequip the plants with the latest in Western technology.

A.E.G., General Electric, and Metropolitan-Vickers were the major operators in the machinery sectors. Only in the agricultural sector was the concession a failure.

After information had been acquired on as many such concessions and technical-assistance agreements as possible, the economy was divided into 44 sectors and the impact of concessions and foreign technical assistance in each sector was analyzed. It was found that about two-thirds of the sectors received Type I and Type II concessions, while over four-fifths received technical-assistance agreements with foreign companies. A summary statement of this assistance, irrespective of the types of concession, revealed that all sectors except one, i.e., 43 sectors of a total of 44, had received some form of concession agreement. In other words, in only one sector was there no evidence of Western technological assistance received at some point during the 1920s. The agreements were made either with dominant trusts or with larger individual plants, but as each sector at the outset comprised only a few large units bequeathed by the Tsarist industrial structure, it was found that the skills transferred were easily diffused within a sector and then supplemented by imported equipment. Examination of reports by Western engineers concerning individual plants confirmed that restarting after the Revolution and technical progress during the decade were dependent on Western assistance.

It was therefore concluded that the technical transfer aspect of the New Economic Policy was successful. It enabled foreign entrepreneurs and firms to enter the Soviet Union. From a production of almost zero in 1922 there was a recovery to pre-World War I production figures by 1928. There is no question that the turn-around in Soviet economic fortunes in 1922 is to be linked to German technical assistance, particularly that forthcoming after the Treaty of Rapallo in April 1922 (although this assistance was foreseeable as early as 1917 when the Germans financed the Revolution).

It was also determined that the forerunners of Soviet trading companies abroad—i.e., the joint trading firms—were largely established with the assistance of sympathetic Western businessmen. After the initial contacts were made, these joint trading firms disappeared, to be replaced by Soviet-operated units such as Amtorg in the United States and Arcos in the United Kingdom.

It was concluded that for the period 1917 to 1930 Western assistance in various forms was the single most important factor first in the sheer survival of the Soviet regime and secondly in industrial progress to prerevolutionary levels.

EMPIRICAL CONCLUSIONS: 1930 TO 1945

Most of the 350 foreign concessions of the 1920s had been liquidated by 1930. Only those entrepreneurs with political significance for the Soviets received

compensation, but for those few that did (for example, Hammer and Harriman), the compensation was reasonable.

The concession was replaced by the technical-assistance agreement, which together with imports of foreign equipment and its subsequent standardization and duplication, constituted the principal means of development during the period 1930 to 1945.

The general design and supervision of construction, and much of the supply of equipment for the gigantic plants built between 1929 and 1933 was provided by Albert Kahn, Inc., of Detroit, the then most famous of U.S. industrial architectural firm. No large unit of the construction program in those years was without foreign technical assistance, and because Soviet machine tool production then was limited to the most elementary types, all production equipment in these plants was foreign. Soviet sources indicate that 300,000 high-quality foreign machine tools were imported between 1929 and 1940. These machine tools were supplemented by complete industrial plants: for example, the Soviet Union received three tractor plants (which also doubled as tank producers), two giant machine-building plants (Kramatorsk and Uralmash), three major automobile plants, numerous oil refining units, aircraft plants, and tube mills.

Published data on the Soviet "Plans" neglect to mention a fundamental feature of the Soviet industrial structure in this period: the giant units were built by foreign companies at the very beginning of the 1930s, and the remainder of the decade was devoted to bringing these giants into full production and building satellite assembly and input-supply plants. In sectors such as oil refining and aircraft, where further construction was undertaken at the end of the decade, we find a dozen top U.S. companies (McKee, Lummus, Universal Oil Products, etc.) aiding in the oil-refining sector and other top U.S. aircraft builders in the aircraft sector (Douglas, Vultee, Curtiss-Wright, etc.).

Only relatively insignificant Soviet innovation occurred in this period: SK-B synthetic rubber, dropped in favor of more useful foreign types after World War II; the Ramzin once-through boiler, confined to small sizes; the turbodrill; and a few aircraft and machine gun designs.

The Nazi-Soviet pact and Lend Lease ensured a continued flow of Western equipment up to 1945.

In sum, the Soviet industrial structure in 1945 consisted of large units producing uninterrupted runs of standardized models copied from foreign designs and manufactured with foreign equipment. Where industrial equipment was of elementary construction (e.g., roasters and furnaces in the chemical industry, turret lathes in the machine tool industry, wooden aircraft, and small ships), the Soviets in 1945 were able to take a foreign design and move into production. One prominent example (covered in detail in this volume) was the Caterpillar D-7 tractor. The original, sent under Lend Lease in 1943, was copied in metric form and became the Soviet S-80 and S-100. It was then adapted for dozens of other military and industrial uses.

Thus in the period 1930 to 1945 the Soviets generally no longer required foreign engineers as operators inside the U.S.S.R. as they had in the concessions of the 1920s, but they still required foreign designs, foreign machines (the machines to produce machines), and complete foreign plants in new technical areas. By 1945 the Soviet Union had "caught up" at least twice; once in the 1930s (it could also be argued that the assistance of the 1920s constituted the first catching-up) with the construction of the First Five Year Plan by foreign companies, and again in 1945 as a result of the massive flow of Western technology under Lend Lease. While the technical skills demonstrated by the Tsarist craftsmen had not quite been achieved,[1] it may be said that in 1945 the nucleus of a skilled engineering force was once again available in Russia—for the first time since the Revolution.

EMPIRICAL CONCLUSIONS: 1945 TO 1965

In the immediate postwar period the Soviets transferred a large proportion of German industry to the Soviet Union—at least two-thirds of the German aircraft industry, the major part of the rocket production industry, probably two-thirds of the electrical industry, several automobile plants, several hundred large ships, and specialized plants to produce instruments, military equipment, armaments, and weapons systems. The stripping of East Germany was supplemented by a U.S. program (Operation RAP) to give the Soviets dismantled plants in the U.S. Zone. By the end of 1946 about 95 percent of dismantling in the U.S. Zone was for the U.S.S.R. (including the aircraft plants of Daimler-Benz, ball bearings facilities, and several munitions plants).

Manchuria and Rumania also supplied numerous plants. And as we have seen, Finnish reparations which supplemented the pulp and paper industries and ship construction were made possible by U.S. Export-Import Bank credits to Finland.

In the late 1950s all this industrial capacity had been absorbed and the Soviets turned their attention to the deficient chemical, computer, shipbuilding, and consumer industries, for which German acquisitions had been relatively slight.[2] A massive complete-plant purchasing program was begun in the late

[1] Tsarist-era technology was of a higher standard than is generally believed: it had achieved capability to produce aircraft, calculating machines, and locomotives. Foss Collection, Hoover Institution; see Sutton I, pp. 183-84.

[2] For typical articles that appeared in Western journals as the Soviets took steps to start a massive acquisition program to fill major technical gaps in the Soviet structure, see: Raymond Ewell, "Soviet Russia Poses a New Industrial Threat," *ASTM Bulletin*, no. 239 (July 1959), 43-44; W. Benton, "Are We Losing the Sheepskin War," *Democratic Digest*, July 1956; "From Revolution to Automation in 37 Years," *American Machinist*, November 19, 1956; G. Marceau, "Exceptionnelles possibilités du forage en U.R.S.S.," *Industrie du petrole*, 28 (November 1960), 47-49; "Soviet Scientists Emerge from Curtain to Crow about Progress," *Business Week*, September 14, 1957, pp. 30-32.

1950s—for example, the Soviets bought at least 50 complete chemical plants between 1959 and 1963 for chemicals not previously produced in the U.S.S.R. A gigantic ship-purchasing program was then instituted, so that by 1967 about two-thirds of the Soviet merchant fleet had been built in the West. More difficulty was met in the acquisition of computers and similar advanced technologies, but a gradual weakening of Western export control under persistent Western business and political pressures produced a situation by the end of the sixties whereby the Soviets were able to purchase almost the very largest and fastest of Western computers.

Soviet exports in the late sixties were still those of a backward, underdeveloped country. They consisted chiefly of raw materials and semimanufactured goods such as manganese, chrome, furs, foodstuffs, pig iron, glass blocks, and so on. When manufactured goods were exported they were simple machine tools and vehicles based on Western designs, and they were exported to underdeveloped areas. When foreign aid projects fell behind—although they had been given first priority on Soviet resources—they were brought back on schedule with the use of foreign equipment (e.g., British and Swedish equipment was used at the Aswan Dam). And while great efforts have been made to export to advanced Western markets Soviet goods with a technological component (i.e., watches, automobiles, tractors, and so on), a technical breakdown of these goods reveals in all cases examined either a Western origin or the substitution of Western parts where the products are assembled in the West.[3]

As a further indicator of Soviet technical backwardness, it may be noted that some Western firms selling to the Soviet Union have found "so many gaps in the control schemes proposed"[4] that a two-phase quotation format has been adopted: first a feasibility study is conducted (for which the Western company is paid), and then the actual quotation is determined for a complete system based on the feasibility study. In other words, technical inadequacy is such that the Soviets have not been able to specify exactly what is wanted. What this reflects is not a lack of scientific skill; it shows a lack of information on the technical constituents of a modern industrial system.

In the few areas where indigenous innovation was identified in the earlier period, we find a move back toward the use of Western technology. This is visible in the use of Western synthetic rubbers to replace SK-B, a renewed research effort on rotary drilling as a result of efficiency problems encountered in the use of the Soviet turbodrill, and instances of abandonment of the Ramzin boiler in favor of Western designs. The research and development effort has continued, but its results in practical engineering terms have been near zero. From the technical viewpoint the Soviet Union at 1970 is a copy—a rather imperfect copy—of the West. Generally, initial units are still built by Western

[3] For the example of watches, see *Business Week*, June 6, 1960, p. 74.

[4] *Control Engineering* (New York), November 1958, p. 80.

companies and subsequent units built by Soviet engineers are based on the original Western model, and imported equipment is used in key process and control areas.

ORIGINAL WESTERN INTENT FOR TECHNICAL TRANSFER

It may be unwise to attempt to read into an historical sequence of events as important as those described, any rational objective on the part of Western statesmen. Although the policies concerning trade and technical transfers appear vague and often confused, there is one fundamental observation to be made: throughout the period of 50 years from 1917 to 1970 there was a persistent, powerful, and not clearly identifiable force in the West making for continuance of the transfers. Surely the political power and influence of the Soviets was not sufficient alone to bring about such favorable Western policies. Indeed, in view of the aggressive nature of declared Soviet world objectives, such policies seem incomprehensible if the West's objective is to survive as an alliance of independent, non-communist nations. What, then, are the wellsprings of this phenomenon?

In the years 1917-20 a variant of the modern "bridge-building" argument was influential within policymaking circles. The Bolsheviks were outlaws, so the argument went, and had to be brought into the civilized world. For example, in 1918 a statement by Edwin Gay, a member of the U.S. War Trade Board and former Dean of the Harvard Business School, was paraphrased in the board minutes as follows:

> Mr. Gay stated the opinion that it was doubtful whether the policy of blockade and economic isolaton of these portions of Russia which were under Bolshevik control was the best policy for bringing about the establishment of a stable and proper Government in Russia. Mr. Gay suggested to the [War Trade] Board that if the people in the Bolshevik sections of Russia were given the opportunity to enjoy improved economic conditions, they would themselves bring about the establishment of a moderate and stable social order.[5]

At about the same time American businessmen were instrumental in aiding the formation of the Soviet Bureau, and several hundred firms had their names on file in the bureau when it was raided in 1918.[6] Hence there was Western business pressure through political channels to establish Soviet trade. No one appears to have foreseen the possibility of creating a powerful and threatening enemy to the Free World. There was widespread criticism of the Bolsheviks,

[5] Minutes of the U.S. War Trade Board, December 5, 1918, vol. V, pp. 43-44.

[6] New York [State] Legislature, Joint Legislative Committee to Investigate Seditious Activities (Lusk Committee), Albany, N.Y., 1919.

but this was not allowed to interfere with trade. In sum, there was no argument made against technical transfers while several influential political and business forces were working actively to open up trade.

The lack of clear policy formulation and foresight was compounded by the apparent efforts of some State Department officials in the 1930s to discourage collection of information on Soviet economic actions and problems. While the First Five Year Plan was under construction by Western companies, various internal State Department memoranda disputed the wisdom of collecting information on this construction.[7] For example, a detailed report from the U.S. Embassy in Tokyo in 1933 (a report containing precisely the kind of information used in this study) was described in Washington as "not of great interest."[8] It is therefore possible that no concerted effort to examine the roots of Soviet industrial development has ever been made within the U.S. State Department. Certainly internal State Department reports of the 1930s provide less information than the present study was able to develop. Such lack of ordered information would go far to account for many of the remarkably inaccurate statements made to Congress by officials of the State Department and its consultants in the 1950s and 1960s—statements sometimes so far removed from fact they might have been drawn from the pages of *Alice in Wonderland* rather than the testimony of senior U.S. Executive Department personnel and prominent academicians.[9]

In brief, a possibility exists that there has been no real and pervasive knowledge of these technical transfers—even at the most "informed" levels of Western governments. Further, it has to be hypothesized that the training of Western government officials is woefully deficient in the area of technology and development of economic systems, and that researchers have been either unable to visualize the possibility of Soviet technical dependence or unwilling, by reason of the bureaucratic aversion to "rocking the boat," to put forward research proposals to examine that possibility. This does not however explain why some of the outside consultants who were hired by all Western governments

[7] See U.S. State Dept. Decimal File, 861.50/Five Year Plan/50.

[8] U.S. State Dept. Decimal File, 861.5017/Living Conditions/709. Report no. 689, Tokyo, August 31, 1933.

[9] A former assistant chief of the division of research of the Department of State has formed equally harsh conclusions. Bryton Barron has listed four examples of highly strategic tools whose export to the U.S.S.R. was urged by officials of the Department of State:

"1. Boring mills essential to the manufacture of tanks, artillery, aircraft, and for the atomic reactors used in submarines.

"2. Vertical boring mills essential to the manufacture of jet engines.

"3. Dynamic balance machines used for balancing shafts on engines for jet airplanes and guided missiles.

"4. External cylindrical grinding machines which a Defense Department expert testified are essential in making engine parts, guided missiles, and radar."

Barron concludes: "It should be evident that we cannot trust the personnel of the Department to apply our agreements in the nation's interests any more than we can trust it to give us the full facts about our treaties and other international commitments." See Bryton Barron, *Inside the State Department* (New York: Comet Press, 1956).

in such profusion, have not systematically explored the possibility.[10] If it is argued, on the contrary, that Western Governments *are* aware of Soviet technical dependency, then how does one explain the national security problem, outlined in chapter 27?

An argument has been made that a policy of technical assistance to the U.S.S.R. before World War II was correct as it enabled the Soviets to withstand Hitler's attack of June 1941. This is *ex post facto* reasoning. The German Government financed the Bolshevik Revolution with the aim of removing an enemy (Tsarist Russia), but also with postwar trade and influence in mind. This German support was largely replaced in the late 1920s by American technical assistance, but until the mid-1930s the Germans were still arming the Soviets; it was only in 1939 that Hermann Goering began to protest the supply. Thus in the twenties and the early thirties it was not possible for anyone to foresee that Germany would attack the Soviet Union.

The Bolsheviks were assisted to power by a single Western government, Germany, and were maintained in power by all major Western governments. The result is that we have created and continue to maintain what appears to be a first-order threat to the survival of Western civilization. This was done because in the West the political pressures for trade were stronger than any countervailing argument.

This conclusion is supported by the observations that in both the 1930s and the 1960s the U.S. State Department pressed for the outright transfer of military technology to the U.S.S.R. over the protests of the War Department (in the thirties) and the Department of Defense (in the sixties). When in the 1930s the War Department pointed out that the proposed Dupont nitric acid plant had military potential, it was the State Department that allowed the Dupont contract to go ahead.[11] A Hercules Powder proposal to build a nitrocellulose plant was approved when the State Department accepted the argument that the explosives produced were intended for peacetime use.[12]

In the 1960s we have the extraordinary "ball bearing case" of 1961, which revealed that the U.S.S.R. was to receive 45 machines used to produce miniature ball bearings (in the United States almost all miniature ball bearings are used in missiles). That proposal was called a "tragic mistake" by the Department of Defense but supported by the State Department. In 1968 came the so-called "Fiat deal" under which the United States supplied three-quarters of the equipment for the Volgograd plant, the largest automobile plant in the U.S.S.R. This agreement ignored an earlier interagency committee finding that 330 military items can be produced by any civilian automobile industry and that the automobile industry is a key factor for war. It also ignores an argument particularly stressed

[10] See p. x.
[11] See Sutton, *Western Technology ... 1930 to 1945*, p. 101.
[12] *Ibid.*, p. 113.

here—that any automobile plant can produce military vehicles. The supply of U.S. equipment for the Volgograd plant was diametrically opposed to any policy of denial of exports of stratetic goods to the Soviet Union, for under any definition of "strategic" the Volgograd plant has clear and significant military weapons capability. Yet the State Department was strongly in favor of the shipment of the plant equipment. The developing story of the Kama plant suggests history is repeating itself.

Under these conditions, where policy is so far removed from logical deduction, it would be imprudent to arrive at any conclusion concerning Western intentions. If logical intentions exist—and in chapter 27 it is suggested that our strategic policies are not logically derivable from observable fact—they are obscure indeed. The writer leans to the position that there is gross incompetence in the policymaking and research sections of the State Department. There is probably no simple, logical explanation for the fact that we have constructed and maintain a first-order threat to Western society.

IMPLICATIONS FOR THE SOVIET UNION

The Soviet Union has a fundamental problem. In blunt terms, the Soviet economy, centrally planned under the guidance of the Communist Party, does not constitute a viable economic system. The system cannot develop technically across a broad front without outside assistance; internal industrial capacity can be expanded only in those sectors suitable for scaling-up innovation and duplication of foreign techniques.

Quite clearly a modern economy cannot be self-maintained, however skilled its planners and technicians, if technical adoptions in basic industries are limited to processes that lend themselves to scaling up or duplication. Further, the more developed the economy the greater its complexity; consequently the planning problems associated with the acquisition of information must surely increase in geometric ratio.

Logically, then, a system that is strictly centrally planned is not efficient either for rapid balanced growth or for any growth at all once the economy is past the primitive stage. Beyond that stage, the chief function of central planning, so far as the economy is concerned, becomes the retention of political control with the ruling group. There are few economic functions, and certainly no technical functions, that cannot be performed in a more efficient manner by a market economy.

How have the Russian Party member, the Politburo, Stalin, Khrushchev, and Brezhnev looked upon Western technology in relation to Soviet technology? This is indeed a fascinating question. Party injunctions, for example in *Pravda*, suggest that on many levels there has been a deep and continuing concern

with lagging Soviet technology. The general problem has long been recognized, ever since Lenin's time. But Lenin thought it curable;[13] the current Politburo must at least suspect it is incurable.

It is however unlikely that either the Party in Russia or the Communist parties in the West have fully probed the depths of the problem. First, their writings mirror a persistent confusion between science and technology, between invention and innovation.[14] Second, it is unlikely that most Marxists appreciate how important an indigenous innovative process is to a nation's self-sufficiency (in contrast to their clear understanding of the value of scientific endeavor and invention). Even breakaways from Marxist dogma still find it difficult to absorb the notion that virtually *all* widely applied (i.e., innovated) technology in the Soviet Union today may have originated in the outside world. Third, Russian designers and engineers may have succeeded in deceiving the Party and even themselves. By claiming as indigenous Russian work designs which in fact originated in the West, they may have obscured the realities of Soviet technology.

The dilemma facing the Soviets in 1970 is stark and overwhelming, and periodic reorganization and adjustments have not identified the basic cause. Indeed, each reorganization either stops short of the point where it may have lasting effect or leads to yet further problems. This is because the Party continues to demand absolute political control while a viable economy increasingly demands the adaptability, the originality, and the motivation that result from individual responsibility and initiative. Attempted solutions through use of computers may temporarily ease the problem, but ultimately they too will result in confusion because accurate information still has to be acquired and analyzed. The computer is only as useful as its human operators are capable and as its data input is sound. In any event, who will supply the computers?

Moreover a communist regime *cannot* yield political power; doctrine demands continuance of power in the hands of the Party. The economy demands diffusion

[13] V. I. Lenin, *Selected Works*, J. Fineberg, ed., vol. IX (New York, International Publishers, 1937), pp. 116-118.

[14] Another and more puzzling facet of the Soviet concept of what begets innovation is found in descriptions of the innovatory process in practice. For example, an article by G. B. Nagigin on innovation in the glass industry states: "Technical offices were established [in one factory] before the start of the competition. Leading engineers and technologists were on duty in these offices and gave practical assistance to innovators who turned to them for advice, consultation, etc. The technical offices are equipped with reference literature and other material needed by innovators and inventors. For example, there is a drawing board and the necessary instruments in the technical office of the Gushkovskii Works. The establishment of well-equipped technical offices, with qualified engineers on duty, naturally had a very favorable effect on the development of innovation and invention work in the factories." *Steklo i keramika* (New York), vol. XIV, no. 2, p. 66. A table is included in the article giving "results." We have to assume that this scheme to encourage competition was a serious attempt to induce the innovatory process—although one is tempted to dismiss it as naive in the extreme. It need only be said that anyone with the slightest knowledge of invention and innovation would conclude that little that is worthwhile can be achieved by such a forced and artificial process.

of power. What will be the result? If Russian historical precedent is any indicator, then the outlook is gloomy indeed. The Russian Revoluton was a gigantic and violent upheaval. The first revolution achieved what had been attained by evolutionary means elsewhere, the substitution of relatively democratic control for autocracy. Then the briefly emergent democratic forces in Russia were caught between the autocracy of the right and the Bolsheviks of the left and were rendered impotent. A new absolutism took power. Today there is no question that a fundamental change has to come again; what is unknown is the form that change will take and whether it will be revolutionary or evolutionary.

It is also clear—and the writer makes this assertion only after considerable contemplation of the evidence—that whenever the Soviet economy has reached a crisis point, Western governments have come to its assistance. The financing of the Bolshevik Revolution by the German Foreign Ministry was followed by German assistance out of the abysmal trough of 1922. Examples of continuing Western assistance include the means to build the First Five Year Plan and the models for subsequent duplication; Nazi assistance in 1939-41 and U.S. assistance in 1941-45; the decline in export control in the fifties and sixties; and finally the French, German, and Italian credits of the sixties and the abandonment of controls over the shipment of advanced technology by the United States in 1969. All along, the survival of the Soviet Union has been in the hands of Western governments. History will record whether they made the correct decisions.

IMPLICATIONS FOR THE WESTERN BUSINESS FIRM

The Western business firm has been the main vehicle for the transfer process, and individual firms have, of course, an individual right to accept or reject Soviet business in response to their own estimation of the profitability of such sales. There is ample evidence in the files of the U.S. State Department, the German Foreign Ministry, and the British Foreign Office that Western firms have cooperated closely with their respective governments in negotiating for such sales.

Historically, sales to the Soviet Union must have been profitable, although the Russians are reputed to be hard bargainers and there have been numerous examples of bad faith and breaches of contract. Firms have accepted theft of blueprints and specifications, [15] duplication of their equipment without permission or royalties,[16] and similar unethical practices and still deemed it worthwhile to continue trade. This applies particularly to larger firms such as General

[15] Sutton II, pp. 263-67.
[16] *Ibid.*

Electric, Radio Corporation of America, Ford Motor, Union Carbide, and Imperial Chemical Industries, Ltd. There is evidence that larger firms are able to demand and obtain somewhat more equitable treatment from the Soviets, partly by virtue of the fact that respective foreign offices are more willing to back them up and partly because the Soviets are aware of the relatively few sources for their new technologies. But less well-known firms such as Lummus, Universal Oil Products, and Vickers-Armstrongs (Engineers), Ltd., apparently also have found that Soviet business pays.

This profitability must be balanced against possible loss of domestic sales in the face of hostile domestic publicity. American Motors found itself in this trap in 1966, when it had no more than vaguely contemplated sales to the U.S.S.R.[17]—and other firms have suffered boycotts. As long as these sales and the impact of such sales on Soviet capabilities were relatively unknown, however, the possibility of boycotts was not great. It appears that some reevaluation may be in order in the light of the findings of this study; i.e., the factors entering into the tradeoffs in considering such business may change. This applies certainly to sales to Red China, where we now stand at a point equivalent to about 1921-22 with the Soviet Union. It is eminently clear that comparable sales over a period of 50 years could place Red China on an equal industrial footing with the U.S.S.R. The difference between the early seventies and the early twenties is that we now have the example of the U.S.S.R. before us: trade has built a formidable enemy, while hopes for a change in ideology and objectives not only have gone unfulfilled but are perhaps more distant than they were 50 years ago.

IMPLICATIONS FOR SOCIO-ECONOMIC SYSTEMS

The Soviet problem is not that the nation lacks theoretical or research capability[18] or inventive genius. The problem is rather that there is a basic weakness in engineering skills, and the system's mechanisms for generating innovation are almost nonexistent.

Table 29-1 suggests the sparseness of Soviet innovation; engineering weaknesses are implicit in continuing plant purchases abroad—while such purchases continue the Soviets are not building plants using their own laboratory discoveries. Why does the Soviet system have such weaknesses?

There is certainly no choice among competing inventions using market criteria, but if more useful Soviet processes existed they would be adopted whether market-tested or not. Absence of the marketplace is not, then, sufficient

[17] See *Milwaukee Journal*, January 22, 1967.

[18] For example of Russian research capability see A. V. Zolotov, *Problema tungusskoi katastrofy 1908 g.* (Minsk, 1969), a fascinating empirical study of various hypotheses relating to the gigantic meteorite that fell in Siberia in 1908.

Table 29-1 INDIGENOUS SOVIET INNOVATION, 1917-65

1917 to 1930	*1930 to 1945*	*1945 to 1965*
Primitive tractors	Turbodrill	Electro-drill
	Alumina from nepheline	Aircraft
	Synthetic rubber; SK-B	*Sputnik*
	Once-through boiler	Medical sutures
	Machine guns	Electro-slag welding
		"Scaling up"

Source: Based on table 25-2.

reason to explain the absence of innovation. There may be, as has been suggested elsewhere, no compelling pressures to develop innovation despite the fact that the Party is constantly exhorting technical progress. But the explanation that most adequately covers the problem is one that has been previously mentioned though not heretofore stressed--the "inability hypothesis." The spectrum of engineering skills required to build a complete polyester plant, a large truck plant, a fast large-capacity computer, *and* a modern marine diesel engine just does not exist in the Soviet Union. Sufficient engineering skills do exist for limited objectives—a military structure can be organized to select and marshal the technology of war, or a space program can be decreed and realized through top-priority assignment of resources. But the skills are not present to promote and maintain a complex, self-regenerative industrial structure.

The point to be stressed is that if there *were* adequate engineering ability some innovation would be forthcoming in the form of original new processes, and such innovation would appear in many sectors of the economy. This is generally not the case. In most sectors the West installs the initial plants and subsequent plants are duplicates based on that Western technology. Once the sector has been established, major new innovations within the sector tend to be either imported technologies or duplicates of imported technologies. Therefore pervasive "inability" in engineering seems the most likely basic explanation. For some reason—and this study has not explored the diverse institutional factors within the system that might be responsible—Soviet central planning has not fostered an engineering capability to develop modern technologies from scratch, nor has it generated inputs (educational, motivational, and material) to achieve this objective.

The world is now presented with 50 years' history of industrial development in the most important of socialist experiments, and censorship can no longer hide the problem. Every new Soviet purchase of a major Western technology is *pari passu* evidence for a central lesson of this study: Soviet central planning is the Soviet Achilles' heel.

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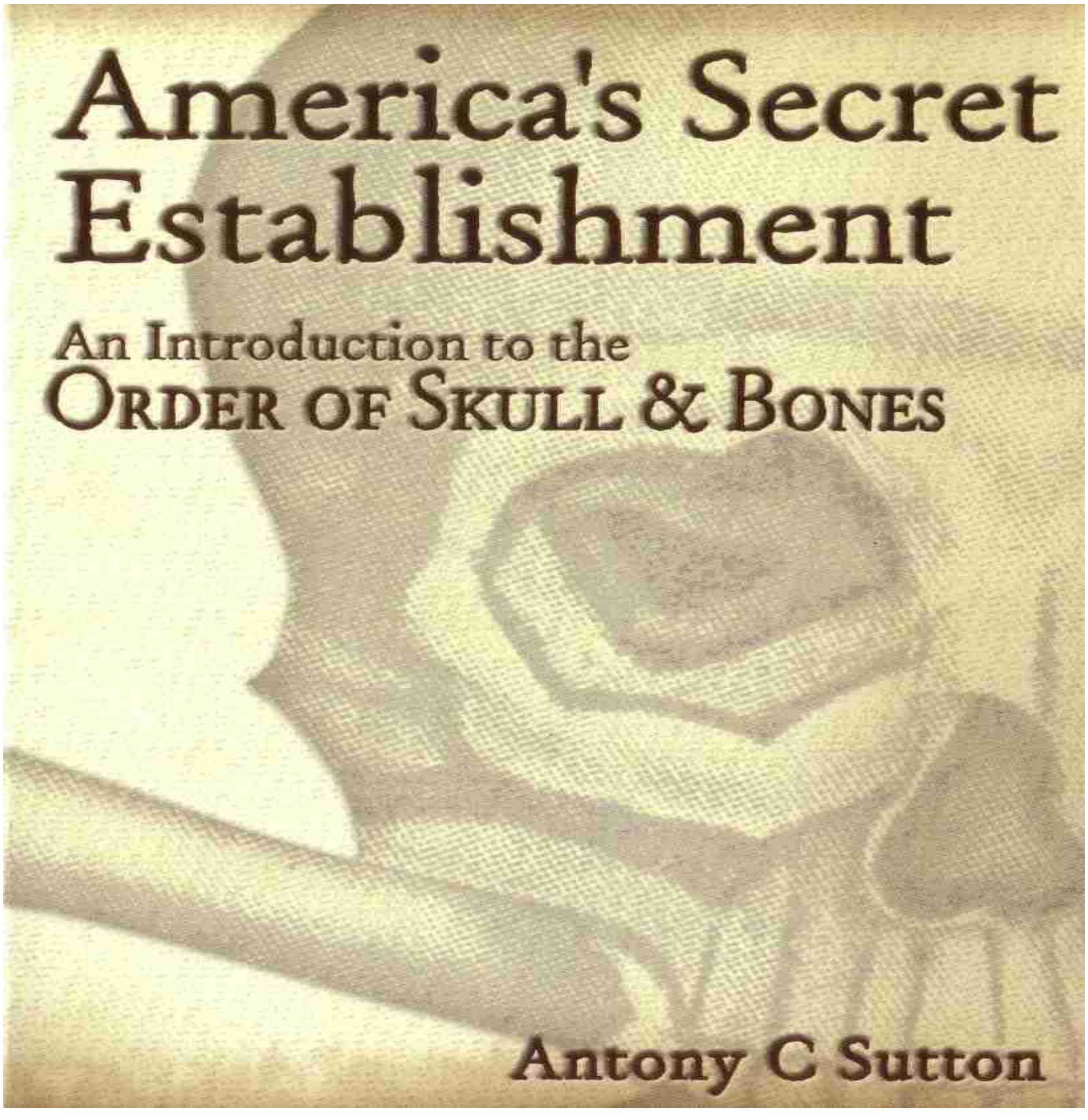
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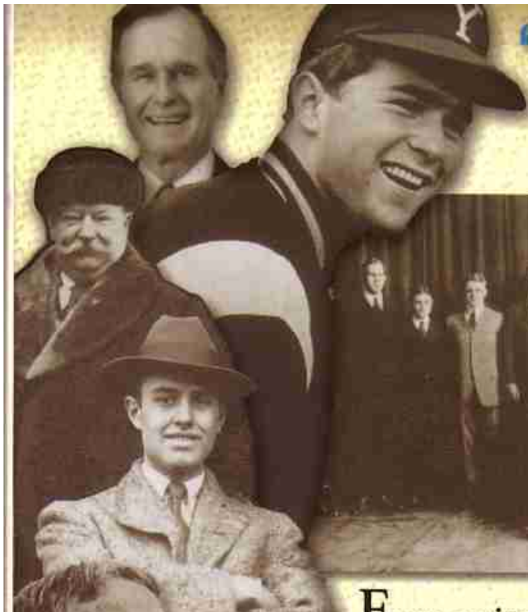
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America's Secret
Establishment
An Introduction to the
ORDER OF SKULL & BONES
Antony C Sutton

"...only at Yale"

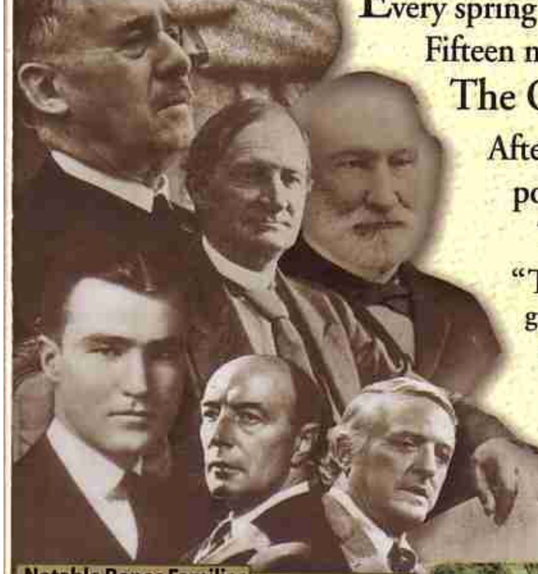
"My senior year, I joined Skull and Bones, a secret society, so secret I can't say anything more."
— George W. Bush
Adjudicated 43rd President of the United States





Every spring since 1832
Fifteen new faces are asked to join
The Order of Skull and Bones.
After Yale, many go on to the heights of power and shape our world.
This is the story of how and why...

"The public owes Antony Sutton a debt of gratitude for this book. It is an essential primer for tracing the families, bloodlines and business entanglements of America's secret establishment. If one does not have Sutton's information, they will never truly understand American history or foreign policy."
— Jim Marrs
Journalist and author of *Rule by Secrecy*



Notable Bones Families

Aldrich	Gates	Phelps
Buckley	Goodyear	Pillsbury
Bush	Gould	Pinchot
Bundy	Harriman	Rockefeller
Cheney	Kellogg	Stimson
Daniels	Lord	Taft
Davison	Lovett	Vanderbilt
Dodge	Luce	Weyerhaeuser
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AMERICA'S SECRET ESTABLISHMENT

AN INTRODUCTION TO
THE ORDER of SKULL & BONES



ANTONY C. SUTTON



ANTONY SUTTON was a research Fellow at the Hoover Institution, Stanford University, from 1968 to 1973. He is a former economics professor at California State University Los Angeles. He was born in London in 1925 and educated at the universities of London, Gottingen and California with a D.Sc. degree from University of Southampton, England.

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Technological Treason
The Diamond Connection
Gold Versus Paper
Wall Street and The Rise of Hitler
The War On Gold
Energy, The Created Crisis
Wall Street and the Bolshevik Revolution
Wars and Revolutions Parts 1 and 2
Wall Street and Franklin D. Roosevelt
Trilaterals Over Washington - Volume 1-Volume 2
Western Technology and Soviet Economic Development 1917–1930
Western Technology and Soviet Economic Development 1930-1945
Western -Technology and Soviet Economic Development 1945-1965
National Suicide: Military Aid to the Soviet Union in 19'3
Introduction to The Order
How The Order Controls Education
How The Order Creates War and Revolution
The Secret Cult of The Order
The Best Enemy Money Can Buy

Sutton, Antony C.

We offer no objections to their existing clan
No one disputes with them this right, we question but the plan
On which they act, - *that* only *he who wears* upon *his breast*
Their emblem, he for every post shall be considered best.

Anonymous Yale student, 1873.

CONTENTS
AN INTRODUCTION TO THE ORDER

HOW THE ORDER CONTROLS EDUCATION

HOW THE ORDER CREATES WAR AND REVOLUTION

THE SECRET CULT OF THE ORDER

Authors Preface:
America's Secret Establishment

After 16 books and 25 years in basic research I thought I'd heard it all ... the world was a confused mess, probably beyond understanding and certainly beyond salvation - and there was little 'l could do about it.

Back in 1968 my Western Technology and Soviet Economic Development was published by the Hoover Institution at Stanford University. In three substantial volumes I detailed how the West had built the Soviet Union. However, the work generated a seemingly insoluble puzzle - why have we done this? Why did we build the Soviet Union, while we also transferred technology to Hitler's Germany? Why does Washington want to conceal these facts? Why have we boosted Soviet military power? And simultaneously boosted our own?

In subsequent books, the Wall Street series, I added more questions - but no answers. I had more or less arrived at the conclusion that there was no rational answer that could be proven.

Then a year or so ago I received an eight-inch batch of documents - nothing less than the membership lists of an American secret society. Glancing through the sheets it was more than obvious - this was no ordinary group. The names spelled Power, with a capital P. As I probed each individual a pattern emerged ... and a formerly fuzzy world became crystal clear.

The book you will read here is a combined version of a series reporting on this research. Each volume builds on the previous volume in a logical step-by-step process.

These volumes will explain why the West built the Soviets and Hitler; why we go to war, to lose; why Wall Street loves Marxists and Nazis; why the kids can't read; why the Churches have become propaganda founts; why historical facts are suppressed, why politicians lie and a hundred other whys.

This series is infinitely more important than the original Western Technology series on technological transfers. If I have a magnum opus, this is it.

ANTONY C. SUTTON

Phoenix, Arizona
July 30, 1983

Announcement Of Weekly Meeting



Wednesday Evening, June 28th, 1882.

☞ VIII. S. B. C.

"Est hodie in bonis."

Cicero, Fam. XIII. 30.

E. L. McLaughlin S. E. C.

YALE COLLEGE,
June 15th, 1882.

New Initiates Into The Order for 1985

1985

BOASBERG, James Emanuel, 3136 Newark Street, NW, Washington, D.C.20008

CARLIN, William John Carr, Jr., 21 Schermerhorn Street, Brooklyn, New York 11201.

CHANDRASEKHAR, Ashok Jai, 120 East 34th Street, New York, New York 10016.

FRANKEL, Scott David, 3290 Kersdale Road, Pepper Pike Ohio 44124.

GROSSMAN, Jay Alan, 48 Niles Road, Randolph, Massachusetts 02368.

KWOK, Wei-Tai, 5 109 Philip Road, Annandale, Virginia 22003. LINDY, Peter Barnes, 105 South Perkins, Memphis, Tennessee 38117.

MISNER, Timothy Charles, 1009 Crest Park Drive, Silver Spring, Maryland 20903.

MNU CHIN, Steven Terner, 721 Fifth Avenue, New York, New York 10022.

PATELA, James Gerard, 47 Knollwood Drive, Branford, Connecticut 06405.

POWERS, Richard Hart, 21 Haigh Avenue, Niantic Connecticut 06357.

SMOCK, Morgan Robert, 4017 Louisiana Avenue North, New Hope, Minnesota 55427.

TAFT, Horace Dutton, 403 St. Ronan Street, New Haven, Connecticut 06511.

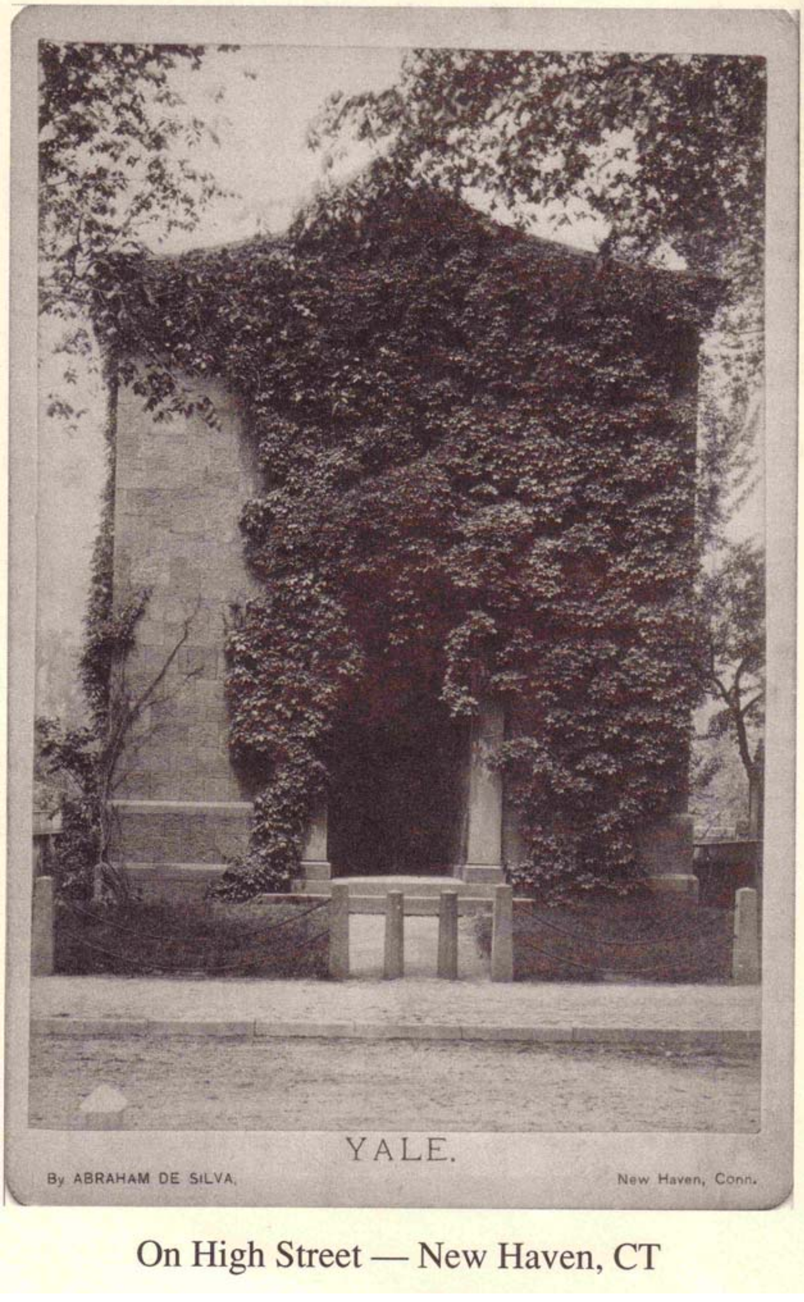
THOMPSON, Gregory Allan, 118 Whitman Drive, Brooklyn, New York 11234.

WALSH, Kevin Sanchez, 1030 Clay Avenue, Pelham Manor, New York 10803.

Initiates For 1917

Y. 2113.	D. 115.
Alfred Raymond Bellinger,	Syracuse, N. Y.
Prescott Sheldon Bush,	Columbus, O.
Henry Sage Fenimore Cooper,	Albany, N. Y.
Oliver Baty Cunningham,	Evanston, Ill.
Samuel Sloan Duryee,	New York City
Edward Roland Noël Harriman,	Arden, N. Y.
Henry Porter Isham,	Chicago, Ill.
William Ellery Sedgwick James,	New York City
Harry William LeGore,	LeGore, Md.
Henry Neil Mallon,	Cincinnati, O.
Albert William Olsen,	Glenbrook, Conn.
John Williams Overton,	Nashville, Tenn.
Frank Parsons Shepard, Jr.,	St. Paul, Minn.
Kenneth Farrand Simpson,	New York City
Knight Woolley,	Brooklyn, N. Y.

The "Tomb" (circa 1900)



On High Street — New Haven, CT

Introduction for 2002 Edition

AMERICAS SECRET ESTABLISHMENT has had an unusual publishing history.

The book began with an anonymous donation to the author of an 8-inch package of documents in the early 1980s. Nothing less than the membership list and supporting documents for a truly secret society the Yale Skull and Bones.

The late Johnny Johnson, of Phoenix Arizona was the spark that moved me to write first a four-part series and later, a jumbo volume based on this material. This volume went to several editions with several publishers, even a Russian edition of 12,000 copies. Probably in the past few years, as many copies have been sold in Russia as in the United States.

America's Secret Establishment has had little publicity, few reviews ignored by mainline distributors yet, has sold steadily for the past 16 years at a rate of several hundred copies a month.

This activity, in turn, has generated other articles and books by other authors. But my real intent, to generate an exploration of Hegelian influence in modern America, has not been fulfilled. In great part, this can be attributed to an educational system based on a statist-Hegelian philosophy, and which has already achieved the "dumbing down" of America.

This disastrous, destructive philosophy, the source of both Naziism and Marxism, has infected and corrupted our constitutional republic. Much of the blame for this corruption is with an elitist group of Yalie "Bonesmen." Their symbol of Skull and Bones, and their Hegelian philosophy, says it all, although with typical duplicity, they would have you believe otherwise.

Hegelianism glorifies the State, the vehicle for the dissemination of statist and materialist ideas and policies in education, science, politics and economics.

Wonder why we have a "dumbed-down" society? Look no further than the Bonesman troika who imported the Prussian education system into the U.S. in the 19`h Century. A political philosophy in direct opposition to the classical liberalism nurtured in 19`h Century British and American history. In classical liberalism, the State is always subordinate to the individual. In Hegelian Statism, as we see in Naziism and Marxism, the State is supreme, and the individual exists only to serve the State.

Our two-parry Republican-Democrat (= one Hegelian party, no one else welcome or allowed) system is a reflection of this Hegelianism. A small group - a very small group - by using Hegel, can manipulate, and to some extent, control society for its own purposes.

More than that, reflect on their pirate flag. An emblem found on poison bottles, the symbol of the Nazi Death Head Division in World War Two. Not only did Skull and Bones become a major force in drug smuggling (the Bush and Prescott families in the 1860s), but in true Hegelian fashion, generated the antithesis, the so-called "war on drugs." This hypocritical policy maintains the price of drugs, controls supply, and puts millions in jail while the gainers, in great part, are none other than the same "Bonesmen" who pass the laws to prohibit (Bonesman Taft, 1904).

Right and Left - A Control Device

For Hegelians, the State is almighty, and seen as "the march of God on earth." Indeed, a State religion.

Progress in the Hegelian State is through contrived conflict: the clash of opposites makes for progress. If you can control the opposites, you dominate the nature of the outcome.

We trace the extraordinary Skull and Bones influence in a major Hegelian conflict: Naziism vs. Communism. Skull and Bones members were in the dominant decision-making positions - Bush, Harriman, Stimson, Lovett, and so on - all Bonesmen, and instrumental in guiding the conflict through use of "right" and "left." They financed and encouraged the growths of both philosophies and controlled the outcome to a significant extent. This was aided by the "reductionist" division in science, the opposite of historical "wholeness." By dividing science and learning into narrower and narrower segments, it became easier to control the whole through the parts.

In education, the Dewey system was initiated and promoted by Skull and Bones members. Dewey was an ardent statist, and a believer in the Hegelian idea that the child exists to be trained to serve the State. This requires suppression of individualist tendencies and a careful spoon-feeding of approved knowledge. This

"dumbing down" of American education is not easily apparent unless you have studied in both foreign and domestic U.S. universities - then the contrast becomes crystal clear.

This dumbing down is now receiving attention. Two excellent books are *The Deliberate Dumbing Down of America,* by Charlotte Thomson Iserbyt (Conscience Press, Revenna Ohio, 2001), and *The Dumbing Down of America,* by John Taylor Gotta. Both books trace this process to the impact of education, and both give remarkable detail of the process. We go further, in that we trace the import of the system to three Yalies - members of Skull & Bones.

For Iserbyt, in *The Deliberate Dumbing Down of America,* the American education system begins with Rockefeller and Gates. But in fact, this statist system is a reflection of the Hegelian ideas brought to the United States by the Skull and Bones "troika" of Gilman, White and Dwight, and then financed by Rockefeller.

People Control

Today in California, one can see in real time the use of controlled conflict to achieve a desired outcome. The debate over the energy crisis is carefully contained to a debate over price caps and price control. Republicans want no caps and no controls. Most Democrats want price controls through caps.

But look at what is NOT discussed anywhere. The entire spectrum of almost free energy, based on a decade of research is carefully kept out of the discussion. Isn't this highly relevant to an energy crisis?

In fact, the existence of free energy systems just down the road is the reason for the controlled debate. Mills Blacklight Power now has its patents and some utilities have already bought in. Bearden's MEG energy from space, is under discussion. Working models exist. The maligned cold fusion has hundreds of successful experiments, but so far as we know, cannot be repeated with sufficient assurance. Other systems have come into the view of government agencies, and then disappear from sight.

A knowing public would ask, Why are these not included in the discussion?" - Simple. Because the utilities know they are for real, and only a few years down the road. The problem for utilities is not the price of energy today, but how to dump their fixed assets (hydro plants, transmission lines, etc.) onto the public. These "valuable" assets will have zero value down the road, because all new systems are stand-alone units which don't need fixed plant and transmission lines. If the public is aware of the dilemma of the utilities, the ability to dump assets onto the State is heavily reduced.

The Republican-Democrat debate over "caps" is a diversion. The relevant question carefully avoided is, how long will it take to get these new systems into production?

Another example is Monsanto Corporation development of genetic engineering and predator seed, a barely-concealed effort for world domination of agriculture.

President George Bush, Jr. , a Bonesman, appoints a Monsanto vice president, Dr. Virginia Weldon, as Director of Food and Drug Administration, which has the power to block labeling of genetically-engineered foods, and pass on other corporate control efforts.

Just before this, in New Technology, we had the 1989 dramatic announcement of "cold fusion." When this announcement was made public, President George Bush (also a Bonesman) called establishment scientist the late physicist Seagrum into his office and gave instructions.

We don't know what was said, but we know what happened. Cold fusion, a valid process for free energy, as was subsequently revealed, was slandered and harassed by the establishment, no doubt fearful of what free energy would do to the oil industry.

What is to be Done?

If the voting public was even vaguely aware of this rampant and concealed scenario, it could, and possibly would force change. However, this is not a likely possibility. Most people are "go-along" types, with limited personal objectives and a high threshold for official misdeeds.

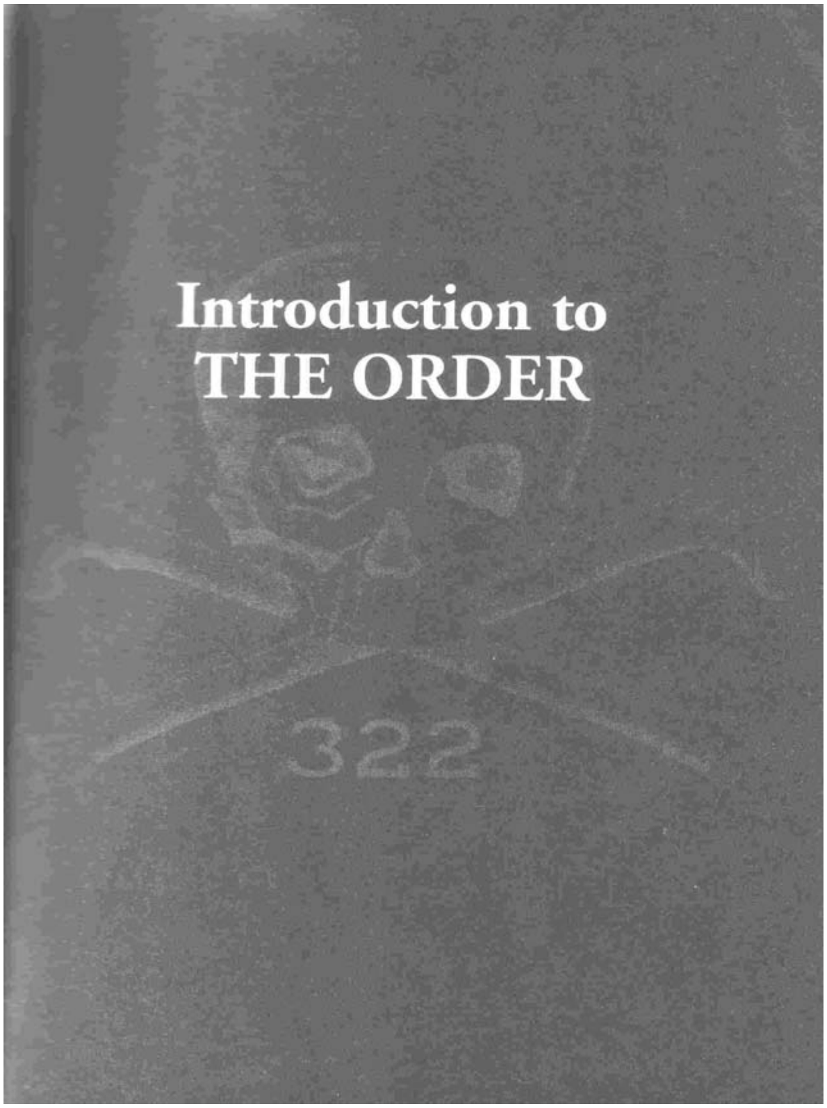
What has taken over a century to establish cannot be changed in a few years. The initial question is education. To eliminate the Hegelian system that stifles individual initiative and trains children to become mindless zombies, serving the State.

We need a lot less propaganda for "education" and a more individual creative search for learning. Instead of more money for education, we need to allocate a lot less. The existing system of education is little more than a

conditioning mechanism. It has little to do with education in the true sense, and a lot to do with control of the individual.

It is more likely that time, rather than the voting booth, will erode the secret power of this Yale group, Nothing this outrageous can survive forever.

Antony Sutton



Memorandum Number One: Is There A Conspiracy Explanation For Recent History?

The reader anxious to get into the story of The Order should go directly to Memorandum Number Two. This section concerns methods, evidence and proof. Essential, but perhaps boring for most readers.

During the past one hundred years any theory of history or historical evidence that falls outside a pattern established by the American Historical Association and the major foundations with their grantmaking power has been attacked or rejected - not on the basis of any evidence presented, but on the basis of the acceptability of the argument to the so-called Eastern Liberal Establishment and its official historical line.

The Official Establishment History

There is an Establishment history, an official history, which dominates history textbooks, trade publishing, the media and library shelves. The official line always assumes that events such as wars, revolutions, scandals, assassinations, are more or less random unconnected events. By definition events can NEVER be the result of a conspiracy, they can never result from premeditated planned group action. An excellent example is the Kennedy assassination when, within 9 hours of the Dallas tragedy, TV networks announced the shooting was NOT a

conspiracy, regardless of the fact that a negative proposition can never be proven, and that the investigation had barely begun.

Woe betide any book or author that falls outside the official guidelines. Foundation support is not there. Publishers get cold feet. Distribution is hit and miss, or non-existent.

Just to ensure the official line dominates, in 1946 the Rockefeller Foundation allotted $139,000 for an official history of World War Two. This to avoid a repeat of debunking history books which embarrassed the Establishment after World War One. The reader will be interested to know that The Order we are about to investigate had great foresight, back in the 1880s, to create both the American Historical Association and the American Economic Association (most economists were then more historians than analysts) under their terms, with their people and their objectives. Andrew Dickson White was a member of The Order and the first President of the American Historical Association.

Failure of Official History

Times have changed. The weaknesses, inconsistencies and plain untruths in official history have surfaced. In the 1980s it is rare to find a thinking reader who accepts official history. Most believe it has been more or less packaged for mass consumption by naive or greedy
historians. Although an historian who will stick out his neck and buck the trend is rare, some who do are victims of an even deeper game. Conspiracy then is an accepted explanation for many events at the intelligent grass roots level, that level furthest removed from the influence of The Order. We can cite at random the Kennedy assassination where the official "lone gunman" theory was never accepted by Americans in the street; Watergate, where a "deep throat" informer and erased tapes reek of conspiracy, and Pearl Harbor, where Rear Admiral Husband E. Kimmel and Major General Walter C. Short took the rap for General George C. Marshall and President Franklin D. Roosevelt.

The revisionist historian has a double burden as well as a double task. The double burden is that research likely to question the official historical line will not get financed. The double task is that research must be more than usually careful and precise.

A non-official work is not going to be judged on its merits. The work will be judged on the basis of its acceptability to a predetermined historical standard. What this standard is we shall explore later.

Hypotheses and Method

Which brings us to methodology. In this volume we will present three hypotheses. What is a hypothesis? A hypothesis is a theory, a working theory, a start point, which has to be supported by evidence. We arrived at these three hypotheses by examining certain documents which will also be described. The official history hatchet mongers will scream that our hypotheses are now being presented as proven assertions - and whatever we write here will not stop the screams. But again, these are only hypotheses at this point, they have to be supported with evidence. They are a first step in a logical research process.

Now in scientific methodology a hypothesis can be proven. It cannot be disproven. It is up to the reader to decide whether the evidence presented later supports, or does not support, the hypotheses. Obviously no one author, critic, or reader can decide either way until all the evidence has been presented.

We also intend to use two other principles of scientific research ignored by official establishment historians.

Firstly, in science the simplest explanation to a problem is always the most acceptable solution. By contrast, in establishment history, a simple answer is usually criticized as "simplistic." What the critic implies is "The poor writer hasn't used all the facts," In other words, it's a cheap "putdown" without the necessity of providing an alternate answer or additional facts.

Secondly, again in science, an answer that fits the most cases, i.e., the most general answer, is also the most acceptable answer. For example, you have 12 events to explain and a theory that fits 11 of these events. That theory is more acceptable than a theory that fits only 4 or 5 of the events.

The Devil Theory of History

Using this methodology we are going to argue and present detailed precise evidence (including names, dates and places) that the only reasonable explanation for recent history in the United States is that there exists a conspiracy to use political power for ends which are inconsistent with the Constitution.

This is known by the official historians as the "devil theory of history," which again is a quick, cheap device for brushing facts under the rug. However, these critics ignore, for example, the Sherman Act, i.e., the anti-trust laws where conspiracy is the basic accepted theory. If there can be a conspiracy in the market place, then why not in the political arena? Are politicians any purer than businessmen? Following the antitrust laws we know that conspiracy can only be proven in a specific manner. A similar pattern of market actions is not proof of conspiracy. Just because something looks like a duck, walks like a duck, and all the ducks act similarly, does not make it a duck - or a conspiracy. Under the Sherman Act a similar pattern of prices, where all prices are the same, is not proof of conspiracy. Similarity of prices can occur in a purely competitive market. Neither is similar political action necessarily a conspiracy.

Proof of conspiracy requires specific types of evidence, i.e.,:

(a) there must be secret meetings of the participants and efforts made to conceal joint actions,

(b) those meetings must jointly agree to take a course of action,

(c) and this action must be illegal.

The Council on Foreign Relations

Widely accepted explanations of recent history based on a conspiracy theory do not present evidence that fits the above criteria. For example, the Council on Foreign Relations cannot be claimed as a conspiracy even for the period since its founding in 1921. Membership in the CFR is not a secret. Membership lists are freely available for the cost of a postage stamp. There is no proof that the entire membership conspires to commit illegal acts.

What has to be proven in any conspiracy explanation of history is that the participants have secret groupings, and meet to plan illegal actions.

Members of the CFR, when accused of being involved in a conspiracy, have protested to the contrary. And by and large they are right. Most CFR members are not involved in a conspiracy and have no knowledge of any conspiracy. And some personally known to the author are about the last people on earth to get involved in an illegal conspiracy.

HOWEVER, there is a group WITHIN the Council of Foreign Relations which belongs to a secret society, sworn to secrecy, and which more or less controls the CFR. CFR meetings are used for their own purposes, i.e., to push out ideas, to weigh up people who might be useful, to use meetings as a forum for discussion.

These members are in The Order. Their membership in The Order can be proven. Their meetings can be proven. Their objectives are plainly unconstitutional. And this ORDER has existed for 150 years in the United States.

Memorandum Number Two: The Order - What It Is And How It Began

THOSE on the inside know it as The Order. Others have known it for more than 150 years as Chapter 322 of a German secret society. More **formally** for legal purposes, The Order was incorporated as The Russell Trust in 1856. It was also once known as the "Brotherhood of Death." Those who make light of it, or want to make fun of it, call it "Skull & Bones," or just plain "Bones."

The American chapter of this German order was founded in 1833 at Yale University by General William Huntington Russell and Alphonso Taft who, in 1876, became Secretary of War in the Grant Administration. Alphonso Taft was the father of William Howard Taft, the only to be both President and Chief Justice of the United States.

What Is The Order?

The Order is not just another campus Greek letter fraternal society with passwords and handgrips, common to most campuses. Chapter 322 is a secret society whose members are sworn to silence. It only exists on the Yale campus (that we know about). It has rules. It has ceremonial rites. It is not at all happy with prying, probing citizens - known among initiates as "outsiders" or "vandals." Its members always deny membership (or are supposed to deny membership) and in checking hundreds of autobiographical listings for members we found only half a dozen who cited an affiliation with Skull & Bones. The rest were
nt. An interesting point is whether the many members in various Administrations or who hold government positions have declared their members in the biographical data supplied for FBI "background checks.

Above all, The Order is powerful, unbelievably powerful. If the reader will persist and examine the evidence to be presented - which is overwhelming - there is no doubt his view of the world will suddenly come sharply into focus, with almost frightening clarity. t

Before we go further we need to add a couple of important observations about The Order:

- It is a Senior year society which exists only at Yale. Members are chosen in their Junior year and spend only one year on campus, the 5enior year, with Skull & Bones. In other words, the organization is oriented to the post graduate outside world. The Order meets annually - patriarchs only - on Deer Island in the St. Lawrence River.
- Senior societies are unique to Yale. There are two other senior societies at Yale, but none elsewhere. Scroll & Key and Wolf's Head are supposedly competitive societies founded in the mid-19th century. We believe these to be part of the same network. Rosenbaum commented in his *Esquire* article, very accurately, that anyone in the Eastern Liberal Establishment who is not a member of Skull & Bones is almost certainly a member of either Scroll & Key or Wolf's Head.

What is the significance of the "322" in Chapter 322? William Russell imported the society from Germany and so it has been argued the 322 stands for '32 (from 1832), the second chapter, of this German organization. Possibly a chapter 320 and a chapter 321 may exist somewhere And 323 is the designation of a room within the Skull & Bones temple at Yale.

Another interpretation is that The Order is descended from a Greek fraternal society dating back to Demosthenes in 322 B.C. This has perhaps some credibility because Bones records are dated by adding 322 to the current year, i.e., records originating in 1950 are dated Anno - Demostheni 2272.

How A Member Is Chosen By The Order?

The selection procedure for new members of The Order has not changed since 1832. Each year 15, and only 15, never more, never fewer', are selected. In the past 150 years about 2500 Yale graduates have been initiated into The Order. At any one time about 500-600 are alive and active. Roughly about one-quarter of these take an active role in furthering the objectives of The Order. The others either lose interest or change their minds. They are silent drop-outs.

A Yale Junior cannot ask to join. There is no electioneering. Juniors are invited to join and are given two options: accept or reject. Apparently some amount of personal information is gathered on potential members. The following is the kind of evaluation made in the last century; we doubt it has changed too much down to the present time:

- "Frank Moore is an ideal Bones man, he is a hard worker and a man whose efforts have been more for Yale than himself. He is manager of the Musical clubs and has been active in Dwight Hall. His election will be well deserved and popular."
- "Don Thompson is a sure man whom the class wishes well for and will be glad to see go. He comes from a Bones family." In selection emphasis is placed on athletic ability - the ability to play on a team. The most unlikely potential member of The Order is a loner, an iconoclast, an individualist, the man who goes his own way in the world.

[1] Readers who want more on the cermonial and initiation aspects should read the September. 1977 *Esquire* article by Ron Rosenbaum. ' The Last Secrets of Skull and Bones` Unfortunately, the article completely misses the historical significance of Skull & Bones, although it is an excellent source of lurid details and the mumbo-jumbo rites

The most likely potential member is from a Bones family, who is energetic, resourceful, political and probably an amoral team player. A man who understands that to get along you have to go along. A man who will sacrifice himself for the good of the team. A moment's reflection illustrates why this is so. In real life the thrust of The Order is to :)ring about certain objectives. Honors and financial rewards are guaranteed by the power of The Order. But the price of these honors and rewards is sacrifice to the common goal, the goal of The Order. Some, perhaps many, have not been willing to pay this price.

Inside The Order

Entry into The Order is accompanied by an elaborate ritual and no doubt by psychological conditioning. For example:

"Immediately on entering Bones the neophyte's name is changed. He is no longer known by his name as it appears in the college catalogue but like a monk or Knight of Malta or St. John, becomes Knight so and so. The old Knights are then known as Patriarch so and so. The outside world are known as Gentiles and vandals."

The Catalogue (or membership list - it became "Addresses" sometime in this century) of Chapter 322, however, is made with the usual "outside" names and is unique and impressive. Each member has a copy bound in black leather with peculiar symbols on the outside and inside. The symbols presumably have some meaning.

The owner's name and the single letter "D" is gilt-stamped' on the outer cover of earlier issues, at least up to the mid-19th century. It then appears to have been omitted, at least on copies we have seen: Each right-hand page, printed one side only, about 6 x 4 inches, has the members listed for one year and surrounded by a heavy black border, :hick in the early years, not so thick in recent decades. This symbolizes the death of the person named as he adopts his new name and new life upon entering The Order.

Most interesting is an entry between the decade lists of members. On the 1833 list, before the 15 founders' names, are the words "Period 2 Decade 3." Similarly, before names on the 1843 list are the words "Period 2 Decade 4." In brief, "Period" stays the same throughout the years, but the "Decade" number increases by one in each ten years. No doubt this means something to The Order, else it wouldn't be there. Another mystical group of letters and numbers is at the top of the first list of names in 1833, "P.231-D.31." The numbers increase by one in each succeeding class. In 1834, for example, the entry reads "P.232-D 32."

Furthermore, the first class list of 1833 has two blank lines in place of the eleventh name on the list. This supports the argument that the society has German origins and this is the listing of the anonymous German connection.

The Members of 1833

We estimate that at any one time only about one-quarter of the membership is active. Even the active quarter is not always effective or successful. It's instructive to compare 1833 with 1983 and how, over the century and a half span, a group of 20-30 families has emerged to dominate The Order.

The very first name on the very first membership list, Samuel Henshaw Bates, was a private in the Union Army, went west to farm in Santa Rosa, California, at that time very much in the boondocks, and died in 1879. A life not different to millions of other Americans.

In fact, out of the first 15 members (actually 14 plus the anonymous member), achievements were not much greater than we would expect from the cream of a Yale "class". Rufus Hart spent several years in the Ohio Senate, Asahel Hooker Lewis was in the Ohio Legislature for a couple of years, Samuel Marshall was an Illinois State Legislator for a while, and Frederick Mather was in the New York Legislature. Other members, apart from the two founders of The Order, did nothing much with their lives or for The Order.

By contrast, the two founding members, William Huntington Russell and Alphonso Taft, went far. William Russell was a member of the Connecticut State Legislature in 1846-47, a General in the Connecticut National Guard from 1862-70, and founded the Collegiate and Commercial Institute in New Haven, Connecticut. Alphonso Taft went further: he was Secretary of War in 1876 - the first of several members of The Order to hold this post down into the 1950s. Taft became U.S. Attorney General in 1876-7, then U.S. Minister to Austria in 1882-4, and finally U.S: Ambassador to Russia in 1884-5.

During the 150-year interval since 1833, active membership has evolved into a core group of perhaps 20-30 families; it seems that active members have enough influence to push their sons and relatives into The Order, and there is significant inter-marriage among the families. These families fall into two major groups.

First we find old line American families who arrived on the East coast in the 1600s, e.g., Whitney, Lord, Phelps, Wadsworth, Allen, Bundy, Adams and so on.

Second, we find families who acquired wealth in the last 100 years, sent their sons to Yale and in time became almost old line families, e.g., Harriman, Rockefeller, Payne, Davison.

Some families, like the Whitneys, were Connecticut Yankees and acquired wealth in the nineteenth century.

In the last 150 years a few families in The Order have gained enormous influence in society and the world.

One example is the Lord family. Two branches of this family date from the 1630s: Those descended from Nathan Lord and those from Thomas Lord. Other Lords arrived in the U.S. over the years but do not enter our discussion. Of these two main branches, only the Thomas Lord group appears to have contributed members to The Order. Their ancestry traces to Thomas Lord, who left Essex, England in 1635 in a company led by Rev. Thomas Hooker, and settled in what is now Hartford, Connecticut. In fact, part of Hartford is still known as Lord's Hill. The line of descent for this Lord family is full of DeForest and Lockwood names because intermarriage is more than common among these elite families.

The first Lord to be initiated into The Order was George DeForest Lord (1854), a New York lawyer. Together with his father, Daniel Lord (another Yale graduate), George DeForest Lord established the New York law firm of Lord, Day and Lord. Among its present day clients are The New York Times and the Rubin Foundation. The Rubin Foundation is one of the financial angels for the Institute for Policy Studies in Washington, D.C.

In the next hundred years five more Lords were initiated into The Order:

Franklin Atkins Lord	('98)
William Galey Lord	('22)
Oswald Bates Lord	('26)
Charles Edwin Lord, II	('49)
Winston Lord	('59)

When we ask the question, what have these members achieved? And what are they doing today? a dramatic picture emerges . . . as demonstrated in the chart . . .

Past Lords In The Order	The Lords Today
1854 George de Forest Lord 1898 Franklin Atkins Lord 1922 William Galey Lord = Francis Norton son is Charles Edwin Lord 2nd	→ CHARLES EDWIN LORD Acting Comptroller of the Currency (1981)
1926 Oswald Bates Lord = Mary Pillsbury (of Pillsbury flour family) son is Winston Lord 1949 Charles Edwin Lord 2nd 1959 Winston Lord	→ WINSTON LORD Chairman of the Council on Foreign Relations (1983)

Memorandum Number Three: How Much Is Known About The Order?

The openly published literature on The Order amounts to merely two articles over a span of one hundred years: The Iconoclast (Volume One, Number One only) published October *13, 1873* and an already cited article in Esquire by Ron Rosenbaum, published in *1977.* This book and its successors are based on unpublished archival material originating with The Order.

The Iconoclast October 1873)

Back in October *1873* an enterprising Yale student, stung to action because The Order had taken over Yale finances and left the University near poverty, took it upon himself to publish an expose. Unfortunately, some of the anonymous student's acutest observations were buried in not-so-good verse. We will reprint some of the verse below as in the original Iconoclast because it's impossible to summarize.

The Yale college newspapers, Courant and *Record,* had a blackout policy on The Order. As Iconoclast puts it,

> "We speak through a new publication, because the college press is closed to those who dare to openly mention 'Bones'."

The College Press was controlled by The Order. From time to time Yale newspapers were run by Editors in The Order. For example, one noteworthy editor of the Yale *Record* also in The Order was Thomas Cochran ('94), who went on to make a career as an influential partner in the influential banking firm of J.P. Morgan.

Three paragraphs in this anonymous publication summarize the Iconoclast accusation.

First, there is a Yale secret society open only to a select few:

"For more than forty years a secret society called Skull and Bones has existed in Yale College. It receives a certain number of men from each class. These are chosen nominally by the members of the class . . ., although it is understood that a prominent man's influence avails for his friends and relatives through several years after his graduation. By observing the men elected from year to year, we find that they are chosen with a distinct end in view, namely, that of obtaining for the society the most honors. Some of these honors are given to literary, some to wealthy men. This, then, is the case. Men receive marks of distinction from Yale College or from their entire class, because of which they are taken into this secret society. Since Yale honors men, this fraternity professes to honor them also."

Secondly, the Iconoclast states that The Order has obtained control of Yale, and its members care more for their society than for Yale:

To Whom It May Concern

We come before the college now on Justice's side arrayed,
To claim redress for open wrongs that Vandal hands have made,
To give a college sentiment expression bold and free,
Asserting each man's native right, if such a thing there be.

We represent no clique or clan, but honest men and true,
Who never will submit to that which **fifteen** men may do,
Who feel the shameful yoke that long has on the college lain,
And who propose to do their best to break that yoke in twain.

We are not "soreheads." God forbid that we should cherish strong
Desires to be identified with principles that long
Have been a blight upon the life and politics of Yale,
Before whose unjust aims the glow of "Boss Tweed's" brass
would pale.

We represent the neutral men, whose voices must be heard,
And never can be silenced by a haughty look or word.
Of those whose influence here at Yale would be but void and null
Did they not wear upon their breasts **two crossed bones and a skull.**

We hold no grudge 'gainst any man, but wish that all may be
United by the common bond of peace and harmony;
Yet, when a **few** do to themselves most proudly arrogate
The running of affairs, there can be no such happy state.

What right, forsooth, have **fifteen** men to lord it over all?
What right to say the college world shall on their faces fall
When they approach? Have they, indeed, to "sickly greatness
grown,"
And must each one with servile speech them his "superiors" own?

If they have grounds on which they base their claim as just and
true,
We challenge them to set them forth exposed to public view,
That all may know the reasons why this oligarchy proud
Elect themselves as lords supreme o'er us, the "vulgar crowd."

We offer no objections to their existing clan, —
No one disputes with them this right, we question but the plan
On which they act, — **That only he who wears upon his breast
Their emblem, he for every post shall be considered best.**

We wish this understood by all. Let none who read this say
That we are moved by petty wrongs or private spite obey;
It is for principles of right that we with them contend,
For principles which they've ignored, but which we here defend.

O fellow students, who with us revere these classic halls,
O ye across whose pathway bright their sacred glory falls, —
Ye men of every class who feel our Alma Mater's care,
Shall college life beneath these elms this loathsome aspect wear?

Shall none assert the right to act as to each seemeth best,
But cringe and fawn to him who wears a **death's head** on his
breast?
Nay, let all rise and break the spell whose sickly glamour falls
About all that originates within those brown stone walls.

And if they will not hear our claims, or grant the justice due,
But still persist in tarnishing the glory of the blue,
Ruling this little college world with proud, imperious tones,
Be then the watchword of our ranks — Down, Down With Skull
and Bones!

"Out of every class Skull and Bones takes its men. They have gone out into the world and have become, in many instances, leaders in society. They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will. No doubt they are worthy men in themselves, but the many whom they looked down upon while in college, cannot so far forget as to give money freely into their hands. Men in Wall Street complain that the college comes straight to them for help, instead of asking each graduate for his share. The reason is found in a remark made by one of Yale's and America's first men: Few will give but Bones men, and they care far more for their society than they do for the college.' "

Finally, the Iconoclast calls The Order a "deadly evil" growing year by year:

"Year by year the deadly evil is growing. The society was never as obnoxious to the college as it is today, and it is just this ill-feeling that shuts the pockets of non-members. Never before has it shown such arrogance and self-fancied superiority. It grasps the College Press and endeavors to rule it all. It does not deign to show its credentials, but clutches at power with the silence of conscious guilt.

To tell the good which Yale College has done would be well nigh impossible. To tell the good she might do would be yet more difficult. The question, then, is reduced to this - on the one hand lies a source of incalculable good, - on the other a society guilty of serious and farreaching crimes. It is Yale College against Skull and Bones!! We ask all men, as a question of right, which should be allowed to live?"

The power of The Order is put to use on behalf of its members even before they leave Yale. Here's a case from the late 19th century which predates the cases we will present later and suggests how long immoral use of power has prevailed within The Order:

"The Favoritism Shown To Bones Men"

"Are not we coming to a sad state when open injustice can be done by the Faculty, and when the fact that a man is a member of Skull and Bones can prejudice them in his favor? Briefly, the case which calls forth this question is this: Two members of the Senior class, the one being a neutral, the other a Bones man, returned at the beginning of the college year laden with several conditions, some of which, upon examination, they failed to pass. Up to this point the cases were parallel, and the leniency, if there was to be leniency, should have been shown to the neutral, who has done all that lay in his power to further the interests of the college, rather than **to the** Bones man, who has, during his three years at Yale, accomplished nothing that we wot of. But, strange to say, the former has been suspended until the end of the term and obliged to leave town, not being permitted to pass another examination until he returns. The Bones man, on the contrary, is allowed to remain in New Haven, attends recitation daily, is called upon to recite, and will have a second examination in less than six weeks. Why is this distinction made? `O, Mr. So-and-so's is a special case,' said a professor (a Bones man), - the specialty, we presume, being the fact that Mr. So-and-so wears a death's head and cross bones upon his bosom. We understand that Mr. So-and-so claims to have been ill during vacation and offers the illness as an excuse for not passing the examination; but the neutral gentleman was also ill, as the Faculty were expressly informed in a letter from his father."

"The circumstance has caused a very lively indignation throughout the Senior class. It is certainly time for a radical reform when the gentlemen who superintend our destinies, and who should be just if nothing else, can allow themselves to be influenced by so petty a thing as society connections."

Esquire (September 1977)

Only one article is known to have been published within the last 100 years on The Order. Unfortunately, it is a superficial, almost mocking, review and provides some enlightenment but little contribution to historical knowledge. The article is the "Last Secrets of Skull and Bones" by Ron Rosenbaum (Esquire, September 1977).

Rosenbaum is a Yale graduate attracted by the fictional possibilities of a secret society out to control the world; he is apparently not aware of the political implications. The contribution is a blend of known authentic documents and outright hearsay. On the other hand, Rosenbaum does make some notable observations. Among these are: ". . . the people who have shaped America's national character since it ceased being an undergraduate power had their undergraduate character shaped in that crypt over there" (i.e., the "temple" on the Yale campus).

Another comment: when a new member is initiated into The Order, "tonight he will die to the world and be born again into The Order as he will thenceforth refer to it. The Order is a world unto itself in which he will have a new name and fourteen new blood brothers, also with new names."

And when Rosenbaum starts to inquire about The Order, he is told: "They don't like people tampering and prying. The power of Bones is incredible. They've got their hands on every lever of power in the country. You'll see - it's like trying to look into the Mafia. Remember they're a secret society too."
The Esquire piece is well worth reading, it gives a side of The Order that doesn't concern us too much.

The "Addreses" Books

As The Order is a secret society it does not publish minutes or journals. As Rosenbaum suggests, "they don't like people tampering and prying.„

This author does, however, possess copies of the "Addresses" books, which used to be called "Catalogues." These are the membership lists all the way back to 1832, the founding date in the United States. How did this material make its way into outside hands? It is possible that one or more members, although bound by oath, would not be dismayed if the story became public knowledge. That's all we will say.

Other material exists, Skull & Bones is always a lively topic for Yale conversation. Some time back a few practical minded students made their own investigation; they did a break-in job, a "Yalegate." A small hoard of Bones momentos, a layout diagram and considerable embarrassment resulted.

The core of the research for this book is the "Addresses" books. With these we can reconstruct a picture of motives, objectives and operations. The actions of individual members are already recorded in open history and archives.

By determining when members enter a scene, what they did, what they argued, who they appointed and when they faded out, we can assemble patterns and deduce objectives.

Memorandum Number Four: Who Is In This Secret Society?

The membership list of about 2500 initiates into The Order has very obvious features:

- Most members are from the Eastern seaboard United States. As late as 1950 only three members resided in Los Angeles, California, but 28 members resided in New Haven, Connecticut.
- Members are all males and almost all WASPS (White Anglo Saxon Protestant). In great part they descended from English Puritan families, their ancestors arrived in North America in the 1630-1660 period.
- These Puritan families either intermarried with financial power or invited in sons of money moguls, e.g., Rockefellers, Davisons, and Harrimans, whose sons became members of The Order.

From this preliminary information we can derive Hypothesis One:
THERE EXISTS [N THE UNITED STATES TODAY, AND HAS EXISTED SINCE 1833, A SECRET SOCIETY COMPRISING MEMBERS OF OLD LINE AMERICAN FAMILIES AND REPRESENTATIVES OF FINANCIAL POWER.

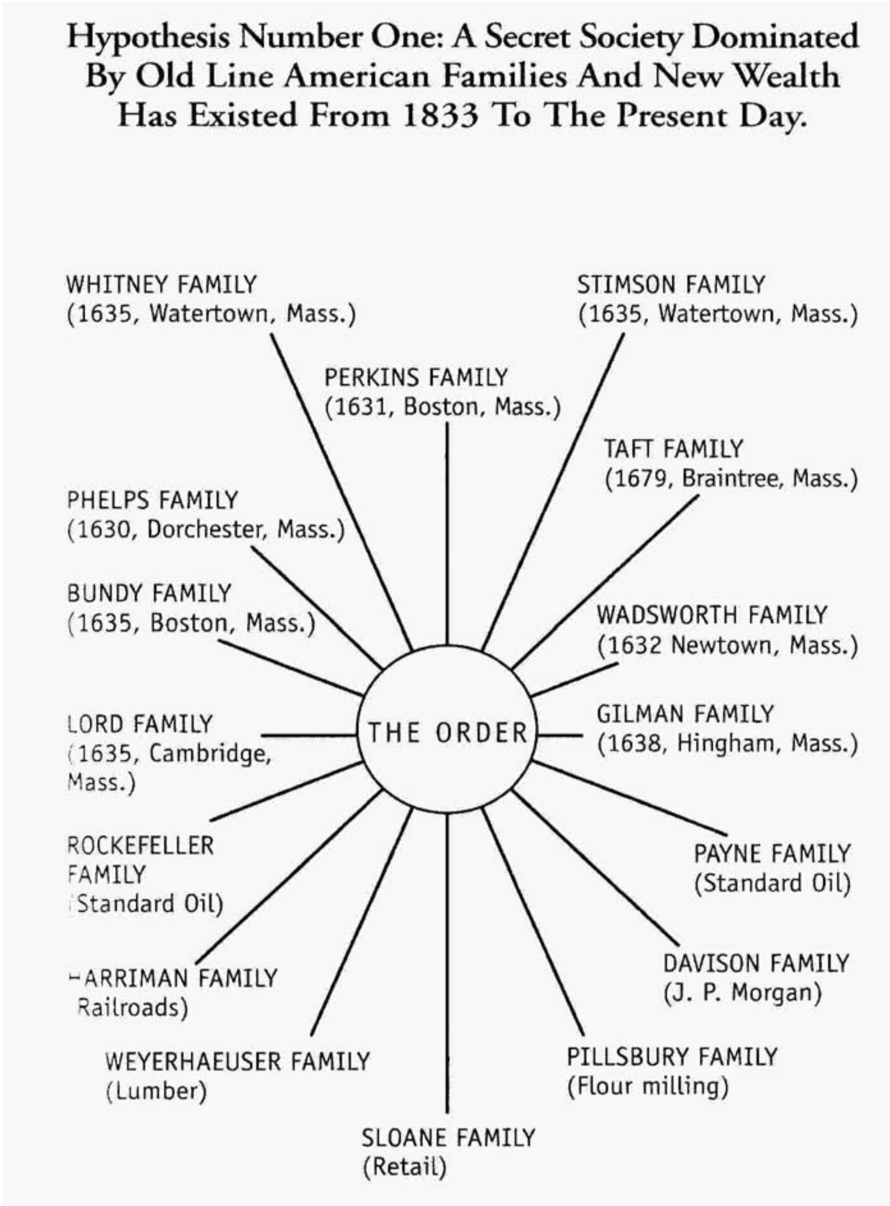
The chart on page 19 presents a simplified layout of this hypothesis. Full information remains for a later book - for now we'll give details of just two key families, the Whitneys and the Harrimans.

The Whitney Family

A key family is the Whitneys, descended from English Puritans who came to the U.S. about 1635 and settled in Watertown, Mass. Eight Whitneys have been members of The Order. Of these, three had brief lives; Emerson Cogswell Whitney died a few months after initiation and Edward Payson Whitney "disappeared in 1858" according to his biographer. However, three Whitneys, William Collins Whitney and his two sons, are the core of Whitney influence in The Order which survives today through the Harriman family and intermarriage with Paynes and Vanderbilts.

Whitneys In The Order:

Initiation	Name	Field
1851	Emerson Cogswell Whitney	Education: "Died December 1, 1851."
1854	Edward Payson Whitney	Medicine: "Disappeared in 1858"
1856	James Lyman Whitney	Library work: Boston Library
1863	William Collins Whitney	Secretary of Navy (1885-9) Promoter and Financier
1878	Edward Baldwin Whitney	Law: Justice, New York Supreme Court
1882	Joseph Ernest Whitney	Education: "Died Feb. 25, 1893"
1894	Payne Whitney (son of W.C. Whitney)	Finance: Knickerbocker Trust Co.
1898	Harry Payne Whitney (son of W.C. Whitney)	Finance: Guaranty Trust and Guggenheim Explora tion Co.



William Collins Whitney (1841-1904) is a fine example of how members of The Order rise to fame and fortune. W.C. Whitney was initiated in 1863 and by 1872 had only advanced his career to Inspector of Schools for New York. However, in the last three decades of the century, he rolled up a massive fortune, became a power behind the throne in the Cleveland Administration, and directed the often unscrupulous activities of a cluster of capitalists known as "the Whitney Group". A brief quotation suggests the power that Whitney amassed in a brief 30 years. This is a list of Whitney estates at the turn of the century:

> ". . . a city residence in New York, a Venetian palace and 5,000 acres in Wheatley Hills, near Jamaica, L.I.; a Sheepshead Bay house, with a private track covering 300 acres; a mansion at Berkshire Hills, Mass., with 700 acres of land; October Mountain house, with a large tract of land; Stony Ford Farm, New York, used as an auxiliary to his Kentucky Stock Farm; an Adirondack game preserve of 16,000 acres; a lodge at Blue Mountain Lake with a fine golf course, a Blue Grass farm of 3,000 acres in Kentucky; and an estate at Aiken, S.C., comprising a mansion, race course, and 2,000 acres of hunting land."

William C. Whitney married Flora Payne, daughter of Standard Oil Treasurer Oliver Payne. The Paynes are not in The Order, but adding the Payne piece of the Standard Oil fortune made Whitney's fortune that much larger. Their two sons, Harry Payne ('94) and Payne Whitney ('98), went to Yale and became members of The Order. After Yale Harry Payne promptly married Gertrude Vanderbilt in 1896 and so the Whitney-Payne fortune now joined some Vanderbilt money. This financial power was channeled into Guaranty Trust, the J.P. Morgan and Guggenheim outfits.

And it gets more complicated. For example, the son of Harry Payne Whitney, Cornelius Vanderbilt Whitney, married Marie Norton. After their divorce, Marie Norton Whitney married W. Averell Harriman (his first wife) who is today at 91 a key member. It is these tightly woven family and financial interlocks that make up the core of The Order.

So let's take a look at the Harriman family.

The Harriman Family

In the first few days of June 1983 a prominent American, a private citizen, flew to Moscow for a confidential chat with Yuri Andropov. A State Department interpreter went along.

This American was not the President, nor the Vice-President, nor the Secretary of State, nor any member of the Reagan Administration. It was a private individual - W. Averell Harriman. The first time any American had talked with Yuri Andropov since the death of his predecessor, Brezhnev. So who is W. Averell Harriman?

The elder Harriman, a prominent and not too scrupulous railroad magnate, sent both his sons to Yale. William Averell Harriman ('13) and Edward Roland Noel Harriman ('17) joined The Order. A good example of how old line families in The Order absorbed new wealth families, although as history has unfolded it may be that Harriman and his fellow investment bankers have dominated the direction of The Order in the past few decades.

Business Established 1818

BROWN BROTHERS HARRIMAN & Co.

PRIVATE BANKERS

NEW YORK • BOSTON • PHILADELPHIA • CHICAGO • ST. LOUIS

STATEMENT OF CONDITION, JUNE 30, 1972

ASSETS

Cash on Hand and Due from Banks	$125,311,119
U.S. Government Securities: Direct and Guaranteed	45,083,406
State, Municipal and Other Public Securities	59,169,090
Other Marketable Securities	1,408,308
Loans and Discounts	178,690,569
Customers' Liability on Acceptances	11,940,935
Other Assets	21,879,118
	$443,482,545

LIABILITIES

Deposits	$398,446,959
Acceptances: Less Amount in Portfolio	12,389,930
Other Liabilities	5,860,372
Capital	8,000,000
Surplus	18,785,284
	$443,482,545

PARTNERS

J. Eugene Banks	John C. Hanson	Thomas McCance
Moreau D. Brown	E. R. Harriman	L. J. Newquist
Walter H. Brown	Frank W. Hoch	William F. Ray
Prescott Bush	Stephen Y. Hord	Robert V. Roosa
Granger Costikyan	R. L. Ireland III	L. Parks Shipley
William R. Driver Jr.	F. H. Kingsbury, Jr.	Maarten van Hengel
Terrence M. Farley	Robert A. Lovett	John C. West
Elbridge T. Gerry	John B. Madden	Knight Woolley

LIMITED PARTNERS

Louis Curtis — Gerry Brothers & Co. — W. Averell Harriman

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Brown Brothers Harriman, advertisement from *Wall Street Journal* listing partners.

In the 1930s W.A. Harriman & Company merged with Brown Brothers. This was an older financial house whose partners were also members of The Order. Alexander Brown was founded 1800 in New York and Philadelphia.

By the 1970s the relatively unknown private international banking firm of Brown Brothers, Harriman, with assets of about one-half billion dollars, had taken in so many of "the Brotherhood" that out of 26 individual partners, no fewer than 9 were members of The Order. We don't know of any greater concentration of members.

And to make it more interesting, Prescott Bush, father of President George H. W. Bush (both in The Order), was a partner in Brown Brothers, Harriman for over 40 years.

Finally, because Brown Brothers, Harriman is a private banking firm it has relatively no government supervision and does not publish an annual report. In other words, we know NOTHING about its operations - at least we know nothing from Brown Brothers, Harriman sources.

Here's a line-up of Brown Brothers, Harriman partners who were also members of The Order in the mid 1970s:

Name of Partner	**Date Initiated**
Walter H. Brown	1945
Prescott Sheldon Bush	1917
Granger Kent Costikyan	1929
Edward Roland Noel Harriman	1917
W. Averell Harriman	1913
Stephen Young Hord	1921
Robert Abercrombie Lovett	1918
John Beckwith Madden	1941
Knight Woolley	1917

It's worth thinking about this concentration of names and the power it represents in the light of outside comments on The Order over the years.

After the title page of this volume we reprint the verse of an anonymous Yale student of the 1870s. He commented on the requirement to put The Order ahead of all else.

The Editor of The Iconoclast (also in the 1870s) wrote:

And on their breasts they wear a sign That tells their race and name
It is the ghastly badge of death And from his kingdom came The son of
Satan, son of sin The enemy of man.

Another writer in the 1870s called The Order the "Brotherhood of Death":

> Outside already, in the doubtful dawn,
>
> Thither, from this side and from that, slow sweep, And settle down in silence solidly,
> Crow-wise, the frightful Brotherhood of Death. Black-hatted and black-hooded huddle
> they, With black cravats a-dangling from each neck; So take they their grim station at
> the door, Torches lit, skull-and-cross-bones-banner spread.

Ron Rosenbaum in his 1977 Esquire article a century later, was no less caustic. Rosenbaum called it a Mafia.

From evidence to be presented later this author would term The Order "an international Mafia" . . . unregulated and all but unknown. To the outside world, however, it's merely Brown Brothers, Harriman, 59 Wall Street, New York. But obviously Yuri Andropov over in Moscow knows who holds the cards.

The British Connection

Some well read readers may raise a question - how does The Order the its families relate to Cecil Rhodes secret society, Milners Round Table, the Illuminati and the Jewish secret society equivalents? How do these fit into the picture?

We are concerned here only with the core of a purely American phenomenon with German origin. It is undoubtedly linked to overseas groups. The links between The Order and Britain go through Lazard Freres and the private merchant bankers. Notably the British establishment was also founded at a University - Oxford University, and especially All Souls College at Oxford. The British element is called "The Group."

The Group links to the Jewish equivalent through the Rothschilds in Britain (Lord Rothschild was an original member of Rhodes "inner circle"). The Order in the U.S. links to the Guggenheim, Schiff and Warburg families. There were no Jews at all in The Order until very recently. In fact, The Order has, as Rosenbaum suggests, some definite anti-semetic tendencies. Token Jews (and token blacks) have been admitted in recent years.

There is an Illuminati connection. Some details are in the *Esquire* article, more details will be in our future volumes.

All these groups have cooperative and competitive features. But to argue that all the world's ills can be ascribed to any one of these groups is false. The core of The Order, like the core of "The Group" in England, comprises about 20 families. In the U.S. case they are mostly descendents from the original settlers in Massachusetts. New wealth did not enter The Order until the mid-19th century and until recently, has never dominated The Order. On the other hand, key families, the Whitneys and the Harrimans, are linked to their own banking interests. In many ways these old line Yankee families have outsmarted the bankers. The Puritans diverted bankers' wealth to their own objectives without always absorbing the banker families. The Order controls the substantial wealth of Andrew Carnegie, but no Carnegie has ever been a member of The Order. The Order used the Ford wealth so flagrantly against the wishes of the Ford family that two Fords resigned from the board of the Ford Foundation. No Ford has been a member of The Order. The name Morgan has never appeared on the membership lists, although some Morgan partners are with the inner core, for example, Davison and Perkins. Interestingly, the Astor name is prominent in "The Group" in England, but not in The Order in the U.S.

Memorandum Number Five: What Organizations Has It Penetrated?

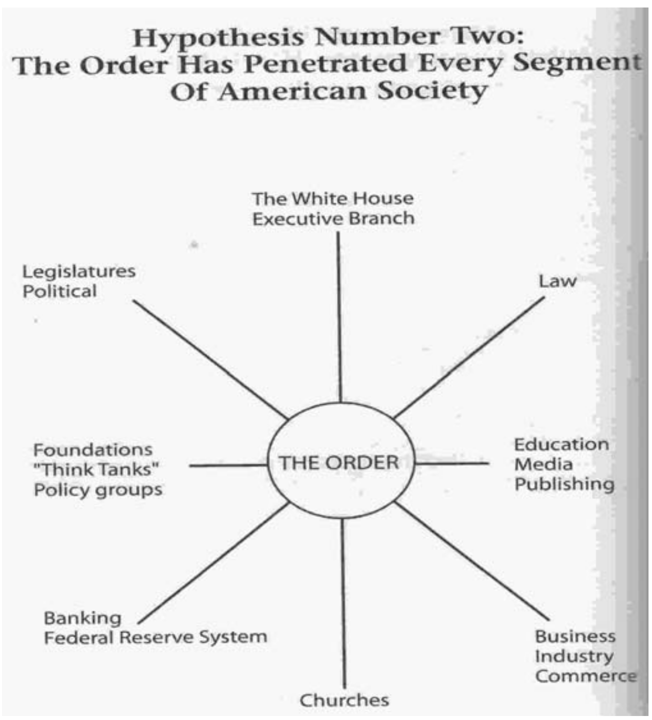
The Order has either set up or penetrated just about every significant research, policy, and opinion-making organization in the United States, in addition to the Church, business, law. government and politics. Not all at the same time, but persistently and consistently enough to dominate the direction of American society. The evolution of American society is not, and has not been for a century, a voluntary development reflecting individual opinion, ideas and decisions at the grass roots. On the contrary, the broad direction has been created artificially and stimulated by The Order.

Not all organizations know they have been penetrated or used for another purpose. It's a situation very much as Quigley (see page 30) found in "The Group":

"there is . . . an inner core of intimate associates who unquestionably knew that they were members of a group devoted to a common purpose and an outer circle of a larger number on whom the inner circle acted by personal persuasion, patronage distribution and social pressure. It is probable that most members of the outer circle were not conscious that they were being used by a secret society."

Therefore our Hypothesis Number Two is:

THE ORDER HAS PENETRATED OR BEEN THE DOMINANT INFLUENCE [N SUFFICIENT POLICY, RESEARCH AND OPINION MAKING ORGANIZATIONS THAT IT DETERMINES THE BASIC DIRECTION OF AMERICAN SOCIETY.



The Order Is The Original Impulse

One observation is that The Order gets the ball rolling in new organizations, i.e., puts in the FIRST President or Chairman and the ideas and then, when operations are rolling along, often just fades out of the picture.

Among universities we can cite Cornell University, where Andrew Dickson White ('53) was its FIRST President, and Johns Hopkins University, based on the German educational system, where Daniel Coit Gilman ('52) was the FIRST President (1875-1901).

Among academic associations the American Historical Association, the American Economic Association, the American Chemical Society, and the American Psychological Association were all started by members of The Order or persons close to The Order. These are key associations for the conditioning of society.

This phenomenon of The Order as the FIRST on the scene is found especially among foundations, although it appears that The Order keeps a continuing presence among Foundation Trustees. It does more than just be

FIRST where money is concerned. It stays around to keep an eye on expenditures. The FIRST President of the Carnegie Institution (1902-5) was Daniel Coit Gilman, but other members of The Order nave been on Carnegie boards since the turn of the century. Gilman .vas on the scene for the founding of the Peabody, Slater, and Russell 5age Foundations. McGeorge Bundy was President of the Ford Foundation from 1966-1979.

The FIRST Chairman of an influential but almost unknown organiza'ion established in 1910 was also a member of The Order. In 1920 Theodore Marburg founded the American Society for the Judicial Settlement of International Disputes, but Marburg was only President. The FIRST Chairman was member William Howard Taft ('78). The Society .vas the forerunner of the League to Enforce the Peace, which developed into the League of Nations concept and ultimately into the United Nations.

In United Nations we find, for example, that Archibald McLeash ('15) was the brains behind the constitution of the UNESCO organization. We find the same FIRST on the scene phenomenon in "think tanks." :n 1960, James Jeremiah Wadsworth ('27) set up the Peace Research Institute. In 1963 this was merged to become the Institute for Policy Studies, along with Marcus Rashkin, who had been National Security Council Aide (1961-3) to McGeorge Bundy ('40), a very active member of The Order.

The Church

About 2 percent of The Order is in the Church (all Protestant denominations), although this percentage has declined in recent years.

A key penetration is the Union Theological Seminary, affiliated with Columbia University in New York. This Seminary, a past subject of investigation for Communist infiltration, has close links to The Order. Henry Sloane Coffin ('97) was Professor of Practical Theology at Union from 1904 to 1926 and President of Union Theological Seminary, also known as the "Red Seminary," from 1926 to 1945. Union has such a wide interpretation of religious activity that has, or used to have, an Atheists Club for its students.

Henry Sloane Coffin, Jr. ('49) was one of the Boston Five indicted on federal conspiracy charges.

And this is only part of The Order's penetration into the Church.

The Law

The major establishment law firms in New York are saturated with The Order.

In particular, Lord, Day and Lord, dominated by the Lord family already discussed; also Simpson, Thacher and Bartlett, especially the Thacher family; David, Polk, Wardwell and Debevoise, Plimpton, the Rockefeller family law firm.

Communications

There has been a significant penetration into communications. Some examples:

- Henry Luce of Time-Life is in The Order.
- so is William Buckley ('50) of National Review
- and Alfred Cowles ('13), President of Cowles Communications, Des Moines Register, Minneapolis Star
- and Emmert *Bates* ('32) of Litton Educational Systems, plus ' Richard Ely Danielson ('07) of Atlantic Monthly
- Russell Wheeler Davenport ('23), Fortune

' John Chipman Farrar ('18), of Farrar, Straus, the publishers. The most prestigious award in journalism is a Nieman Fellowship at Harvard University. Over 300 were granted from 1937-68. The FIRST Director of the Nieman Fund was member Archibald McLeash.

Industry

The oil companies have their links to The Order. Members Percy Rockefeller, the Paynes, the Pratts, all link to Standard Oil. Shell Oil, Creole Petroleum, and Socony Vacuum also link. A wide variety of manufacturing firms have members in The Order from the Donnelley family in Chicago (printers of the Official Airline Guide and other references); lumber companies like Weyerhaeuser, who is also a Trilateralist; Dresser Industries, and so on.

The Federal Reserve System

A dozen members can be linked to the Federal Reserve, but one appointment is noteworthy, Pierre Jay ('92), whose only claim to fame in 1913 was to run a private school and be an obscure Vice President of Manhattan Bank yet he became FIRST Chairman of the New York Federal Reserve, the really significant Reserve Bank.

The White House, Politics and Government

This is the area where The Order has made headway: with names like Taft, Bush, Stimson, Chafee, Lovett, Whitney, Bundy and so on. It will take a separate volume to cover this story and in Memorandum Nine we describe just one example, THE BUNDY OPERATION.

Memorandum Number Six:
Operations Of The Order

In 1981 The Anglo American Establishment, by Carroll Quigley, was published in New York by a small anti-Establishment publisher. Quigley was formerly instructor at Princeton and Harvard and then Professor at the School of Foreign Service, Georgetown University. The publisher notes in his introduction that Quigley had been unable to find a major publisher for the manuscript. This is not surprising. The book blows the lid off the British equivalent of The Order.

The *Anglo American Establishment* has nothing at all to do with the American establishment, which is hardly mentioned, but it has a lot to do with the British establishment. *The* publisher probably inserted the word "AMERICAN" into the title to enhance marketability in the States. Quigley describes in minute detail the historical operations of the British establishment controlled by a secret society and operating very much as The Order operates in the U.S. This is the real significance of Quigley's explosive book.

The Group

The British secret society, known as "The Group" or just plain "US", was founded at Oxford University, much as The Order was founded at Yale, but without the Masonic mumbo jumbo. As we noted in Memorandum Five. the Group operates in a series of concentric circles and like The Order consists of old line families allied with private merchant bankers, known in the U.S. as investment bankers.

Bearing in mind. the proven existence of The Group. the operations of The Order and the kind of penetration it has achieved cannot be explained by mere chance. By examining The Order's operations we can generate a picture of its objectives without access to any internal constitution or statement of objectives even if such exists. It may only be word of mouth.

By contrast. The Group's objective is recorded in Cecil Rhodes' will. It was:

The extension of British rule throughout the world, the perfecting of a system of emigration from the United Kingdom and of colonization by British subjects of all lands wherein the means of livelihood are attainable by energy. labor and enterprise ... and the ultimate recovery of the United States of America as an integral part of the British Empire.

This objective is, of course. ridiculous and somewhat immature, but no less ridiculous and immature than the New World order objective of The Order. Yet The Group has controlled British policy for a hundred years and still does.

Both The Group and The Order have been created by Anglophiles who want to pattern the world on a Hegelian-Anglo hybrid culture. Where the Latins, the Slavs and the Sino races fit is not considered, but clearly these cultures will be disinclined to become pawns of either the British Empire or New England Yankees. Even within the Commonwealth, a voluntary association of nations, it is unlikely that Canada, Australia and New Zealand would accept the constitutional bondage envisaged by Cecil Rhodes. Both secret organizations overlook, and there is a philosophic basis for this neglect, the natural right of any ethnic group, be it white, black or yellow, English, Slavic or Latin, to develop its own culture without coercion.

Unlike this author, Quigley sympathizes with the ends of The Group, although he terms their methods despicable. Both The Group and The Order are unwilling or unable to bring about a global society by voluntary means, so they opted for coercion. To do this they have created wars and revolutions, they have ransacked public treasuries, they have oppressed, they have pillaged, they have lied - even to their own countrymen.

How have they done this?

Modus Operandi Of The Order

The activities of The Order are directed towards changing our society, -hanging the world, to bring about a New World Order. This will be a planned order with heavily restricted individual freedom, without Constitutional protection, without national boundaries or cultural distinction.

We deduce this objective by examining and then summing up the actions of individual members: there has been a consistent pattern of activity over one hundred years. Part of this activity has been in cooperation with The Group, with its parallel and recorded objectives.

Now if, for example, we found that the dominant interest of members .vas raising ducks, that they wrote articles about ducks, bred ducks, sold ducks, formed duck-studying councils, developed a philosophy of ducks, then it would be reasonable to conclude that they had an objective concerning ducks, that this is not mere random activity.

Historically, operations of The Order have concentrated on society, now to change society in a specific manner towards a specific goal: a New World Order. We know the elements in society that will have to be changed in order to bring about this New World order, we can then examine The Order's actions in this context.

More or less these elements would have to be:

Education - how the population of the future will behave,
Money - the means of holding wealth and exchanging goods,
Law - the authority to enforce the will of the state, a world law and a world court is needed for a world state,
Politics - the direction of the State, Economy - the creation of wealth,
History - what people believe happened in the past,
Psychology - the means of controlling how people think,
Philanthropy - so that people think well of the controllers,
Medicine - the power over health, life and death,
Religion - people's spiritual beliefs, the spur to action for many, Media - what people know and learn about current events,
Continuity - the power to appoint who follows in your footsteps.

Operations in each of these areas will be detailed in subsequent volumes. For example, in the next volume, The Order Controls Education, we will describe how Daniel Coit Gilman, President of Johns Hopkins University, imported Wundt psychological methods from Germany, then welded education and psychology in the U.S., established laboratories, brought these educational laboratories into major Universities and generated 100s of PhDs to teach the new educational conditioning system. One of the first of these Johns Hopkins doctorates was John Dewey. The result we well know. The educational morass of the '80s where most kids - not all - can't spell, read or write, yet can be programmed into mass behaviour channels.

The Order's next move was to control the Foundations. They got all the big ones - Carnegie, Ford, Peabody, Slater, Russell Sage and so on. That's the topic of another volume. As in education, the modus operandi of The Order was to get in FIRST and set the stage for the future. The initial objective was to establish a direction in an organization. Selection of managers, intuitive or amoral enough to catch on to the

direction, kept the momentum going. In the case of Foundations, The Order has usually maintained a continuing presence over decades.

When it comes to activities by individual members, at first sight the pattern is confusing and superficially inconsistent. Let's give some examples:

- Andrew Carnegie profited from war through his vast steel holdings, but under the guidance of member Daniel Coit Gilman, Carnegie was also an enthusiastic president and financial backer of the American Peace Society. This is seemingly inconsistent. Could Carnegie be for war and peace at the same time?
  - The League to Enforce the Peace, founded by members William H. Taft and Theodore Marburg, was promoting peace, yet active in urging U.S. participation in World War One. How could the League be for war and peace at the same time?
  - In the 1920s, W. Averell Harriman was a prime supporter of the Soviets with finance and diplomatic assistance, at a time when such aid was against State Department regulations. Harriman participated in RUSKOMBANK, the first Soviet commercial bank. Vice-President Max May of Guaranty Trust, dominated by the Harriman-Morgan interests, became the FIRST Vice President of RUSKOMBANK in charge of its foreign operations. In brief, an American banker under guidance of a member of The Order had a key post in a Soviet bank! But we also find that Averell Harriman, his brother Roland Harriman, and members E.S. James and Knight Woolley, through the Union Bank (in which they held a major interest) were prime financial backers of Hitler.

Now our textbooks tell us that Nazis and Soviets were bitter enemies and :heir systems are opposites. How could a rational man support Soviets and Nazis at the same time? Is Harriman irrational or is the inconsistency explainable?

- The Bundy family (we have a Memorandum on them later) gives us another example of seeming inconsistency. William Bundy was with the Central Intelligence Agency for a decade. McGeorge Bundy was National Security Assistant to Presidents Kennedy and Johnson. So the Bundys presumably support U.S.-European policy which is pro-NATO. Yet the Bundys have been linked to activities and organizations which are anti NATO and, indeed, pro-Marxist - for example, the Institute for Policy Studies. Are the Bundys inconsistent?
- Among individual members of The Order we find a wide variety of publicly proclaimed beliefs, ideologies and politics. William Buckely periodically chews out the Soviets. On the other hand, member John Burtt has been a member of a dozen communist front groups. Member William S. Coffin, Jr. spent three years with CIA and then became a leader of anti-Vietnam war activity through the National Conference for a New Politics and Clergy and Laymen Concerned about Vietnam. In fact, Coffin was one of the Boston Five charged and indicted for conspiracy to violate Federal laws. And, of course, W. Averell Harriman is elder statesman of the Democratic Party.

Quite a mixture of beliefs and activities. Do they reflect inconsistent philosophies?
How can The Order have a consistent objective with this potpourri of individual actions?

The answer is, they are not at all inconsistent: **because the objective of The Order is above and beyond these actions and in fact needs these seeming contradictions.**

The State is Absolute

How can there exist a common objective when members are apparently acting in opposition to one another?

Probably the most difficult task in this work will be to get across to the reader what is really an elementary observation: that the objective of The Order is **neither** "left" **nor** "right." "Left" and "right" are artificial devices to bring about change, and the extremes of political left and political right are vital elements in a process of controlled change.

The answer to this seeming political puzzle lies in Hegelian logic. Remember that both Marx and Hitler, the extremes of "left" and "right" presented as textbook enemies, evolved out of the same philosophical system:

Hegelianism. That brings screams of intellectual anguish from Marxists and Nazis, but is well known to any student of political systems.

The dialectical process did not originate with Marx as Marxists claim, but with Fichte and Hegel in late 18th and early 19th century Germany. In the dialectical process a clash of opposites brings about a synthesis. For example, a clash of political left and political right brings about another political system, a synthesis of the two, neither left nor right. **This conflict of opposites is essential to bring about change**. Today this process can be identified in the literature of the Trilateral Commission where "change" is promoted and "conflict management" is termed the means to bring about this change.

In the Hegelian system conflict is essential. Furthermore, for Hegel and systems based on Hegel, the State is absolute. The State requires complete obedience from the individual citizen. An individual does not exist for himself in these so-called organic systems but only to perform a role in the operation of the State. He finds freedom only in obedience to the State. There was no freedom in Hitler's Germany, there is no freedom for the individual under Marxism, neither will there be in the New World Order. And if it sounds like George Orwell's 1984 - it is.

In brief, the State is supreme and conflict is used to bring about the ideal society. Individuals find freedom in obedience to the rulers.

So who or what is the State? Obviously it's a self-appointed elite. It is interesting that Fichte, who developed these ideas before Hegel, was a freemason, almost certainly Illuminati, and certainly was promoted by the Illuminati. For example, Johann Wolfgang Goethe (Abaris in the Illuminati code) pushed Fichte for an appointment at Jena University.

Furthermore, the Illuminati principle that the end justifies the means. a principle that Quigley scores as immoral and used by both The Group and The Order, is rooted in Hegel. Even the anonymous Yale student who wrote the verse in Memorandum Three observed this principle at work on the Yale campus.

This, then, is a vital part of our explanation of The Order. When its co-founder, William Russell, was in Germany in 1831-2, there was no way he could have avoided Hegelian theory and discussion. It was the talk of the campus. It swept intellectual Germany like a Pac Man craze. Most Americans haven't heard of it. And those who have don't want to hear any more about it. Why? Because its assumptions are completely at variance with our sense of individual freedom and Constitutional guarantees. Most of us believe the State exists to serve the individual, not vice versa.

The Order believes the opposite to most of us. That is crucial to understanding what they are about. So any discussion between left and right, while essential to promote change, is **never** allowed to develop into a discussion along the lines of Jeffersonian democracy, i.e., the best government is least government. The discussion and the funding is always towards more state power, use of state power and away from individual rights. So it doesn't matter from the viewpoint of The Order whether it is termed left, right, Democratic, Republican, secular or religious - so long as the discussion is kept within the framework of the State and the power of the State.

This is the common feature between the seemingly dissimilar positions taken by members - **they have a higher common objective in which clash of ideas is essential**. So long as rights of the individual are not introduced into the discussion the clash of ideas generates the conflict necessary for change.
As the objective is also global control an emphasis is placed on global -_'-inking, i.e., internationalism. This is done through world organizations and world law. The great contribution of the Tafts to The Order w as on the world court system and world law - to the internationalist aspect of the New World Order.

Memorandum Number Seven:

How The Order Relates To The Council On Foreign Relations, Trilateral Commission And Similar Organizations

Organizations like the Council on Foreign Relations (CFR) do not fit the requirements for a conspiracy. They are simply too large and their membership is not secret. The membership list for The Order has never surfaced until now. Anyone can obtain a list of members for the CFR and the Trilateral Commission. Also, too many people are included as members in these organizations who are just not given to membership in conspiratorial groups.

Certainly there is off-the-record discussion and certainly the general direction of U.S. policy reflects majority thinking in these organizations - but they are not conspiracies.

Moreover, the CFR and its sister organizations are not geared to action and implementation of policy. Compare, for example, the Brown Brothers, Harriman firm with nine members of The Order and the CFR. Obviously the first is more cohesive, yet more low profile, more able to conceal its actions, yet more action oriented.

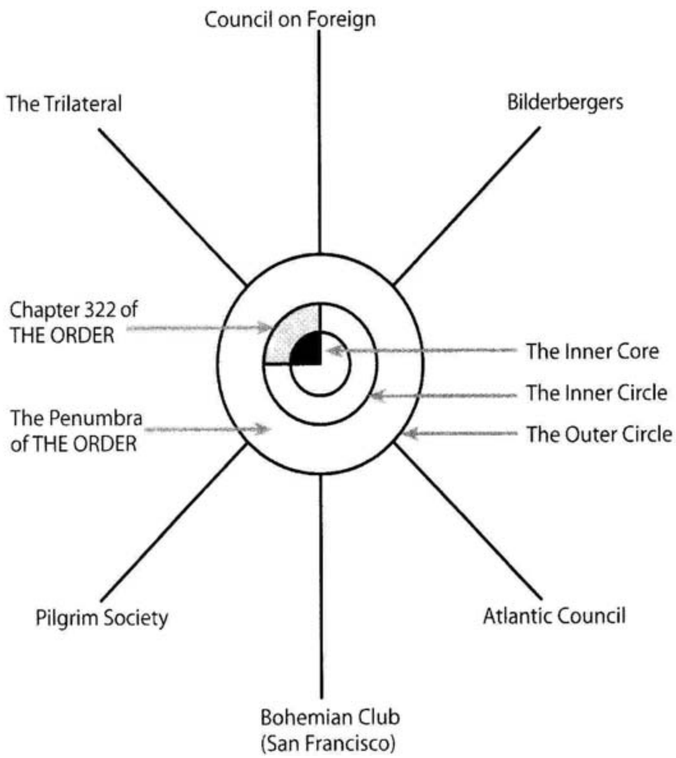
The larger open organizations are a forum for discussion, a place where ideas can be kicked around, "a rich man's club", as someone commented, where people can be assessed, where discrete comment and criticism can be made away from a nosy press and a possibly unsympathetic public. They may not be elected bodies, but neither are they conspiracies; they fall in the shadow of a conspiracy. They are neither democratic or dictatorial.

The Role Of The Order

The Order is represented in these organizations but does not always dominate. David Rockefeller, a former chairman of the CFR, is not a member of The Order (only Percy Rockefeller has represented the family), but the present CFR chairman, Winston Lord, is.

We can represent the relationship between The Order and the larger groups as a series of concentric circles. The CFR, etc. form an outer circle, i.e., a penumbra. They exist in a shadow cast by an inner organization. It is this inner organization that needs to be surfaced. The Order is the inner circle and Chapter 322 is a part of this inner circle because it is unlikely Chapter 322 is the only chapter in the U.S. We suspect, but cannot yet prove, at least one other.

How Chapter 322 Of The Order Relates To Other Organizations



In brief, it looks like three segments:

(1) **The outer circle**, made up of large, open organizations with some membership coming from The Order.
(2) **The inner circle**, made up of one or more secret societies like Chapter 322. We can only prove one chapter at this time.
(3) **The inner core**, a secret society within a secret society. This is the inner decision-making core. We cannot prove it exists, but logic suggests that some members of the inner circle will form an executive committee, an action group, an inner core. While we cannot prove the existence of an inner core, there are some obvious candidates for membership and we could hazard a guess as to the identity of the Chairman.

The Outer Circle

The Council on Foreign Relations is the largest organization in the outer circle. It has about 2500 members at any one time, as many as The Order in its entire history. The Trilateral Commission has 200 members world wide, but only 70 in the United States. These are younger organizations. The CFR dates from 1922, The Pilgrims from 1900, The Trilateral Commission from 1973, and the Bilderbergers from the 1950s.
How many members of The Order are in the CFR?
This is not the place for an exhaustive analysis, but a general idea can be gained from looking at names in The Order beginning with the letter "B":
The following are members of The Order and the Council on Foreign Relations:

Jonathan Bingham (Congressman)

William F. Buckley (Editor, *National Review* and The Order's house conservative)

McGeorge Bundy (Foundation executive) William Bundy

(Central Intelligence Agency)

George Herbert Walker Bush (President of the United States) The make-up of the Council on Foreign Relations reflects its purpose as a meeting ground, a discussion forum. The CFR mainly consists of government officials, industrialists and academics. The Order has a distinctly different make-up, i.e., many more lawyers, for example, and a wider variety of declared occupations with far fewer industrialists. The

Trilateral Commission

The Trilateral Commission was founded in 1973 by David Rockefeller and comprises 200 members world wide, of whom about 77 are American. There is no overlap among memberships; for example, lumber industrialist Frederick Weyerhaeuser was in The Order, but his son is in the Trilateral Commission and not The Order. Similarly, Robert Taft, Jr., is in the Trilateral Commission but not The Order, even though The Order was co-founded by his great grandfather and eight Tafts have been members. The link is elusive, conceivably there may not be a link.

The Trilateral Commission is not a conspiracy. Its membership list is completely public - it costs a postage stamp to get one. The Commission publishes dozens of booklets. The organization is completely above ground. In fact, this author has openly debated with George Franklin, Jr., Coordinator of the Trilateral Commission on the radio. Mr. Franklin did show a rather ill-concealed dislike for the assault on his pet global New World Order - and made the mistake of attempting to disguise

this objective, but evasion and hostility do not constitute conspiracy. Conspirators just don't appear on radio talk shows to debate their objectives.

Temporarily the following facts should be held in mind:

' J. Richardson Dilworth, at Room 3600 Rockefeller Plaza, and the Rockefeller Family Associates' chief financial and administrative officer, is a member of The Order.

' Percy Rockefeller (1900) was a member of The Order, but no other Rockefeller name is on the list.

J It may be that the Trilateral Commission will prove to be a purely David Rockefeller personal endeavor rather than a broader establishment vehicle. However, Trilateral purposes, as portrayed in the literature, are almost identical to those of The Order. It may be a vehicle to attain an interim goal, i.e., three regional groupings. In this case J. Richardson Dilworth is the conduit and liaison.

Bilderbergers

So far as we can trace, only William F. Buckley is a member of the Bilderbergers and The Order.

Pilgrim Society

The Order does not show up directly on the Executive Committee of !he Pilgrim Society, but only through family names, i.e., Aldrich and Pratt. The Pilgrim Society is probably a rather harmless social club using its annual dinners to cement ties between the British and American establishment.

The Inner Circle

Chapter 322 of The Order differs from the CFR, the Trilateral Commission and similar organizations in that it is truly a secret society. Its purposes and membership are not disclosed. It is paranoid about secrecy and in covering its trail.

The circumstances that surround the founding of Scroll & Key in the 1850s suggest this secret society may in fact be Chapter 323. But this is pure speculation. So we have two secret societies that differ extensively from the CFR, Trilaterals and others and which can be seen as making up an inner circle.

Even this inner circle is too large for decision making. No doubt it includes many active or just plain bored members, even many who have forgotten they were ever initiated and who might be shocked to read in this book that they belong to a subversive organization. So logically there is a secret society within the secret society. Again, we cannot prove it, but it's a logical deduction. This would be an executive committee that controls finances and makes basic decisions.

Another important distinction between the outer core and the inner circle is in funding. This is important because funding controls everything. The families in The Order are closer to more foundations and more sources of funding than the Rockefeller family. To be sure, the Rockefeller family has 1 percent of Chase Manhattan stock, enough for control, and it has influence in the Rockefeller Foundation, but this doesn't compare to the centuries long pervasive influence of The Order. Remember, it was The Order that got John D. Rockefeller off the ground with his General Education Board, not the other way round.

It's an open question quite how the Trilaterals fit with The Order. It may be the international aspect of The Order, it may be a Rockefeller dominated group.

Many of these old line families see the Rockefellers as upstarts, as nouveau riche, not quite on the outside looking in, but definitely not socially acceptable without some reservations - except for their money, of course. Anyone who heard Nelson Rockefeller speak and compared his syntax to the polished charm of a Boston Brahmin will understand. There's a New England saying that "the Lowells only talk to the Cabots and the Cabots only talk to God." The Rockefellers just are not in this league.

And if we may be excused a little gossip: we have been told by several establishment people that David Rockefeller is just "not too bright," and Nelson Rockefeller was the only man in America who could torture the English language to the extent of placing two "non sequiters" in one sentence.

If we were to look back to 1983 from the year 2083, it could be that the Rockefellers will have followed in the footsteps of the Carnegies and the Morgans. Names in dusty files but no longer represented in the power group.

Memorandum Number Eight:
The Chain Of Influence

Initiates into The Order are assured of career advancement and success, even wealth, providing they follow the rule "to get along you must 3o along"

Intermarriage consolidates the power of the families and expands their span of influence.

Finally, a chain of influence spread over many years guarantees continuity and must be extraordinarily impressive to any new initiate who doubts the power of The Order.

We can identify two types of influence chains: a horizontal chain and a vertical chain. Both types are duplicated many times, for the moment well give a single example.

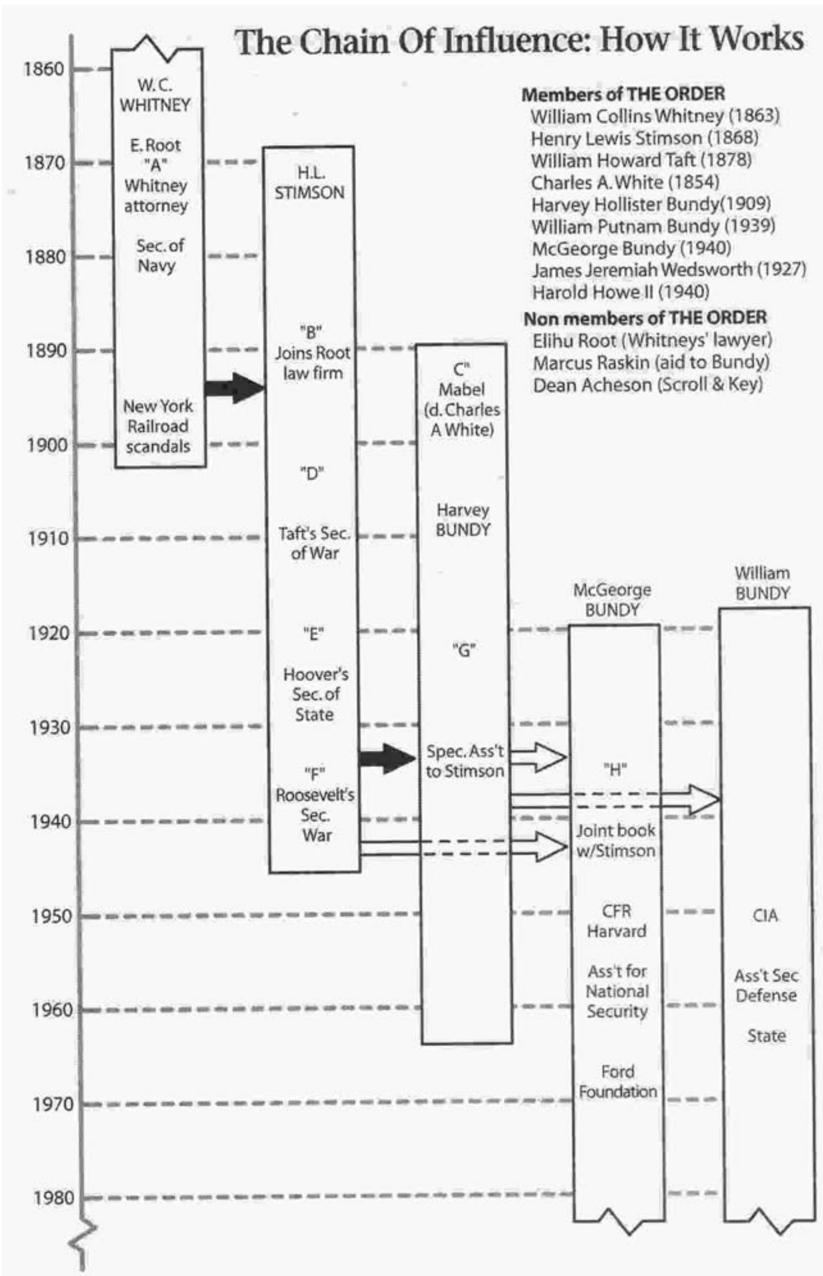
Horizontal Chains of Influence

Members of The Order are to be found in every segment of society: in education, in foundations, in politics, in government, industry, law and finance. Consequently, at any time The Order can tap influence in any area of society. The occupational breakdown of The Order demonstrates the great breadth of this horizontal chain of influence. The major occupations of members are law, education, business, finance and industry.

Approximately, the breakdown is as follows:

Occupation	Percent of members involved (approximately)

Law	18 percent
Education	16 percent
Business	16 percent
Finance	15 percent
Industry	12 percent
	77 percent



In other words, these five occupations account for over three quarters of the membership, and these are the key fields for control of society. Government and politics account for only about 3 percent at any one time. This is misleading, as any member in the above five fields can find himself temporarily in and out of government through the "revolving door" phenomenon.

The Church accounts for only 2 percent of members. These are concentrated in the Union Theological Seminary (the so-called "Red Seminary") and the Yale School of Divinity.

Notably the areas of society least represented are those with the least ability to influence the structural direction of society. They may give depth and richness to society, but are not essential to its control and direction. For example, very, very few engineers have ever been members of The Order - we only identified five engineers in the 150 year span. Yet engineering and technology are key elements to the success of the material aspects of American society. Art, architecture, and music are under-represented. We can only identify 16 members in these three occupations over 150 years. Again, these occupations are not influential in determining the structure of society. Farmers are under-represented; only 16 in 150 years, but we suspect some took up farming to get away from The Order.

In brief: at any one time The Order can call on members in any area of American society to do what has to be done.

Vertical Chains of Influence

A tribute to the success of The Order has been an ability to implement one of its principles. This principle is:

"That only he who wears upon his breast, Their emblem, he for every post shall be considered best."

The practice of absolute preferment for members of The Order has worked to perpetuate its influence over time in a remarkable manner. Before we look at this chain of influence we need to look at some basic statistics. The Order has only initiated about 2500 members in its history in the United States. Each year 15 new members are initiated, no more, no less. On the other hand, between 800,000 and 1 million persons receive college degrees each year from an institute of higher learning, including about 30,000 doctorates.

When you follow the chain of influence below, hold in mind that out of 30-40 million degree holders, a few hundred men (never women) or in this case less than a dozen men, are presumed to be the only ones fit to occupy top posts in government. No one else is even seriously considered. We are asked to believe that only a few hundred members of The Order are capable of guiding the United States.

If we assume a random distribution of ability throughout the United States, then our evidence cannot be accounted for by chance. It must reflect, just on the basis of mathematical laws of average, a conscious series of choices. Unless you want to assume that all wisdom and a11 ability in the United States is generated solely by 15 Yale graduates each year. And that gets you back to the argument of this book.

ON

ACTIVE SERVICE

IN PEACE AND WAR

BY

HENRY L. ST IMSON
Secretary of War 1911-13 Secretary of State 1929-33
Secretary of War 1940-45

AND

McGEORGE BUNDY
Junior Fellow, Society of Fellows
Harvard University

HARPER & BROTHERS, NEW YORK

On Active Service In Peace And War authored by two members of The Order

Furthermore, there are approximately 2500 institutions of higher learning in the United States. Are we to believe that only one of these institutions can generate the talent to lead the country?

The Whitney-Stimson-Bundy-Acheson Chain of Influence

Four families provide an example of one such chain of influence. Multiply this chain by a few dozen and you readily see how control is perpetuated by a small group. The families in this chain are Whitney, Stimson, Acheson and Bundy. The Acheson family is only partly in The Order. Dean Acheson was a member of Scroll & Key at Yale. This is an offshoot of The Order and at least influenced by it. Dean Acheson's daughter, Mary Acheson, married William Bundy (The Order). Dean Acheson's son, David, is a member of The Order.

(1) We start with the Whitneys in the late 19th century. Whitney The Order), along with Ryan and a handful of other capitalists, have been heavily criticized in several books on grounds of massive corruption and fraud. New York street railway franchises generated enormous profits for the Whitney group. When Whitney was Secretary of the Navy he promoted a giant naval ship building program - which didn't hurt his friends who owned shipyards and steel mills.

Whitney's attorney and close associate was Elihu Root. Although not a member of The Order, Root has been called "Whitney's artful attorney" (Point "A" on our chart). Root, one of the sharpest legal minds n American history and a power in his own right, worked along with the purposes of The Order.

(2) 1n 1890 along comes young Henry Stimson, fresh out of Yale, The Order, and Harvard Law School. Stimson joins Root's law firm -B"). then called Root & Clark. After a while, in 1897, it became mown as Root, Howard, Winthrop & Stimson and by 1901 it became Winthrop and Stimson. In the meantime ("C"), Stimson married Mabel White daughter of Charles A. White (The Order).

Stimson proved he was capable in the law and when Taft (The Order) was looking for a Secretary of War in 1911, he appointed Stimson (The Order) . which brings us to Point "D."

Then Stimson's career went like this:

• As Secretary of War Stimson completed a reorganization begun by his predecessor none other than Elihu Root.

• From 1917 to 1922 Stimson was in the Army, with ranks up to Brigadier General.
• In 1927 Coolidge appointed Stimson Governor-General of the Philippine Islands.
•In 1929 Herbert Hoover appointed Stimson Secretary of State Point "E" on the chart).

• In 1940 Franklin D. Roosevelt appointed Stimson Secretary of War (Point "F" on the chart).
• In 1945, as Truman's Secretary of War, Stimson recommended the atomic bomb drops on Japan.

(3) During World War II Stimson had a special assistant - Harvey Hollister Bundy (The Order), (Point "G"). Special Assistant Harvey Bundy was the key Pentagon man on the Manhattan Project and was Stimson's constant companion to conferences in North Africa, Italy and Germany.

(4) While Stimson was still Secretary of War he brought Harvey Hollister's son, McGeorge Bundy (The Order), into the Pentagon to work on a book manuscript ("H" on the chart). This was published in 1948, entitled On Active Service In Peace And War. The joint authorship (see illustration) gave McGeorge Bundy a quick start in his career, as we shall describe in the next Memorandum when we pick up the career of the two younger Bundys, both members of The Order.

In a nutshell:

• Stimson was appointed to government offices by every President, except Harding, from 1911 to 1946, i.e., Taft, Wilson, Coolidge, Hoover, Roosevelt, and Truman.
• Stimson used his office to advance the career of fellow members of The Order, in particular Harvey Hollister Bundy and his son, McGeorge Bundy.

Memorandum Number Nine: The Bundy Operation

If The Order had a reasonably "normal" life style, there would be no necessity for, and no substance in, this book. Unfortunately for us they do not have a normal life style.

The Order does not just go to college, look for a secure post with an establishment law firm, intermarry with the sisters and daughters of :):her members, get noisily drunk at the country club and go to church on Sunday. These may be reasonably "normal" patterns, but certainly not topics for research and analysis.

A proportion of The Order follows a life style which can best be described as: AMBITIOUS ACTIVISM TOWARDS A NEW WORLD ORDER GOAL.

Let's select one family - the Bundy family - fairly typical of another 2O or so families in The Order, and take a closer look.

The Bundy family came to the United States from England before 1635 and settled first in Boston, then in Taunton, Massachusetts. The family is one of lawyers and politicians with four members in The Order.

Date Initiated	Name	Key Activities
1909	Harvey Hollister Bundy	Special assistant to Secretary of War Stimson.
1921	Frederick McGeorge Bundy	Selling fish fillets
1939	William Putnam Bundy	CIA, Editor Foreign Affairs.
:940	McGeorge Bundy	Government and foundation official.

Frederick McGeorge Bundy is an example of a member who is initiated and then, apparently, is disinclined to do more. We can safely ignore Fred: his great achievement in life was Chairman of the North Atlantic Fillet

Council which sounds vaguely like a government policy organization, but is concerned merely with marketing fish fillets. If the oher Bundys had followed in Fred's honest, industrious footsteps and confined their activism to fish fillets, the world would be a lot safer, saner place.

Unfortunately, they didn't. The other three Bundys - Harvey Hollister and two of his three sons, William Putnam and McGeorge - we key activists and the activism has a Hegelian pattern, i.e., creation :r conflict to bring about change.
Let's take a look at each of the activist Bundys:

Harvey Hollister Bundy

Born Grand Rapids, Michigan 1888, died 1963. His grandfather was a lawyer and Congressman, and his father was a lawyer too. Harvey Hollister described himself as lawyer and government official. Bundy was initiated into The Order in 1909. After a Harvard law degree and some world travel he became law clerk to Supreme Court Associate Justice Wendell Holmes (1914-1915). By coincidence, Alger Hiss, later convicted of perjury in the celebrated Chambers-Hiss trials involving Soviet espionage, was also a law clerk to Justice Holmes (1929-1930).

Harvey Hollister Bundy senior had five children, of whom three linked themselves to The Order.

The eldest son, Harvey Hollister, graduated Yale 1938, but was not initiated into Skull & Bones. He's a banker who, like Fred, keeps away from activism.

The next eldest is William Putnam Bundy, initiated in 1939. The next son is McGeorge Bundy, initiated in 1940. The eldest daughter, Harriet Lowell Bundy, married Gasper d'Andelot Belin, a partner in Covington and Burling and initiated with William Bundy in 1939. The youngest daughter, Katherine Lawrence Bundy, married Hugh Auchincloss, Jr. The two Bundy boys have been the real activists.

William P. Bundy

Here's William Bundy's career in brief:

• 1947-1951	Law firm Covington & Burling in Washington. D. C.
• 1951-1961	Central Intelligence Agency
• 1960	Staff Director of Presidential Commission on Na tional Goals
• 1961-3	Deputy Assistant Secretary of Defense for Inter national Security Affairs
• 1964-9	Assistant Secretary of State for East Asian and Pacific Affairs in the Vietnam War period.
• 1969-71	Visiting Professor at Center for International Studies, MIT
• 1972	Editor of Foreign Affairs, the Council on Foreign Relations (CFR) quarterly and the most pres tigious foreign affairs journal in the U.S. A guide for all policy makers. Winston Lord (The Order) is Chairman of CFR.

Bundy is a member of the American Assembly and the Council on Foreign Relations.

Clearly, Mr. Bundy has been appointed to some very influential positions in the last 30 years. As the Washington law firm of Covington &

Burling is intimately linked to Government regulatory affairs, it's reasonable to presume that Bundy probably had CIA dealings in the 1947-51 period and then moved to CIA to expand on these projects. The firm of Covington & Burling represents more than 100 top U.S. firms in Washington. Former partners have included William Bundy's father-in-law, Dean Acheson, and brother-in-law, Gasper Belin, (The Order).

An interesting aspect of this law firm, where the Bundy family consists of the single most influential element in the past few decades, is its creation of "left wing" political activity. This creative activity brings to mind the McCarthy Senate hearings on subversion of the 1953 era when Senator Joseph McCarthy wanted to call William Bundy as a witness before the Committee and found the establishment strongly arrayed against this idea (Bundy had given $400 to the Alger Hiss Defense fund). In retrospect it may have been more than McCarthy's harsh treatment of witnesses - which is on the record - that prompted establishment horror. There may indeed have been some skeletons in the closet (and perhaps some bones) that the Senator could have unwittingly unearthed, and these skeletons had nothing to do with domestic communism.

In any event, as Quigley pointed out in Tragedy and Hope, the J.P. Morgan firm had financed the non-communist left in the United States =or political control. It seems that Covington & Burling may well be another conduit. Some preliminary evidence:

- Covington & Burling partner John Douglas is the son of Paul H. Douglas - who was one of the most prominent radicals of the 30s and 40s and an outspoken member of the non-communist left. John Douglas was a key coordinator in the 1972 George McGovern campaign: McGovern, of course, being on the left end of the political spectrum.
- Another former partner is Senator Charles Mathias, whose political stance is more or less at the left end of the Republican Party and along the lines of George Bush's (The Order) internationalist line
- Yet another partner is Michael Boudin. son of Leonard Boudin and brother of Kathy Boudin. This should raise some eyebrows as Kathy was on the FBI "Most Wanted" list. Leonard Boudin is the long time communist front lawyer and member of the National Lawyers Guild ("The foremost legal bulwark of the Communist Party"), New Masses ("a communist periodical") and a dozen other Communist fronts. Kathy was a founder of Students for a Democratic Society and a leader in its terrorist Weathermen faction. A bomb manufacturing enterprise got the group into trouble with the law and Kathy onto the FBI list.

In brief, we have the elements of a hypothesis that left wing activity in the U.S., down to bomb making and outright terrorism, may link to Covington and Burling - and the CIA. This is not a new assertion. Statements have been made before that the CIA has funded the left in the U.S. This claim hasn't received too much publicity for two reasons: (a) it offends the establishment media, which prefers to pose the CIA as a "right" organization and (b) it doesn't make much sense.

It certainly doesn't make any sense unless you throw your mind back to Memorandum Number Six and the Hegelian dialectic process. In this process change requires conflict, and conflict requires the clash of opposites. You can't just have a "right," you must have a "right" and a "left." You can't have just a pro-Vietnam War policy, you must also have an anti-Vietnam War policy. Else the dialectical process won't bring about change. An interesting thought.

To move on, in 1960 Bundy, while still at CIA, became Staff Director for the newly formed Presidential Commission on National Goals. Such a commission, even in its title, assumes conscious direction. If you have goals, you logically need a device to achieve these goals. In a society like the U.S. it should be a superfluous sort of commission unless there is some "guiding hand," something more than the voting booth and the market place at work.

The Report of this Commission came up with some quotes which are almost pure Hegelianism:

(a) "a role of government is to stimulate changes of attitude"

(b) "in the 1960s every American is summoned to extraordinary personal responsibility, sustained effort, and sacrifice"

(c) "The American citizen in the years ahead ought to devote a larger portion of his time and energy directly to solution of the nation's problems ... many ways are open for citizens to participate in the attainment of national goals."

Now the basic set of rules governing our society is the Constitution and the Bill of Rights. There is nothing in these constitutional documents to support any of these demands. What the demands imply is that an American citizen has a DUTY to advance the will of the State. But such an assumption is definitely NOT implicit in the philosophy under which the United States was founded and presumably operates today.

In 1972, after a stint of government service, Bundy took over *Foreign Affairs,* the most prestigious and influential foreign affairs journal in the U.S.: the bible for policy makers.

So William Bundy is a very influential man. Enough that three aspects of his career require further investigation:

• The Hegelian tinge, that a citizen has a duty to the State,

• The operation of the Hegelian dialectic and whether any "left" operations can be traced more directly to Covington and Burling,
• Whether Bundy's service in Government shows promotion of "right" operations, needed to balance off the "left" operations.

McGeorge Bundy

Preferential treatment has been accorded McGeorge Bundy all the way along the line.

Graduating Yale and joining The Order in 1940, Bundy spent a while at Harvard and then joined the U.S. Army "as a private"

Within 12 months Bundy had rocketed to captain and staff officer working on Operation Husky (the invasion of Sicily) and Operation Overlord (the invasion of Normandy).

If there is one job in this world that requires experience, it must be a staff planning officer for an amphibious operation. Only experience can make the calculations of timing and logistics for personnel and supplies come out right. And men's lives depend on this experience. Can a 23-year-old, with no military experience, undertake planning for amphibious operations? The answer is obviously no even if his father (The Order) is in the Pentagon as an aide to the Secretary of War (The Order).

The war in Europe finished, Bundy now a veteran of 27 years, went straight to the Pentagon as assistant to the Secretary of War, Henry Stimson. We have already noted Bundy worked on the manuscript of On Active *Service* In *Peace* And *War* and was rewarded with co-authorship, a definite leg up in his career.

Then, in quick succession, Bundy became consultant to the Economic Cooperation Administration, although he presumably knew no more about economics than amphibious landing, then foreign policy analyst for Presidential candidate Thomas Dewey, then analyst for the Council on Foreign Relations. By 1949 Bundy was invited to Harvard University and in four years (1953) was made Dean of the Faculty of Arts and Sciences.

We are asked to believe that out of hundreds, perhaps thousands, of experienced academics with decades of hard-won credentials, an assistant professor who has been, skipping around the non-academic world for ten years is the most talented for the post of Harvard Dean! We might accept the lack of experience in amphibious warfare planning and economic programs planning, but Dean of a prestigious Harvard department in four years! No, that's too much. It smells of "pull" and few readers will dispute that conclusion.

From 1961 to 1966 Bundy was Special Assistant for National Security Affairs to Presidents Kennedy and Johnson. There is a significant aspect of this sensitive post which only surfaced under Henry Kissinger. The post can be used to screen information reaching the President: in fact, that is one of its major purposes, to stop a flood of paper reaching the Presidential desk.

The other side to this screening process is that it could place the President in an artificial information environment. If the options presented to the President are controlled, so are the decisions. Selected information can control the options.

McGeorge Bundy was National Security Adviser in the early years of the Vietnam debacle. While McGeorge Bundy (The Order) was in the White House his brother, William P. Bundy (The Order) was in key positions relating to the Far East in Defense and State Departments. By acting jointly, the Bundy brothers could have controlled absolutely the flow of information relating to Vietnam from Intelligence, State and DOD. We are not saying this happened. We believe it to be a hypothesis worthy of examination. As they are blood brothers in a secret organization of which we know very little - and nothing voluntarily - we have reason to make this further examination.

In 1966 McGeorge Bundy was appointed President of the Ford Foundation, a post he retained until 1979. While at Ford, Bundy brought in as Vice President in charge of Education and Research Division another member of The Order - Harold Howe 11,

Howe's qualifications, apart from a Yale undergraduate degree, can be described in Howe's own words:

". . . in the old scheme of things I would not have qualifications to be a professor - I have no PhD degree, no scholarly research publications to my credit. 1 once applied to the Yale Graduate School but was turned down as academically unpromising." (Apparently The Order doesn't reach everywhere, even at Yale).

Some of the half-baked ideas Howe and Bundy promoted with Ford Foundation money probably stem from Howe's philosophy. In Howe's own words, "When in doubt, do it." For example, we have this gem from Howe:

"... we will have to re-think American values regarding cooperation and competition . . . many schools (particularly secondary schools) would define as "cheating" the kinds of cooperative activities whereby students help each other instead of competing for places on the ladder of academic success."

This is pure Hegelian collectivism. It undoubtedly works to the advantage of The Order: this moves the citizen to a dependency role and away from reliance on individual faculties.

It is noteworthy that both Fords on the board resigned in disgust with Ford Foundation policies.

Memorandum Number Ten: Keeping The Lid On The Pot

The Order's control of history, through foundations and the American Historical Association, has been effective. Not so much because of outright censorship, although that is an important element, but more because of the gullibility of the American "educated public:'

From time to time their plans go awry. The bubbling pot of political manipulation - it's called conflict management on the inside - threatens to spill over into public view. It is extraordinary how newspaper editors, columnists, TV and radio commentators, and publishers either lack insight to see beyond the superficial or are scared witless to do so. Even worse, the educated public, the 30-40 million degree holders, lets these opinion molders get away with it.

Outright censorship has not been too effective. There has certainly been a campaign to suppress revisionist interpretations of history. Witness Harry Elmer Barnes in The Struggle Against The Historical Blackout:

> It may be said, with great restraint, that, never since the Dark and Middle Ages, have there been so many powerful forces organized and alerted against the assertion and acceptance of historical truth as are active today to prevent the facts about the responsibility for the second World War and its results from being made generally accessible to the American public. Even the great Rockefeller Foundation frankly admits (Annual Report, 1946, p. 188) the subsidizing of a corps of historians to anticipate and frustrate the development of any neo-Revisionism in our time. And the only difference between this Foundation and several others is that it has been more candid and forthright about its politics.

This author's personal experience of attempted outright censorship was at the Hoover Institution, Stanford University, when the Director attempted to suppress publication of my then forthcoming National Suicide: Military Aid To The Soviet Union. The facts weren't in question. Unfortunately, the book offended the Nixon-Kissinger program to aid the Soviets while they were aiding the North Vietnamese - so in effect, Americans were being killed by our own technology. In this case neither author nor publisher was in a mood to listen, and the Establishment put tail between legs and called it a day.

More effective than outright censorship is use of the left-right political spectrum to neutralize unwelcome facts and ideas or just condition citizens to think along certain lines.

The "left" leaning segment of the press can always be relied upon to automatically assault ideas and information from the "right" and vice versa. In fact, media outlets have been artificially set up just for this purpose: both *Nation* and *New Republic* on the "left" were financed by Willard Straight, using Payne Whitney (The Order) funds. On the "right" *National Review* published by William Buckley (The Order) runs a perpetual deficit. presumably made up by Buckley.

Neither the independent right nor the independent left sees the trap. They are so busy firing at each other they've mostly forgotten to look behind the scenes. And The Order smugly claims control of the "moderate" center. A neat game, and it's worked like a charm. But the establishment has a problem . . .

In Fact, It Has Several Problems

They are on the inside looking out. We are on the outside looking in. They may call us "peasants" but we have the advantage of knowing about the real world and its infinite diversity. Their global objectives are dreams based on skewed information. Dangerous dreams, but still dreams.

(1) The Order Lives In A Cultural Straightjacket

All the power in the world is useless without accurate information. If you meet these people as this author has more or less casually over 30 years, one impression comes to the forefront - they are charming but with a limited perception of the world. They may have global ambitions, they may act politically like miniature power houses, but their knowledge of the world comes from an in-group and those who play along with the in-group. And the in-group lacks morality and diversity. It's a kind of jet Set Politburo. Charming, power-hungry and myopic simultaneously.

All it can offer to the outsider is an invitation, almost an ultimatum, "You are part of the establishment." Which has as much interest for many as a Frederick Bundy fish fillet. Perhaps one of the exceptions is house conservative William Buckley, Jr. - at least his cynicism is marked by witty incisiveness. The rest are a pretty sad bunch.

(2) An Easy Prey For the Ambitious

Limited perception makes members of The Order a target and an easy prey for the ambitious outsider . . . who needs only the ability to say the right things at the right time to the right people, coupled with a sense of unscrupulousness. Henry Kissinger is a prime example - an outsider who wants desperately to stay on the inside. More devious than clever, but expert at using deviousness for his own ends.

Conservative readers may not agree, but Secretary of State Dean Acheson, who defended a guilty Alger Hiss to the bitter end, was probably more stupid than culpable. Which leads us to,

(3) Genetic Problems

Extensive intermarriage among the families raises a serious question of genetic malfunctions. Membership lists are heavily laced with Dodge, Whitney, Phelps, Perkins, Norton, Putnam used as middle (maternal) names. Cultural inhibitions are obvious, the intellectual limitations from genetic factors are more difficult to analyze and describe.

(4) Shallow Power Base

It may be as Rosenbaum comments, that The Order is "incredibly powerful". On the other hand, it is also incredibly weak - there is no philosophic or cultural depth to The Order.

Diversity is strength and The Order lacks diversity.

The vast bulk of the American people, that giant melting pot of Anglo, Germanic, Slavic, Hispanic, black, yellow, and who knows what else has been suckered. Many of them know it. Some are now going to know by whom.

When they've overcome the disbelief, the shock and perhaps some fear, they are surely going to say "What do we do?."

The great strength of individualism, an atomistic social order where the individual holds ultimate sovereignty, is that any counter revolution to an imposed social order where the State is boss, can take a million roads and a million forms.

No one is going to create an anti-The Order movement. That would be foolish and unnecessary. It could be infiltrated, bought off, or diverted all too easily. Much too easily.

Why play by the rules set by the enemy?

The movement that will topple The Order will be extremely simple and most effective. It will be ten thousand or a million Americans who come to the conclusion that they don't want the State to be boss, that they prefer to live under the protection of the Constitution. They will make their own independent decision to thwart The Order, and it will take ten thousand or a million forms.

The only weakness is communication. The Order has so wrecked education that reading comprehension is difficult for many - that's part of the brainwashing program. But there are more than enough readers. Most people prefer to talk, anyway.

The program of The Order might work in Russia, which has a history of obedience to the State; it's barely working in Poland, while in England "The Group" survives because enough of class structure and attitude remain. It can never work in the United States.

Conclusions

In the first introductory volume we have laid out the preliminary groundwork and suggested some hypotheses we need to examine. An understanding of The Order, the havoc it has wreaked on American society, its plans for future havoc - perpetual war for perpetual peace - is a logical step by step process.

The next step is to look at education. Our present educational chaos can be traced to three members of The Order: Daniel Coit Gilman (First President of University of California and First President of Johns Hopkins University), Timothy Dwight (twelfth President of Yale University) and Andrew Dickson White (First President of Cornell University).

Gilman imported the experimental psychology of Hegelian physiologist Wilhelm Wundt from Germany. This psychology was grafted onto the American education system through the educational laboratories at Columbia and Chicago University. And they moved a familiar name, John Dewey, a pure Hegelian in philosophy, along the fast track in his career. This has been aptly termed "The Leipzig Connection" by Lance J. Klass and Paolo Lionni.

Then we shall look at the Foundations, how these were captured by The Order and their gigantic funds used to finance a Hegelian educational system designed to condition future society. It is doubtful if John D. Rockefeller or Mrs. Russell Sage, and certainly the Ford family, ever quite understood how their philanthropies were used for a long-term conditioning plan.

It is also doubtful if The Order forecast the public backlash of the 1970s and 1980s - not all children have succumbed to the social conditioning brainwashing, parents have more than once risen in part revolt, private schools have sprouted like spring flowers in the desert and perhaps enough academics have slipped through a net designed to contain and neutralize independent research and thinking.

After we have looked at education and foundations we still have to work our way through the system of "perpetual war for perpetual peace." How The Order has financed revolution and profited from war. The objective? To keep the conflict boiling because conflict for Hegel is essential for change and the forward motion of society. Then we have to look at the financial system and the Federal Reserve. The Order was there right from the start.

In conclusion we must emphasize one point. An understanding of The Order and its modus operandi is impossible unless the reader holds in mind the Hegelian roots of the game plan. Hegelianism is alien to grass roots America. The national character is straightforward and to the point, not devious and tortuous. The grass roots are still closer to the American Revolution, the Jeffersonian Democrats, the classical liberal school of Cobden and Bright in England, and the Austrian School of Economics where Ludwig von Mises is the undisputed leader.

These schools of thought have been submerged in the public eye by pirate-like onslaught of The Order and its many minions, but they still very much represent the daily operation of American society. From billionaire Bunker Hunt in Dallas, Texas to the seventeen year old black trying to "survive" in the Los Angeles ghetto, individual initiative is <u>still</u> more than obvious in American society.

A Statist system is the objective of The Order. But in spite of constant prattling about "change" by zombie supporters - such a system is foreign to deeply held beliefs in this country.

Above all the reader must - at least temporarily while reading this work - put to one side the descriptive clichés of left and right, liberal and conservative, communist and fascist, even republican and democrat These terms may be important for self recognition, they do provide a certain reassurance, but they are confusing in our context unless seen as essential elements in a game plan. You will never understand The Order if you try to label it right or left.

A Robert Taft and a William Buckley on the right are just as important -- the forward motion of society, the fundamental change desired by The Order, as a William Sloan Coffin and a Harry Payne Whitney (who financed the left). Their conflict is essential for change.

Which brings us to HYPOTHESIS NUMBER THREE: THE ORDER U SES THE HEGELIAN DIALECTIC PROCESS TO BRING ABOUT SOCIETY IN WHICH THE STATE IS ABSOLUTE, i.e., ALL POWERFUL.

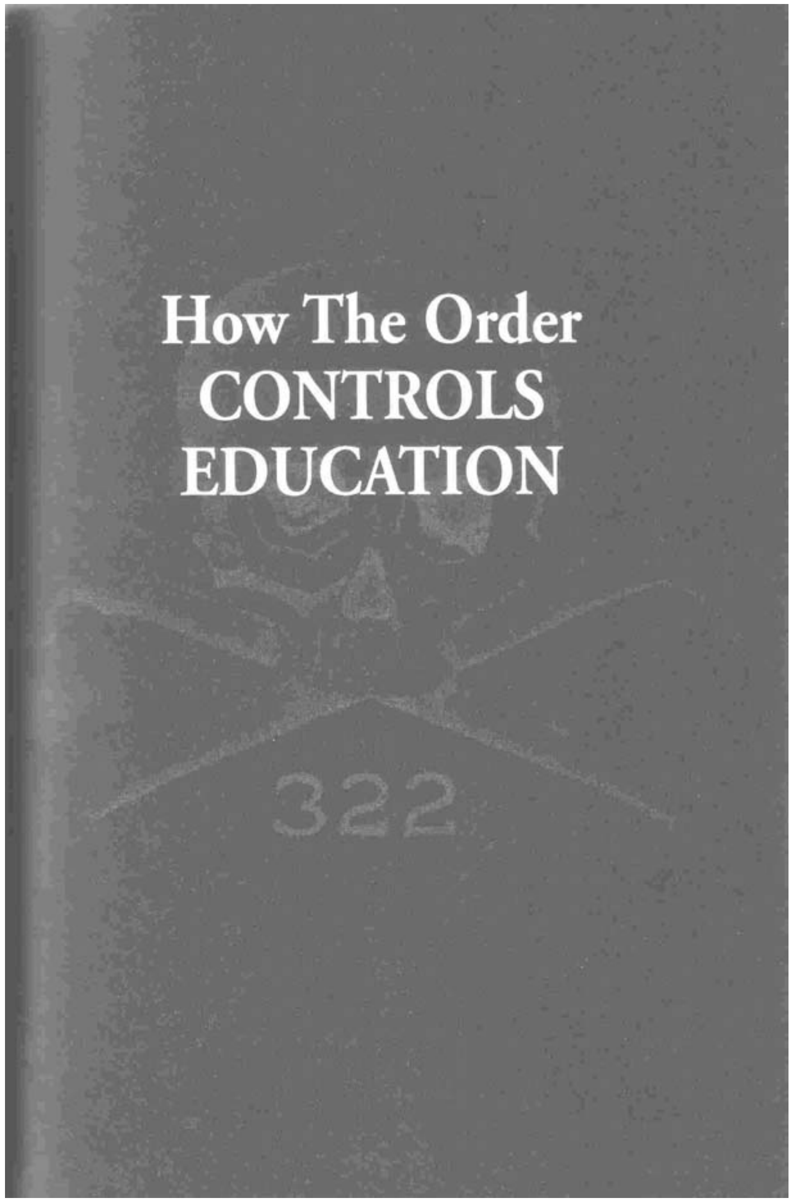
This hypothesis, of course, reflects the gulf between The Order and American society. The gulf stems from the differing views of the relationship between the State and the individual.

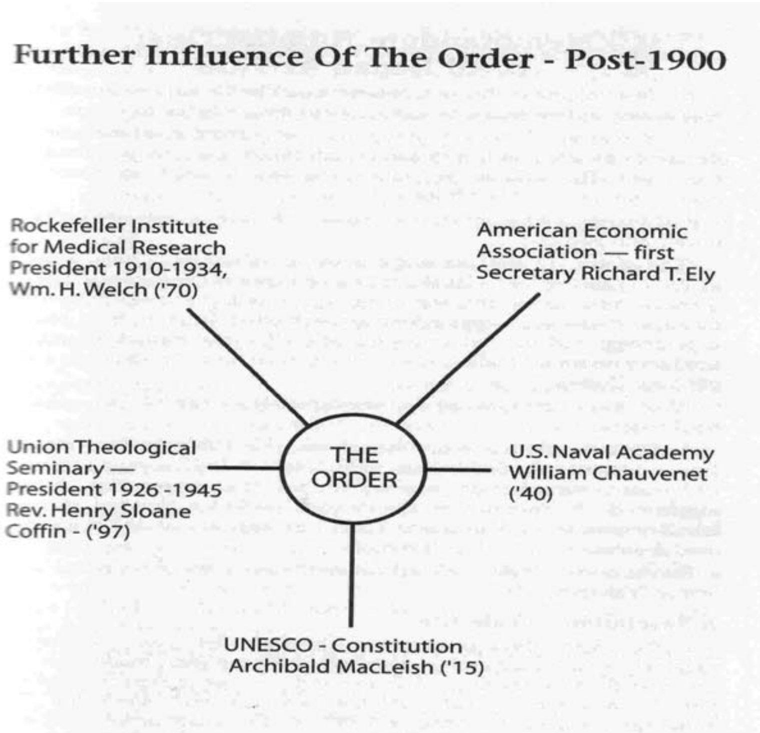
Which is superior? Our whole way of life is based on the assumption -at the individual is superior to the State. That the individual is the ---mate holder of sovereignty. That the State is the servant of the people. It's deeply engrained within us.

The Order holds the opposite - that the State is superior, that the common man (the peasant) can find freedom only by obedience to the State.

Now, of course, the State is a fiction. So who or what controls the State?

Obviously, The Order.


How The Order
CONTROLS
EDUCATION
322



Memorandum Number One:
It All Began At Yale

The first volume of this series introduced The Order, presented three preliminary hypotheses with examples of the evidence to come.

We also asserted that any group that wanted to control the future of American society had first to control education, i.e., the population of the future. This volume will outline the way in which education has been controlled by The Order.

It all began at Yale. Even the official Yale history is aware of Yale's power and success:
"The power of the place remain(s) unmistakable. Yale was organized. Yale inspired a loyalty in its sons that was conspicuous and impressive. Yale men in after life made such records that the suspicion was that even there they were working for each other. In short, Yale was exasperatingly and mysteriously successful. To rival institutions and to academic reformers there was something irritating and disquieting about old Yale College."[1]

"Yale was exasperatingly and mysteriously successful," says the official history.

And this success was more than obvious to Yale's chief competitor, Harvard University. So obvious, in fact, that in 1892 a young Harvard instructor, George Santanyana, went to Yale to investigate this "disturbing legend" of Yale power. Santanyana quoted a Harvard alumnus who intended to send his son to Yale - because in real life "all the Harvard men are working for Yale men."[2]

But no one has previously asked an obvious question - Why? What is this "Yale power"?

A Revolutionary Yale Trio

In the 1850s, three members of The Order left Yale and working together, at times with other members along the way, made a revolution that changed the face, direction and purpose of American education. It was a rapid, quiet revolution, and eminently successful. The American people even today, in 1983, are not aware of a coup d'etat.

The revolutionary trio were:

• Timothy Dwight ('49) Professor in the Yale Divinity School and then 12th President of Yale University.
• Daniel Coit Gilman ('52), first President of the University of California, first President of the Johns Hopkins University and first President of the Carnegie Institution.
• Andrew Dickson White ('53), first President of Cornell University and first President of the American Historical Association.

This notable trio were all initiated into The Order within a few years of each other (1849, 1852, 1853). They immediately set off for Europe. AD three went to study philosophy at the University of Berlin, where post-Hegelian philosophy had a monopoly.

- Dwight studied at the Universities of Berlin and Bonn between 1856 and 1858,
- Gilman was at the University of Berlin between 1854 and 55 under Karl von Ritter and Friedrich Trendelenberg, both prominent "Right" Hegelians, and
- White studied at the University of Berlin between 1856 and 1858.

Notably also at the University of Berlin in 1856 (at the Institute of Physiology) was none other than Wilhelm Wundt, the founder of experimental psychology in Germany and the later source of the dozens of American PhDs who came back from Leipzig, Germany to start the modern American education movement.

Why is the German experience so important? Because these were the formative years, the immediate post graduate years for these three men, the years when they were planning the future, and at this period Germany was dominated by the Hegelian philosophical ferment.

There were two groups of these Hegelians. The right Hegelians, were the roots of Prussian militarism and the spring for the unification of Germany and the rise of Hitler. Key names among right Hegelians were Karl Ritter (at the University of Berlin where our trio studied), Baron von Bismarck, and Baron von Stockmar, confidential adviser to Queen Victoria over in England. Somewhat before this, Karl Theodor Dalberg 1744-1817), arch-chancellor in the German Reich, related to Lord Acton in England and an Illuminati (Baco v Verulam in the Illuminati code), was a right Hegelian.

There were also Left Hegelians, the promoters of scientific socialism. Most famous of these, of course, are Karl Marx, Friedrich Engels, Heinrich Heine, Max Stirner and Moses Hess.

The point to hold in mind is that both groups use Hegelian theory of :he State as a start point, i.e., the State is superior to the individual. Prussian militarism, Nazism and Marxism have the same philosophic roots.

And it left its mark on our trio.

[1]George Wilson Pierson, YALE COLLEGE 1871-1922 (Yale University Press. New Haven. 1952) . olume One, p. 5.
[2]E.E. Slosson, GREAT AMERICAN UNIVERSITIES (New York, 1910) pp. 59-60.

Daniel Coit Gilman

Gilman wrote his sister in 1854 that what he most desired to do on returning home to America was to "influence New England minds." An extract from one Gilman letter is worth quoting at length.



Daniel C. Gilman in the early seventies as president of the University of California.



Daniel C. Gilman in the early seventies as president of the University of California

Gilman wrote his sister from St. Petersburg in April, 1854:

> And what **do you think I am "keeping" for?** Tell me, some day when you write, for every year makes me feel that I must draw nearer to a point. When I go home to America I must have some definite notions. Day and night I think of that time, and in all I see and do I am planning for being useful at home. I find my wishes cling more and more towards a home in New England, and I long for an opportunity to influence New England minds. If I am an editor, New York is the place; but, to tell the truth, I am a little afraid of its excitements, its politics, its money-making whirl. I look therefore more and more to the ministry as probably the place where I can do more good than anywhere else; that is to say, if I can have a congregation which will let me preach such things as we have talked over so many times in our up-stairs confabs. I am glad you remember those talks with pleasure, for I look upon them as among the greatest "providences" of my life. If ever I make anything in this world or another I shall owe it to the blessed influences of home. For me, it seems

as though new notions and wider views of men and things were crowding upon me with wonderful rapidity, and every day and almost every hour I think of some new things which I wish to have accomplished in America.... I find my thoughts, unconsciously, almost, dwelling on the applications of Christianity or the principles of the New Testament to business, study, public education, political questions, travel, and so forth. I had a long talk with Mr. Porter in Berlin (it was three days long with occasional interruptions) on topics related to such as I have named, and he assures me that there are many places in New England ripe for the advocacy of some such views upon these questions as I have often hinted to you at home. I told him a great deal about my thoughts on such things, talking quite as freely and perhaps more **fully than I have ever** done with you girls at home: He seemed exceedingly interested .... He told me that the kind of preaching I spoke of was the kind now needed - the kind which would be most influential of good - and on the whole he encouraged me to attempt it. I feel more and more desirous to do so, and shall keep on, in all I see and hear abroad, with the examination of every influence now working upon men - churches and schools, politics and literature . . .[1]

Daniel Coit Gilman is the key activist in the revolution of education by The Order. The Gilman family came to the United States from Norfolk, England in 1638. On his mother's side, the Coit family came from Wales to Salem, Massachusetts before 1638.

[1]Fabian Franklin, THE LIFE OF DANIEL COIT GILMAN (Dodd, Mead. New York, 1910), pp. 28-9.

Gilman was born in Norwich, Connecticut July 8, 1831, from a family laced with members of The Order and links to Yale College (as it was known at that time).

Uncle Henry Coit Kingsley (The Order '34) was Treasurer of Yale from 1862 to 1886. James I. Kingsley was Gilman's uncle and a Professor at Yale. William M. Kingsley, a cousin, was editor of the influential journal *New Englander.*

On the Coit side of the family, Joshua Coit was a member of The Order in 1853 as well as William Coit in 1887.

Gilman's brother-in-law, the Reverend Joseph Parrish Thompson ('38) was in The Order.

Gilman returned from Europe in late 1855 and spent the next 14 years in New Haven, Connecticut - almost entirely in and around Yale, consolidating the power of The Order.

His first task in 1856 was to incorporate Skull & Bones as a legal entity under the name of The Russell Trust. Gilman became Treasurer and William H. Russell, the cofounder, was President. It is notable that there is no mention of The Order, Skull & Bones, The Russell Trust, or any secret society activity in Gilman's biography, nor in open records. The Order, so far as its members are concerned, is designed to be secret, and apart from one or two inconsequential slips, meaningless unless one has the whole picture. The Order has been remarkably adept at keeping its secret. In other words, The Order fulfills our first requirement for a conspiracy - i.e., IT IS SECRET.

The information on The Order that we are using surfaced by accident. In a way similar to the surfacing of the Illuminati papers in 1783, when a messenger carrying Illuminati papers was killed and the Bavarian police found the documents. All that exists publicly for The Order is the charter of the Russell Trust, and that tells you nothing.

On the public record then, Gilman became assistant Librarian at Yale in the fall of 1856 and "in October he was chosen to fill a vacancy on the New Haven Board of Education." In 1858 he was appointed Librarian at Yale. Then he moved to bigger tasks.

The Sheffield Scientific School

The Sheffield Scientific School, the science departments at Yale, exemplifies the way in which The Order came to control Yale and then the United States.

In the early 1850s, Yale science was insignificant, just two or three very small departments. In 1861 these were concentrated into the Sheffield Scientific School with private funds from Joseph E. Sheffield. Gilman went to work to raise more funds for expansion.

Gilman's brother had married the daughter of Chemistry Professor Benjamin Silliman (The Order, 1837). This brought Gilman into contact with Professor Dana, also a member of the Silliman family, and this group decided that Gilman should write a report on reorganization of Sheffield. This was done and entitled "Proposed Plan for the Complete Reorganization of the School of Science Connected with Yale College."

While this plan was worked out, friends and members of The Order made moves in Washington, D.C., and the Connecticut State Legislature to get state funding for the Sheffield Scientific School. The Morrill Land Bill was introduced into Congress in 1857, passed in 1859, but vetoed by President Buchanan. It was later signed by President Lincoln. This bill, now known as the Land Grant College Act, donated public lands for State colleges of agriculture and sciences .... and of course Gilman's report on just such a college was ready. The legal procedure was for the Federal government to issue land scrip in proportion to a state's representation, but state legislatures first had to pass legislation accepting the scrip. Not only was Daniel Gilman first on the scene -o get Federal land scrip, he was first among all the states and grabbed all of Connecticut's share for Sheffield Scientific School! Gilman had, of course, tailored his report to fit the amount forthcoming for Connecticut. No other institution in Connecticut received even a whisper until 1893, when Storrs Agricultural College received a land grant.

Of course it helped that a member of The Order, Augustus Brandegee ('49), was speaker of the Connecticut State Legislature in 1861 when the state bill was moving through, accepting Connecticut's share for Sheffield. Other members of The Order, like Stephen W. Kellogg ('46) and William Russell ('33), were either in the State Legislature or had influence from past service.

The Order repeated the same grab for public funds in New York State. All of New York's share of the Land Grant College Act went to Cornell University. Andrew Dickson White, a member of our trio, was t<u>h</u>e key activist in New York and later became first President of Cornell. Daniel Gilman was rewarded by Yale and became Professor of Physical Geography at Sheffield in 1863.

In brief, The Order was able to corner the total state shares for Connecticut and New York, cutting out other scholastic institutions. This is the first example of scores we shall present in this series - how The Order uses public funds for its own objectives.

And this, of course, is the great advantage of Hegel for an elite. The State is absolute. But the State is also a fiction. So if The Order can manipulate the State, it in effect becomes the absolute. A neat game. And like the Hegelian dialectic process we cited in the first volume, the Order has worked it like a charm.

Back to Sheffield Scientific School. The Order now had funds for Sheffield and proceeded to consolidate its control. In February 1871 the School was incorporated and the following became trustees:

Charles J. Sheffield

Prof. G.J. Brush (Gilman's close friend) Daniel Coit Gilman (The Order, '52) W.T. Trowbridge
John S. Beach (The Order, '39) William W. Phelps (The Order, '60)

Out of six trustees, three were in The Order. In addition, George St. John Sheffield, son of the benefactor, was initiated in 1863, and the first Dean of Sheffield was J.A. Porter, also the first member of Scroll & Key (the supposedly competitive senior society at Yale).

How The Order Came To Control Yale University

From Sheffield Scientific School The Order broadened its horizons. The Order's control over all Yale was evident by the 1870s, even under the administration of Noah Porter (1871-1881), who was not a member. In the decades after the 1870s, The Order tightened its grip. The Iconoclast (October 13, 1873) summarizes the facts we have presented on control of Yale by The Order, without being fully aware of the details:

> "They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will. No doubt they are worthy men in themselves, but the many whom they looked down upon while in college, cannot so far forget as to give money freely into their hands. Men in Wall Street complain that the college

> comes straight to them for help, instead of asking each graduate for his share. The reason is found in a remark made by one of Yale's and America's first men: `Few will give but Bones men, and they care far more for their society than they do for the college.' The Woolsey Fund has but a struggling existence, for kindred reasons."
>
> "Here, then, appears the true reason for Yale's poverty. She is controlled by a few men who shut themselves off from others, and assume to be their superiors . . . "

The anonymous writer of Iconoclast blames The Order for the poverty of Yale. But worse was to come. Then-President Noah Porter was the last of the clerical Presidents of Yale (1871-1881), and the last without either membership or family connections to The Order.

After 1871 the Yale Presidency became almost a fiefdom for The Order.

From 1886 to 1899, member Timothy Dwight ('49) was President, followed by another member of The Order, Arthur Twining Hadley (1899 to 1921). Then came James R. Angell (1921-37), not a member of The Order, who came to Yale from the University of Chicago where he worked with Dewey, built the School of Education, and was past President of the American Psychological Association.

From 1937 to 1950 Charles Seymour, a member of The Order was President followed by Alfred Whitney Griswold from 1950 to 1963. Griswold was not a member, but both the Griswold and Whitney families have members in The Order. For example, Dwight Torrey Griswold ('08) and William Edward Schenk Griswold ('99) were in The Order. In 1963 Kingman Brewster took over as President. The Brewster family has had several members in The Order, in law and the ministry rather than education.

We can best conclude this memorandum with a quotation from the anonymous Yale observer:

"Whatever want the college suffers, whatever is lacking in her educational course, whatever disgrace lies in her poor buildings, whatever embarrassments have beset her needy students, so far as money could have availed, the weight of blame lies upon this ill-starred society. The pecuniary question is one of the future as well as of the present and past. Year by year the deadly evil is growing. The society was never as obnoxious to the college as it is today, and it is just this ill-feeling that shuts the pockets of nonmembers. Never before has it shown such arrogance and self-fancied superiority. It grasps the College Press and endeavors to rule in all. It does not deign to show its credentials, but clutches at power with the silence of conscious guilt."

APPENDIX TO MEMORANDUM NUMBER ONE: THE ORDER IN THE YALE FACULTY

Member	Date Initiate	Position at Yale
BEEBE, William	1873	Professor of Mathematics (1882-1917)
BEERS, Henry A.	1869	Professor of English Literature (1874-1926)
BELLINGER, Alfred R.	1917	Professor of Greek (1926
DAHL, George	1908	Professor Yale Divinity School (1914-1929)
DARLING, Arthur B.	1916	Professor of History (1925-1933)
DAY, Clive	1892	Professor of Economic History (1902-1938)
DEXTER, Franklin B.	1861	Secretary, Yale University (1869-99)
DWIGHT, Timothy	1849	President of Yale University (1886-98)
FARNAM, Henry	1874	Professor of Economics (1880-1933)
FARNAM, William	1866	Trustee Sheffield Scientific School (1894-1923)
FRENCH, Robert D.	1910	Professor of English (1919-1950
GILMAN, Daniel C.	1852	See text.
GRAVES, Henry S.	1892	Dean, Yale School of Forestry (1900-1939)
GRUENER, G.	1884	Professor of German (1892-1928)
HADLEY, Arthur T.	1876	President of Yale (1899-1921)
HILLES, Frederick W.	1922	Professor of English (1931
HOLDEN, Reuben A.	1940	Assistant to President (1947
HOPPIN, James M.	1840	Professor of History of Art (1861-99)

INGERSOLL, James W.	1892	Professor of Latin (1897-1921)
JONES, Frederick S.	1884	Dean, Yale College 1909-1926
LEWIS, Chariton M.	1886	Professor of English (1898-1923)
LOHMAN, Carl A.	1910	Secretary, Yale University (1927
LYMAN, Chester	1837	Professor of Mechanics (1859-1890)
McLAUGHLIN, Edward T.	1883	Professor of English (1890-93)
NORTHROP, Cyrus	1857	Professor of English (1863-84)
PACKARD, Lewis R.	1856	Professor of Greek (1863-84)
PECK, Tracy	1861	Professor of Latin (1889-1908)
PERRIN, Bernadotte	1869	Professor of Greek (1893-1909)
PIERCE, Frederick E.	1904	Professor of English (1910-35)
ROOT, Reginald D.	1926	Yale football coach (1933-48)
SCHWAB, John C.	1886	Professor of Political Economy (1893-1906)
SEYMOUR, Charles	1908	Professor of History (1915-37) President (1936-1950)
SEYMOUR, Charles Jr.	1935	Professor of Art (1949
SILLIMAN, Benjamin Jr.	1837	Professor of Chemistry (1846-85)
STOKES, Anson P.	1896	Secretary of Yale (1899-1921)
SUMNER, William G.	1863	Professor of Economics (1872-1909)
TAFT, William H.	1878	Professor of Law (1913)
TARBELL, Frank B.	1873	Professor of Greek (1882-87)
THACHER, Thomas A.	1835	Professor of Latin (1842-86
THOMPSON, John R.	1938	Professor of Law (1949
WALKER, Charles R.	1916	Assistant Secretary (1943-45)
WOOLSEY, Theodore S.	1872	Professor of International Law (1878-1929)
WRIGHT, Henry B.	1898	Professor of History (1907-11)
WRIGHT, Henry P.	1868	Professor of Latin (1871-1918) Dean, Yale College (1884-1909)

Memorandum Number Two: The Look-Say Reading Scam

A tragic failure of American education in this century has been a failure to teach children how to read and write and how to express themselves in a literary form. For the educational system this may not be too distressing. As we shall see later, their prime purpose is not to teach subject matter but to condition children to live as socially integrated citizen units in an organic society - a real life enactment of the Hegelian absolute State. In this State the individual finds freedom only in obedience to the State, consequently the function of education is to prepare the individual citizen unit for smooth entry into the organic whole.

However, it is puzzling that the educational system allowed reading to deteriorate so markedly. It could be that The Order wants the citizen components of the organic State to be little more than automated order takers; after all a citizen who cannot read and write is not going to challenge The Order. But this is surmise. It is not, on the basis of the evidence presently at hand, a provable proposition.

In any event, the system adopted the look-say method of learning to read, originally developed for deaf mutes. The system has produced generations of Americans who are functionally illiterate. Yet, reading is essential for learning and learning is essential for most occupations. And certainly those who can read or write lack vocabulary in depth and stylistic skills. There are, of course, exceptions. This author spent five years teaching at a State University in the early 1960s and was appalled by the general inability to write coherent English, yet gratified that some students had not only evaded the system, acquired vocabulary and writing skills, but these exceptions had the most skepticism about The Establishment.

The Order comes into adoption of the look-say method directly and indirectly. Let's start at the beginning.

The Founder Of Deaf Mute Instruction

Look-say reading methods were developed around 1810 for deaf mutes by a truly remarkable man, Thomas Hopkins Gallaudet. Thomas H. Gallaudet was the eldest son of Peter Wallace Gallaudet, descended from a French Huguenot family, and Jane Hopkins. Jane Hopkins traced her ancestry back to John Hopkins and the Reverend Thomas Hooker in the seventeenth century, who broke away from the Congregational Church to help found Hartford, Connecticut. This parallels the story of the Lord family (see Volume One). The Lords also traced their ancestry back to Hopkins and Hooker and the Lords founded Hartford, Connecticut. And it was in Hartford, Connecticut in 1835 that a printer named Lord produced Thomas Gallaudet's first look-say primer, Mother's Primer.

Gallaudet's original intention was to use the look-say method only for deaf mutes who have no concept of a spoken language and are therefore unaware of phonetic sounds for letters. For this purpose, Gallaudet founded the Hartford School for the Deaf in 1817. The Gallaudet system works well for deaf mutes, but there is no obvious reason to use it for those who have the ability to hear sounds.

Anyway, in 1835 Mother's Primer was published and the Massachusetts Primary School Committee under Horace Mann immediately adopted the book on an experimental basis. Later we shall find that Horace Mann ties directly to The Order - in fact, the cofounder of The Order. On pages 73-74 we reproduce two pages from the second edition of 1836, with the following directions to the teacher:

. . . pointing to the whole word Frank, but not to the letters. Nothing is yet to be said about letters…"



THE

MOTHER'S PRIMER,

TO

TEACH HER CHILD ITS LETTERS,

AND

HOW TO READ.

DESIGNED ALSO FOR THE

LOWEST CLASS IN PRIMARY SCHOOLS.

ON A NEW PLAN.

BY REV. T. H. GALLAUDET,
Late Principal of the Deaf and Dumb Asylum, Hartford.

SECOND EDITION.

HARTFORD.
DANIEL BURGESS & CO.
1836.

THE MOTHER'S PRIMER. 9





frank **jane**

frank **jane**

jane **frank**

frank

jane

Directions to the Teacher.—Say to the child, pointing to the first picture, "What is that? Do you know his name? I wonder if he has a name. Suppose we call him *Frank.* O there is his name, right under him," pointing to the *whole word*, Frank, but not to the letters. *Nothing is yet to be said about letters.* "Here is his name again. And here it is again. And here it is once more. What is that?" pointing to the other picture. "Perhaps it is Frank's sister. What is her name? O here is her name. It is Jane. Can you show me her name again?—again —once more." Repeat till the child can tell the words readily.

10 THE MOTHER'S PRIMER.





dog **cat**

dog **cat**

cat **dog**

dog

cat

frank

jane

Point to the first picture, "What is that? Here is the word *dog* under the picture. Can you show me the word *dog* again?—again,—once more. That is Frank's dog. Well here is Jane's"——(pointing to the second picture.) "What? Can you tell me? What word do you think that is right under Jane's cat? Can you show me the word *cat* again?—again,—once more." Pointing to the word *Frank*, "What word is this?" So with the word *Jane*. Repeat till the words are thoroughly learned.

Why did Horace Mann push a method designed for deaf mutes onto a school system populated with persons who were not deaf mutes? There are two possible reasons. The reader can take his or her pick. First, in 1853 Mann was appointed President of Antioch College. The most influential Trustee of Antioch College was the co-founder of The Order - Alphonso Taft.

Second, Mann never had a proper education and consequently was unable to judge a good method from a bad method for reading. Here's a description of Mann's school days:

"The opportunities for the lad's schooling were extremely meager. The locality enjoyed the reputation of being the smallest school district, with the poorest school house and the cheapest teacher in the State."

Mann's teacher was Samuel Barratt and we quote: "In arithmetic he was an idiot. He could not recite the multiplication table and could not tell the time of day by the clock ... Six months of the year he was an earnest and reliable teacher, tasting nothing stronger than tea, then for another six months he gave himself up to a state of beastly drunkenness . . ."

By 1840 there was a backlash, and the look-say system was dropped in Massachusetts.

The Second Attempt

Towards the end of the 19th century The Order came on the scene - and the look-say method was revived. The youngest son of Thomas Hopkins and Sophia Gallaudet was Edward Miner Gallaudet. Two of -is sons went to Yale and became members of The Order:

• Edson Fessenden Gallaudet ('93), who became an instructor of physics at Yale, and
• Herbert Draper Gallaudet ('98), who attended Union Theological Seminary and became a clergyman.

Then the method was adopted by Columbia Teachers' College and :he Lincoln School. The thrust of the new Dewey-inspired system of education was away from learning and towards preparing a child to be a unit in the organic society. Look-say was ideal for Deweyites. It skipped one step in the learning process. It looked "easy," and de-emphasized reading skills.

The educational establishment rationalized look-say be claiming that up to the turn of the century reading was taught by "synthetic" methods, i.e., children were taught letters and an associated sound value. Then they learned to join syllables to make words. This was held to be uninteresting and artificial. Educational research, it was claimed, demonstrated that in reading words are not analyzed into component letter parts but seen as complete units. Therefore, learning to read should start with complete units.

Education

Of course, there is a gigantic non-sequitur in this reasoning process. Certainly a skilled reader does see words as complete units. And a really skilled reader does see lines and paragraphs at a glance. But the accuracy of perceiving the whole is based on the degree of understanding and knowledge of the component parts.

The educational establishment argues today in the 1980s that, based on further experimental testing, it is easier for a child to read the line "the rocket zoomed into space" than "the cat sat on the mat." The first line has "contrasting visual structure" and the second quote has a "similar visual pattern."

What they have done now is to make a mountain out of a molehill, convert the relatively simple task of learning to read into an unnecessarily complex system.

Why? That we shall see as the story progresses.



The visual patterns of words in two sentences

How children are taught to read - and why they can't.

Memorandum Number Three: The Illuminati Connection

We need to trace three historical lines in modern education: the first we looked at in Memorandum Number Two, the development of the look-say method of reading, its abandonment and its later adoption around the turn of the century.

Another line is the import of the experimental psychology of Wilhelm Wundt into the United States by The Order. This we shall examine in Memorandum Number Four.

For the moment we want to briefly trace the influence of Johann Friedrich Herbart, a major German philosopher of the early 19th century. There was at one time in the United States a National Herbart Society for the Scientific Study of Education to adapt Herbartian principles to American education. Later, this became just National Society for the Study of Education. You don't hear too much about Johann Herbart today, but his influence survives in the so-called "enriched" school curricula and in current educational methodology.

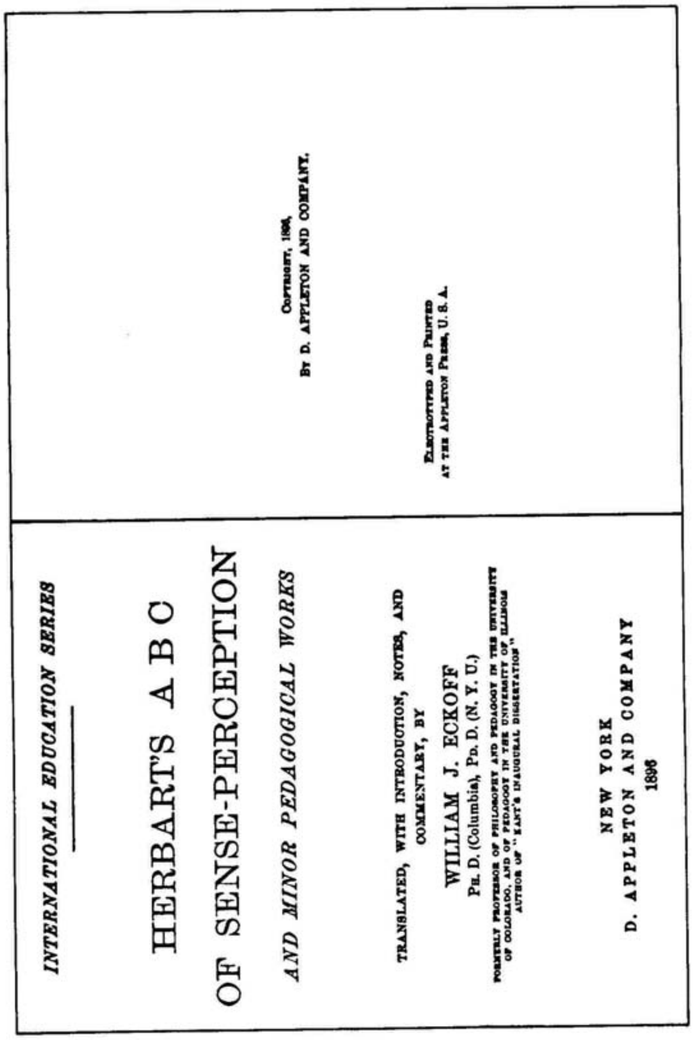
Our purpose in this memorandum is twofold: to show the Hegelian aspects of Herbartian theory and to trace the Illuminati connection. There is no direct connection to The Order. However, in a subsequent book, we will trace The Order to the Illuminati and this section will then fall into a logical place.

Herbart was an educational theorist as well as philosopher and psychologist, and strongly influenced Wilhelm Wundt. For Herbart, education had to be presented in a scientifically correct manner, and the chief purpose of education for Herbart is to prepare the child to live properly in the social order of which he is an integral part. Following Hegel, the individual is not important. The mere development of individual talent, of individual fitness, mental power and knowledge is not .he purpose of education. The purpose is to develop personal character and social morality, and the most important task of the educator is to analyze the activities and duties of men within society.

The function of instruction is to fulfill these aims and impart to the individual socially desirable ideas. Morality for Herbart, therefore, is what is good for society, following Hegelian theory.

Herbartians favor grouping of subjects around a core topic, i.e., the grouping of history, social science and English literature. This enables the teacher to more easily draw out those notions useful to the objective.

All of these ideas we can recognize in today's educational philosophy came into American education through the Herbartian groups.



INTERNATIONAL EDUCATION SERIES

HERBART'S A B C OF SENSE-PERCEPTION

AND MINOR PEDAGOGICAL WORKS

TRANSLATED, WITH INTRODUCTION, NOTES, AND COMMENTARY, BY

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The Illuminati Connection

Johann Herbart studied at the University of Jena, and came under the influence of Johann Herder, Friedrich Schiller, Johann Fichte and Johann Goethe. Later, in Switzerland, Herbart came into contact with Johann Pestalozzi.

What is interesting about these names, and they comprise the most important influence on Herbart, is that they are either known members of the Illuminati or reputed to be close to the Illuminati Order.

Let's take each name in turn:

- Johann Gottried Herder (1744-1803) was "Damascus pontifex" in the Illuminato.
- Johann Fichte, we have already noted in the previous volume, was close to the Illuminati and pushed by Goethe ("Abaris") for the post at the University of Jena, where Johann Herbart was studying.
- Friedrich Schiller (1759-1805) was known in the circle but not reliably recorded as an Illuminati member.
- Johann Wolfgang Goethe (1749-1832) was "Abaris" in the Illuminati.

We have an even more precise connection for another prominent Illuminati, Johann Heinrich Pestalozzi (1746-1827), a Swiss teacher of some renown living at Interlaken, and known as "Alfred" in the Illuminati code.

Before Herbart completed his doctorate, just after the turn of the 19th century, he spent three years at Interlaken in Switzerland. Out of his contact with Pestalozzi came a book on Pestalozzi's educational theories, much of which rubbed off onto Herbart. The book is PestaIozzi's Idee Eines *ABC Der* Anschaung *Untersucht* Und *Wissenschaftlich Asugefuhrt* (Pestalozzi's idea of an ABC of sense impression). This book has been translated and we reproduce a copy of .he title page of the 1896 New York edition. This is not insignificant. It is a commentary by a prominent influence on today's education upon an Illuminati book.

Why Is The Illuminati Connection Significant?

The Illuminati was founded May 1, 1776 by Professor Adam Weishaupt of the University of Ingolstadt. It was a secret society, but in 1785 and 1787 several batches of internal documents came to the Bavarian Government. Subsequent investigation determined that the aim of the Illuminati was world domination, using any methods to advance the objective, i.e., the end always justifies the means. It was anti-Christian, although clergymen were found in the organization. Each member had a pseudonym to disguise his identity.

During its time, the Illuminati had widespread and influential membership. After suppression by the Bavarian Government in 1788 it was quiet for some years and then reportedly revived.

The significance for this study is that the methods and objectives parallel those of The Order. In fact, infiltration of the Illuminati into New England is known and will be the topic of a forthcoming volume.

So far as education is concerned, the Illuminati objective was as follows:

"We must win the common people in every corner. This will be obtained chiefly by means of the schools, and by open, hearty behaviour, show, condescension, popularity and toleration of their prejudices which we shall at leisure root out and dispel."

As Rosenbaum has pointed out in his *Esquire* article, the Illuminati ceremony has similarities to The Order. For example, John Robison in Proofs Of A Conspiracy: 1 "The candidate is presented for reception in the character of a slave; and it is demanded of him what has brought him to this most miserable of all conditions. He answers - Society - the State - Submissiveness - False Religion. A skeleton is pointed out to him, at the feet of which are laid a Crown and a Sword. He is asked whether that is the skeleton of a King, a Nobleman or a Beggar?

As he cannot decide, the President of the meeting says to him, "the character of being a man is the only one that is of importance." Finally, in conclusion, we can trace the foundation of three secret societies, in fact the most influential three secret societies that we know about, to Universities. The Illuminati was founded at University of Ingolstadt. The Group was founded at All Souls College, Oxford University in England, and The Order was founded at Yale University in the United States.

The paradox is that institutions supposedly devoted to the search for truth and freedom have given birth to institutions devoted to world enslavement.

[1] John Robinson, PROOFS OF A CONSPIRACY (Americanist Classics, Belmont, 1967), p. 110.

Memorandum Number Four:
The Leipzig Connection*

The link between German experimental psychology and the American educational system is through American psychologist G. Stanley Hall, in his time probably the foremost educational critic in the U. S.

The Hall family is Scotch and English and goes back to the 1630s, but Hall was not a Yale graduate, and at first sight there is no connection between Hall and The Order.

On the other hand, Hall is a good example of someone whose life has major turning points and on probing the turning points, we find The Order with its guiding hand. The detail below is important to link Hall with The Order. It is an open question how much Hall knew, if he knew anything at all, about The Order and its objectives.

After graduation from Williams College, Hall spent a year at the Union Theological Seminary, New York. Our "Addresses" books for The Order do not give church affiliations for members citing the ministry as their occupation. We do know that Rev. Henry Sloane Coffin ('97) was Associate Professor of Practical Theology at Union from 1904-1926 and President of Union Seminary from 1926 to 1945, but we cannot trace any members at Union before 1904.

Fortunately, Hall was an egocentric and wrote two long, tedious autobiographies: Recreations Of A Psychologist and *Life* And Confessions Of A Psychologist. This is how Hall described his entry to Union in the latter book (pp. 177-8):

> "Recovering from a severe attack of typhoid fever the summer after graduation and still being very uncertain as to what I would be and do in the world, I entered Union Theological Seminary in September 1867."

Later Hall adds,

> "The man to whom t owe far more in this group than any other was Henry B. Smith, a foreign trained scholar, versed more or less not only in systematic theology, which was his chair, but in ancient and modern philosophy, on which he gave us a few lectures outside the course. Of him alone I saw something socially. He did me perhaps the greatest intellectual service one man can render another by suggesting just the right reading at the right time. It was he, too, who seeing my bent advised me to go to Europe."

'*The Leipzig* Connection is the title of an excellent little booklet by Lance J. Klass and Paoli Lionni, published by The Delphian Press. Route 2, Box 195, Sheridan, Oregon 97378 ($4 00 postpaid), The book came out in 1967 and was the first to trace the Wundt link It has more detail on Wundt than this memorandum, but, of course, is not concerned with The Order.

The Rev. Henry Boynton Smith cited by Hall was Professor of Church History at Union Seminary from 1850 to 1874, and in the "liberal" wing of the Presbyterian Church, he edited Theological Review from 1859-1874 and translated several German theological works. Smith was not a member of The Order.

How did Hall, who says he was broke, get from New York to Europe, specifically to Germany?

Here's the interesting twist. Someone he didn't know (but whom today we can trace to The Order) gave him $1,000 - a lot of money in those days. Here's how it happened. While preaching in Pennsylvania in 1868, Hall received a letter from Rev. Henry Ward Beecher, whose church he attended in New York:

> ". . . asking me to call on him. I immediately took the train and Beecher told me that through the Manns (friends) he had learned that I wished to study philosophy in Germany but lacked the means . . . (he) gave me a sealed note to the lumber magnate Henry Sage, the benefactor of Cornell, which I presented at his office without knowing its contents. To my amazement, after some scowling and a remark to the effect that his pastor took amazing liberties with his purse, he gave me a check for one thousand dollars. Taking my note to repay it with interest, he told me to sail for Germany the next day" (Confessions, p. 182).

Who was "lumber magnate Henry Sage, the benefactor of Cornell"? The Sage family had several "Henrys" involved with Yale and Cornell Universities in those days. The "Henry Sage" cited is probably William Henry Sage (1844-1924) who graduated Yale 1865 and then joined the family lumber company, H.W. Sage & Company in New York. Henry Sage was a member of Scroll & Key - the sister Senior Society to Skull & Bones at Yale. Furthermore, two of Henry Sage's nephews were in The Order, but well after 1868:

- Dean Sage ('97)
- Henry Manning Sage ('90)

Both Sages entered the family lumber business, by then renamed Sage Land & Lumber.

In brief: the funds to get Hall to Germany on his first trip came from a member of Scroll & Key, i.e., Henry Sage, while Sage's two nephews joined The Order later in the century.

In Germany, Hall studied philosophy at the University of Berlin for two years under Hegelians Trendelenberg (Gilman of The Order also studied under Trendelenberg) and Lepsius. There were few American students in Berlin at this time. So few that the American Minister George Bancroft could entertain them at the U.S. Embassy to meet German Chancellor von Bismarck.

Hall At Antioch College

Hall returned to the U.S. from Germany in 1871 and by design or accident found himself under the wing of The Order.

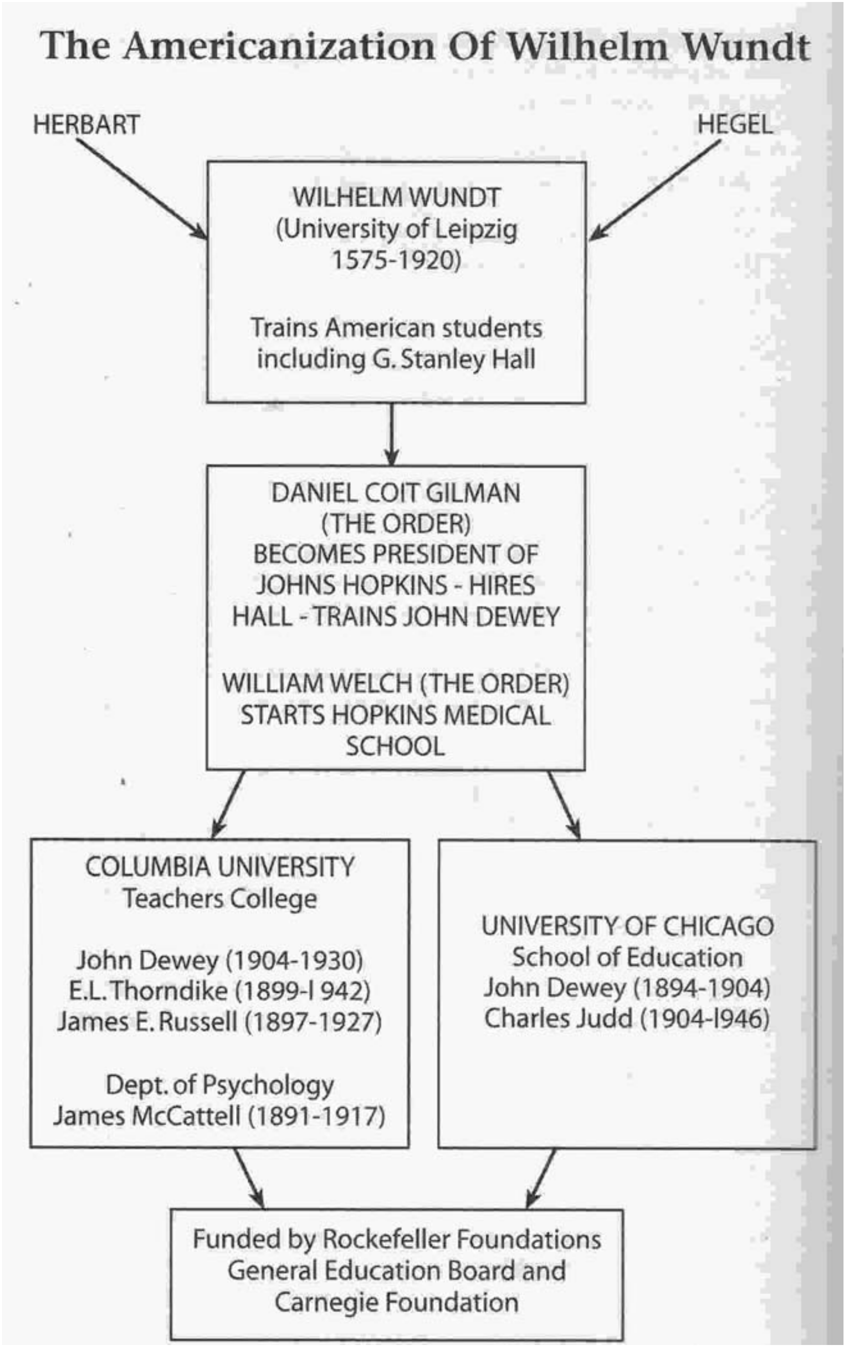
Again, the detail is important. There are two versions of Hall's life immediately after returning from his first trip to Germany. According to Hall's Confessions, he became tutor for the Seligman banking family in New York and was then contacted by James K. Hosmer, Professor at Antioch College, Yellow Springs, Ohio. Hosmer asked, and this is very unusual, if Hall would like his professorial post at Antioch. Said Hall, "I gladly accepted."

There is another version in National Cyclopaedia Of American Biography which states, "In 1872 he (Hall) accepted a professorship at Antioch College, Ohio, that formerly was held by Horace Mann."

In any event Hall went to Antioch, a "liberal" Unitarian college with a more than "liberal" view of education. And at Antioch College, G. Stanley Hall was at the core of The Order.

Horace Mann, whom we met in Memorandum Two as the promoter of "look-say" reading, was the first President of Antioch (1853-1860). The most prominent trustee of Antioch College was none other than the co-founder of The Order, Alphonso Taft. According to Hall, "(I) occasionally spent a Sunday with the Tafts. Ex-President Taft was then a boy and his father, Judge Alonzo (sic) Taft was a trustee of Antioch College" Confessions, p. 201).

Furthermore, Cincinnati, Ohio, at that time was the center for a Young Hegelian movement including famous left Hegelian August Willich, and these were well known to Judge Alphonso Taft.



In brief, while at Antioch College in Yellow Springs, Ohio, Hall came under the influence of four groups:

(a) the legend of Horace Mann, a hero of the modern education movement.

(b) the Unitarian Church, which will enter our later reports,

(c) a Hegelian discussion group comprised of left Hegelians, and (d) the co-founder of The Order, Alphonso Taft. And Hall knew William Howard Taft, also a member of The Order ('78) and future President and Chief Justice of the United States.

Hall stayed four years at Antioch, then took off again for Europe, while Alphonso Taft went to Washington, D.C. as Secretary of War, then as Attorney General in the Grant Administration. Hall

paused a while in England and then went on to Germany, to Leipzig and Wilhelm Wundt. He became the first of a dozen Americans to receive a Ph.D. in psychology (a new field) under Wundt.

The Hegelian Influence On Hall

So between 1870 and 1882, a span of twelve years, Hall spent six years in Germany. As Hall himself comments,

> "I do not know of any other American student of these subjects (i.e., philosophy and psychology) who came into even the slight personal contact it was my fortune to enjoy with Hartmann and Fechner, nor of any psychologist who had the experience of attempting experimental work with Helmholtz and I think I was the first American pupil of Wundt. The twelve years included in this span, more than any other equal period, marked and gave direction to modern psychology . . ."1

Who were these four German philosophers who so influenced Stanley Hall?

Eduard von Hartmann (1842-1906), a prominent philosopher. Hartmann's views on individual rights are entirely contrary to our own, i.e., "The principle of freedom is negative . . . in every department of life, save religion alone, compulsion is necessary ... What all men need is rational tyranny, if it only holds them to a steady development, according to the laws of their own nature."

There isn't too much difference between Hegel and Hartmann on the idea of social progress. Individual freedom is not acceptable to these philosophers, man must be guided by "rational tyranny."

Gustav Theodor Fechner (1801-1887). Fechner disliked Hegel, who Fechner said, "unlearned men to think." However, Fechner was mainly interested in psycho-physics, i.e., parapsychology:

[1]G. Stanley Hall. FOUNDERS OF MODERN PSYCHOLOGY. Appleton & Co., London, 1912, pp. v-vi.

> ". . . he was particularly attracted to the unexplored regions of the soul and so he became interested in somnambulism, attended seances when table tapping came into vogue."

Herman L. F. von Helmholtz (1821-1894) was undoubtedly Germany's greatest scientist in the 19th century and was rooted in Kant, the predecessor of Hegel.

For Helmholtz:

> "The sensible world is a product of the interaction between the human organism and an unknown reality. The world of experience is determined by this interaction but the organism itself is only an object of experience and is to be understood by psychology and physiology."

Wilhelm Maximilian Wundt

Wilhelm Wundt (1832-1920), Professor of Philosophy at University of Leipzig, was undoubtedly the major influence on G. Stanley Hall. Modern education practice stems from Hegelian social theory combined with the experimental psychology of Wilhelm Wundt. Whereas Karl Marx and von Bismarck applied Hegelian theory to the political field, it was Wilhelm Wundt, influenced by Johann Herbart, who applied Hegel to education, which in turn, was picked up by Hall and John Dewey and modern educational theorists in the United States.

Wilhelm Maximilian Wundt was born August 16, 1832 at Neckarau, a suburb of Mannheim, Germany. His father Maximilian (1787-1846) was a minister. Wundt's grandfather on the paternal side is of significant interest: Kirchenrat Karl Kasimir Wundt (1744-84) was Professor at Heidelberg University in the history and geography of Baden and pastor of the church at Wieblingen, a small neighborhood town.

The Illuminati-Order documents show that "Raphael" in the IIluminati is identified as this same Professor Karl Kasimir Wundt and is referred to in the Illuminati Provincial Report from Utica (i.e., Heidelberg) dated September 1782.[1]

The magnum opus of Wilhelm Wundt, i.e., Volkerpsychologie, is also today a recommended book in Internationales Freimaurer *Lexikon* (page 50).

Historical links aside, Wundt is important in the history of American education for the following reasons:

(1) He established in 1875 the world's first laboratory in experimental psychology to measure individual responses to stimuli.

'Richard van Dulman, *Der Geheimbund Der Illuminaten* (Stuttgart, 1977, p. 269).

(2) Wundt believed that man is only the summation of his experience, i.e., the stimuli that bear upon him. It follows from this that, for Wundt, man has no self will, no self determination. Man is in effect only the captive of his experiences, a pawn needing guidance.

(3) Students from Europe and the United States came to Leipzig to learn from Wundt the new science of experimental psychology. These students returned to their homelands to found schools of education or departments of psychology, and trained hundreds of Ph.D.s in the new field of psychology.

The core of our problem is that Wundt's work was based on Hegelian philosophical theory and reflected the Hegelian view of the individual as a valueless cog in the State, a view expanded by Wundt to include man as nothing more than an animal influenced solely by daily experiences.

This Wundtian view of the world was brought back from Leipzig to the United States by G. Stanley Hall and other Americans and went through what is known among psychologists as "The Americanization of Wundt."

Although Hall was primarily psychologist and teacher, his political views were partially Marxist, as Hall himself writes: ". . . (I) had wrestled with Karl Marx and half accepted what I understood of him" (Confessions, p. 222).

In the next Memorandum, Number Five, we will link Hall with Gilman and trace their joint influence on American education.

Memorandum Number Five: The Baltimore Scheme

While G. Stanley Hall was in Leipzig working under Wilhelm Wundt, the revolutionary trio Gilman-Dwight-White were moving events back home - and The Order ran into its first organized opposition.

The protesting "neutrals" at Yale had no hope of winning. Even under independent President Noah Porter in the 1870s, The Order had Yale University under its control. But while Yale students were watching, protesting and writing bad verse, Daniel Gilman ran into opposition 3000 miles away - and if the leaders of this counter revolution had known the story we are recounting here, they might just have stopped The Order dead in its tracks.

In 1867 Daniel Gilman received an offer as President of the University of Wisconsin. This he declined. In 1872 Gilman was offered the Presidency of the newly established University of California. This offer he accepted.

In California Gilman found a political hornets' nest. For some years there had been increasing popular concern about the railroad monopolies, government subsidies to railroads and - oddly enough - the Morrill Bill which gave federal land grants to agricultural and scientific colleges. The reader will recall that in Connecticut and New York, The Order had grabbed the total state's share for Yale and Cornell respectively. Californians believed that the University of California, a land grant college, should teach agriculture and science, whereas Gilman had different ideas. Unrest over corruption, including corruption among University of California Regents and the railroads (in which members of The Order had widespread interests), led to formation of a new California political party.

In 1873 the party was known as the Patrons of Husbandry or the Grangers. Then members of the Republican Party broke away and joined with the Grangers to form the Peoples Independent Party (known also as the Dolly Varden Party). They won a decisive victory in the 1873 California elections and following investigations by the Grangers, a petition was sent to the Legislature concerning operation of the University of California under Daniel Giiman.
At that time Henry George was editor of the San Francisco Daily Evening Post and George used his considerable journalistic skills to attack the University, the Regents, Gilman, and the land grants. Although Henry George is known as a socialist, we classify him as an independent socialist, not part of the Hegelian right-left spectrum. His main target was land monopoly, whereas the "scientific" Hegelian socialism of Karl Marx is geared to establishing monopolies of all kinds under state control, following the Hegelian theory of the supremacy of the State.

This populist furor scared Gilman, as he freely admits:

> ". . . there are dangers here which I could not foresee. . . . This year the dangers have been averted but who can tell what will happen two years hence"? I feel that we are building a superior structure but it rests over a powder mill which may blow it up any day. All these conditions fill me with perplexity."

Reading between the lines, Daniel Gilman was not too anxious to =ace the populist west. He needed a more stable base where prying journalists and independent politicians could be headed off. And this base presented itself in the "Baltimore scheme."

Daniel Gilman Becomes President Of Johns Hopkins

Johns Hopkins, a wealthy Baltimore merchant, left his fortune to establish a University for graduate education (the first in the United States along German lines) and a medical school.

Hopkins' trustees were all friends who lived in Baltimore. How then did they come to select Daniel Coit Gilman as President of the new University?

In 1874 the trustees invited three university presidents to come to Baltimore and advise on the choice of a President. These were Charles W. Eliot of Harvard, Andrew Dickson White of Cornell, and James B. Angell of Michigan. Only Andrew Dickson White was in The Order. After meeting independently with each of these presidents, half a dozen of the trustees toured several American Universities in search of further information - and Andrew D. White accompanied the tour. The result . as in the words of James Angell:

> "And now I have this remarkable statement to make to you, that without the least conference between us three, we all wrote letters telling them that the one man was Daniel C. Gilman of California,"1

The truth is that Gilman not only knew what was going on in 3aitimore, but was in communication with Andrew White on the Baltimore scheme," as they called it.

In a letter dated April 5, 1874, Gilman wrote as follows to Andrew D. white

> "(could not conclude on any new proposition without conferring upon it with some of my family friends, and I have not felt at liberty to do so. I confess that the Baltimore (italics in original) scheme has often suggested itself to me, but I have no personal relations in that quarter."[2]

'John C. French. A HISTORY OF "I HE UNIVERSITY FOUNDED BY JOHNS HOPKINS (The Johns Hopkins Press. Baltimore. 1946), p. 26.
[2]LIFE OF DANIEL COIT GILMAN. p. 157.

Here's the interesting point: the board appointed by Johns Hopkins to found a university did not even meet to adopt its by-laws and appoint committees until four weeks before this letter i.e., March 7, 1874. Yet Gilman tells us "the Baltimore scheme has of times suggested itself to me...

In brief: Gilman knew what was happening over in Baltimore BEFORE HIS NAME HAD BEEN PRESENTED TO THE TRUSTEES! Gilman became first President of Johns Hopkins University and quickly set to work.

Johns Hopkins had willed substantial amounts for both a University and a medical school. Dr. William H. Welch ('70), a fellow member of The Order, was brought in by Gilman to head up the Hopkins medical school. (Welch was President of the Board of Directors of the Rockefeller Institute of Medical Research for almost 25 years, 1910-1934. This we shall expand upon later in the series when we examine how The Order came to control medicine). For the moment let's return to G. Stanley Hall who was in Leipzig while Johns Hopkins was acquiring its new President.

Gilman Starts The Revolution in American Education

When he returned to the United States Hall was feeling pretty low: "I came home, again in the depths because of debt and with no prospects, took a small flat on the edge of Somerville, where my two children were born, and waited, hoped and worked. One Wednesday morning President Eliot (of Harvard University) rode up to the house, rapped on the door without dismounting from his horse and asked me to begin Saturday of that week a course of lectures on education . . ."

As Hall recounts it, he had a "very impressive audience" for these lectures. Sometime later,

> "In 1881 I was surprised and delighted to receive an invitation from the Johns Hopkins University, then the cynosure of all aspiring young professors, to deliver a course of twelve semi-public lectures on psychology."

At the end of the lecture series, Gilman offered Hall the chair of Professor of Psychology and Pedagogy. This puzzled Hall because others at Johns Hopkins were "older and abler" than himself and

> "Why the appointment for which all of them had been considered fell to me I was never able to understand unless it was because my standpoint was thought to be a little more accordant with the ideals which then prevailed there."

Hall was given a psychological laboratory, a thousand dollars a year for equipment and, with the encouragement of Gilman, founded The American Journal Of Psychology.

And what did Hall teach? Again in his own words:

> "The psychology I taught was almost entirely experimental and covered for the most part the material that Wundt had set forth in the later and larger edition of Physiological Psychology."

The rest is known. The chart demonstrates how doctoral students from Wundt and Hall fanned out through the United States, established departments of psychology and education by the score; 117 psychological laboratories just in the period up to 1930. Prominent among these students were John Dewey, J.M. Cattell and E.L. Thorndike - all part of the founding of Columbia Teachers' College and Chicago's School of Education - the two sources of modern American education.

Their activities can be measured by the number of doctorates in educational psychology and experimental psychology granted in the period up to 1948. The following list includes psychologists with training in Germany under Wilhelm Wundt before 1900, and the number of doctorates they in turn awarded up to 1948:

American Students of Wundt Teaching at U.S. Universities	Career At	Number of Doctorates They Awarded up to 1948
G. Stanley Hall	Johns Hopkins and Clark University	149 doctorates ;
J. McKeen Cattell	Columbia University	344 doctorates
E. W . Scripture	Yale University	138 doctorates
E.B. Titchener	Cornell University	112 doctorates
H. Gale	Minnesota University	123 doctorates
G.T.W. Patrick	Iowa University	269 doctorates
C.H. Judd	University of Chicago	196 doctorates

Of these only E.B. Titchener at Cornell could be called a critic of the Wundt school of experimental psychology. The rest followed the party line: an amalgamation of Hegelian philosophy and Wundtian animal psychology.

So from the seed sown by Daniel Coit Gilman at Johns Hopkins grew the vast network of interlocking schools of education and departments of psychology that dominates education today.

Memorandum Number Six:
The Troika Spreads Its Wings

Around the turn of the century The Order had made significant penetration into the educational establishment. By utilizing the power of members in strategic positions they were able to select, groom and position non-members with similar philosophy and activist traits.

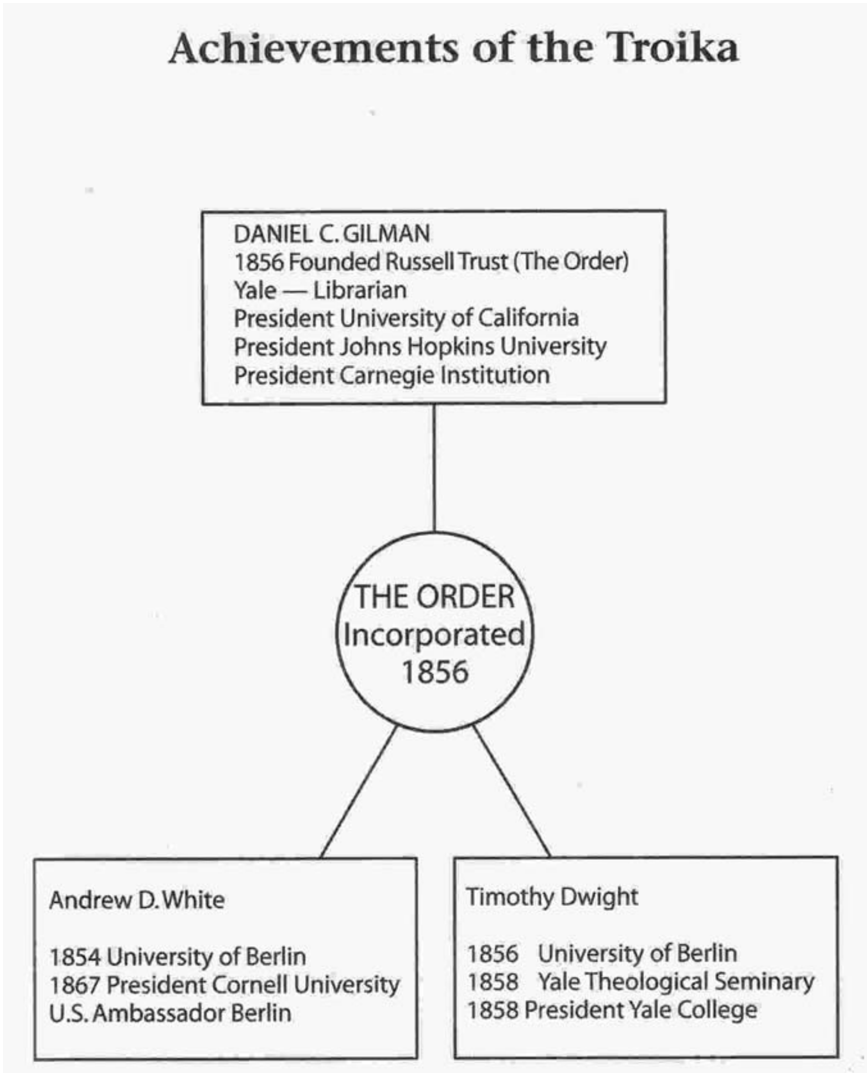
In 1886 Timothy Dwight (The Order) had taken over from the last of Yale's clerical Presidents, Noah Porter. Never again was Yale to get too far from The Order. Dwight was followed by member Arthur T. Hadley ('76). Andrew Dickson White was secure as President of Cornell and alternated as U.S. Ambassador to Germany. While in Berlin, White acted as recruiting agent for The Order. Not only G. Stanley Hall came into his net, but also Richard T. Ely, founder of the American Economic Association. Daniel Gilman, as we noted in the last memorandum, was President of Johns Hopkins and used that base to introduce Wundtian psychology into U.S. education. After retirement from Johns Hopkins, Gilman became the first President of the Carnegie Institution of Washington, D.C.

The chart overleaf summarizes the achievements of this remarkable troika.

Now let's see how The Order moved into more specialized fields of education, then we need to examine how The Order fits with John Dewey, the source of modern American educational philosophy, then how The Order spread Dewey throughout the system.

Founding Of The American Economic Association

Academic associations are a means of conditioning or even policing academics. Although academics are great at talking about academic freedom, they are peculiarly susceptible to peer group pressures. And if an academic fails to get the word through his peer group, there is always the threat of not getting tenure. In other words, what is taught at University levels is passed through a sieve. The sieve is faculty conformity. In this century when faculties are larger, conformity cannot be imposed by a President. [t is handled equally well through faculty tenure committees and publications committees of academic associations.



We have already noted that member Andrew Dickson White founded and was first President of the American Historical Association and therefore was able to influence the constitution and direction of the AHA. This has generated an official history and ensured that existence of The Order is never even whispered in history books, let alone school texts.

An economic association is also of significance because it conditions how people who are not economists think about the relative merits of free enterprise and state planning. State economic planning is an essential part of State political control. Laissez faire in economics is the equivalent of individualism in politics. And just as you will never find any plaudits for the Ninth and Tenth Amendments to the Constitution in official history, neither will you find any plaudits for individual free enterprise.

The collectivist nature of present day college faculties in economics has been generated by the American Economic Association under influence of The Order. There are very few outspoken preachers of the Austrian School of Economics on American campuses today. They have been effectively weeded out. Even Ludwig von Mises, undisputed leader of the school, was unable to find a teaching post in the United States. So much for

academic freedom in economics. And it speaks harshly for the pervasive, deadening, dictatorial hand of the American Economics Association. And the controlling hand, as in the American Psychological Association and the American Historical Association, traces back to The Order.

The principal founder and first Secretary of the American Economic Association was Richard T. Ely. Who was Ely?

Ely descended from Richard Ely of Plymouth, England who settled at Lyme, Connecticut in 1660. On his grandmother's side (and you have heard this before for members of The Order) Ely descended from the daughter of Rev. Thomas Hooker, founder of Hartford, Connecticut. On the paternal side, Ely descended from Elder William Brewster of Plymouth Colony.

Ely's first degree was from Dartmouth College. In 1876 he went to University of Heidelberg and received a Ph.D. in 1879. Ely then returned to the United States, but as we shall describe below, had already come to the notice of The Order.

When Ely arrived home, Daniel Gilman invited Ely to take the Chair of Political Economy at Johns Hopkins. Ely accepted at about the same time Gilman appointed G. Stanley Hall to the Chair of Philosophy and Pedagogy and William Welch, a member of The Order we have yet to describe, to be Dean of the Johns Hopkins medical school.

Fortunately, Richard Ely was an egocentric and left an autobiography, Ground Under Our Feet, which he dedicated to none other than Daniel Coit Gilman (see illustration). Then on page 54 of this autobiography is the caption "I find an invaluable friend in Andrew D. White." And in Ely's first book, French And German Socialism, we find :he following:

> "The publication of this volume is due to the friendly counsel of the Honorable Andrew D. White, President of Cornell University, a gentleman tireless in his efforts to encourage young men and alive to every opportunity to speak fitting words of hope and cheer. Like many of the younger scholars of our country, I am indebted to him more than I can say."

Ely also comments that he never could understand why he always received a welcome from the U.S. Embassy in Berlin, in fact from the Ambassador himself. But the reader has probably guessed what Ely didn't know - White was The Order's recruiter in Berlin.

Ely recalls his conversations with White, and makes a revealing comment: "I was interested in his psychology and the way he worked cleverly with Ezra Cornell and Mr. Sage, a benefactor and one of the trustees of Cornell University." The reader will remember it was Henry 5age who provided the first funds for G. Stanley Hall to study in Germany.

Then Ely says, "The only explanation I can give for his special interest n me was the new ideas I had in relation to economics." And what were these new ideas? Ely rejected classical liberal economics, including free trade, and noted that free trade was "particularly obnoxious to the German school of thought by which I was so strongly impressed." In other ,words, just as G. Stanley Hall had adopted Hegelianism in psychology from Wundt, Ely adopted Hegelian ideas from his prime teacher Karl Knies at University of Heidelberg.

TO THE MEMORY OF
DANIEL COIT GILMAN

First President of Johns Hopkins University, creative genius in the field of education; wise, inspiring and courageous chief under whom I had the good fortune to begin my career and to whom I owe an inestimable debt of gratitude, I dedicate this book.

And both Americans had come to the watchful attention of The Order. The staff of the U.S. Embassy in Berlin never did appreciate why a young American student, not attached to the Embassy, was hired by Ambassador White to make a study of the Berlin City Government. That was Ely's test, and he passed it with flying colors. As he says, "It was this report which served to get me started on my way and later helped me get a teaching post at the Johns Hopkins."

The rest is history. Daniel Coit Gilman invited Richard Ely to Johns Hopkins University. From there Ely went on to head the department of economics at University of Wisconsin. Through the ability to influence choice of one's successor, Wisconsin has been a center of statist economics down to the present day.

Before we leave Richard Ely we should note that financing for projects at University of Wisconsin came directly from The Order - from member George B. Cortelyou ('13), President of New York Life Insurance Company.

Ely also tells us about his students, and was especially enthralled by Woodrow Wilson: "We knew we had in Wilson an unusual man. There could be no question that he had a brilliant future."

And for those readers who are wondering if Colonel Edward Mandell House, Woodrow Wilson's mysterious confidant, is going to enter the story, the answer is Yes! He does, but not yet.

The clue is that young Edward Mandell House went to school at Hopkins Grammar School, New Haven, Connecticut. House knew The Order from school days. [n fact one of House's closest classmates at Hopkins Grammar School was member Arthur Twining Hadley ('76), who went on to become President of Yale University (1899 to 1921). And it was Theodore Roosevelt who surfaced Hadley's hidden philosophy: "Years later Theodore Roosevelt would term Arthur Hadley his fellow anarchist and say that if their true views were known, they would be so misunderstood that they would both lose their jobs as President of the United States and President of Yale."1

House's novel, *Philip Dru,* was written in New Haven, Connecticut and in those days House was closer to the Taft segment of The Order than Woodrow Wilson. In fact House, as we shall see later, was The Order's messenger boy. House was also something of a joker because part of the story of The Order is encoded within *Philip Dru!*

We are not sure if The Order knows about House's little prank. It's just like House to try to slip one over on the holders of power.

American Medical Association

Your doctor knows nothing about nutrition? Ask hom confidentially and he'll probably confess he had only one course in nutrition. And there's a reason.

Back in the late 19th century American medicine was in a deplorable state. To the credit of the Rockefeller General Education Board and the Institute for Medical Research, funds were made available to staff teaching hospitals and to eradicate some pretty horrible diseases.

[1] Morris Hadley. ARTHUR TWINING HADLEY, Yale University Press. 1948, p. 33.

On the other hand, a chemical-based medicine was introduced and the medical profession cut its ties with naturopathy. Cancer statistics tell you the rest.

For the moment we want only to note that the impetus for reorganizing medical education in the United States came from John D. Rockefeller, but the funds were channeled through a single member of The Order.

Briefly, the story is this. One day in 1912 Frederick T. Gates of Rockefeller Foundation had lunch with Abraham Flexner of Carnegie Institution. Said Gates to Flexner: "What would you do if you had one million dollars with which to make a start in reorganizing medical education in the United States?"[1]

As reported by Fosdick, this is what happened:

> "The bluntness was characteristic of Mr. Gates, but the question about the million dollars was hardly in accord with his usual indirect and cautious approach to the spending of money. Flexner's reply, however, to the effect that any funds - a million dollars or otherwise - could most profitably be spent in developing the Johns Hopkins Medical School, struck a responsive chord in Gates who was already a close friend and devoted admirer of Dr. Wi!liam H. Welch, the dean of the institution."

Welch was President of the Rockefeller Institute for Medical Research from 1901, and a Trustee of the Carnegie Institution from 1906. William H. Welch was also a member of the Order and had been brought to Johns Hopkins University by Daniel Coit Gilman.

Other Areas Of Education

We should note in conclusion other educational areas where The Order had its influence. In theology we have already noted that The Order controlled Union Theological Seminary for many years, and was strong within the Yale School of Divinity.

The constitution for UNESCO was written largely by The Order, i.e., member Archibald MacLeish. And member William Chauvenet (1840) was "largely responsible for establishing the U.S. Naval Academy on a firm scientific basis." Chauvenet was director of the Observatory, U.S. Naval Academy, Annapolis from 1845 to 1859 and then went on to become Chancellor of Washington University (1869).

Finally, a point on methodology. The reader will remember from Memorandum One (Voume One) that we argued the most "general" solution to a problem in science is the most acceptable solution. In brief, a useful hypothesis is one that explains the most events. Pause a minute and reflect. We are not developing a theory that includes numerous superficially unconnected events.

[1] Raymond D. Fosdick. ADVENTURE IN GIVING (Harper & Row. New York. 1962), p. 154.

For example, the founding of Johns Hopkins University, the introduction of Wundtian educational methodology, a psychologist G. Stanley Hall, an economist Richard T. Ely, a politician Woodrow Wilson - and now we have included such disparate events as Colonel Edward House and the U.S. Naval Observatory. The Order links to them all . . . . and several hundred or thousand other events yet to be unfolded.

In research when a theory begins to find support of this pervasive nature it suggests the work is on the right track.

So let's interpose another principle of scientific methodology. How do we finally know that our hypothesis is valid? If our hypothesis is correct, then we should be able to predict not only future conduct of The Order but also events where we have yet to conduct research. This is still to come. However, the curious reader may wishto try it out. Select a major historical event and search for the guiding hand of The Order.

Members Of The Order In Education

(For Yale University see list at end of Memorandum Number One)

Name	Date Initiated	Affiliations
BURTT, Edwin A.	1915	Professor of Philosophy, University of Chicago (1924-1931) and Cornell Universi ty (1931-1960)
ALEXANDER, Eben	1873	Professor of Greek and Minister to Greece (1893-97)
BLAKE, Eli Whitney	1857	Professor of Physics, Cornell (1868-1870) and Brown University (1870-95)
CAPRON, Samuel M.	1853	Not known
CHAUVENET, William	1840	U.S. Naval Academy (1845-59) and Chancellor Washington University (1862-9)
COLTON, Henry M.	1848	Not known
COOKE, Francis J.	1933	New England Conservatory of Music
COOPER, Jacob	1852	Professor of Greek, Center College (1855-1866), Rutgers University (1866-1904)
CUSHING, William	1872	Not known
CUSHMAN, Isaac LaFayette	1845	Not known
CUTLER, Carroll	1854	President, Western Reserve University (1871-1886)
DALY, Frederick J.	1911	Not known
DANIELS, Joseph L.	1860	Professor of Greek, Olivert College, and President (1865-1904)

EMERSON, Joseph	1841	Professor of Greek, Beloit College (1848-1888)
EMERSON, Samuel	1848	Not known
ESTILL, Joe G.	1891	Connecticut State Legislature (1932-1936)
EVANS, Evan W.	1851	Professor of Mathematics, Cornell Universi ty (1868-1872)
EWELL, John L.	1865	Professor of Church History, Howard University (1891-1910)
FEW SMITH, W.	1844	Not known
FISHER. Irving	1888	Professor of Political Economy, Yale (1893-1935)
FISK, F.W.	1849	President, Chicago Theological Seminary (1887-1900)
GREEN, James Payne	1857	Professor of Greek, Jefferson College (1857-59)
GRIGGS, John C.	1889	Vassar College (1897-1927)
GROVER, Thomas W.	1874	Not known
HALL, Edward T.	1941	St. Mark's School Southborough, Mass.
HARMAN, Archer	1913	St. Paul's School, Concord, N.H.
HARMAN, Archer, Jr.	1945	St. Paul's School, Concord. N.H.
HEBARD, Daniel	1860	Not known
HINCKS, John H.	1872	Professor of History, Atlanta University (1849-1894)
HINE, Charles D.	1871	Secretary, Connecticut State Board of Education (1883-1920)
H0LLISTER, Arthur N.	1858	Not known
HOPKINS, John M.	1900	Not known
HOXTON. Archibald R.	1939	Episcopal High School
HOYT, Joseph G.	1840	Chancellor, Washington University (1858-1862)
IVES, Chauncey B.	1928	Adirondack-Florida School
JOHNSON, Charles F.	1855	Professor of Mathematics, U.S. Naval Academy (1865-1870). Trinity College (1884-1906)
JOHNSTON, Henry Phelps	1862	Professor of History, N.Y. City College (1883-1916)
J OHNSTON, William	1852	Professor of English Literature, Washington & Lee (1867-1877) and Louisiana State University (1883-1889)
ONES, Theodore S.	1933	Institute of Contemporary Art
J UDSON, Isaac N.	1873	Not known
KELLOGG, Fred W.	1883	Not known
KIMBALL, John	1858	Not known
KINGSBURY, Howard T.	1926	Westminster School
KINNE, William	1948	Not known
{.APP, John M.	1936	Princeton University
KNOX, Hugh	1907	Not known
LEARNED, Dwight Whitney	1870	Professor of Church History, Doshiba College, Japan (1876-1928)
McCLINTOCK, Norman	1891	Professor of Zoology, University of Pitts burgh (1925-30), Rutgers (1932-6)
MACLEISH, Archibald	1915	Library of Congress (1939-1944), UNESCO, State Dept., OWI, Howard University

MACLEISH, William H.	1950	Not known
MACLELLAN, George B.	1858	Not known
MOORE, Eliakim H.	1883	Professor of Mathematics, University of Chicago (1892-1931)
MORSE, Sidney N.	1890	Not known
NICHOLS, Alfred B.	1880	Professor of German, Simmons College (1903-1911)
NORTON, William B.	1925	Professor of History, Boston Univ.
OWEN, Edward T.	1872	Professor of French, University of Wiscon sin (1879-1931)
PARSONS, Henry Mcl	1933	Columbia University
PERRY, David B.	1863	President, Douana College (1881-1912)
PINCKARD, Thomas C.	1848	Not known
POMEROY, John	1887	Professor of Law, University of Illinois (1910-1924)
POTWIN, Lemuel S.	1854	Professor, Western Reserve University (1871-1906
REED, Harry L.	1889	President, Auburn Theological Seminary (1926-1939)
RICHARDSON, Rufus B.	1869	Director of American School of Classical Studies, Athens (1893-1903)
RUSSELL, William H.	1833	Collegiate School, Hartford
SEELY, Wm. W.	1862	Dean, Medical Faculty, University of Cin cinnati (1881-1900)
SHIRLEY, A.	1869	Not known
SOUTHWORTH, George CS	1863	Bexley Theological Seminary (1888-1900
SPRING, Andrew J.	1855	Not known
STAGG, Amos A.	1888	Director Physical Education, University of Chicago
STILLMAN, George S.	1935	St. Paul's School
SUTHERLAND, Richard O.	1931	Not known
THACHER, William L.	1887	Not known
TIGHE, Lawrence G.	1916	Treasurer of Yale
TWICHELL, Charles P.	1945	St. Louis Country Day School
TYLER, Charles M.	1855	Professor of History, Cornell University (1891-1903)
TYLER, Moses Coit	1857	Professor at Corneli (1867-1900
VOGT, T.D.	1943	Not known
WALKER, Horace F.	1889	Not known
WATKINS, Charles L.	1908	Director, Phillips Art School
WHITE, John R.	1903	Not known
WHITNEY, Emerson C.	1851	Not known
WHITNEY, Joseph E.	1882	Not known
WILLIAMS, James W.	1908	Not known
WOOD, William C.	1868	Not known
YOUNG, Benham D.	1848	Not known
YARDLEY, Henry A.	1855	Berkeley Divinity School (1867-1882)

Memorandum Number Seven: The Order's Objectives For Education

We can deduce The Order's objectives for education from evidence already presented and by examining the work and influence of John Dewey, the arch creator of modern educational theory.

How do we do this? We first need to examine Dewey's relationship with The Order. Then compare Dewey's philosophy with Hegel and with the philosophy and objectives of modern educational practice.

These educational objectives have not, by and large, been brought about by governmental action. In fact, if the present state of education 7 had been brought about by legislation, it would have been challenged on the grounds of unconstitutionality.

On the contrary, the philosophy and practice of today's system has been achieved by injection of massive private funds by foundations under influence, and sometimes control, of The Order. This implementation we will describe in a future volume, How *The Order Controls Foundations.* In fact, the history of the implementation of Dewey's objectives is also the history of the larger foundations, i.e., Ford, Carnegie, Rockefeller, Peabody, Sloan, Slater and Twentieth Century.

How John Dewey Relates To The Order

John Dewey worked for his doctorate at Johns Hopkins University from 1882-86 under Hegelian philosopher George Sylvester Morris. Morris in turn had his doctorate from University of Berlin and studied under the same teachers as Daniel Gilman, i.e., Adolph Trendelenberg and Hermann Ulrici.

Neither Morris nor Dewey were members of The Order, but the link is clear. Gilman hired Morris, knowing full well that Hegelianism is a totally integrated body of 'knowledge and easy to recognize. It is a different from the British empirical school of John Stuart Mill as night and day.

John Dewey's psychology was taken from G. Stanley Hall, the first American student to receive a doctorate from Wilhelm Wundt at University of Leipzig. Gilman knew exactly what he was getting when he hired Hall. With only a dozen faculty members, all were hired personally by the President.

In brief, philosophy and psychology came to Dewey from academics hand-picked by The Order.

From Johns Hopkins Dewey went as Professor of Philosophy to University of Michigan and in 1886 published *Psychology,* a blend of Hegelian philosophy applied to Wundtian experimental psychology. It sold well. In 1894 Dewey went to University of Chicago and in 1902 was appointed Director of the newly founded - with Rockefeller money - School of Education.

The University of Chicago itself had been founded in 1890 with Rockefeller funds - and in a future volume we will trace this through Frederick Gates (of Hartford, Connecticut), and the Pillsbury family (The Order). The University of Chicago and Columbia Teachers' College were the key training schools for modern education.

The Influence Of Dewey

Looking back at John Dewey after 80 years of his influence, he can be recognized as the pre-eminent factor in the collectivization, or Hegelianization, of American Schools. Dewey was consistently a philosopher of social change. That's why his impact has been so deep and pervasive. And it is in the work and implementation of the ideas of John Dewey that we can find the objective of The Order.

When The Order brought G. Stanley Hall from Leipzig to Johns Hopkins University, John Dewey was already there, waiting to write his doctoral dissertation on "The Psychology of Kant." Already a Hegelian in philosophy, he acquired and adapted the experimental psychology of Wundt and Hall to his concept of education for social change. To illustrate this, here's a quote from John Dewey in My Pedagogic Creed:

> "The school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends. Education, therefore, is a process of living and not a preparation for future living."

What we learn from this is that Dewey's education is not child centered but State centered, because for the Hegelian, "social ends" are always State ends.

This is where the gulf of misunderstanding between modern parents and the educational system begins. Parents believe a child goes to school to learn skills to use in the adult world, but Dewey states specifically that education is "not a preparation for future living." The Dewey educational system does not accept the

role of developing a child's talents but, contrarily, only to prepare the child to function as a unit in an organic whole - in blunt terms a cog in the wheel of an organic society. Whereas most Americans have moral values rooted in the individual, the values of the school system are rooted in the Hegelian concept of the State as the absolute. No wonder there is misunderstanding!

The Individual Child

When we compare Hegel, John Dewey, and today's educational thinkers and doers, we find an extraordinary similarity.

For Hegel the individual has no value except as he or she performs a function for society:

> "The State is the absolute reality and the individual himself has objective existence, truth and morality only in his capacity as a member of the State."

John Dewey tried to brush the freedom of the individual to one side. In an article, "Democracy and Educational Administration" (School & Society, XVL, 1937, p. 457) Dewey talks about the "lost individual," and then restates Hegel in the following way: "freedom is the participation of every mature human being in formation of the values that regulate the living of men together." This is pure Hegel, i.e., man finds freedom only in obedience to the State. As one critic, Horace M. Kallen stated, John Dewey had a "blindness to the sheer individuality of individuals."

In other words, for Dewey man has no individual rights. Man exists only to serve the State. This is directly contradictory to the Declaration of Independence and the Constitution with the preamble "We the people." They then go on to define the rights of the state which are always subordinate and subject to the will of "We the people."

This, of course, is why modern educationists have great difficulty in introducing the Constitution into school work. Their ideas follow Hegel and Dewey and indirectly the objectives of The Order. For example: "An attempt should be made to redress the present overemphasis on individualism in current programs . . . students need to develop a sense of community and collective identity." (Educational Leadership, May 1982, William B. Stanley, Asst. Professor, Dept. of Curriculum and Instruction, Louisiana State University).

The Purpose Of Education

What then is the purpose of education, if the individual has no rights and exists only for the State?

There was no need for Hegel to describe education, and so far as we Know there is no statement purely on education in Hegel's writings. It is unnecessary. For Hegel every quality of an individual exists only at the mercy and will of the State. This approach is reflected in political systems based on Hegel whether it be Soviet Communism or Hitlerian national socialism. John Dewey follows Hegel's organic view of society. For example:

"Education consists either in the ability to use one's powers in a social direction or else in ability to share in the experience of others and thus widen the individual consciousness to that of the race" (Lectures For The First Course In Pedagogy).

This last sentence is reminiscent of the Hitlerian philosophy of race (i.e., right Hegelianism).

And today's educators reflect this approach. Here's a quote from Assemblyman John Vasconcellos of California, who also happens to be Chairman of the Joint Committee on the Master Plan for Higher Education and the Education Goals Committee for the California State Assembly - a key post:

> "It is now time for a new vision of ourselves, of man, of human nature and of human potential, and a new theory of politics and institutions premised upon that vision. What is that vision of Man? That the natural, whole, organismic human being is loving . . . that man's basic thrust is towards community" (quoted in Rex Myles, Brotherhood and Darkness, p. 347).

What is this "widen(ing) the individual conscienceness" (Dewey) and "thrust . . . towards community" (Vasconcellos)?

Stripped of the pedantic language it is new world order, a world organic society. But there is no provision for a global organic order within the Constitution. In fact, it is illegal for any government officer or elected official to move the United States towards such an order as it would clearly be inconsistent with the Constitution. To be sure, Dewey was not a government official, but Vasconcellos has taken an oath of allegiance to the Constitution.

The popular view of a global order is probably that we had better look after our problems at home before we get involved in these esoteric ideas. Political corruption, pitifully low educational standards, and insensitive bureaucracy are probably of more concern to Americans.

It's difficult to see what the new world order has to do with education of children, but it's there in the literature. Fichte, Hegel's predecessor from whom many of his philosophical ideas originated, had a definite concept of a League of Nationas (Volkerbund) and the idea of a league to enforce peace. Fichte asserted "As this federation spreads further and gradually embraces the whole earth, perpetual peace begins, the only lawful relation among states . . ."

The National Education Association, the lobby for education, produced a program for the 1976 Bicentennial entitled "A *Declaration* Of *Interdependence: Education For* A *Global Community.* "

On page 6 of this document we find:

> "We are committed to the idea of Education for Global Community. You are invited to help turn the commitment into action and mobilizing world education for development of a world community."

An objective almost parallel to Hegel is in Self Knowledge And *Social* Action by Obadiah Silas Harris, Associate Professor of Educational Management and Development New Mexico State University, Las Cruces, New Mexico:

> "When community educators say that community education takes into consideration the total individual and his total environment, they mean precisely this: the field of community education includes the individual in his total psycho-physical structure and his entire ecological climate with all its ramifications - social, political, economical, cultural, spiritual, etc. It seeks to integrate the individual within himself (sic) and within his community until the individual becomes a cosmic soul and the community the world."

And on page 84 of the same book:

> "The Cosmic soul ... the whole human race is going to evolve an effective soul of its own - the cosmic soul of the race. That is the future of human evolution. As a result of the emergence of the universal soul, there will be a great unification of the entire human race, ushering into existence a new era, a new dawn of unique world power."

This last quote sounds even more like Adolph Hitler than Assemblyman John Vasconcellos. It has the same blend of the occult, the ethnic and absolutism.

In conclusion we need only quote the Constitution, the basic body of law under which the United States is governed.

The generally held understanding of the Constitution on the relationship between the individual and the State is that the individual is Supreme, the State exists only to serve individuals and the State has no power except by express permission of the people.

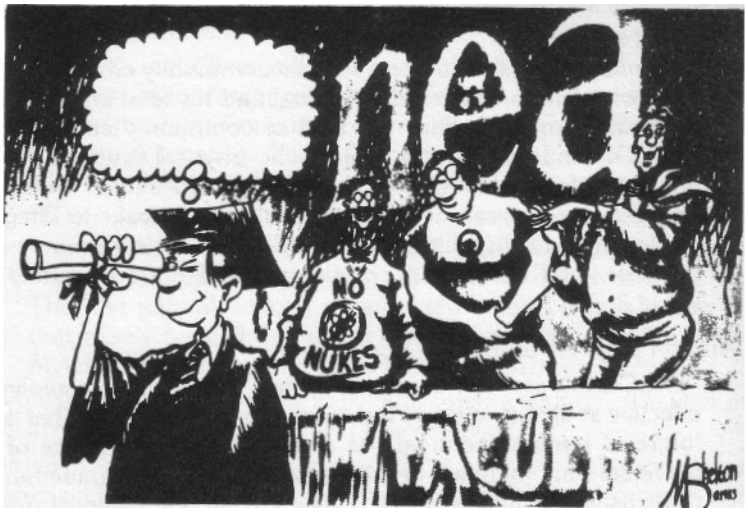
This is guaranteed by Amendments IX and X of the Constitution. Amendment IX reads,

"The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the People." Note, the "retained". And,

Amendment X reads,

> "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."

In brief, the proposals of John Dewey and his followers are un constitutional. They would never have seen the light of day in American schoolrooms unless they had been promoted by The Order with its enormous power.



Mind Blank - The Order's Objective For Education

Memorandum Number Eight: Summary

Up to this point we have established the following:

(1) By the 1870s The Order had Yale University under its control. Every President of Yale since Timothy Dwight has either been a member of The Order or has family connections to The Order.

It also appears that some Yale graduates who are not members of The Order will act towards objectives desired by The Order. Some of these, for example Dean Acheson, we can identify as members of Scroll & Key, or with relatives in The Order. Others yet to be brought into our discussion are members of Wolf's Head (for example, Reeve Schley, who worked for the Rockefellers). Still others, for example Robert Maynard Hutchins (Fund for the Republic), are Yale graduates but not yet identified as members of any Yale senior society. It appears at this point that Ron Rosenbaum's assertion (in Esquire, 1977), that members of the Eastern Establishment who are not members of Skull & Bones will be members of either Scroll & Key or Wolf's Head is holding up.

(2) So far as education is concerned, look-say reading originated with Thomas Gallaudet and was designed for deaf mutes. The elder Gallaudet was not a member of The Order, but his two sons (Edson and Herbert Gallaudet) were initiated in 1893 and 1898. Horace Mann, a significant influence in modern educational theory and the first promoter of "look-say," was not a member. However, Mann was President of Antioch College, and the Tafts (The Order) were the most powerful trustees of Antioch.

(3) We traced John Dewey's philosophy, that education is to prepare a person to fit into society rather than develop individual talents, to Herbart who was influenced by the Swiss Pestalozzi. Personal development cannot be achieved by developing individual talents, it must take the form of preparation to serve society, according to Herbart, Dewey and Pestalozzi. Pestalozzi was a member of the Illuminati, with the code name "Alfred."

This raises new perspectives for future research, specifically whether The Order can be traced to the illuminati.

(4) The scene shifts in the late 19th century from Yale to Johns Hopkins University. Member Daniel Coit Gilman is the first President of Johns Hopkins and he has handpicked either members of The Order (Welch) or Hegelians for the new departments. G. Stanley Hall, the first of Wilhelm Wundt's American students, began the process of Americanization of Wundt, established the first experimental psychology laboratory for education in the United States with funds from Gilman, and later started the Journal *Of Psychology.*
John Dewey was one of the first doctorates from Johns Hopkins (under Hall and Morris), followed by Woodrow Wilson, who was President of Princeton University before he became President of the United States.

We noted that at key turning points of G. Stanley Hall's career the guiding hand of The Order can be traced. Hall also links to another member of The Order, Alphonso Taft. We noted that Wilhelm Wundt's family had Illuminati connections.

(5) The Order was able to acquire all the Morrill Act land grant entitlements for New York and Connecticut for Cornell and Yale respectively. However, member Gilman ran into trouble as President of University of California on the question of the California land grants and corruption among the University regents. The first organized opposition to The Order came from the San Francisco Times, but editor Henry George was not fully aware of the nature of his target.

(6) The core of The Order's impact on education can be seen as a troika: Gilman at Johns Hopkins, White at Cornell (and U.S. Minister to Germany) and Dwight, followed by member Hadley, at Yale. Andrew White was first President of the American Historical Association. Richard T. Ely (not a member but aided by The Order) became a founder and first secretary of the American Economic Association. Members can also be traced into such diverse areas as the U.S. Naval Observatory and the Union Theological Seminary.

(7) John Dewey, the originator of modern educational theory, took his doctorate at Johns Hopkins under Hegelians. Dewey's work is pure Hegel in theory and practice, and is totally inconsistent with the Constitution of the U.S. and rights of the individual. A comparison of German Hegelians, John Dewey and modern educational theorists demonstrates the parallelism. Children do not go to school to develop individual talents but to be prepared as units in an organic society.

Experimental schools at University of Chicago and Columbia University fanned the "new education" throughout the United States.

In brief, The Order initiated and controlled education in this century by controlling its CONTENT. The content is at variance with the traditional view of education, which sees each child as unique and the school as a means of developing this uniqueness.

Criticism of the educational system today bypasses the fundamental philosophic aspect and focuses on omissions, i.e., that the kids can't read, write, spell or undertake simple mathematical exercise. If we look at the educational system through the eyes of The Order and its objectives, then the problems shift.

If teachers are not teaching basics, then what are they doing?

They appear to be preparing children for a political objective which also happens to be the objective of The Order. The emphasis is on global living, preparing for a global society. It is apparently of no concern to the educational establishment that children can't read, can't write, and can't do elementary mathematics…but they are going to be ready for the Brave New World.

Summary Of The Order's Influence In Education

Institution/Field	DIRECT (Major impact only)	INDIRECT (via a member of The Order)
Yale University	Gilman/Dwight/Hadley/White	— —
Cornell University	White	— —
Johns Hopkins University	Gilman/Welch/White	Hall/Ely/Dewey/Wilson/Morris
University of Chicago	— —	Hall/Dewey + foundation financial aid (Volume III)
Columbia Teachers College	— —	Hall/Dewey + foundation financial aid (Volume III)
Look-say reading	Gallaudet (Edson and Herbert)	Mann/Gallaudet (Thomas)
Influence of:		
Horace Mann	Taft	— —
Herbart	Illuminati (Pestalozzi i.e. "Alfred")	— —
Wundt	Gilman/Taft/White	— —
American Historical Assoc.	White	— —
American Economic Assoc.	— —	Ely

Refer to membership at end of Memoranda #1 and #6 for lesser influences.

Memorandum Number Nine: Conclusions And Recommendations

A general conclusion is that The Order has been able to convert the educational system from one aimed at developing the individual child to one aimed at conditioning the child to be a unit in an organic, i.e., Hegelian, society.

When we look at philanthropic foundations in the next volume we shall see the way this has been implemented by private foundation funds.

There is not sufficient evidence to argue whether the decline in educational standards is an accidental by-product of this "new education" or a deliberate subsidiary policy. In any event, the Reagan Administration policy of merit pay will compound, not solve, the problem.

Recommendations for reform have been forthcoming at intervals since the late 1950s when educational problems first surfaced. At the time of Sputnik there was a hue and cry about the backward nature of U.S. training in mathematics and science, which at the University level are not at all backward. Anyway the educational establishment recognized an opportunity and cried, "more, more money." They got it, and there

was a massive expansion in the '60s. But the funds have been poured into social conditioning. Mathematics and sciences have taken back seat in the last 30 years.

Then in 1981, James S. Coleman of the University of Chicago produced a study of public schools for the U.S. Department of Education. In this study Coleman used the National Opinion Research Center to contact 58,728 sophomores and seniors in 1,016 public, parochial, and private schools across the United States. His findings were:

- private and parochial schools provide an education closer to the common school ideal than do public schools,
- private school students learned more than public school counterparts,
- Coleman wrote it was paradoxical that "catholic schools function much closer to the American ideal of the common school . . . than do public schools."
- private schools provide "a safer, more disciplined and more ordered environment" than public schools,
- "blacks and Hispanics perform better at private schools."

The reason? Private schools are less under the influence of the Dewey educational philosophy. They still have to use accredited teachers, but these teachers - quite bluntly - have been able to survive the teacher training conditioning.

Yet the educational establishment does not see the writing on the wall.

In Fall 1983 a report by John Goodlad, Dean of the School of Education at University of Southern California, will be published. John I. Goodlad wrote the Foreword to *Schooling For A* Global *Age* (McGraw Hill, 1979) which includes these comments:

> "Enlightened social engineering is required to face situations that demand global action now" (page xiii).
>
> "Parents and the general public must be reached . . . otherwise children and youth enrolled in globally oriented programs may find themselves in conflict with values assumed in the home."

And more. Another 345 pages of globalony follows.

Nothing about the child as an individual. Nothing about the child as a repository of talents that need to be encouraged. Nothing about basic education: the 3 R's.

Yet this Goodlad report is being pushed in The *New York Times* July 19, 1983) as the most "comprehensive report" ever made on American schools. These are some Goodlad proposals:

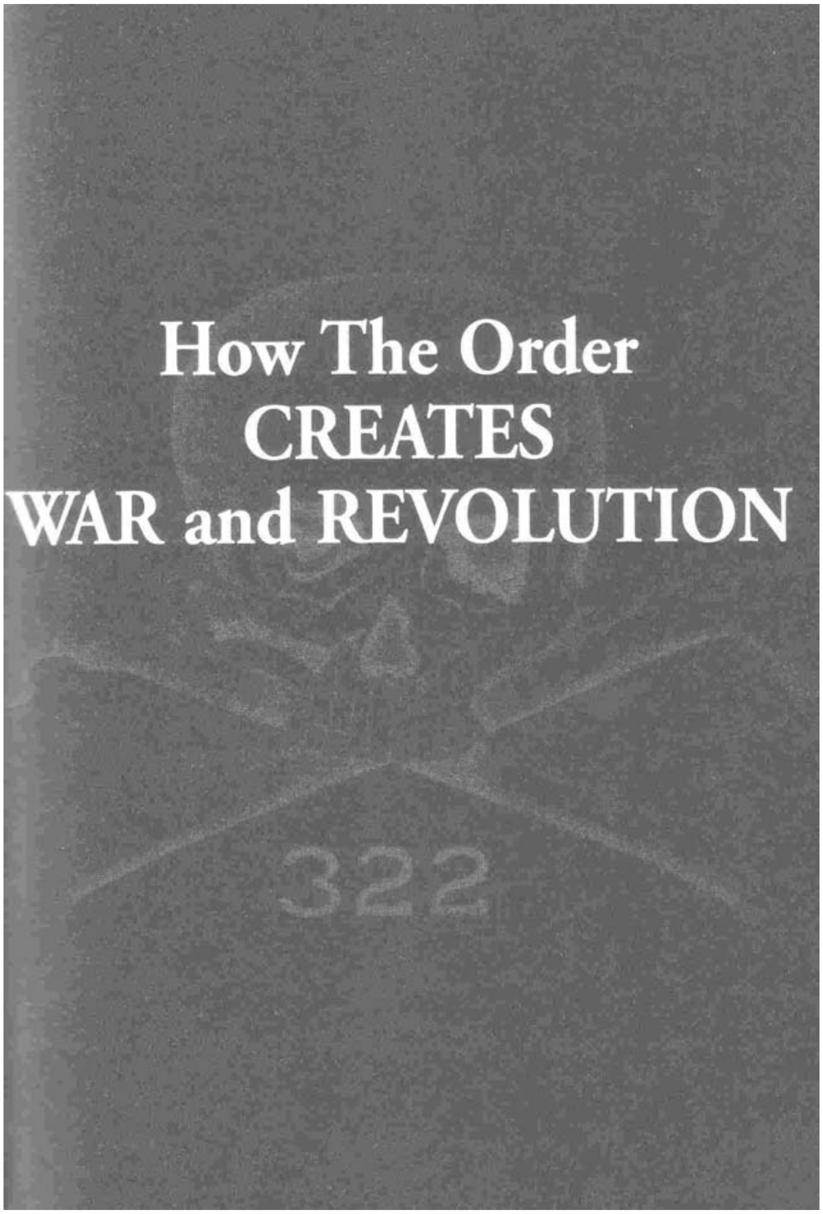
- education should start at 4 years old • schools should be smaller
- head teachers with doctorates should have more pay.

And this does nothing, of course, to stop what a former Commissioner of Education called "a rising tide of mediocrity."

If the United States is to survive in the coming technologically intensive age, then certain recommendations follow. These are:

- the function of the school is to develop individual talent. Social engineering as an objective has to be discarded.
- A thorough grounding in the 3 R's is essential for a good education. In other words, "content" is all important.
- It follows that Schools of Education should be abolished (this is under serious discussion at Duke University and has been proposed at University of Michigan and even Cal Berkeley).
- Teacher credentials should be based on subject matter entirely, not educational theory.

• All restrictions on private schools should be abolished. • Public schools should be returned to local control.



Preface

The operational history of The Order can only be understood within a framework of the **Hegelian dialectic** process. Quite simply this is the notion that **conflict creates history**.

From this axiom it follows that **controlled** conflict can create a predetermined history. For example: When the Trilateral Commission discusses "managed conflict", as it does extensively in its literature, the Commission implies the managed use of conflict for long run predetermined ends - not for the mere random exercise of manipulative control to solve a problem.

The dialectic takes this Trilateral "managed conflict" process one step further. In Hegelian terms, an existing force (the thesis) generates a counterforce (the antithesis). Conflict between the two forces results in the forming of a synthesis. Then the process starts all over again: Thesis is. antithesis results in synthesis.

The synthesis sought by the Establishment is called the New World Order. Without controlled conflict this New World Order will not come about. Random individual actions of persons in society would not lead m this synthesis, it's artificial, therefore it has to be created. And this is being done with the calculated, managed, use of conflict. And all the while this synthesis is being sought, there is no profit in playing the involved parties against one another. This explains why the International [b]ankers backed the Nazis, the Soviet Union, North Korea, North Vietnam, ad nauseum, against the United States. The "conflict" built profits while pushing the world ever closer to One World Government. The process continues today.

We apologize for the poor quality of some documents included in this volume. These are the best copies in existence today. In fact, it is a miracle they survived at all ... For example, letters between Patriarch Amos Pinchot (Club D. 95) and Patriarch William Kent (Club D. 85) Would almost certainly have been destroyed if a New York State Commission had not seized the documents as part of an investigation into subversion in the United States.

However, even where contents cannot be clearly identified, the very existence of even a fragmentary text proves a vital point: There is a joint calculated effort among Patriarchs to bring about a specific objective. Furthermore, the diverse conflicting nature of these efforts, commented upon even in letters between Patriarchs, can only be explained in the terms of the Hegelian dialectic.

In brief, the existence of these documents is just as important as the nature of the contents. It demonstrates joint planned actions, ergo: A Conspiracy!

Antony C. Sutton

April, 1984

Memorandum Number One: Created Conflict And The Dialectic Process

I. INTRODUCTION

The first volume of this series (Introduction To The *Order* described in broad terms the nature and objectives of The Order.

Our first hypothesis, that the U.S. was ruled by an elite, secret society . was supported by documentary evidence: such a secret society does exist, its membership is concealed, and disclosure of membership is not a voluntary effort. Further, since publication of the first volume, the Sterling Library at Yale University which has major holdings of their _records has refused to allow researchers further access to Russell Trust papers (the legal name for The Order).

We also argued in the first volume that the operations of The Order must be seen and explained in terms of the Hegelian dialectic process. Their operations cannot be explained in terms of any other philosophy; therefore The Order cannot be described as "right" or "left," secular or religious, Marxist or Capitalist. The Order, and its objectives, is all of these and none of these.

In Hegelian philosophy the conflict of political "right" and political "left," or thesis and antithesis in Hegelian terms, is essential to the forward movement of history and historical change itself. Conflict between thesis and antithesis brings about a synthesis, i.e., a new historical situation.

Our descriptive world history in the West and Marxist countries consists only of description and analysis within a political framework of "right" or "left." For example, historical work published in the West looks at

communism and socialism either through the eyes of financial capitalism or Marxism. Historical work published in the Soviet Union looks at the West only through Marxist eyes. However, there is another frame for historical analysis that has never (so far as we can determine) been utilized, i.e., to use a framework of Hegelian logic, to determine if those elites who control the State use the dialectic process to create a predetermined historical synthesis.

Only tantalizing glimpses of any such creative process can be found in modern historical works. The most convincing glimpses are in the late Carroll Quigley's Tragedy And Hope which we shall quote below. Rarely some politicians on the periphery of elitist power have allowed brief insights into the public eye. For example, President Woodrow Wilson made the revealing statement: "Some of the biggest men in the U.S. in the fields of commerce and manufacturing know that there is a power so organized, so subtle, so complete, so pervasive that they had better not speak above their breath when they speak in condemnation of it."

Who or what is this power? And how is it used?

This series argues that the current world situation has been deliberately created by this elitist power more or less by manipulation of "right" and "left" elements. We argue that the most powerful of all world elites has during the past 100 years or so developed both right and left elements to bring about a New World Order.

There is no question that the so-called establishment in the U.S. uses "managed conflict." The practice of "managing" crises to bring about a favorable outcome, that is, favorable to the elite, is freely admitted in the literature of, for example, The Trilateral Commission. Furthermore, there is no question that decisions of war and peace are made by a few in the elite and not by the many in the voting process through a political referendum. This volume explores some major conflict decisions made by the few in The Order and the way in which right-left situations have been deliberately created and then placed in a conflict mode to bring about a synthesis.

Finally, we will tie these decisions and operations back to the elite and specifically to The Order.

II. HOW THE DIALECTIC PROCESS WORKS

Throughout the last 200 years, since the rise of Kant in German philosophy, we can identify two conflicting systems of philosophy and so opposing ideas of the State, society and culture. In the U.S., the British Commonwealth and France, philosophy is based on the individual and the rights of the individual. Whereas in Germany from the time of Kant, through Fichte and Hegel up to 1945, the root philosophy has been universal brotherhood, rejection of individualism and general opposition to Western classical liberal thought in almost all its aspects. German idealism, as we noted in earlier volumes of this series, was the philosophical basis for the work of Karl Marx and the Left Hegelians as well as Bismarck, Hitler and the Right Hegelians. This is the paradox: that Hegel gave a theoretical basis not only to the most conservative of German movements, but also to most of the revolutionary movements of the 19th century. **Both Marx and Hitler have their philosophical roots in Hegel.**

From the Hegelian system of political thought, alien to most of us in the West, stem such absurdities as the State seen as the "march of God through history," that the State is also God, that the only duty of a citizen is to serve God by serving the State, that the State is Absolute Reason, that a citizen can only find freedom by worship and utter obedience to the State. However, we also noted in How The Order Controls Education that Hegelian absurdities have thoroughly penetrated the U.S. educational system under pressure from such organizations as the National Education Association and major foundations.

From this system of Hegelian philosophy comes the historical dialectic, i.e., that all historical events emerge from a conflict between opposing forces. These emerging events are above and different from the conflicting events. Any idea or implementation of an idea may be seen as THESIS. This thesis will encourage emergence of opposing forces, known as ANTITHESIS. The final outcome will be neither thesis nor antithesis, but a synthesis of the two forces in conflict.

Karl Marx, in Das Kapital, posed capitalism as thesis and communism as antithesis. What has been completely ignored by historians, including Marxists, is that any clash between these forces cannot lead to a society Which is either capitalist or communist but must lead to a society characterized by a synthesis of the two conflicting forces. The clash of opposites must in the Hegelian system bring about a society neither capitalist nor

communist. Moreover, in the Hegelian scheme of events, this new synthesis will reflect the concept of the State as God and the individual as totally subordinate to an all powerful State.

What then is the function of a Parliament or a Congress for Hegetians? These institutions are merely to allow individuals to feel that opinions have some value and to allow a government to take advantage of whatever wisdom the "peasant" may accidentally demonstrate. As Hegel puts it:

"By virtue of this participation, subjective liberty and conceit, with their general opinion, (individuals) can show themselves palpably efficacious and enjoy the satisfaction of feeling themselves to count for something."

War, the organized conflict of nations for Hegelians, is only the visible outcome of the clash between ideas. As John Dewey, the Hegelian darling of the modern educational system, puts it:

"War is the most effective preacher of the vanity of all merely finite interests, it puts an end to that selfish egoism of the individual by which he would claim his life and his property as his own or as his family's." (John Dewey, German *Philosophy* And Politics, p. 197)

Of course, this war-promoting Dewey paragraph is conveniently forgotten by the National Education Association, which is today busy in :he "Peace Movement" - at precisely that time when a "peace" movement most aids the Hegelian Soviets.

Above all, the Hegelian doctrine is the divine right of States rather than the divine right of kings. The State for Hegel and Hegelians is God on earth:

"The march of God in history is the cause of the existence of states, their foundation is the power of Reason realizing itself as will. Every state, whatever it be, participates in the divine essence. The State is not the work of human art, only Reason could produce it." *(Philosophy Of Right)*

For Hegel the individual is nothing, the individual has no rights, morality consists solely in following a leader. For the ambitious individual the rule is Senator Mansfield's maxim: "To get along you have to go along."

Compare this to the spirit and letter of the Constitution of the United States: "We the people" grant the state some powers and reserve all others to the people. Separation of church and state is built into the U.S. Constitution, a denial of Hegel's "the State is God on earth." Yet, compare this legal requirement to the actions of The Order in the United States, The Group in England, the Illuminati in Germany, and the Politburo in Russia. For these elitists the State is supreme and a self-appointed elite running the State acts indeed as God on earth.

III. J.P. MORGAN USES THE DIALECTIC PROCESS

The concept of the Hegelian dialectic is obviously beyond the comprehension of modern textbook writers. No historical or political theory textbook that we know of discusses the possible use of the Hegelian dialectic in American politics. Yet its use has been recorded by Professor Carroll Quigley in *Tragedy And Hope,* a trade book based on documents of the Council on Foreign Relations. Quigley not only describes banker J.P. Morgan's use of the "right" and the "left" as competitive devices for political manipulation of society, but adds an eye-opening comment:

"Unfortunately we do not have space here for this great and untold story, but it must be remembered that what we do say is part of a much larger picture." *(Tragedy And Hope, p.* 945)

This much larger picture is partly revealed in this book. First let's briefly note how J.P. Morgan used the dialectic process as a means of political control for financial ends. The only college attended by Morgan was 2-3 years in the mid-1850s at University of Gottingen, Germany, which was a center of Hegelian activism. *We* have no record that Morgan joined any secret society, no more than the KONKNEIPANTEN, one of the student corps. Yet German Hegelianism is apparent in J.P. Morgan's approach to political parties - Morgan used them all.

As Quigley comments:

"The associations between Wall Street and the Left, of which Mike Straight is a fair example, are really survivals of the associations between the Morgan Bank and the Left. To Morgan all political parties were simply organizations to be used, and the firm always was careful to keep a foot in all camps. Morgan himself, Dwight Morrow, and other partners were allied with Republicans; Russell C. Leffingwell was allied with the

Democrats; Grayson Murphy was allied with the extreme Right; and Thomas W. Lamont was allied with the Left. Like the Morgan interest in libraries, museums, and art, its inability to distinguish between loyalty to the United States and loyalty to England, its recognition of the need for social work among the poor, the multi-partisan political views of the Morgan firm in domestic politics went back to the original founder of the firm, George Peabody (1795-1869). To this same seminal figure may be attributed the use of tax-exempt foundations for controlling these activities, as may be observed in many parts of America to this day, in the use of Peabody foundations to support Peabody libraries and museums. Unfortunately, we do not have space here for this great and untold story, but it must be remembered that what we do say is part of a much larger picture." *(Ibid)*

Quigley did not know of the link between the Morgan firm, other New York financial interests and The Order. As we have noted before, Quigley did publish a valuable expose of the British Establishment known as "The Group." And we know from personal correspondence that Quigley suspected more than he published, but identification of an American elite was not part of Quigley's work. The names Harriman, Bush, Acheson, Whitney - even Stimson - do not appear in *The* Anglo American *Establishment.*

We can therefore take the above paragraph from Quigley's *Tragedy* And *Hope* and insert identification of The Order. The paragraph then becomes more revealing. Although Morgan himself was not a member of The Order, some of his partners were, and after Morgan's death the firm became Morgan, Stanley & Co. The "Stanley" was Harold Stanley (The Order 1908). In Morgan's time the influence of The Order came through partner Henry P. Davison, whose son H.P. Davison, Jr. was initiated in 1920. The elder Henry P. Davison brought Thomas Lamont and Willard Straight into the Morgan firm. These partners were instrumental in building the left wing of Morgan's dialectic, including the Communist Party U.S.A. (with Julius Hammer, whose son is today Chairman of Occidental Petroleum).

Morgan partner Thomas Cochran was initiated in 1904. However, it was in the network of Morgan dominated and affiliated firms, rather than in the partnership itself, that one finds members of The Order. In firms like Guaranty Trust and Bankers Trust, somewhat removed from the J.P. Morgan financial center, although under Morgan control, we find concentrations of initiates (as we shall describe below).

This practice by The Order of supporting both "right" and "left" persists down to the present day. We find in 1984, for example, that Averell Harriman (The Order '13) is elder statesman of the Democratic Party while George Bush (The Order '49) is a Republican Vice President and leader of the misnamed "moderate" (actually extremist) wing of the Republican Party. In the center we have so-called "independent" John Anderson, who in fact receives heavy financial support from the elite.

IV. THE CREATION OF WAR AND REVOLUTION

This manipulation of "left" and "right on the domestic front is duplicated in the international field where "left" and "right" political structures are artificially constructed and collapsed in the drive for a one-world synthesis.

College textbooks present war and revolution as more or less accidental results of conflicting forces. The decay of political negotiation into physical conflict comes about, according to these books, after valiant efforts to avoid war. Unfortunately, this is nonsense. War is always a deliberate creative act by individuals.

Western textbooks also have gigantic gaps. For example, after World War II the Tribunals set up to investigate Nazi war criminals were careful to censor any materials recording Western assistance to Hitler. By the same token, Western textbooks on Soviet economic development omit any description of the economic and financial aid given to the 1917 Revolution and subsequent economic development by Western firms and banks.

Revolution is always recorded as a spontaneous event by the politically or economically deprived against an autocratic state. Never in Western textbooks will you find the evidence that revolutions need finance and the source of the finance in many cases traces back to Wall Street.

Consequently it can be argued that our Western history is every bit as distorted, censored, and largely useless as that of Hitler's Germany or the Soviet Union or Communist China. No Western foundation will award grants to investigate such topics, few Western academics can "survive" by researching such theses and certainly no major publisher will easily accept manuscripts reflecting such arguments.

In fact, there is another largely unrecorded history and it tells a story quite different than our sanitized textbooks. It tells a story of the deliberate creation of war, the knowing finance of revolution to change governments, and the use of conflict to create a New World Order.

In the following Memorandum Number Two we will describe the operational vehicles used to create two revolutions and one world conflict. Then, in Memoranda Three and Four, we will explore thesis and antithesis in one major historical episode - the development and construction of the Soviet Union (thesis) and Hitler's Germany (antithesis),

In Memorandum Five we will explore the continuation of this dialectic conflict into the last few decades, specifically Angola and China today. We will show that the purpose of The Order is to create a new synthesis, a New World Order along Hegelian lines where the State is the Absolute and the individual can find freedom only in blind obedience to the State.

Memorandum Number Two: Operational Vehicles For Conflict Creation

I. A UNIVERSAL MIND SET

Our first task is to break an almost universally held mind set, i.e., that communists and elitist capitalists are bitter enemies. This Marxist axiom is a false statement and for a century has fooled academics and investigators alike.

To illustrate this mind set, let's look at a report on revolutionaries in the U.S. compiled by the respected Scotland Yard (London) in 1919. London police investigators were then tracking the Bolshevik Revolution and attempting to identify its Western supporters. When it came to men with long beards and even longer overcoats, most police departments had no problem - they looked like revolutionaries, therefore, they must be revolutionaries. But when it came to respectable black-suited bankers, Scotland Yard was unable to rise above its mind set and recognize that bankers might equally be revolutionaries. Witness this extract from a Scotland Yard Intelligence Report. [1]

"Martens is very much in the limelight. There appears to be no doubt about his connection with the Guarantee (sic) Trust Company. Although it is surprising that so large and influential an enterprise should have dealings with a Bolshevik concern."

Scotland Yard had picked up an accurate report that the Soviets were deeply involved with Guaranty Trust of New York, but they couldn't believe it, and dropped this line of investigation.

Even today the FBI has a similar mind set. For example, David Rockefeller has met regularly with a KGB agent in the United States - weekly lunch meetings is a close description. Yet the FBI presumably can't bring itself to investigate David Rockefeller as a potential Soviet agent, but if Joe Smith of Hoboken, N.J. was lunching weekly with the KGB, you can be sure the FBI would be on his tail. And, of course, our domestic U.S. Marxists find it absolutely inconceivable that a capitalist would support communism.

Organizations like Scotland Yard and the FBI, and almost all academics on whom investigators rely for their guidelines, have a highly important failing: they look at known verifiable historical facts with a mind set. They convince themselves that they have the explanation of a problem even before the problem presents itself.

The key to modern history is in these facts: **that elitists have close working relations with both Marxists and Nazis**. The only questions are who and why? The common reaction is to reject these facts.

[1] A copy is in U.S. State Department Decimal File, Microcopy 316, Roll 22, Frame 656.

On the other hand, national security alone demands that we face these unwelcome relations before any more damage is done to our way of life.

In this memorandum we will present the concept that world history, certainly since about 1917, reflects deliberately created conflict with the objective of bringing about a synthesis, a New World Order.

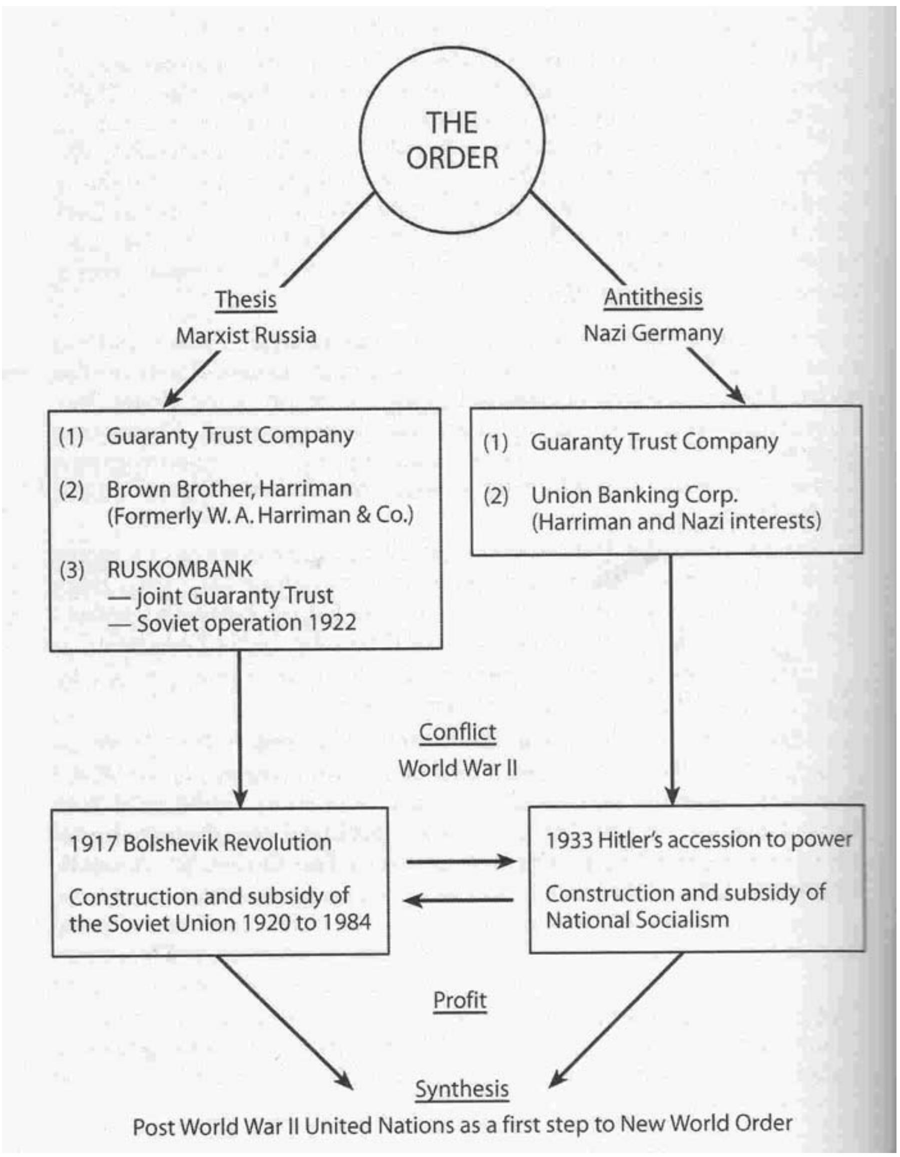
The operation actually began before 1917. In later volumes we will explore the Spanish-American War and the Anglo-Boer War of 1899. The first was created by The Order, i.e., the U.S. elite, and the second by "The Group," i.e., the British elite (with some U.S. assistance). We might aptly term these the First and Second Hegelian Wars, but this is another story. In this volume we are limited to the rise of Hitler in Germany and the rise of the Marxist state in the Soviet Union. The clash between these two powers or the political systems they represent was a major source of World War II.

After World War II the world stage was changed. After 1945 it became the Soviet Union on one side versus the United States on the other. The first dialectical clash led to the formation of the United Nations, an elementary step on the road to world government. The second dialectical clash led to the Trilateral Commission, i.e., regional groupings and more subtly to efforts for a merger of the United States and the Soviet Union.

In Introduction To The Order we established the existence of a secret society, The Order. We are now going to demonstrate how The Order created and developed two global arms needed for Hegelian conflict. Since 1917 the operational vehicles for this global battle have been:

(a) Guaranty Trust Company of New York, the same firm cited in the 1919 Scotland Yard report, and

(b) Brown Brothers, Harriman, private bankers of New York. Before 1933 Brown Brothers, Harriman consisted of two firms: W.A. Harriman Company and Brown Brothers. Numerous members of The Order have been in both firms, but **one individual stands out above all others as the key to the operation of The Order: W. Averell Harriman** (The Order ' 13) .



D. W. AVERELL HARRIMAN (THE ORDER'13)[1]

The name William Averell Harriman turns up behind world political scenes more frequently than any other member of The Order. Possibly as because Harriman is a remarkably active man. Born in 1891, graduated Yale 1913, Harriman is still newsworthy in the 1980s. In June 1983 Harriman had a private meeting with Yuri Andropov in Moscow and in December 1983, at 92, broke his right leg while swimming in the sea off Barbados. Whatever else we say here about Averell, we must record his truly remarkable energy and longevity.

In official Harriman biographies, however, there is no mention of The Order, Skull & Bones, or the Russell Trust. Like other initiates Harriman has carefully expunged membership from the public record. We have not yet determined if this membership was ever made known to the FBI for use in background checks needed for government positions, or maybe no one ever bothered to ask for a background check on Averell Harriman.

To understand Averell Harriman we need to go back to his father, Edward H. Harriman, the 19th century "robber baron." Edward Harriman's biography (E.H. Harriman: A *Biography)* is as self-serving as all hired biographies. It was written by George Kennan (published by Houghton Mifflin in 1922) who was active in the Dean Acheson State Department. The author of the famous - some say infamous - National Security Council document 68 was none other than George Kennan. (See page 175)

Edward Harriman started work at 14 with little education, but married Mary Averell, daughter of a New York banker and railroad president. At 22, Harriman bought a seat on the New York Stock Exchange and got lucky or smart with Union Pacific after the crash of 1893.

Even the widely accepted Dictionary of American *Biography* states that Harriman was subsequently guilty of a combination in restraint of trade (1904 Northern Securities case), that his dubious financial activities netted him $60 million in a manner which led to investigation by the Interstate Commerce Commission. This source cites Harriman as "an example of how a road may be drained of its resources for the benefit of insiders."

Harriman printed securities with a nominal value of $80 million to expand capitalization of his railroads. On the other hand, Harriman neglected to acquire improvements and property for more than $18 million. In other words, $60 million of the securities was water, mostly sold through Kuhn Loeb & Co., his backers and bankers. The $60 million went into Harriman's pocket.

[1]Names of Brown Brothers, Haniman partners in 1972 were included in Introduction To The Drder, pages 20-21. About 100 Harriman related documents from the 1920s may be found in U.S. State Department Decimal File, Microcopy 316, Roll 138 (861.6364-6461).

The 1904 ICC report stated:

"It was admitted by Mr. Harriman that there was about $60 million of stock and liabilities issued, against which no property had been acquired and this is undoubtedly an accurate estimate."[1]

In brief, Mr. Edward H. Harriman was apparently a thief, a crook, and a felon, because fraudulent conversion of $60 million is a felony. Harriman stayed out of jail by judicious expenditures to politicians and political parties. Biographer George Kennan relates how Harriman responded to President Theodore Roosevelt's 1904 plea for $250,000 for the Republican National Committee.[2]

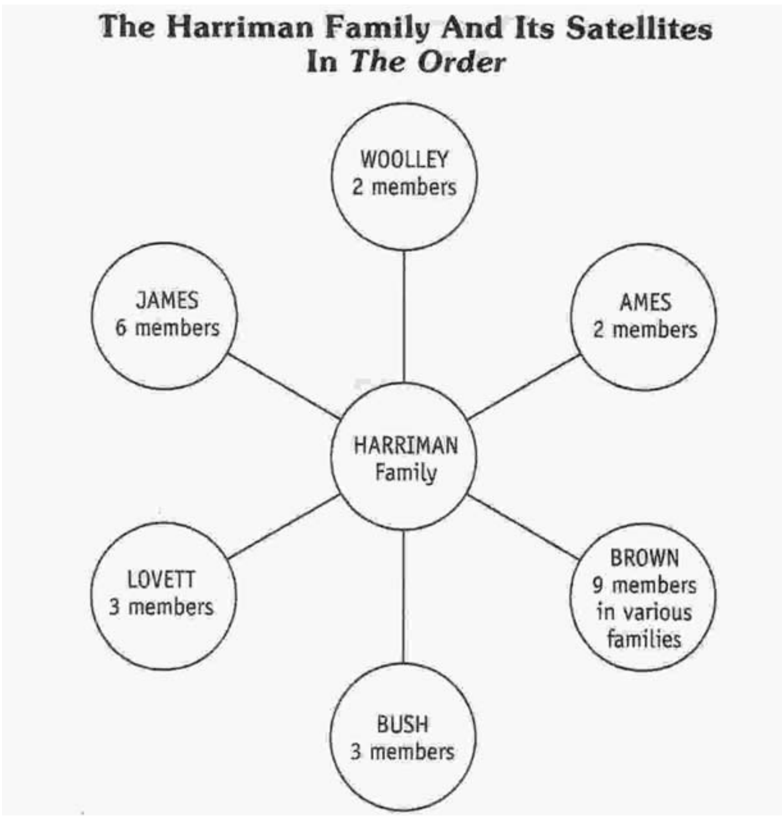
These funds were turned over to the Committee by Harriman's friend and attorney, Judge Robert Scott Lovett. Lovett was also general counsel for the Union Pacific Railroad and could be described as Harriman's bagman. Judge Lovett's son, Robert Abercrombie Lovett (The Order '18) went to Yale and with the two Harriman boys, Roland and Averell, was initiated into The Order. We shall catch up again with Robert Abercrombie Lovett in the 1950s as Secretary of Defense, partner in Brown Brothers, Harriman, and a key force to have President Harry Truman recall General Douglas MacArthur from Korea. By itself the Lovett family is incidental. When we link it to the Harriman family we have an example of how these families help each other along the way for a common objective.

In any event, $250,000 hardly changed Theodore Roosevelt's view of Harriman. Two years after the gift, Roosevelt wrote Senator Sherman and described Harriman as a man of "deep seated corruption," an "undesirable citizen" and "an enemy of the Republic."[3]

Another description of Averell Harriman's father is in Concise Dictionary Of National *Biography* (page 402) : "Self confident, dominant, cold and ruthless, he spared neither friend nor foe if they blocked his plans."

Now we cannot visit the sins of the father onto his sons, but we should keep this background in mind when we look at the careers of the Harriman boys, Averell and Roland. At least we have reasons to probe behind the public relations facade and perhaps suspect the worst.

[1]Gustavus Myers. History Of The Great American Fortunes (Modern Library, New York, 1937) p 500.
[2] George Kennan. op cit., p 192
[3] Augustus Myers, op cit., p. 214.



Superficially, Averell Harr[i]man's life has been quite different than his fathers Here's an official summary of Averell Harriman's long career: • Married three times -

(1) 1915 Kitty Lanier Lawrence (2) 1930 Marie Norton Whitney[4] (3) 1971 Pamela Churchill Hayward[5]

• Groton Prep School, then Yale. Initiated into The Order in 1913. • Started with his father's company, Union Pacific Railroad

1917 organized the Merchant Shipbuilding Corporation, sold all shipping interests in 1925
1917 Director of Guaranty Trust. Family holdings of about one-third of Guaranty stock were put into a J.P. Morgan voting trust in 1912

[4]For Marie Norton Whitney, see Volume One, p 29 The Order, p. 29.
[5]Pamela Hayward was formerly married to Randolph Churchill, thus linking Harriman to the British establishment.

• 1920 established W.A. Harriman Company, with his brother Roland as Vice-President
• 1923 formed Georgian Manganese Company

• 1933 W.A. Harriman merged with Brown Brothers to become Brown Brothers, Harriman
• 1934 Special assistant administrator of Roosevelt's National Recovery Act
• 1941 Minister to Great Britain in charge of Lend Lease for Britain and Russia
• 1941Ambassador to the Soviet Union
• 1946 Ambassador to Great Britain
• 1946 Secretary of Commerce
• 1948 U.S. representative to ECA in Europe
• 1950 Special Assistant to President Truman
• 1951 U.S. representative at NATO defense meetings
• 1951 Director of Mutual Security Agency
• 1955 Governor of State of New York
• 1961 Ambassador at Large
• 1961 Assistant Secretary of State for Far East
• 1963 Under Secretary of State for Political Affairs
• 1968 U.S. representative at Paris "peace" talks on Vietnam
• 1974 Chairman Democratic Party Foreign Policy Task Force
• 1975 Limited Partner Brown Brothers, Harriman
• 1983 Visits Yuri Andropov in Moscow

With this lengthy global experience one might suspect that Harriman has developed a deep knowledge, understanding and perception of the world. But in fact his writings suggest he is either rather stupid or one of the most deceptive men ever to walk the face of our earth. Let's take one example: an article written by Averell Harriman, published in *Look.* October 3, 1967 and entitled "From Stalin to Kosygin: the myths and the realities."

Here are two extracts:

(1) "Therefore in the early twenties my firm participated in credits to finance trade with Russia. We found as others did that the new government was most meticulous in meeting its financial commitments."

In fact, the Soviets expropriated the concessions of the 1920s including Harriman's, usually without reimbursement. Harriman was double-crossed by the Soviets in his Georgian manganese concession, then persuaded to take $3 million in Soviet bonds as compensation.

(See documents printed on pages 154-155). This Soviet "compensation" in effect put Harriman in a position of making the first U.S. loan to Russia, so breaching United States law against such loans.

But this is what Harriman told John B. Stetson, Jr. of the State Department (861.637-Harriman) "Mr. Harriman said that they expect to drop about three million dollars which they would charge off to experience." This, Harriman calls "most meticulous in meeting its financial obligations."

(2) "On the Russian side, one of the most troublesome myths is that America is run by a `ruling circle,' made up of Wall Streeters and industrialists who have an interest in continuing the cold war and the arms race to prop up the 'capitalist' economy. Anybody who knows American politics knows what nonsense this is." Unfortunately, the Russians are largely right on the political aspects of this one. In making the above statement Harriman not only confirms Russian paranoia, i.e., that capitalists can't be trusted to tell the truth, but also deceives the American reading audience in *Look* that they do, in fact, have a participation in running political affairs. Compare this paragraph to this series on The Order and you will see the devious way the Harriman mind works, perhaps not so different than Harriman senior.

The previously described official Harriman biography suggests that Harriman, given his decades on the political inside, must be well aware of the dependence of the Soviet Union on Western technology: that the Soviet Union can make no economic progress without Western enterprise technology. In fact, Stalin himself told Harriman as much back in 1944. Here's an extract from a report by Ambassador Harriman in Moscow to the State Department, dated June 30, 1944:

"Stalin paid tribute to the assistance rendered by the United States to Soviet industry before and during the war. He said that about two-thirds of all the large industrial enterprises in the Soviet Union had been built with United States help or technical assistance."[1]

Stalin could have added that the other one-third of Soviet industry had been built by British, German, French, Italian, Finnish, Czech and Japanese companies.

In brief, Harriman knew first hand back in 1944 at least that the West had built the Soviet Union. Now examine Harriman's official biography with its string of appointments relating to. NATO, Mutual Security Agency, State Department, foreign policy, and so on. In these posts Harriman actively pushed for a military build-up of the United States. But if the Soviet Union was seen to be an enemy in 1947, then we had no need to build a massive defense.

'Original in U.S. State Department Decimal File 033.1161 Johnston Eric/6-3044 Telegram June 30. 1944.

What we should have done was cut off technology. There was no Soviet technology - and HARRIMAN KNEW THERE WAS NO SOVIET TECHNOLOGY.

Furthermore, Harriman has been in the forefront of the cry for "more trade" with the Soviet Union - and trade is the transfer vehicle for technology. In other words, Harriman has been pushing two CONFLICTING POLICIES SIMULTANEOUSLY.

(a) a build-up of Soviet power by export of our technology, and

(b) a Western defense against that power.

Isn't this the Hegelian dialectic? Thesis versus antithesis, then conflict which leads to a new synthesis. In the following memoranda we will show how Harriman and his fellows in the Brotherhood of Power went about this program of conflict creation.

Moreover, Harriman is understandably highly sensitive when challenged on his pious "I am always right about the Soviets" attitude. One memorable occasion was back in 1971 when author Edward (Teddy) Weintal was at a dinner party with Harriman when Harriman trotted out his well worn line: "I was the first to warn of Soviet dangers…."

Weintal stopped him cold. In research for a book, Weintal had found documents incriminating Harriman in the National Archives (similar to those reproduced later in this book). In particular, Weintal cited a State Department telegram dated February 12, 1944 from Harriman to Roosevelt. Said Weintal,

"You told Roosevelt that you were convinced that the Soviets did not want to introduce a Communist government into Poland."

So up jumped 79-year-old Harriman from the dinner table and waved his fists at 70-year-old Weintal. Shouted Harriman, "If you print anything like that in your book, I'll break your jaw."

Reportedly, the agitated host separated the two men, but not before a Washington Post reporter noted the details (See Washington Post, March 17, 1971, VIP Column by Maxine Cheshire).

III. THE GUARANTY TRUST COMPANY

Guaranty Trust was founded 1864 in New York. Over the next 100 years the banking firm expanded rapidly by absorbing other banks and trust companies; in 1910 it merged Morton Trust Company, in 1912 the Standard Trust Company, and in 1929 the National Bank of Commerce. The J.P. Morgan firm has effectively controlled Guaranty Trust since 1912 when Mrs. Edward Harriman (mother of Roland and Averell Harriman) sold her block of 8,000 shares of the total outstanding 20,000 shares to J.P. Morgan. By 1954 Guaranty Trust had become the most important banking subsidiary of the J.P. Morgan firm and

since 1954 the merged firms have been known as Morgan-Guaranty Company.

The original capital for Guaranty Trust came from the Whitney, Rockefeller, Harriman and Vanderbilt families, all represented in The Order, and on the Board of Guaranty Trust by family members throughout the period we are discussing.

Harry Payne Whitney (The Order'94) inherited two Standard Oil fortunes from the Payne and the Whitney families. H.P. Whitney was a director of Guaranty Trust, as was his father, William C. Whitney (The Order '63). Alfred Gwynne Vanderbilt (The Order '99) represented the Vanderbilt family until he drowned at sea in the sinking of the Lusitania :n 1915. (His sister Gertrude married Harry Payne Whitney, above). The power of The Order is reflected in a bizarre incident as Alfred Gwynne Vanderbilt boarded the Lusitania in

New York on its fateful voyage. A telegram warning Vanderbilt not to sail was delivered to the Lusitania before it sailed - but never reached Vanderbilt. Consequently, Vanderbilt went down with the ship.

The Harriman investment in Guaranty Trust has been represented by W. Averell Harriman.

The Rockefeller investment in Guaranty Trust was represented by Percy Rockefeller (The Order '00).

In brief, The Order was closely associated with Guaranty Trust and Morgan-Guaranty long before 1912 when Mrs. Edward Harriman sold her interest to J.P. Morgan. Averell Harriman remained on the Board of Guaranty Trust after the transfer. The following members of The Order have also been officers and directors of Guaranty Trust Company:

Harold Stanley (The Order 1908): Harold Stanley, born 1885, was the son of William Stanley, an inventor associated with General Electric Company. Stanley prepared for Yale University at the elitist Hotchkiss School, Lakeville, Connecticut. An excellent athlete, Stanley graduated Yale in 1908 and was initiated into The Order.

After Yale, Stanley joined National Bank of Albany and then, between 1913-1915, was with J.G. White (prominent in construction of the Soviet First Five Year Plan). In 1915 Stanley joined Guaranty Trust as Vice President. From 1921 to 1928 he was President of Guaranty Trust and then a partner in the firm of J.P. Morgan, replacing William Morrow. From 1935 to 1941 he was President of Morgan, Stanley & Company, then a partner from 1941 to 1955 and a limited partner after 1956, until his death in 1963.

In brief, a member of The Order was Vice President, then President of Guaranty Trust Company in the years 1915 to 1928 - the years which record the Bolshevik Revolution and the rise of Hitler to power in Germany.

Joseph R. Swan (The Order '02). The Guaranty Company was a subsidiary of Guaranty Trust Co. Joseph Rockwell Swan (The Order '02) was President of the Guaranty Company as well as a director of Guaranty Trust Company.

Percy Rockefeller (The Order '00). Percy Rockefeller, born 1878, was the son of William D. Rockefeller (brother of John D. Rockefeller) and inherited part of the Standard Oil fortune. Percy was a director of Guaranty Trust in the 1915-1930 period.

How The Order Relates To Guaranty Trust Company And Brown Brothers, Harriman

THE ORDER

GUARANTY TRUST COMPANY

HAROLD STANLEY (The Order '08) W. **MURRAY CRANE** (The Order '04) HARRY P. WHITNEY (The Order '94) W. AVERALL HARRIMAN (The Order '13) KNIGHT WOOLLEY (The Order '17) FRANK P. SHEPARD (The Order '17) JOSEPH R. SWAN (The Order '02) THOMAS COCHRANE (The Order '94) PERCY ROCKEFELLER (The Order '00)

POST WORLD WAR II PARTNERS GEORGE H. CHITTENDEN (The Order '39) WILLIAM REDMOND CROSS (The Order'41) HENRY P. DAVISON, JR. (The Order '20) THOMAS RODD (The Order '35) CLEMENT D. GILE (The Order '39) DANIEL P. DAVISON (The Order '49)

BROWN BROTHERS, HARRIMAN,
formerly
W.A. HARRIMAN

W. AVERELL HARRIMAN (The Order '13) E. ROLAND HARRIMAN (The Order'17) ELLERGY S. JAMES (The Order'17) RAY **MORRIS** (The Order '01)

PRESCOTT SHELDON BUSH (The Order ' 17) KNIGHT WOOLLEY (The Order '17)
MORTIMER SEABURY (The Order '09) ROBERT A. LOVETT (The Order '18)
POST WORLD WAR II PARTNERS

EUGENE WM. STETSON, JR. (The Order'34) (1937-42) WALTER H. BROWN (The Order '45)
STEPHEN Y. HORD (The Order '21)

JOHN BECKWITH MADDEN (The Order '41) GRANGE K. COSTIKYAN (The Order '29)
PARTNER NOT IN THE **ORDER:** MATTHEW C. BRUSH (32° Mason)

IV. BROWN BROTHERS, HARRIMAN

The other operational vehicle used by The Order was the private banking firm of Brown Brothers, Harriman. Before 1933 W.A. Harriman Company was the vehicle, and Brown Brothers did not enter the picture. After 1933, the merged firm continued Harriman Company activities.

In *Introduction* To The Order we presented details of the merged firm (pp. 29-33). There is, however, one aspect we want to identify: the extraordinary role of the Yale Class of '17 in Brown Brothers, Harriman and the events to be described in Memoranda Three and Four.

The following five members in the class of '17 (only fifteen were initiated) were involved:

Knight Woolley (The Order '17) was with Guaranty Trust from 1919-1920, Harriman Company from 1927-1931, then Brown Brothers, Harriman from 1933 to the present time. Woolley was also a director of the Federal Reserve Bank.

Frank P. Shepard (The Order '17) also joined Guaranty Trust in 1919 and was a Vice President from 1920 to 1934, the period concerned with development of both Soviet Russia and Hitler's Nazi Party. From 1934 onwards Shepard was with Bankers Trust Company, a member of the Morgan group of banks.

Ellery Sedgewick James (The Order '17) was a partner in Brown Brothers, Harriman.

And finally, two interesting characters: Edward Roland Noel Harriman (The Order '17) and Sheldon Prescott Bush (The Order '17), the father of President George Herbert Walker Bush (The Order '49), and grandfather of President George Walker Bush (The Order '68).

V. THE ORDER'S "FRONT MAN": MATTHEW C. BRUSH

From World War I until well into the 1930s The Order's "front man" in both Guaranty Trust and Brown Brothers, Harriman was Matthew C. Brush.

Brush was not Yale, nor a member of The Order, but through an accidental meeting in the 1890s his talents were used by The Order. Brush became a Knight Templar, a 32nd degree Mason and a Shriner, but not - so far as we can trace - more closely linked to the power center.

Brush was born in Stillwater, Minnesota in 1877 and was a graduate of the Armour Institute of Technology and MIT. By accident his first job in the 1890s was as a clerk with Franklin MacVeagh & Company of Chicago. Franklin MacVeagh was a member (The Order '62) and later Secretary of the Treasury (1909-1913) under President William Taft (The Order '78).

MacVeagh himself, as distinct from Brush, is a little difficult to classify. In 1913 MacVeagh left the Treasury and resigned as trustee of the University of Chicago. By 1919 he had become delinquent in his fees to Russell Trust. We have a copy of a dunning notice sent to MacVeagh by Otto Bannard (The Order '76), President of New York Life and Treasurer for The Order in 1919. The notice asked MacVeagh to pay up his dues.

While the trail of MacVeagh fades out after 1913, that of Matthew Brush, his one-time clerk, blossoms forth. After a series of posts in railroad companies, Brush was made Vice President of American International Corporation in 1918 and President in 1923. He was also Chairman of the Equitable Office Building, also known as 120 Broadway, illustrated on page 139.

Moreover, Brush was President of Barnsdall Corporation and Georgian Manganese Company; the significance of these posts will be seen in the next memorandum.

The purpose of this memorandum has been to demonstrate control of two banking houses by members of The Order. Both Guaranty Trust and Brown Brothers, Harriman can truly be said to have been dominated and substantially owned by individuals identified as members. Furthermore, both Guaranty Trust and the original W.A. Harriman Company were established by members of The Order. Brown Brothers was not absorbed until 1933.

Now, let's examine the evidence that these two banking firms have been vehicles for creation of war and revolution.

Memorandum Number Three: Thesis – *The Order* Creates The Soviet Union

In an earlier book, published in 1974, we presented major evidence of Wall Street assistance for the Bolshevik Revolution. This assistance was mainly cash, guns and ammunition, and diplomatic support in London and Washington, D.C. Wall *Street And The Bolshevik Revolution* also introduced the concept which Quigley described, i.e., that Morgan and other financial interests financed and influenced all parties from left to right in the political spectrum.

This Memorandum continues the story, but now links The Order to the earlier evidence of Wall Street involvement.

On the following pages we reproduce a map of the Wall Street area and a list of firms connected with the Bolshevik Revolution and financing of Hitler located in this area. We can now identify the influence, in fact the dominant influence, of The Order in these firms.

Revolutionary activity was centered at Equitable Trust Building, 120 Broadway, in the building in the photograph on page 139. This had been E.H. Harriman's address. The American International Corporation was located at 120 Broadway. The Bankers' Club, where Wall Street bankers met for lunch, was at the very top of the building. It was in this plush club that plans were laid by William Boyce Thompson for Wall Street participation in the 1917 Russian Revolution. Guaranty Securities was in 120 Broadway, while Guaranty Trust was next door at 140 Broadway (the building can be seen to the left of 120).

I. THE ORDER PUSHES FOR ASSISTANCE TO THE SOVIET ARMY

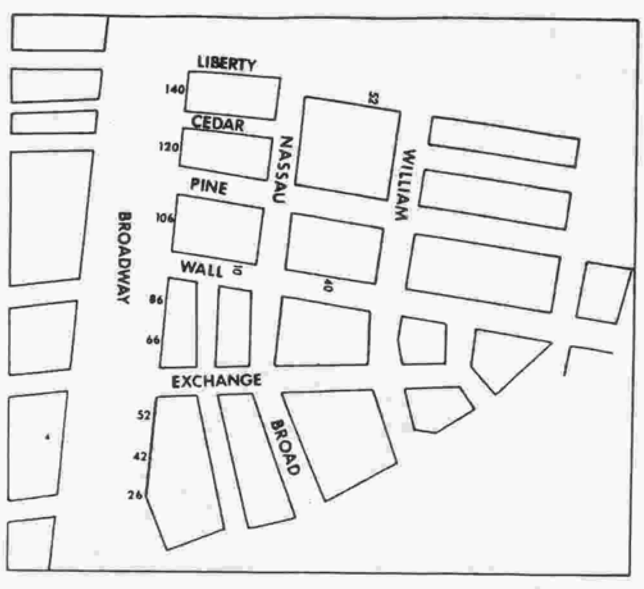
Fortunately we have a copy of the memorandum written by a member of The Order, summarizing intentions for the 1917 Bolshevik Revolution. The memorandum was written by Thomas D. Thacher (The Order'04), a partner in the Wall Street law firm of Simpson, Thacher & Bartlett. Thacher's address was 120 Broadway. Today this law firm, now in Battery Plaza, has the largest billing on Wall Street and has former Secretary of State Cyrus Vance (Scroll & Key) as a partner.

In 1917 Thacher was in Russia with William Boyce Thompson's Red Cross Mission. After consultations in New York, Thacher was then sent to London to confer with Lord Northcliffe about the Bolshevik Revolution and then to Paris for similar talks with the French Government.

The Thacher memorandum not only urges recognition of the barely surviving Soviet Government, which in early 1918 controlled only a very small portion of Russia, but also military assistance for the Soviet Army and intervention to keep the Japanese out of Siberia until the Bolsheviks could take over.



120 Broadway, 1915



FIRMS WITH LINKS TO THE ORDER AT, OR NEAR, 120 BROADWAY IN 1917

120 Broadway Edward H. Harriman (before his death)
59 Broadway W.A. Harriman Company

120 Broadway	American International Corporation
23 Wall	J.P. Morgan firm
120 Broadway	Federal Reserve Bank of New York
120 Broadway	Bankers Club (top floor)
120 Broadway	Thomas D. Thacher (of Simpson, Thacher & Bartlett)
14 Wall	William Boyce Thompson
120 Broadway	Guggenheim Exploration
15 Broad	Stetson, Jennings & Russell
120 Broadway	C.A.K. Martens of Weinberg & Posner (the first Soviet "ambassador")
110 W.	40th Street Soviet Bureau
60 Broadway	Amos Pinchot's office
120 Broadway	Stone & Webster
120 Broadway	General Electric
120 Broadway	Sinclair Gulf Corp.
120 Broadway	Guaranty Securities
140 Broadway	Guaranty Trust Company
233 Broadway	Anglo-Russian Chamber of Commerce

INDIVIDUAL MEMBERS OF THE ORDER AT 120 Broadway: George Webster Adams (The Order '04)
Allen Wallace Ames (The Order '18)
Philip Lyndon Dodge (The Order '07)

Here are the main sections from the Thacher memorandum:

> "First of all ... the Allies should discourage Japanese intervention in Siberia. In the second place, the fullest assistance should be given to the Soviet Government in its efforts to organize a volunteer revolutionary army. Thirdly, the Allied Governments should give their moral support to the Russian people in their efforts to work out their own political systems free from the domination of any foreign power ... Fourthly, until the time when open conflict shall result between the German Government and the Soviet Government of Russia there will be opportunity for peaceful commercial penetration by German agencies in Russia. So long as there is no open break, it will probably be impossible to entirely prevent such commerce. Steps should therefore be taken to impede, so far as possible, the transport of grain and raw materials to Germany from Russia."[1]

The reader should note in particular paragraph two: "In the second place, the fullest assistance should be given to the Soviet Government in its efforts to organize a volunteer revolutionary army." This assistance has been recorded in my National Suicide: Military Aid To The Soviet Union.

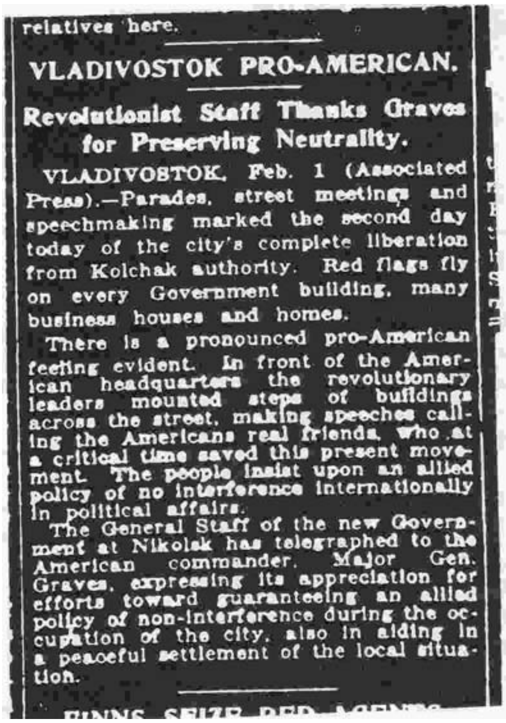
It was in fact the hidden policy adopted at the highest levels, in absolute secrecy, by the United States and to some extent by The Group (especially Milner) in Great Britain. Thacher apparently did not have too much success with the French Government.

When President Woodrow Wilson sent U.S. troops to hold the Trans-Siberian railroad, secret instructions were given by Woodrow Wilson in person to General William S. Graves. We have not yet located these instructions (although we k'now they exist), but a close reading of the available files shows that American intervention had little to do with anti-Bolshevik activity, as the Soviets, George Kennan and other writers maintain.

So grateful were the Soviets for American assistance in the Revolution that in 1920 - when the last American troops left Vladivostok - the Bolsheviks gave them a friendly farewell.

Reported the New York Times (February 15, 1920 7:4):

[1] The full document is in U.S. State Department Decimal File Microcopy 316, Roll 13, Frame 698.



relatives here.

VLADIVOSTOK PRO-AMERICAN.

Revolutionist Staff Thanks Graves for Preserving Neutrality.

VLADIVOSTOK, Feb. 1 (Associated Press).—Parades, street meetings and speechmaking marked the second day today of the city's complete liberation from Kolchak authority. Red flags fly on every Government building, many business houses and homes.

There is a pronounced pro-American feeling evident. In front of the American headquarters the revolutionary leaders mounted steps of buildings across the street, making speeches calling the Americans real friends, who at a critical time saved this present movement. The people insist upon an allied policy of no interference internationally in political affairs.

The General Staff of the new Government at Nikolsk has telegraphed to the American commander, Major Gen. Graves, expressing its appreciation for efforts toward guaranteeing an allied policy of non-interference during the occupation of the city, also in aiding in a peaceful settlement of the local situation.

Note in particular the sentence:

". . . calling the Americans real friends, who at a critical time saves this present movement."

Normally reports inconsistent with the Establishment line are choked, either by the wire services or by the rewrite desks at larger newspapers (small papers unfortunately follow New York Times). This is one report that got through intact.

In fact, the United States took over and held the Siberian Railroad until the Soviets gained sufficient power to take it over. Both British and French military missions in Siberia recorded the extraordinary actions of the United States Army, but neither mission made much headway with its own government.

So far as aiding the Soviet Army is concerned, there are State Department records that show guns and ammunition were shipped to the Bolsheviks. And in 1919, while Trotsky was making anti-American speeches in public, he was also asking Ambassador Francis for American military inspection teams to train the new Soviet Army. [1]

[1] See Antony C Sutton, Notional Suicide (Arlington House, New York, 1974) and Wall Street And The Bolshevik Revolution (Arlington House, New York. 1974)

II. THE ORDER PUSHES FOR THE SOVIETS IN THE UNITED STATES

However, it was in Washington and London that The Order **really** aided the Soviets. The Order succeeded not only in preventing military actions against the Bolsheviks, but to so-muddy the policy waters that much needed vital raw materials and goods, ultimately even loans, were able to flow from the United States to the Soviets, in spite of a legal ban.

The following documents illustrate how members of The Order were able to encourage Soviet ambitions in the United States. While the Department of Justice was deporting so-called "Reds" to Russia, a much more potent force was at work WITHIN the U.S. Government to keep the fledgling Soviet Union intact.

Publisher's Note*: To assist readers with the very poor reproductions of the following two letters we print our reading from the copies that we have.*

211

Hon. William Kent, May *29, 1919* U.S. Tariff Commission,
Washington, D.C.
Dear Billy:

This will introduce to you my friend, Professor Evans Clark, now associated with the Bureau of Information of the Russian Soviet Republic. He wants to talk with you about the recognition of Wolchak, the raising of the blockade, etc., and get your advice in regard to backing up the senators who would be apt to stand up and make a brave fight. Won't you do what you can for him.

As I see it, we are taking a (unreadable) Russia that will leave our, until now, mightily good reputation, badly damaged.

Hope to see you in Washington soon.

Faithfully yours, A. P.

1543

Mr. Santeri Nourteva, Finnish Information Bureau, *299* Broadway, City

November *22, 1918*

Dear Mr. Nuorteva:

Let me thank you for your very kind letter of November 1st; I apologize for not answering sooner.

I have read your bulletin on the barrage of lies, and I am, needless to say, heartily sympathetic with your view of the situation and with the work you are doing. One of the most sinister things at present is the fact that governments are going into the advertising business. They are organized so that they can make or wreck movements. f am sending you, under separate cover, a copy of a letter I have written, which I hope will interest you.

With kindest regards, I am

Sincerely yours,
Amos Pinchot.

211

Office of
Amos Pinchot
101 Park Avenue
New York

Dear Irvine
Hope you will talk to
Mr Clark On

[illegible] 1919

Hon. William Kent,
U. S. Tariff Commission,
Washington, D. C.

Bad Copy

Dear Billy:

This will introduce to you my friend, Professor Evans Clark, now [illegible] with the Bureau of Information of the Russian Soviet Republic. He wants to talk with you about the recognition of Kolchak, the raising of the blockade, etc., and [illegible] your advice in regard to backing up the Senators who would be apt to stand up and make a brave fight. Won't you do what you can for him.

As I see it, [illegible] Russia that will [illegible] good reputation, [illegible]

Hope to see you in Washington [illegible]

Faithfully yours,

A.P.

UNITED STATES TARIFF COMMISSION
WASHINGTON

RETURN AFTER FIVE DAYS

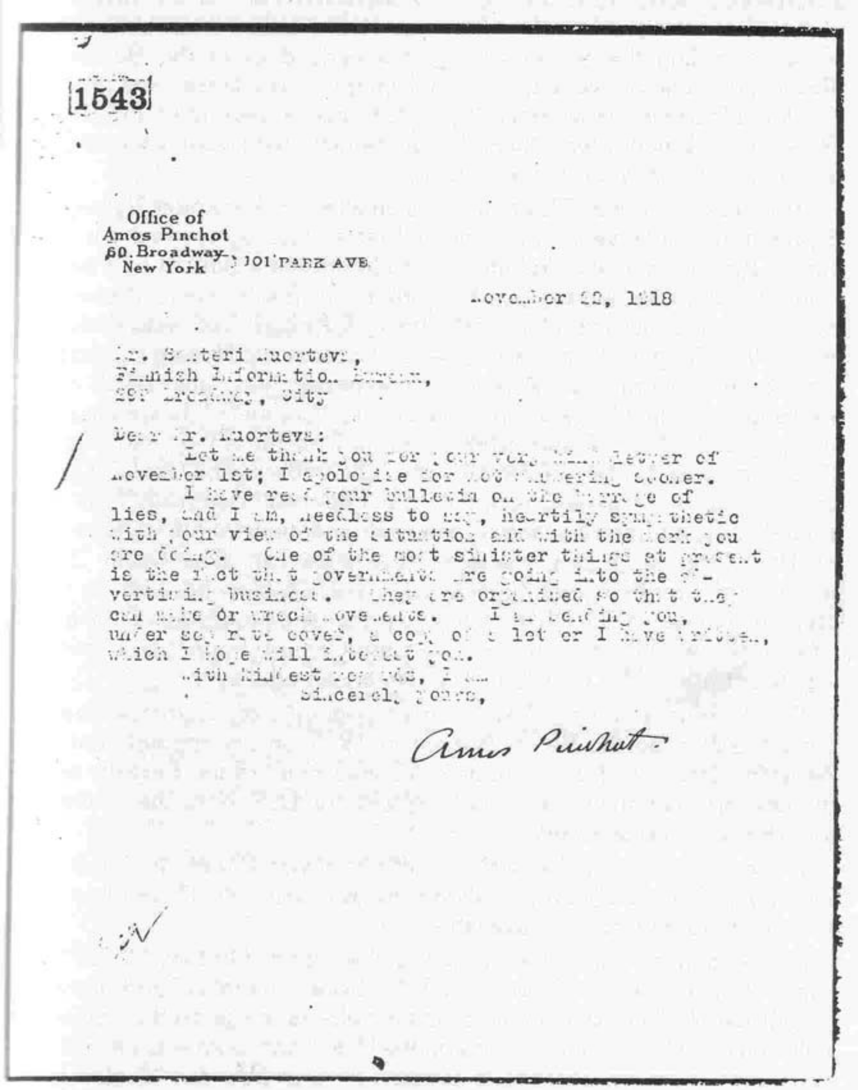
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, $300

212

Senator Lenroot
Introducing
Prof Evans Clark.

Exhibits 211 and 212 From The Lusk Committee Files, New York.



1543

Office of
Amos Pinchot
60 Broadway 101 PARK AVE
New York

November 22, 1918

Mr. Santeri Nuorteva,
Finnish Information Bureau,
299 Broadway, City

Dear Mr. Nuorteva:

Let me thank you for your very kind letter of November 1st; I apologize for not answering sooner.

I have read your bulletin on the barrage of lies, and I am, needless to say, heartily sympathetic with your view of the situation and with the work you are doing. One of the most sinister things at present is the fact that governments are going into the advertising business. They are organized so that they can make or wreck movements. I am sending you, under separate cover, a copy of a letter I have written, which I hope will interest you.

With highest regards, I am

Sincerely yours,

Amos Pinchot

U.S. State Department Decimal File, 851.516/140
Stockholm Legation October 13, 1922

The above letter is from Amos Pinchot (The Order '97). His brother, conservationist Gifford Pinchot (The Order '89) was also a member. Amos Pinchot was a founder of the American Civil Liberties Union and active in aiding the Soviets during the early days of the Bolshevik Revolution. The above letter, exemplifying this assistance, was sent to Santeri Nourteva, November 22, 1918, just a year after the 1917 Revolution. Pinchot was "heartily sympathetic with your view of the situation and the work you are doing."[1]

Who was Nourteva? This name was an alias for Alexander Nyberg, a Soviet representative in the United States. Nyberg worked for the Soviet Bureau (at first called the Finnish Information Bureau - a cover name), along with Ludwig C.A.K. Martens, the first Soviet Ambassador and formerly a Vice President of Weinberg & Posner. The New York office of Weinberg & Posner was at - 120 Broadway! Nyberg's assistant was Kenneth Durant, an American newspaper man, later TASS correspondent in the U.S. and one time aide to "Colonel"

Edward House, mystery man of the Wilson Administration. Director of the Commercial Department in this Soviet Bureau was "Comrade Evans Clark." Clark later became Executive Director of the influential Twentieth Century Foundation, and at Twentieth Century Foundation we find a member of The Order - in this case Charles Phelps Taft (The Order '18), nephew of President and Chief Justice William Howard Taft. In the coming volume on FOUNDATIONS, we shall see how Evans Clark and The Order, working together at Twentieth Century Foundation, had a significant role in the Hegelization of American education.

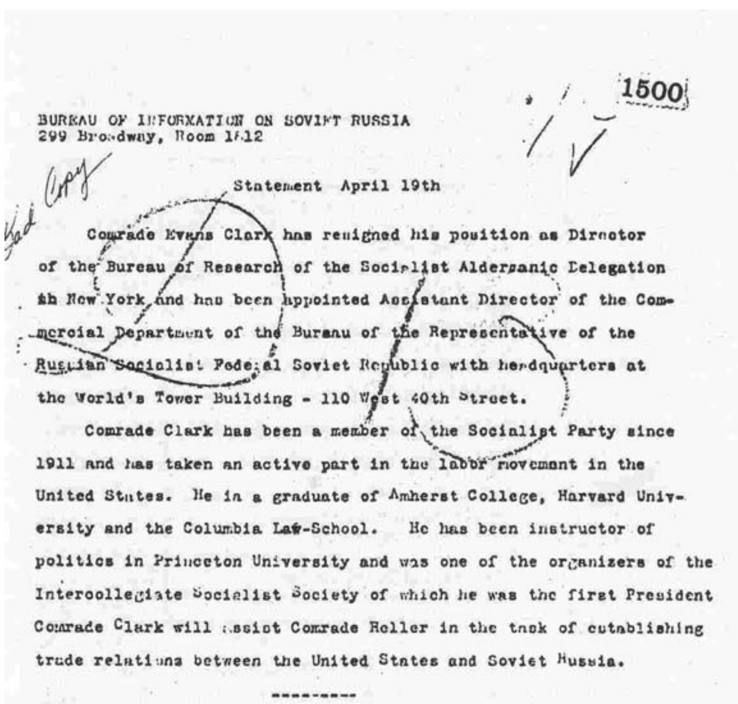
The document on page 147 is a brief biography of "Comrade Evans Clark", issued by the Soviet Bureau in 1919 on his appointment as Assistant, Director of the Commercial Department of the Bureau, with the task of establishing trade relations with the U.S. Note the Harvard and Princeton associations.

Trade was vital for the survival of the Soviet Union. In 1919 all Russian factories and transportation were at a standstill. There were no raw materials and no skills available.

For assistance Evans Clark turned to The Order. On May 29, 1919, Amos Pinchot wrote fellow Skull & Bones member and strong Republican William Kent about raising the blockade against the Soviets. William Kent (The Order'87) was on the U.S. Tariff Commission and in turn wrote Senator Lenroot to request an interview for "Professor" Evans Clark. (Albert Kent, his father, was a member [The Order '53] and he married the daughter of Thomas Thacher (The Order '35].

In brief, two members of The Order, Pinchot and Kent, cooperated to push a known Bolshevik operator onto an unsuspecting Senator. N either member of The Order advised Senator Lenroot about Clark's affiliation with the Soviet Bureau.

'Exhibit Number 1543 from the Lusk Committee files, New York.



1500

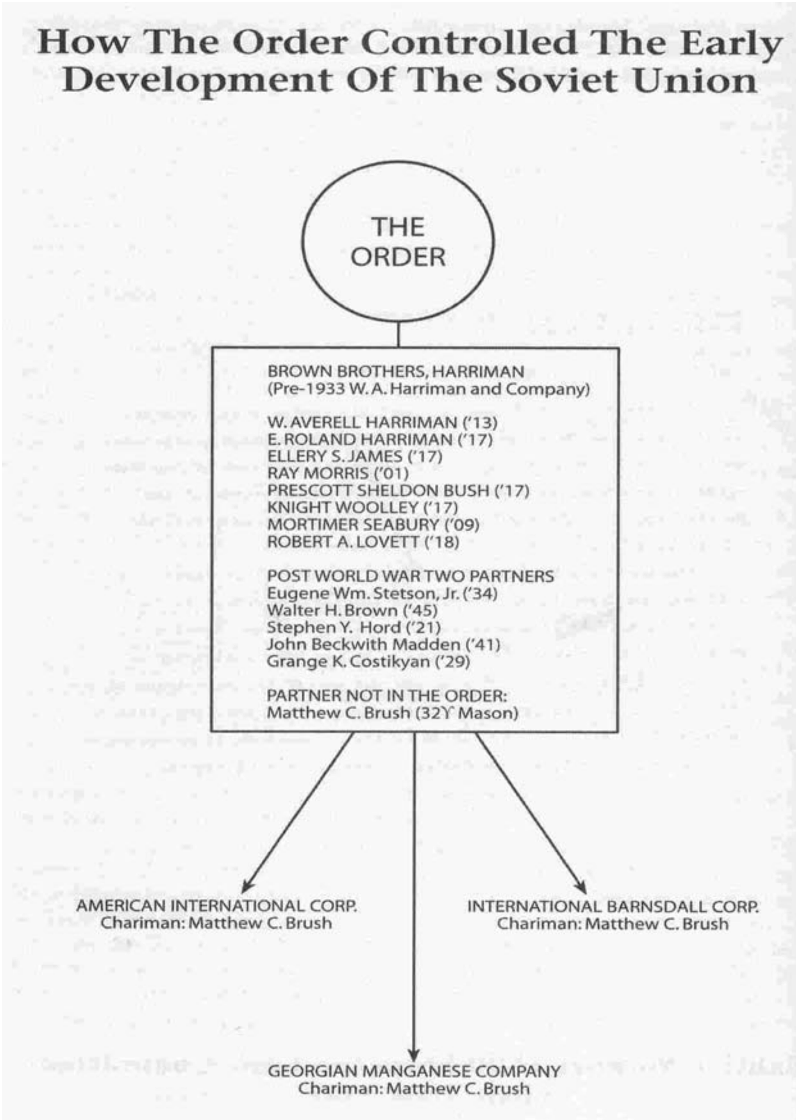
BUREAU OF INFORMATION ON SOVIET RUSSIA
299 Broadway, Room 1812

Statement April 19th

Comrade Evans Clark has resigned his position as Director of the Bureau of Research of the Socialist Aldermanic Delegation in New York and has been appointed Assistant Director of the Commercial Department of the Bureau of the Representative of the Russian Socialist Federal Soviet Republic with headquarters at the World's Tower Building - 110 West 40th Street.

Comrade Clark has been a member of the Socialist Party since 1911 and has taken an active part in the labor movement in the United States. He is a graduate of Amherst College, Harvard University and the Columbia Law-School. He has been instructor of politics in Princeton University and was one of the organizers of the Intercollegiate Socialist Society of which he was the first President Comrade Clark will assist Comrade Reller in the task of establishing trade relations between the United States and Soviet Russia.

Exhibit Number 1500 From the Lusk Committee Files, New York.



III HOW THE ORDER DEVELOPED THE STAGNANT SOVIET UNION

Between 1917 and 1921 the Soviets pushed their control of Russia into Siberia and the Caucasus. As we have noted, the United States intervened in Siberia along the Trans-Siberian Railroad. Histories of U.S. Intervention by George Kennan and the Soviets maintain this was an anti-Soviet intervention. In fact, it was nothing of the kind. The U.S. spread troops along the Siberian railroad only to keep out the Japanese, not to keep out the Soviets. When they left through Vladivostok, the Soviet authorities gave American forces a resounding send-off. But this is yet another untold story, not in the textbooks.

The immediate problem facing the Soviets was to restore silent Russian factories. This needed raw materials, technical skills and working capital. The key to Russian reconstruction was the oil fields of the Caucasus. The Caucasus oil fields are a major segment of Russian natural resource wealth. Baku, the most important field, was developed n the 1870s. **In 1900 it was producing more crude oil than the United States**, and in 1901 more than half of the total world crude output. The Caucasus oil fields survived Revolution and Intervention without major structural damage and became a significant factor in Soviet

economic recovery, generating about 20 percent of all exports by value; **the largest single source of foreign exchange.**

The Bolsheviks took over the Caucasus in 1920-1, but until 1923 oil field drilling almost ceased. During the first year of Soviet rule ". . . not one single new well has started giving oil" and even two years after Soviet occupation, no new oil-field properties had been developed. In addition, deepening of old wells virtually ceased. As a result, water percolated into the wells, and the flow of crude oil became a mixture of oil and water. Drilling records are an excellent indicator of the state of oil field maintenance, development, and production. The complete collapse after the Soviet takeover is clearly suggested by the statistics. In :900, Russia had been the world's largest producer and exporter of crude oil; almost 50,000 feet of drilling per month had been required in Baku alone to maintain this production. By early 1921, the average monthly drilling in Baku had declined to an insignificant 370 feet or so ,0.7 percent of the 1900 rate), although 162 rigs were in working order.

Then, Serebrovsky, Chairman of Azneft (the Soviet oil production trust), put forward a program for recovery in a Prauda article. The plan :or 1923 was to increase oil well drilling to 35,000 Sazhens per year 245,000 feet). This would require 35 rotary drills (to drill 77,000 feet) and 157 percussion drills (to drill 130,000 feet). Serebrovsky pointed out that Azneft had no rotary drills, and that Russian enterprise could not supply them. Rotary drilling, however, was essential for the success of the plan.

[1] **U.S. State Dept. Decimal File, 316-137-221.**

He then announced:

> "But just here American capital is going to support us. The American firm International Barnsdall Corporation has submitted a plan ... Lack of equipment prevents us from increasing the production of the oil industry of Baku by ourselves. The American firm . . . will provide the equipment, start drilling in the oil fields and organize the technical production of oil with deep pumps."[1]

During the next few years International Barnsdall, together with the Lucey Manufacturing Company and other major foreign oil well equipment firms, fulfilled Serebrovsky's program. Massive imports of equipment came from the United States. International Barnsdall inaugurated the rotary drilling program, initiated Azneft drilling crews into its operational problems, and reorganized oil well pumping with deep well electrical pumps.

The first International Barnsdall concession was signed in October 1921, and was followed in September of 1922 by two further agreements. There is no doubt that Barnsdall did work under the agreements. Prauda reported groups of American oil field workers on their way to the oil fields, and a couple of months previously the United States, Constantinople Consulate, had reported that Philip Chadbourn, the Barnsdall Caucasus representative, had passed through on his way out of Russia. The U.S. State Department Archives contain an intriguing quotation from Rykov, dated October 1922:

> "The one comparatively bright spot in Russia is the petroleum industry, and this is due largely to the fact that a number of American workers have been brought into the oil fields to superintend their operation."[2]

Who, or what, was International Barnsdall Corporation?

The Chairman of International Barnsdall Corporation was Matthew C. Brush whom we previously identified as The Order's "front man."

Guaranty Trust, Lee, Higginson Company and W.A. Harriman owned Barnsdall Corporation, and International Barnsdall Corporation was owned 75% by the Barnsdall Corporation and 25% by H. Mason Day. The Guaranty Trust interest was represented by Eugene W. Stetson (also a Vice President of Guaranty Trust), whose son, Eugene W. Stetson Jr., was initiated into The Order in 1934. The Lee Higginson interest was represented by Frederick Winthrop Allen (The Order '00).

[1]Prauda, September 21, 1922.

[2] U.S. State Department Decimal File, Microcopy 316, Roll 107, Frame 1167.

In brief, The Order controlled International Barnsdall Corporation.

The second potentially largest source of Soviet foreign exchange in the 1920s was the large Russian manganese deposits. In 1913, tsarist Russia supplied 52 percent of world manganese, of which about 76 per-cent, or one million tons, was mined from the Chiaturi deposits in the Caucasus. Production in 1920 was zero, and by 1924 had risen only to about 320,000 tons per year. The basic problem was:

> "that further development was seriously retarded by the primitive equipment, which was considered grossly inadequate even according to prewar standards."

The Chiaturi deposits, situated on high plateaus some distance from Batum, were mined in a primitive manner, and the ore was brought on donkeys from the plateaus to the railroads. There was a change of gauge en route, and the manganese had to be transshipped between the original loading point and the port. When at the port, the ore was transferred by bucket: a slow, expensive process.

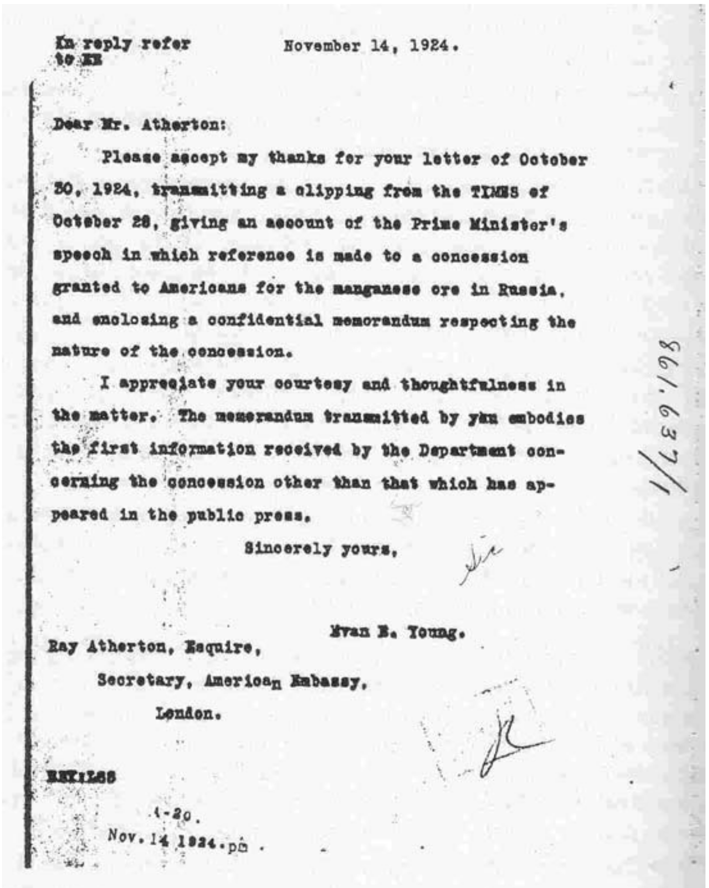
The Soviets acquired modern mining and transportation facilities for their manganese deposits, acquired foreign exchange, and finally shattered American foreign policy concerning loans to the U.S.S.R., in a series of business agreements with W.A. Harriman Company and Guaranty Trust. l

On July 12, 1925, a concession agreement was made between the W.A. Harriman Company of New York and the U.S.S.R. for exploitation of the Chiaturi manganese deposits and extensive introduction of modern mining and transportation methods.

Under the Harriman concession agreement, $4 million was spent on mechanizing the mines and converting them from hand to mechanical operation. A washer and reduction plant were built; and a loading Elevator at Poti, with a two-million ton capacity and a railroad system were constructed, together with an aerial tramway for the transfer of manganese ore. The expenditure was approximately $2 million for the railroad system and $1 million for mechanization of the mines.

The Chairman of the Georgian Manganese Company, the Harriman operating company on the site in Russia, **was none other than The Order's "front man" Matthew C. Brush.**

-The interested reader is referred to over 300 pages of documents in the U.S. State Dept. Decimal File 316-138-12/331, and the German Foreign Ministry Archives. Walter Duranty described the **Harrimen contract as "utterly** inept" and von Dirksen of the German Foreign Office as "a rubber contract." THE full **contract was published [Vysshii sovet nardnogo khoziaistva, Concession Agreement** *Between* The Government *Of The U.S.S.R* and W.A. Harrimon & Co. Inc. *Of New* York (Moscow, 1925)].



In reply refer to EE

November 14, 1924.

Dear Mr. Atherton:

Please accept my thanks for your letter of October 30, 1924, transmitting a clipping from the TIMES of October 28, giving an account of the Prime Minister's speech in which reference is made to a concession granted to Americans for the manganese ore in Russia, and enclosing a confidential memorandum respecting the nature of the concession.

I appreciate your courtesy and thoughtfulness in the matter. The memorandum transmitted by you embodies the first information received by the Department concerning the concession other than that which has appeared in the public press.

Sincerely yours,

Evan E. Young.

Ray Atherton, Esquire,
Secretary, American Embassy,
London.

EEY:LGS

4-20.
Nov. 14 1924. pm

861.637/1

State Department Letter to U.S. Embassy In London (861.637/1)

IV. THE ORDER TOO POWERFUL FOR STATE DEPARTMENT TO INVESTIGATE

While The Order carried out its -plans to develop Russia, the State Department could do nothing. Its bureaucrats sat in Washington D.C. like a bunch of mesmerized jackrabbits.

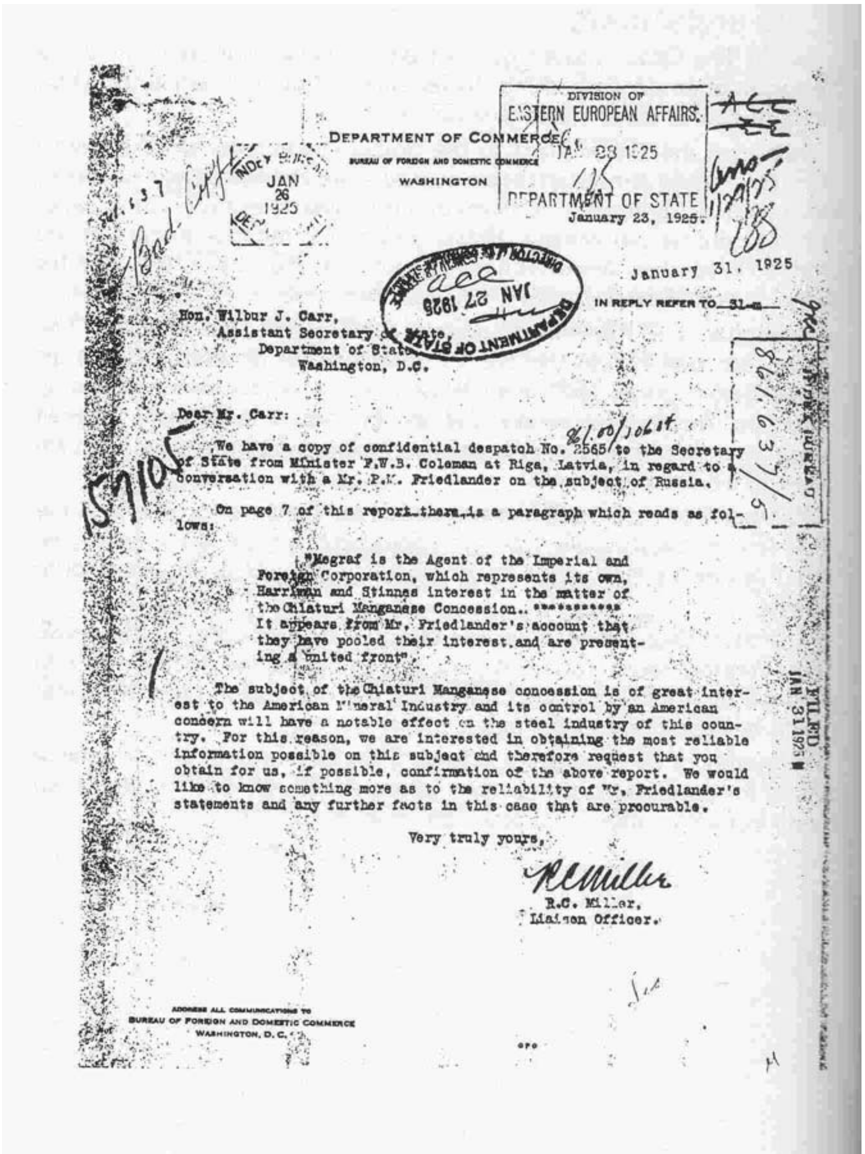
Firstly, in the 1920s loans to the Soviet Union were strictly against U.S. law. While American citizens could enter Russia at their own risk, there were no diplomatic relations and no government support or sanction for commercial activity. Public and government sentiment in the United States was overwhelmingly against the Soviets - not least for the widespread atrocities committed in the name of the Revolution.

Secondly, the Harriman-Guaranty syndicate, which reflected The Order, did not inform the State Department of its plans. As the attached letter (page 152) from Washington to the London Embassy describes, the first information of the Harriman manganese deposit came from the American Embassy in London, which picked it up from London newspaper reports.

In other words, Averell Harriman sneaked an illegal project past the U.S. Government. If this is not irresponsible behavior, then nothing is. And this was the man who was later to become the U.S. Ambassador to Russia.

The State Department letter to London is quite specific on this point: "The memorandum transmitted by you embodies the first information received by the Department concerning the concession other than that which has appeared in the public press."

A month or so later came a letter from Department of Commerce asking for confirmation and more information. Apparently, Harriman didn't bother to inform Commerce either.



DIVISION OF EASTERN EUROPEAN AFFAIRS
JAN 28 1925
DEPARTMENT OF STATE

DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
WASHINGTON

January 23, 1925.

January 31, 1925

IN REPLY REFER TO 31-m

Hon. Wilbur J. Carr,
Assistant Secretary of State,
Department of State,
Washington, D.C.

Dear Mr. Carr:

We have a copy of confidential despatch No. 2565 to the Secretary of State from Minister F.W.B. Coleman at Riga, Latvia, in regard to a conversation with a Mr. P.M. Friedlander on the subject of Russia.

On page 7 of this report there is a paragraph which reads as follows:

"Megraf is the Agent of the Imperial and Foreign Corporation, which represents its own, Harriman and Stinnes interest in the matter of the Chiaturi Manganese Concession.. **********
It appears from Mr. Friedlander's account that they have pooled their interest and are presenting a united front".

The subject of the Chiaturi Manganese concession is of great interest to the American Mineral Industry and its control by an American concern will have a notable effect on the steel industry of this country. For this reason, we are interested in obtaining the most reliable information possible on this subject and therefore request that you obtain for us, if possible, confirmation of the above report. We would like to know something more as to the reliability of Mr. Friedlander's statements and any further facts in this case that are procurable.

Very truly yours,

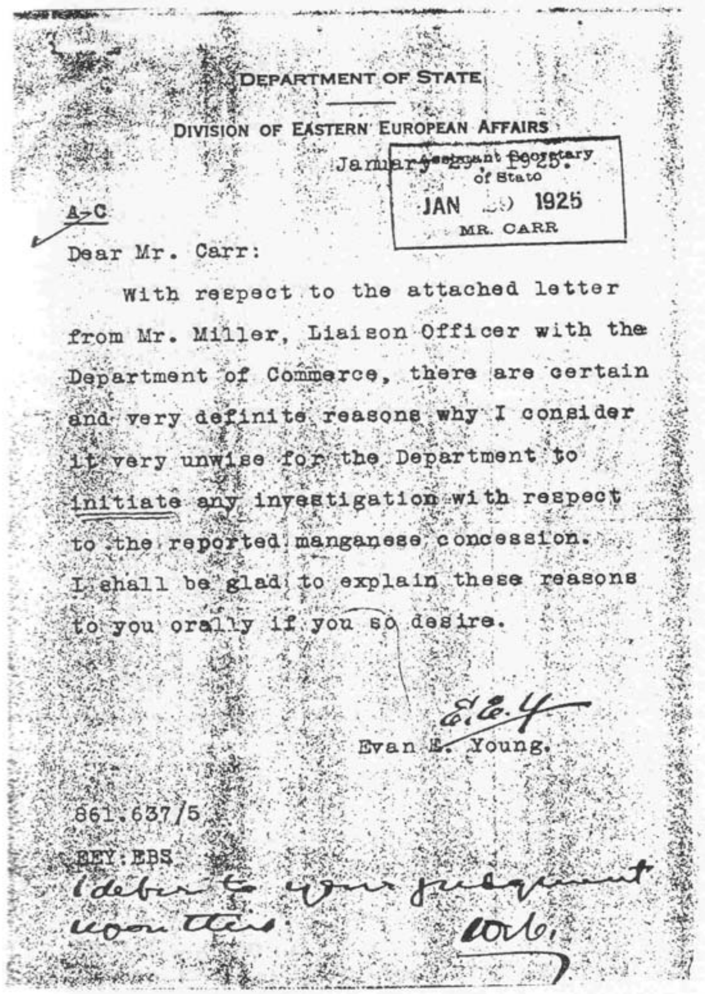
R.C. Miller,
Liaison Officer.

ADDRESS ALL COMMUNICATIONS TO
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
WASHINGTON, D. C.

861.637/5

FILED JAN 31 1925

Commerce Department To State Asking For Confirmation Of Harriman Manganese Concession (861.637/5)



DEPARTMENT OF STATE

DIVISION OF EASTERN EUROPEAN AFFAIRS

January 29, 1925.

Assistant Secretary of State
JAN 30 1925
MR. CARR

A-C

Dear Mr. Carr:

With respect to the attached letter from Mr. Miller, Liaison Officer with the Department of Commerce, there are certain and very definite reasons why I consider it very unwise for the Department to initiate any investigation with respect to the reported manganese concession. I shall be glad to explain these reasons to you orally if you so desire.

E.E.Y.

Evan E. Young.

861.637/5

EEY:EBS

I defer to your judgment upon this

W.J.C.

Now we reach the truly extraordinary point. The U.S. Government was not informed by W.A. Harriman or Guaranty Trust that they intended to invest $4 million developing Soviet manganese deposits. Yet this was clearly illegal and a move with obvious strategic consequences for the U.S. Neither was the U.S. Government able to pick up this information elsewhere; in those days there was no CIA. Economic intelligence was handled by the State Department. It is also obvious that Government officials were interested in acquiring information, as they should have been.

The truly extraordinary point is THAT THE U.S. GOVERNMENT WAS NOT ABLE TO PURSUE AN INVESTIGATION.

We reproduce on page 155 a memorandum from Evan E. Young in Division of Eastern European Affairs to Assistant Secretary of State Carr. Note this is a memorandum at the upper levels of the State Department. Young specifically writes: ". . . there are certain and very definite reasons why I consider it very unwise for the Department to initiate any investigation with respect to the reported manganese concession."

And Assistant Secretary of State Carr scribbles on the bottom, "I defer to your judgment upon this" (presumably after the suggested oral communication).

The distinct impression is that some behind-the-scenes power was not to be challenged.

-2-

Max May, of the Guaranty Trust Company, New York, will take part. In the present arrangement Mr. Max May is designated as director of the foreign division of the Moscow bank.

The above paper gives the following information in regard to the new bank:

"There is a board consisting of five members and five active directors. Among these we note Mr. Schlesinger, former Chief of Moscow's Merchant Bank, Mr. Kalaschkin, Chief of the Junker Bank, and Mr. Ternoffsky, former Chief of the Siberian Bank. Mr. Max May is designated as director of the foreign division of the bank. According to Mr. Aschberg, the Russian bank, through the Ekonomibolaget, Mr. Aschberg's bank in Stockholm, will be in closer contact with German and American financial institutions."

The "Svenska Dagbladet", of October 17th, reports that the above mentioned Mr. Scheinmann has succeeded in obtaining the consent of Professor Gustav Cassel to act as adviser to the Russian State Bank, which bank it appears has a representative in the administration of the new Commercial Bank of Moscow and has the right to exercise control of its activities. Professor Cassel is quoted as stating in part:

"That a bank has now been started in Russia to take care of purely banking matters is a great step forward, and it seems to me that this bank was established in order to do something to create a new economic life in Russia. What Russia needs is a bank to create internal and external commerce. If there is to be any business between Russia and other countries there must be a bank to handle it.

"This step forward should be supported in every way by other countries, and when I was asked my advice I stated that I was prepared to give it. I am not in favor of a negative policy and believe that every opportunity should be seized to help in a positive reconstruction.

"The great question is how to bring the Russian exchange back to normal. It is a complicated question and will necessitate thorough investigation. To solve this problem I am naturally more than willing to take part in the work. To leave Russia to her own resources and her own fate is folly."

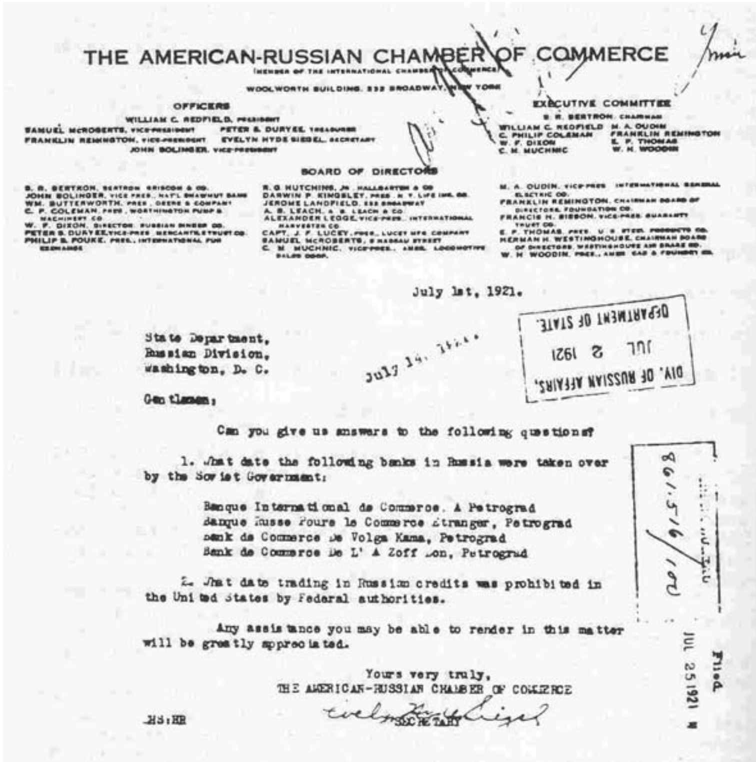
I have the honor to be, Sir,

Your obedient servant,

Ira N. Morris

IRA N. MORRIS.

U.S. State Department Decimal File, 861.516/140
Stockholm Legation October 13, 1922



THE AMERICAN-RUSSIAN CHAMBER OF COMMERCE

(MEMBER OF THE INTERNATIONAL CHAMBER OF COMMERCE)

WOOLWORTH BUILDING, 233 BROADWAY, NEW YORK

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SAMUEL MCROBERTS, VICE-PRESIDENT — PETER S. DURYEE, TREASURER
FRANKLIN REMINGTON, VICE-PRESIDENT — EVELYN HYDE SIEGEL, SECRETARY
JOHN BOLINGER, VICE-PRESIDENT

EXECUTIVE COMMITTEE

S. R. BERTRON, CHAIRMAN
WILLIAM C. REDFIELD — M. A. OUDIN
C. PHILIP COLEMAN — FRANKLIN REMINGTON
W. F. DIXON — E. P. THOMAS
C. M. MUCHNIC — W. H. WOODIN

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W. H. WOODIN, PRES., AMER. CAR & FOUNDRY CO.

July 1st, 1921.

DEPARTMENT OF STATE.
JUL 2 1921
DIV. OF RUSSIAN AFFAIRS.

State Department,
Russian Division,
Washington, D. C.

July 14, 1921

Gentlemen;

Can you give us answers to the following questions?

1. What date the following banks in Russia were taken over by the Soviet Government:

Banque International de Commerce. A Petrograd
Banque Russe Poure le Commerce Etranger, Petrograd
Bank de Commerce De Volga Kama, Petrograd
Bank de Commerce De L' A Zoff Don, Petrograd

2. What date trading in Russian credits was prohibited in the United States by Federal authorities.

861.516/102

Any assistance you may be able to render in this matter will be greatly appreciated.

Yours very truly,
THE AMERICAN-RUSSIAN CHAMBER OF COMMERCE
Evelyn Hyde Siegel
SECRETARY

HS:HR

Filed
JUL 25 1921

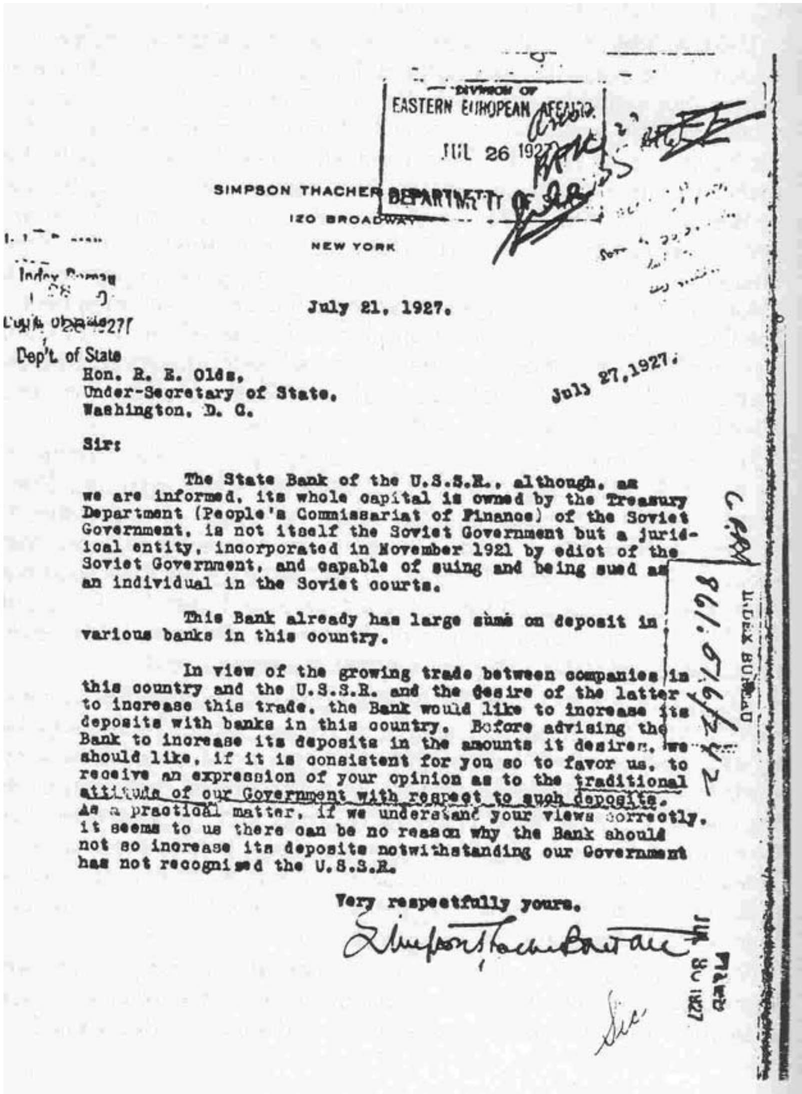
V. THE ORDER MAKES ITS OWN LAW

The Order kept a hold on every non-government strategic position related to the Soviet Union. Nothing appears to have escaped their attention. For example, the Anglo-Russian Chamber of Commerce was created in 1920 to promote trade with Russia - desperately needed by the Soviets to restore idle Tsarist industry. The Chairman of its Executive Committee, the key post in the Chamber, was held by Samuel R. Bertron (The Order '85), a Vice President of Guaranty Trust and formerly a member of the 1917 Root Mission to Russia. Elihu Root, Chairman of the Mission, was, of course, the personal attorney to William Collins Whitney (The Order '63), one of the key members of The Order. The letter from Bertron's Anglo-Russian Chamber of Commerce to State Department, printed on page 158 is noteworthy because :: asks the question: "What date trading in Russian credits was prohibited in the United States by Federal authorities?"

This means that The Order was well aware in 1921 that "credits" to the U.S.S.R. were illegal and indeed were not made legal until President Roosevelt took office in 1933. However, illegal or not, within 18 months of this Bertron letter, Guaranty Trust established more than trading in Russian credits. Guaranty Trust made a joint banking agreement with the Soviets and installed a Guaranty Trust Vice President, Max May, as director in charge of the foreign division of this Soviet -Dank, the RUSKOMBANK (See document on page 157).

In brief, while the U.S. public was being assured by the U.S. Government that the Soviets were dastardly murderers, while "Reds" were being deported back to Russia by the Department of Justice, while every politician (almost without exception) was assuring the American public :hat the United States would have no relations with the Soviets - while this barrage of lies was aimed at a gullible public, behind the scenes the Guaranty Trust Company was actually running a division of a Soviet bank! And American troops were being cheered by Soviet revolutionaries for helping protect the Revolution.

That, dear readers, is why governments **need** censorship. That's why even 50 years after some events, it is almost impossible for independent researchers (not the bootlickers) to get key documents declassified.



DIVISION OF EASTERN EUROPEAN AFFAIRS
JUL 26 1927
DEPARTMENT OF STATE

SIMPSON THACHER & BARTLETT
120 BROADWAY
NEW YORK

July 21, 1927.

Hon. R. E. Olds,
Under-Secretary of State,
Washington, D. C.

July 27, 1927.

Sir:

The State Bank of the U.S.S.R., although, as we are informed, its whole capital is owned by the Treasury Department (People's Commissariat of Finance) of the Soviet Government, is not itself the Soviet Government but a juridical entity, incorporated in November 1921 by edict of the Soviet Government, and capable of suing and being sued as an individual in the Soviet courts.

This Bank already has large sums on deposit in various banks in this country.

In view of the growing trade between companies in this country and the U.S.S.R. and the desire of the latter to increase this trade, the Bank would like to increase its deposits with banks in this country. Before advising the Bank to increase its deposits in the amounts it desires, we should like, if it is consistent for you so to favor us, to receive an expression of your opinion as to the traditional attitude of our Government with respect to such deposits. As a practical matter, if we understand your views correctly, it seems to us there can be no reason why the Bank should not so increase its deposits notwithstanding our Government has not recognized the U.S.S.R.

Very respectfully yours,

Simpson Thacher & Bartlett

861.516/242

VI. THE ORDER'S LAW FIRMS

New York establishment law firms, several founded by members of The Order, have close links to banks and specifically those operational vehicles for revolution already cited.

Take the example of Simpson, Thacher & Bartlett which in the 1920s was located at 120 Broadway, New York. The firm was founded by Thomas Thacher (The Order '71) in 1884. His son Thomas Day Thacher (The Order '04) worked for the family law firm after leaving Yale and initiation into The Order. The younger Thomas Thacher went to work for Henry L. Stimson (The Order'88), a very active member of The Order discussed in Volume One of this series. About this time Thacher, who wrote The Order's statement on the Bolshevik Revolution (page 138), became friendly with both Felix Frankfurter and Raymond Robins. According to extensive documentation in the Lusk Committee files, both Frankfurter and Robins were of considerable assistance to the Soviets.

Another link between the 1917 Revolution and Simpson, Thacher & Bartlett is through the daughter of Thomas Anthony Thacher (The Order '35) who married William Kent (The Order '87) who we have linked to member Amos Pinchot in the case of intervention on behalf of the Soviets in Washington, D.C.

Furthermore, readers of Wall Street And The *Bolshevik* Revolution will recall that member Samuel Bertron was on the Root Mission to Russia in 1917. Moreover, Thomas Thacher (The Order '04) was a member of the Red Cross Mission with Allan Wardwell, son of Thomas Wardwell, Standard Oil Treasurer and a partner in another Wall Street aw firm, Statson, Jennings & Russell (the links of this firm to The Order will be described in a later volume). Eugene Stetson, Jr., for example, is ^. The Order ('34) .

Simpson, Thacher & Bartlett represented the Soviet State Bank in ::e U.S. and was the vehicle used by The Order to inform State Department of activities that might otherwise be blocked by low level bureaucrats following the government rulebook.

For example, in 1927 Simpson, Thacher & Bartlett informed the U.S. Government that the Soviets were in the process of substantially increasing deposits in the U.S. This increase was in preparation for the enormous outlays to be channeled to a few favored U.S. firms to build the Soviet First Five Year Plan.

The letter read closely is definite; it puts words in the mouth of the State Department, i.e., this is what we are going to do and in spite of the U.S. Government, there is no reason why we should not go ahead. Note, for example, the last paragraph: ". . . it seems to us there is no reason why the Bank should not so increase its deposits notwithstanding our Government has not recognized the U.S.S.R."

RUSSIA

During the past four years the Government of the United States has maintained the position that it would be both futile and unwise to enter into relations with the Soviet Government so long as the Bolshevik leaders persist in aims and practices in the field of international relations which preclude the possibility of establishing relations on the basis of accepted principles governing intercourse between nations. It is the conviction of the Government of the United States that relations on a basis usual between friendly nations can not be established with a governmental entity which is the agency of a group who hold it as their mission to bring about the overthrow of the existing political, economic and social order throughout the world and who regulate their conduct towards other nations accordingly.

The experiences of various European Governments which have recognized and entered into relations with the Soviet regime have demonstrated conclusively the wisdom of the policy to which the Government of the United States has consistently adhered. Recognition of the Soviet regime has not brought about any cessation of interference by the Bolshevik leaders in the internal affairs of any recognizing country, nor has it led to the acceptance by them of other fundamental obligations of international intercourse. Certain European states have endeavored, by entering into discussions with representatives of the Soviet regime, to reach a settlement of outstanding differences on the basis of accepted international practices. Such conferences and discussions have been entirely fruitless. No state has been able to obtain the payment of debts contracted by Russia under preceding governments or the indemnification of its citizens for confiscated property. Indeed, there is every reason to believe that the granting of recognition and the holding of discussions have served only to encourage the present rulers of Russia in their policy of repudiation and confiscation, as well as in their hope that it is possible to establish a working basis, accepted by other nations, whereby they can continue their war on the existing political and social order in other countries.

Current developments demonstrate the continued persistence at Moscow of a dominating world revolutionary purpose and the practical manifestation of this purpose in such ways as render impossible the establishment of normal relations with the Soviet government. The present rulers of Russia, while seeking to direct the evolution of Russia along political, economic and social lines in such manner as to make it an effective "base of the world revolution", continue to carry on, through the Communist International and other organizations with headquarters at Moscow, within the borders of other nations, including the United States, extensive and carefully planned *operations for the purpose of ultimately bringing about the overthrow of the existing order n such nations.*

*A mass of data with respect to the activities carried on in the United States by various Bolshevik organizations, under the direction and con*trol of Moscow, *was presented by the Department of State to a subcommittee of the Senate Committee on Foreign Relations in January 1924.*

VII. WHAT THE POLITICIANS TOLD AMERICAN CITIZENS

All this Soviet-building activity recorded in the Lusk Committee and State Department files was carefully concealed from the American public. What the public was told can only be described as a pack of lies, from beginning to end.

To demonstrate the degree of falsehood, we reprint here a page on Russia" from a document "Excerpt from a statement entitled `Foreign Relations' by the Honorable Frank B. Kellogg, Secretary of State, published by the Republican National Committee, Bulletin No. 5, I928."

Among the falsehoods promoted by Secretary Kellogg is the following: ". . . the Government of the United States has maintained the position that it would be both futile and unwise to enter into relations with the Soviet Government."

In fact, at this very time the United States, with implicit government approval, was involved in planning the First Five Year Plan in Russia. The planning work was done actively by American firms. 1

Construction of the Soviet dialectic arm continued throughout the 1930s up to World War II. In 1941 W.A. Harriman was appointed Lend Lease Administrator to assure the flow of United States technology and products to the Soviet Union. Examination of- Lend -ease records shows that U.S. law was violated. The law required military goods only to be shipped. In fact, industrial equipment in extraordinary amounts was also shipped and Treasury Department currency plates so that the Soviets could freely print U.S. dollars.

Since World War II the United States has kept the Soviets abreast of modern technology. This story has been detailed elsewhere.

In brief, the creation of the Soviet Union stems from The Order. The early survival of the Soviet Union stems from The Order. The development of the Soviet Union stems from The Order.

But above all, this story has been concealed from the American public --,"politicians . . . more of this later. Now let's turn to the financing of the Nazi Party in Germany.

[1]This story has been described in my Western Technology And Soviet Economic ***Development*** 917-1930 and 1930-1945, published by the Hoover Institution at Stanford University.

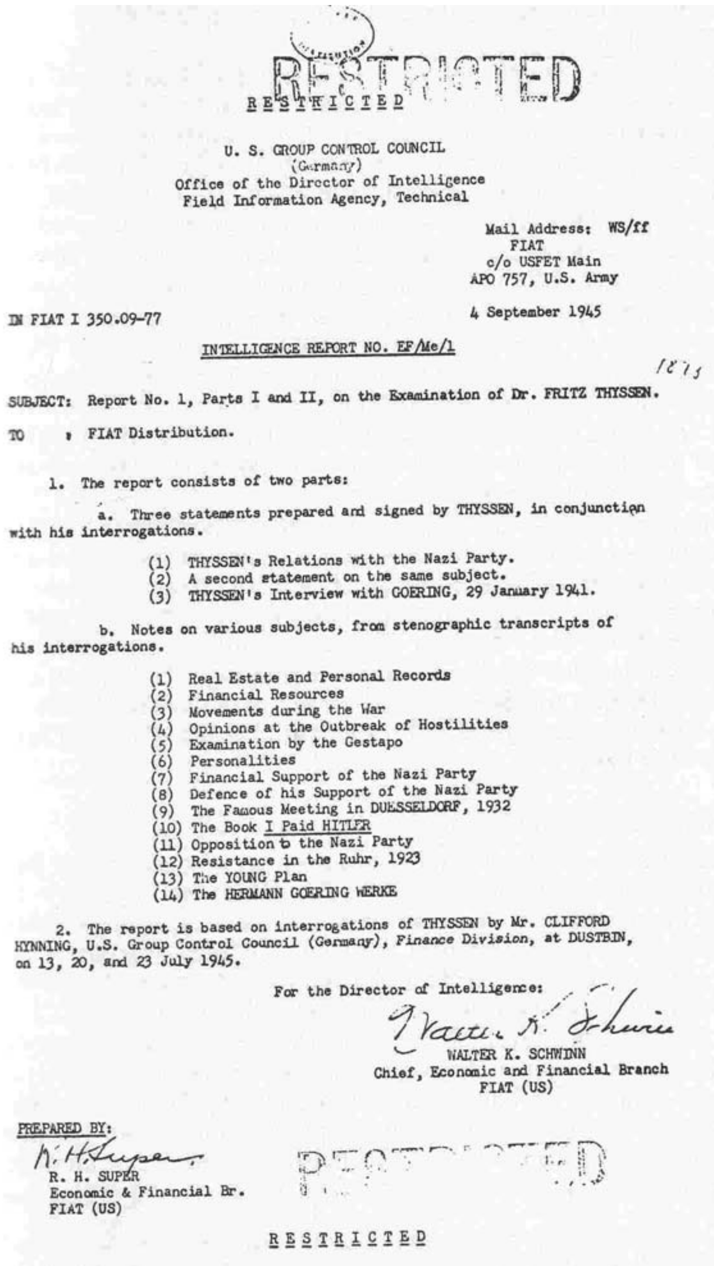
Memorandum Number Four: Antithesis - Financing The Nazis

The Marxist version of the Hegelian dialectic poses financial capitalism as thesis and Marxist revolution as antithesis. An obvious puzzle in this Marxian statement is the nature of the synthesis presumed to evolve out of the clash of these opposites, i.e., the clash of financial capitalism and revolutionary Marxism.

Lenin's statement that the State will wither away at the synthesis stage is nonsensical. In fact, as all contemporary Marxist states testify, the State in practice becomes all powerful. The immediate task of "the revolution" is to convey all power to the state, and modern Marxist states operate under a constant paranoia that power may indeed pass away from the hands of the State into the hands of the people.

We suggest that world forces may be seen differently, although still 17, terms of the Hegelian dialectic. If Marxism is posed as the thesis and national socialism as antithesis, then the most likely synthesis becomes a Hegelian New World Order, a synthesis evolving out of the clash o: Marxism and national socialism. Moreover, in this statement those who finance and manage the clash of opposites can remain in control of the synthesis.

If we can show that The Order has artificially encouraged and developed both revolutionary Marxism and national socialism while retaining some control over the nature and degree of the conflict, then it follows The Order will be able to determine the evolution and nature of the New World Order.



RESTRICTED

U. S. GROUP CONTROL COUNCIL
(Germany)
Office of the Director of Intelligence
Field Information Agency, Technical

Mail Address: WS/ff
FIAT
c/o USFET Main
APO 757, U.S. Army

IN FIAT I 350.09-77

4 September 1945

INTELLIGENCE REPORT NO. EF/Me/1

SUBJECT: Report No. 1, Parts I and II, on the Examination of Dr. FRITZ THYSSEN.

TO : FIAT Distribution.

1. The report consists of two parts:

a. Three statements prepared and signed by THYSSEN, in conjunction with his interrogations.

(1) THYSSEN's Relations with the Nazi Party.
(2) A second statement on the same subject.
(3) THYSSEN's Interview with GOERING, 29 January 1941.

b. Notes on various subjects, from stenographic transcripts of his interrogations.

(1) Real Estate and Personal Records
(2) Financial Resources
(3) Movements during the War
(4) Opinions at the Outbreak of Hostilities
(5) Examination by the Gestapo
(6) Personalities
(7) Financial Support of the Nazi Party
(8) Defence of his Support of the Nazi Party
(9) The Famous Meeting in DUESSELDORF, 1932
(10) The Book I Paid HITLER
(11) Opposition to the Nazi Party
(12) Resistance in the Ruhr, 1923
(13) The YOUNG Plan
(14) The HERMANN GOERING WERKE

2. The report is based on interrogations of THYSSEN by Mr. CLIFFORD HYNNING, U.S. Group Control Council (Germany), Finance Division, at DUSTBIN, on 13, 20, and 23 July 1945.

For the Director of Intelligence:

WALTER K. SCHWINN
Chief, Economic and Financial Branch
FIAT (US)

PREPARED BY:
R. H. SUPER
Economic & Financial Br.
FIAT (US)

RESTRICTED

I. WHERE DID THE NAZIS GET THEIR FUNDS FOR REVOLUTION?

In Wall Street And The Rise of Hitler we described several financial conduits between Wall Street and the Nazi Party. This was later supplemented by publication of a long suppressed book, Hitler's Secret Backers. l Still other books have emphasized the Fritz Thyssen financial connection to Hitler. After he split with Hitler, Thyssen himself wrote a book, I Paid Hitler. We are now in a position to merge the evidence in these books with other material and our documentation on The Order.

The records of the U.S. Control Council for Germany contain the post-war intelligence interviews with prominent Nazis. From these we have verification that the major conduit for funds to Hitler was Fritz Thyssen and his Bank fur Handel and Schiff, previously called von Heydt's Bank. This information coincides with evidence in

Wall Street And The Rise Of Hitler and Hitler's Secret Backers, even to the names of the people and banks involved, i.e., Thyssen, Harriman, Guaranty Trust, von Heydt, Carter, and so on.

The document reproduced on page 167 slipped through U.S. censorship because the Office of Director of Intelligence did not know of the link between Fritz Thyssen and the Harriman interests in New York. Documents linking Wall Street to Hitler have for the most part been removed from U.S. Control Council records. In any event, we reproduce here the Intelligence report identifying Fritz Thyssen and his Bank fur Handel und Schiff (No. EF/Me/1 of September 4, 1945) and page 13 of the interrogation of Fritz Thyssen entitled "Financial Support of the Nazi Party."

lI. WHO WAS THYSSEN"?

Fritz Thyssen was the German steel magnate who associated himself with the Nazi movement in the early '20s. When interrogated in 1945 under Project Dustbin, Thyssen recalled that he was approached in 1923 by General Ludendorf at the time of French evacuation of the Ruhr. Shortly after this meeting Thyssen was introduced to Hitler and provided funds for the Nazis through General Ludendorf.

In 1930-31 Emil Kirdorf approached Thyssen and subsequently sent Rudolf Hess to negotiate further funding for the Nazi Party. This time Thyssen arranged a credit of 250,000 marks at the Bank Voor Handel en Scheepvaart N.V. (the Dutch name for the bank named by Thyssen in the attached document), at 18 Zuidblaak in Rotterdam, Holland. Thyssen was former head of the Vereinigte Stahlwerke, The German

1 Wall Street And The Rise Of Hitler and Hitler's Secret Backers are obtainable from Research Publications, P.O. Box 39850, Phoenix Arizona 85069. Some other aspects are covered in Charles Higham. Trading With The Enemy (Delacorte Press).

G. Financial Support of the Nazi Party.

My first connection with the Nazi party was through General LUDENDORF, following the evacuation of the Ruhr by the French troops. He told me about the Party and asked for my help. I agreed, but I did not want to give any money directly to the Party, so I gave it to LUDENDORF and he gave it to the Party. LUDENDORF introduced me to HITLER in 1923 before the Putsch. After the Putsch the two got separated, and I too got separated from the Nazis.

In 1930 or 1931, I think, EMIL KIRDORF asked me to obtain some foreign credits for the Nazi Party. I had known him for a long time, though not in connection with business. He was my neighbor. After the death of my father, he was the oldest industrialist in the Ruhr. KIRDORF sent HESS to me; HESS had gone first to KIRDORF and reported that he had purchased the Brown House in MUNICH and could not pay for it, and KIRDORF said he could not help him, but that he should apply to me. I told HESS that I could not do as he wished, but that in order to show my good will and because Mr. KIRDORF sent him I would arrange a credit for him with a Dutch bank in ROTTERDAM, the Bank für Handel und Schiff.

I arranged the credit by writing a letter in which I arranged that if the bank would give credit to HESS, he would pay it back in three years in equal rates. I was not officially guarantor of the loan, but because I had proposed it, I was really responsible. I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands. HITLER pretended he never got any help. It was difficult to do nothing in those days when things were going, nobody knew where, and I always thought I would have some influence. It was for the same reason that I would not give up my position later as member of parliament, because I always thought perhaps I could prevent war.

The credit was about 250-300,000 marks--about the same sum I had given before. The loan has been repaid in part to the Dutch bank, but I think some money is still owing on it; it had not all been paid when I left Germany in 1939. I have had to make payments on it myself--perhaps 200,000-280,000 marks which the Nazi Party didn't pay; they did repay some.

The Nazis applied first to KIRDORF rather than direct to me because KIRDORF was a great friend of HITLER-- he was fascinated by him. But KIRDORF told me that he was not himself in a position to give such an amount, and so I made this arrangement. But I certainly would not have done it if KIRDORF had not sent this man HESS to me.

I do not know of anyone else among the industrialists who was supporting the Party financially in 1926; I was then its principal supporter. Later TENGELMANN, KIRDORF, VOEGLER, KNEPPER all contributed; that was some sort of tax imposed on the whole industry. The reason for it was that HITLER would fight the communists: it was clear that the power would fall either to the communists or to the Nazis. When the Reichstag was burned, everyone was sure it had been done by the communists. I later learned in Switzerland that it was all a lie.

My contributions to the Party since that day have not been important-- part of what the industry gave. I did help them in the riding school in my place. In 1932 I made two small contributions to Gauleiter TERBOVEN. He came and asked for the winter help and assistance: the winter contribution was made every year. At that time I gave him a pretty nice sum, something like 20,000 marks. This became an annual contribution; I am not sure whether the sum was increased. You see, we had a winter contribution of our own. When the unemployment began, my family undertook a winter help of our own, and gave poor people food, clothing, and shelter.

I joined the Party when they offered me membership in the Reichstag, I think in the election of 1931 or 1932. Before that time I was a German Nationalist. It is correct to say that my only contributions from my personal resources to the Party were the small annual dues, the subscription to various publications of the Party, and the winter help to the amount of 20-30 thousand marks. In other words the total amount I paid to the Nazi Party and its affiliates in any one year may have been a little over 50,000 marks; certainly not so much as

steel trust, financed by Dillon Read (New York), and played a decisive role in the rise of Hitler to bower by contributing liberally to the Nazi Party and by influencing his fellow industrialists to join him in support of the Fuehrer. In reward for his efforts, Thyssen was showered with political and economic favors by the Third Reich and enjoyed almost unlimited power and prestige under the Nazi regime until his break with Hitler in 1939 over the decision to invade Poland and precipitate the Second World War.

This incident and Thyssen's subsequent publication, *1 Paid Hitler,* has a parallel with the history of his father, August Thyssen. Through a similar confession in 1918 the elder Thyssen, despite his record as a staunch backer of pan-Germanism, succeeded in convincing the Allies that sole responsibility for German aggression should be placed on the Kaiser and German industrialists should not be blamed for the support they had given to the Hohenzollerns. Apparently influenced by August Thyssen and his associates, the Allies made no effort to

reform German industry after World War I. The result was that Thyssen was allowed to retain a vast industrial empire and pass it on intact to his heirs and successors.

It was against this background that Fritz Thyssen took over control of the family holdings following the death of his father in 1926. The new German steel baron had already achieved fame throughout the Reich by his defiance of the French during their occupation of the Ruhr in 1923. Like Hitler, Thyssen regarded the Treaty of Versailles as "a pact of shame" which must be overthrown if the Fatherland were to rise again This is the story in *Hitler's Secret Backers.*

Thyssen set out along the same road as his father, aided by ample Wall Street loans to build German industry. August Thyssen had combined with Hugenburg, Kirdorf, and the elder Krupp to promote the All-Deutscher Verband (the Pan-German League), which supplied the rationale for the Kaiser's expansionist policies.

His son became an active member of the Stahlhelm and later, through Goring, joined the Nazis. Finally, after the crash of 1931 had brought German industry to the verge of bankruptcy, he openly embraced national socialism.

During the next 2 years Thyssen dedicated his fortune and his influence to bring Hitler to power. In 1932 he arranged the famous meeting in the Dusseldorf Industrialists' Club, at which Hitler addressed the leading businessmen of the Ruhr and the Rhineland. At the close of Hitler's speech Thyssen cried, "Heil Herr Hitler," while the others applauded enthusiastically. By the time of the German Presidential elections later that year, Thyssen obtained contributions to Hitler's campaign fund from the industrial combines. He alone is reported to have spent 3,000,000 marks on the Nazis in the year 1932.

III. THE UNION BANKING CONNECTION

This flow of funds went through Thyssen banks. The Bank fur Handel and Schiff cited as the conduit in the U.S. Intelligence report was a subsidiary of the August Thyssen Bank, and founded in 1918 with H.J. •: Kouwenhoven and D.C. Schutte as managing partners. In brief, it was Thyssen's personal banking operation, and affiliated with the W.A. Harriman financial interests in New York. Thyssen reported to his Project Dustbin interrogators that:

> "I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands."

H[i]tler's Secret Backers identifies the conduit from the U.S. as "von Heydt," and von Heydt's Bank was the early name for Thyssen's Bank. Furthermore, the Thyssen front bank in Holland - i.e., the Bank voor -iandel en Scheepvaart N.V. - controlled the Union Banking Corporation in New York.

The Harrimans had a financial interest in, and E. Roland Harriman The Order 1917), Averell's brother, was a director of this Union Bank[n]g Corporation. The Union Banking Corporation of New York City wa[s] a joint Thyssen-Harriman operation with the following directors in 1932:

E. Roland Harriman (The Order 1917)	Vice President of W.A. Harriman & Co., New York
H.J. Kouwenhoven (Nazi)	Nazi banker, managing partner of August Thyssen Bank and Bank voor Handel Scheepvaart N.V. (the transfer bank for Thyssen's funds)
Knight Wooley (The Order 1917)	Director of Guaranty Trust, New York and Director Federal Reserve Bank of N. Y.
Cornelius Lievense	President, Union Banking Corp. and Director of Holland-American Investment Corp.
Ellery Sedgewick James (The Order 1917)	Partner, Brown Brothers, & Co., New York

Johann Groninger (Nazi)	Director of Bank voor Handel en Scheepvaart and Vereinigte Stahlwerke (Thyssen's steel operations)
J.L. Guinter	Director Union Banking Corp
Prescott Sheldon Bush (The Order 1917)	Partner, Brown Brothers. Harriman. Father of President G. H. W. Bush

The eight directors of Union Banking Corporation are an interesting bunch indeed. Look at the following:

- Four directors of Union Banking are members of The Order: a:: initiated at Yale in 1917 - members of the same Yale class. A:: four were members of the same cell (club) D 115.
- E. Harriman was the brother of W. Averell Harriman and a Vice-President of W.A. Harriman Company.
- Guaranty Trust was represented by Knight Woolley.

- Two of the Union directors, Kouwenhoven and Groninger, were Nazi directors of Bank voor Handel en Scheepvaart. formerly the von Heydt Bank. Von Heydt was the intermediary between Guaranty Trust and Hitler named in Hitler's Secret *Backer.*
- Ellery S. James and Prescott S. Bush were partners in Brown Brothers, later Brown Brothers, Harriman.

Out of eight directors of Thyssen's bank in New York, we can therefore identify six who are either Nazis or members of The Order.

This private bank was formerly named Von Heydt Bank and von Heydt is named by Sharp in Hitler's *Secret Backers* as the intermediary from Guaranty Trust in New York to Hitler between 1930 and 1933. Above all, remember that Shoup was writing in 1933 when this information was still only known to those on the inside. Out of tens of thousands of banks and bankers, Shoup, in 1933, names those that evidence surfacing decades later confirms as financing Hitler.

In brief, when we merge the information in PROJECT DUSTBIN with Shoup's Hitler's Secret *Backers,* we find **the major overseas conduit for Nazi financing traces back to THE ORDER and specifically cell D 115**.

IV. PROFIT FROM CONFLICT

Out of war and revolution come opportunities for profit.

Conflict can be used for profit by corporations under control and influence of The Order. In World War II, the Korean War and the Vietnamese War we can cite examples of American corporations that traded with "the enemy" for profit.

This "blood trade" is by no means sporadic or limited to a few firms; it is general and reflects higher policy decisions and philosophies. Corporations - even large corporations - are dominated by banks and trust companies, and in turn these banks and trust companies are dominated by The Order and its allies. (This will be the topic of a forthcoming volume).

Although the U.S. did not officially go to war with Germany until 1941, legally, and certainly morally, the U.S. was at war with Nazi Germany after the Destroyer deal with Great Britain in December 1940, :.e., the exchange of 50 old U.S. destroyers for strategic bases in British territory. Even before December 1940 the MS "Frederick S. Fales" owned by Standard Vacuum Company was sunk by a German submarine on September

21, 1940. Yet in 1941 Standard Oil of New Jersey (now EXXON) had six Standard Oil tankers under Panamanian registry, manned by Nazi officers to carry fuel oil from Standard Oil refineries to the Canary Islands, a refueling base of Nazi submarines.

A report on this dated July 15, 1941 from Intelligence at Fifth Corps :n Columbus, Ohio is reproduced on page 172. The report is in error recording that no Standard Oil ships had been sunk by the Nazis; Major Burrows apparently did not know "Frederick S. Fales" in 1940.

Another example of profit from war is recorded in the document on page 173. This records the association of RCA and the Nazis in World War II. RCA was essentially a Morgan-Rockefeller firm and so linked to The Order.

Yet another example is that of Chase Bank. Chase was linked to The Order through the Rockefeller family (Percy Rockefeller, The Order 1900) and Vice-President Reeve Schley (Yale, Scroll & Key). Directors of Chase in The Order included Frederick Allen (The Order 1900), W.E.S. Griswold (The Order 1899) and Cornelius Vanderbilt, whose brother Gwynne Vanderbilt (The Order 1899) represented the family before his death. President of Chase was Winthrop Aldrich. This was :he Harvard branch of the Aldrich family, another branch is Yale and The Order.

Chase Manhattan Bank is not only a firm that plays both sides of the political fence, but with Ford Motor Company, was selected by Treasury Secretary Morgenthau for post-war investigation of pro-Nazi activities: These two situations [i.e., Ford and Chase Bank] convince us that it is imperative to investigate immediately on the spot the activities of subsidiaries of at least some of the larger American firms which were operating in France during German occupation . . .

The extent of Chase collaboration with Nazis is staggering - and this was at a time when Nelson Rockefeller had an intelligence job in Washington aimed AGAINST Nazi operations in Latin America.

In December 1944 Treasury Department officials examined the records of the Chase Bank in Paris. On December 20, 1944 the senior U.S. examiner sent a memorandum to Treasury Secretary Morgenthau with the preliminary results of the Paris examination. Here's an extract from that report:

OFFICE CHIEF [illegible]
MIL. INTELLIGENCE
JUL 17 1941
2267-[illegible]-32
WAR DEPARTMENT

HEADQUARTERS FIFTH CORPS AREA
OFFICE OF THE CORPS AREA COMMANDER
FORT HAYES, COLUMBUS, OHIO

G-2

July 15, 1941

SUBJECT: Standard Oil Company of New Jersey Ships Under Panamanian Registry.

TO: A. C. of S., G-2,
War Department
Washington, D. C.

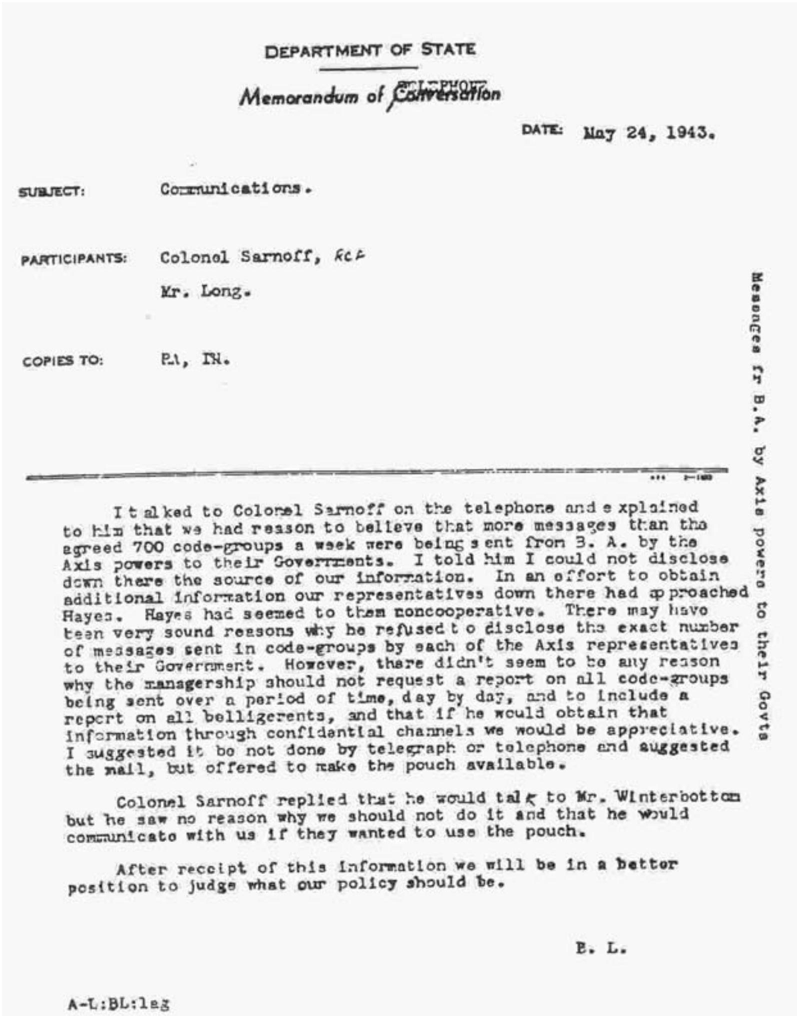
1. A report has been received from Cleveland, Ohio, in which it is stated that the source of this information is unquestionable, to the effect that the Standard Oil Company of New Jersey now ships under Panamanian registry, transporting oil (fuel) from Aruba, Dutch West Indies to Teneriffe, Canary Islands, and is apparently diverting about 20% of this fuel oil to the present German government.

2. About six of the ships operating on this route are reputed to be manned mainly by Nazi officers. Seamen have reported to the informant that they have seen submarines in the immediate vicinity of the Canary Islands and have learned that these submarines are refueling there. The informant also stated that the Standard Oil Company has not lost any ships to date by torpedoing as have other companies whose ships operate to other ports.

For the A. C. of S., G-2,

CHAS. A. BURROWS,
Major, Military Intelligence,
Asst. A. C. of S., G-2

1941 JUL 18 PM 4:34



DEPARTMENT OF STATE

Memorandum of Conversation

DATE: May 24, 1943.

SUBJECT: Communications.

PARTICIPANTS: Colonel Sarnoff, RCA
Mr. Long.

COPIES TO: PA, IN.

Messages fr B.A. by Axis powers to their Govts

I talked to Colonel Sarnoff on the telephone and explained to him that we had reason to believe that more messages than the agreed 700 code-groups a week were being sent from B. A. by the Axis powers to their Governments. I told him I could not disclose down there the source of our information. In an effort to obtain additional information our representatives down there had approached Hayes. Hayes had seemed to them noncooperative. There may have been very sound reasons why he refused to disclose the exact number of messages sent in code-groups by each of the Axis representatives to their Government. However, there didn't seem to be any reason why the managership should not request a report on all code-groups being sent over a period of time, day by day, and to include a report on all belligerents, and that if he would obtain that information through confidential channels we would be appreciative. I suggested it be not done by telegraph or telephone and suggested the mail, but offered to make the pouch available.

Colonel Sarnoff replied that he would talk to Mr. Winterbottom but he saw no reason why we should not do it and that he would communicate with us if they wanted to use the pouch.

After receipt of this information we will be in a better position to judge what our policy should be.

B. L.

A-L:BL:lag

a. Niederman, of Swiss nationality, manager of Chase, Paris, was unquestionably a collaborator;

b. The Chase Head Office in New York was informed of Niederman's collaborationist policy but took no steps to remove him. Indeed there is ample evidence to show that the Head Office in New York viewed Niederman's good relations with the Germans as an excellent means of preserving, unimpaired, the position of the Chase Bank in France.

c. The German authorities were anxious to keep the Chase open and indeed took exceptional measures to provide sources of revenue.

d. The German authorities desired "to be friends" with the important American banks because they expected that these banks would be useful after the war as an instrument of German policy in **the United States.**

e. The Chase, Paris showed itself most anxious to please the , German authorities in every possible way. For example, the Chase zealously maintained the account of the German Embassy in Paris, "as every little thing helps" (to maintain the excellent relations between Chase and the German authorities). f. The whole objective of the Chase policy and operation was to maintain the position of the bank at any cost.

In brief, Chase Bank was a Nazi collaborator, but the above preliminary report is as far as the investigation proceeded. The report was killed on orders from Washington, D.C.

On the other hand, Chase Bank, later Chase Manhattan Bank, has been a prime promoter of exporting U.S. technology to the Soviet Union. **This goes all the way** back to **the early 1920s when Chase** broke U.S.

regulations in order to aid the Soviets. As early as 1922 Chase was trying to export military LIBERTY aircraft engines to the Soviet Union!

In conclusion, we have seen that the two arms of the dialectic described in Memoranda Three and Four clashed in World War II. Furthermore, the corporate segment of the elite profited from Lend Lease to **the Soviets and by underground cooperation with Nazi interests.** The political wing of The Order was at the same time preparing a new dialectic for the post World War 11 era.

Memorandum Number Five:
The New Dialectic - Angola And China

THE NECESSITY FOR A NEW DIALECTIC PROCESS

World War II was the culmination of the dialectic process created in the 1920s and 1930s. The clash between "left" and "right," i.e., the Soviet Union and Nazi Germany, led to creation of a synthesis - notably the United Nations, and a start towards regional groupings in ·:,e Common Market, COMECON, NATO, UNESCO, Warsaw Pact, SEATO, CENTO, and then the Trilateral Commission. A start towards New World Order.

World War II left The Order with the necessity to create a new dialectical situation to promote more conflict to achieve a higher level synthesis.

The source of the current process may be found in National Security Memorandum No. 68 of 1950, with its extraordinary omissions (analyzed in The Phoenix Letter, January 1984). NSC 68 opened up the road for Western technology to build a more advanced Soviet Union - which it did in the 1960s and 1970s with computerized space-age technology. At the same time NSC 68 presented the argument for massive expansion of U.S. defenses - on the grounds of a future Soviet threat. The omission in NSC 68 was quite elementary, i.e., that :he Soviets could not progress without Western technology. NSC 68 allowed that technology transfer to go on. In other words, by allowing Western firms to expand the Soviet Union, NSC-68 also **pari passu** created the argument for a U.S. defense budget. We identified in our 'Phoenix Letter article the link between NSC-68 and The Order.

Unfortunately for The Order, but not surprisingly, given their limited perception of the world, the dialectic plan based on NSC-68 misfired. The principal devices used to control the dialectic process in the past two decades have been (a) information, (b) debt and (c) technology. These have become diluted over time. They just don't work as well today as they did in the 1950s.

By and large, control of information has been successful. The intellectual world is still locked into a phony verbal battle between "left" and "right," whereas the real struggle is the battle between individual freedom and the encroaching power of the absolute State. The Soviet Union, with its tight censorship, presents a strictly Marxist (i.e., "left") orientation to its citizens. The enemy is always the "fascist" United States. The West is a little more complicated but not much more so. Quigley's argument in Tragedy And Hope, that J.P. Morgan used financial power to control politics, has been extended to The Order's control of information. In the West the choice is basically between a controlled "left-oriented" information and a controlled "right-oriented" information. l The conflict between the two controlled groups keeps an apparent informational conflict alive. Unwelcome facts that fall into neither camp are conveniently forgotten. Books that fall into neither camp can be effectively neutralized because they will incur the wrath of both "right" and "left".

In brief, any publication which points up the fallacy of the Left-Right dichotomy is ignored ... and citizens keep trooping down to the polling booths in the belief they have a "choice".

The second control mechanism is debt. If Marxist countries have to import technology, they need to earn or borrow Western currencies to pay for it. Loans have to be repaid. So to some extent, debtors are under control of creditors, unless they default. Default is the weakness

The third control mechanism is technology. If technology to advance to more efficient production levels has to be imported, then the recipient is always kept away from the "state of the art". The weakness for The Order is that military technology does not require a market system.

The dialectic plan therefore misfired for several reasons. Firstly, the informational blackout has not been as successful as The Order expected. We shall describe later how control of Time and Newsweek gave The Order dominance over weekly news summaries. The TV networks have been able to orchestrate viewer reactions - to

some extent For example, the three ABC blockbusters in 1983 were The *Day* After. ***Thornbirds,*** and ***Winds*** Of ***War,*** all with a common propaganda theme But The Order was unable to restrict individuals and relatively small non-academic groups, almost always outside Universities, from exploring obvious inconsistencies in establishment propaganda. These groups often mistakenly termed "left" or "right" are outside the generally manipulated left-right spectrum.

Secondly, the debt weapon was over-used. Communist countries are now saturated with debt to Western bankers.

Thirdly, while technology is still a useful weapon, there are distinct stirrings among independent analysts of the danger posed for the Western world by building enemies.

Consequently, in today's world we can identify two facts in construction of a new dialectic. First, cautious reinforcement of the Marxian arm (the thesis presented in Memorandum Three), i.e., Marxist Angola gets a green light, but a Marxist Grenada got a red light.

Second, the construction of a completely new arm, that of Communist China, itself Marxist, but with conflict potential for the Soviet Union. Major efforts by The Order are in progress, only partly revealed in the press, to create a new superpower in a conflict mode with the Soviet Union. This is the new antithesis, replacing Nazi Germany.

[1]There are exceptions. Obviously *Review* Of *The News,* American Opinion and Reason are large outside the controlled right' frame. To some extent the U.S. Labor Party is outside the left frame but includes so much spurious material that its publications are hardly worth reading. Henry George sit clear-cut left exception.

THE ORDER CREATES A MARXIST ANGOLA

Angola, a former Portuguese province on the southwest coast of Africa, is a contemporary example of continued, but more cautious, creation of the Marxist arm of the dialectic process.

The official establishment view of Angola is that Angola was a Portuguese colony and oppressive Portuguese rule led to an independence movement in which the Marxists won out over "democratic" forces.

This view cannot be supported. If the Portuguese were colonists in Angola, then so are the Boston Brahmins in Massachusetts. Luanda, the chief town in Angola, was settled by the Portuguese in 1575 - that's half a century before the Pilgrims landed in Massachusetts. The indigenous population of Angola in 1575 was less than the Indian population of Massachusetts. Over three centuries the Portuguese treated Angola more as a province than as a colony, in contrast to British, French and Belgian colonial rule in Africa. So if Angola belonged to non-existent indigenous natives, then so does Massachusetts logically belong to American Indians.

In the early 1960s the United States was actively aiding the Marxist cause in Angola. This is clear from former **Secretary of State Dean Acheson. The following extracts are** from a memorandum recording a conversation between Dean Acheson (Scroll & Key), McGeorge Bundy The Order '40), and President Kennedy dated April 2, 1962:

> "He [Kennedy] then turned to the negotiations with Portugal over the Azores base. He said that not much seemed to be happening and that he would be grateful to have me take the matter over and see if something could be done. I asked him for permission to talk about the situation for a few minutes and said about the following: "The Portuguese were deeply offended at what they believed was the desertion of them by the United States, if not the actual alignment of the United States with their enemies. The problem, it seemed to me, lay not so much in negotiations with the Portuguese as in the determination of United States policy. The battle would be in Washington, rather than in Lisbon."

Then Dean Acheson comments on a topic apparently already known -D President Kennedy, that the United States was supporting the revolutionary -nary movements in Angola:

> "The President then asked me why I was so sure that there was no room for negotiations under the present conditions. I said that, as he perhaps knew, we had in fact been subsidizing Portugal's enemies; and that they strongly suspected this, although they could not prove it. He said that the purpose of this was to try to keep the Angolan nationalist movement out of the hands of the communist Ghanians, etc., and keep it in the most moderate hands possible. I said that I quite understood this, but that it did not make what the Portuguese suspected any more palatable to them. We were also engaged in smuggling Angolese out of Angola and educating them in Lincoln College outside o• Philadelphia in the most extreme nationalist views. Furthermore the head of this college had secretly and illegally entered Angola and on his return had engaged in violent anti-Portuguese propaganda. We voted in the United Nations for resolutions "condemning"

Portugal for maintaining order in territory unquestionably under Portuguese sovereignty. I pointed out that the Portuguese were a proud people, especially sensitive because they had declined to such an impotent position after such a glorious history. They would rather proceed to the ruin of their empire in a dignified way, as they had in Goa, than be bought or wheedled into cooperating in their own destruction."

There is an extremely important, although seemingly minor, point in President Kennedy's comments. Kennedy apparently believed the U.S. was financing Nationalists, not Marxists, whereas the U.S. was actually aiding Marxists, as it was later to do in South Africa, following a pattern going back to the 1917 Bolshevik Revolution in Russia. There is a point well worth following up in the Kennedy files, i.e., just how much Kennedy knew about CIA and State Department operations, where The Order was in control.

The Marxists under Neto's MPLA obtained control of Angola. The Order with powerful allies among multinational corporations has exerted pressure on successive Administrations to keep Angola as a Cuban-Soviet base in Southern Africa.

Back in 1975 the U.S. in conjunction with South Africa did indeed make a military drive into Angola. At a crucial point, when South African forces could have reached Launda, the United States called off assistance. South Africa had no choice but to retreat. South Africa learned the hard way that the U.S. is only nominally anti-Marxist. In practice the U.S. did to South Africa what it had done many times before - the elite betrayed its anti-Marxist allies.

By the early 1980s The Order's multinational friends came out of the woodwork while carefully coordinating public actions with Vice President Bush (The Order 1948). For example, in March 27, 1981 The Wall Street Journal ran a revealing article, including some nuggets of reality mingled with the Establishment line. This front page article viewed U.S. multinational support for the Angolan Marxists under the headline "Friendly Foe: companies urge U.S. to stay out of Angola, decline aid to rebels" (these rebels being anti-Marxist Savimbi's UNITA forces aided by South Africa).

The leader of the pro-Marxist corporate forces in the U.S. is Melvin J. Hill, President of Gulf Oil Exploration & Production Company, a unit of Gulf Oil which operates Gulf Cabinda. This is a refinery complex in Angola, protected from Savimbi's pro-Western rebels by Cubans and Angolan Marxist troops. Hill told the WSJ "Angola is a knowledgeable, understanding and reliable business partner." Hill not only appeared before Congress with this pro-Marxist line, but met at least several times with then Vice President Bush.

PWJ Wood of Cities Service added more to the Gulf Oil mythology. Said *Wood:*

> "The Angolans are more and more development oriented. They aren't interested in politicizing central Africa on behalf of Cubans or the Soviet Union. Our people aren't persona non grata in Angola."

Hill and Wood, of course, are no more than public relations agents for Marxist Angola, although we understand they have not registered as foreign agents with the U.S. Department of Justice. Angola is very much a Cuban-Soviet base for the take-over of Southern Africa, yet 17 western oil companies and other firms are in Angola. They include Gulf, Texaco, Petrofina, Mobil, Cities Service, Marathon Oil and Union Texas Petroleum. Other firms include Allied Chemical, Boeing Aircraft, General Electric - and Bechtel Corporation. It should be remembered that both Secretary of State Schultz and Secretary of Defense Weinberger are on loan from Bechtel Corporation.

Gulf Oil Corporation is controlled by the Mellon interests. The largest single shareholder of the outstanding shares. The Mellon Bank is represented on the Board of Gulf Oil by James Higgins, a Yale graduate but not, so far as we can determine, a member of The Order.

The next largest shareholder is the Mellon Family comprising the Andrew W. Mellon Foundation, the Richard King Foundation, and the Sarah Scaife Foundation. This group, which thinks of itself as "conservative," holds about 7 percent of the outstanding shares. Morgan Guaranty Trust (a name we have encountered before) holds 1.8 million shares or about 1 percent of the outstanding shares.

To a great extent these corporations with Angolan interests have themselves out on a limb. It is surprising, for example, that South Africa has not moved to take counter action against Angolan based firms, especially General Electric, *Boeing,* Morgan Guaranty Trust, Gulf Oil and Cities Service. After all, the South Africans are directly losing men ~Dm the massive support given to the Angolan Marxists by these firms.

It would be cheaper in South African lives to direct retaliatory action against the corporations rather than against Cubans and Angolans. After U.S. betrayal of South Africa in 1975, when South African forces could

have reached Luanda, it is a tribute to South Africa's caution that it has not used this rather obvious counter weapon. After all, a South African surgical strike on Cabinda would neatly remove the Angolans' largest single source of foreign exchange, and give multinational Marxists a little food for thought. We are not, of course, recommending any such action, but it does remain an option open to South Africa. And the possible U.S. reaction? Well the State Department and CIA had best be ready with an explanation for the U.S. Embassy plane caught photographing South African military installations! We cite the above only to demonstrate the dangerous nature of The Order's conflict management scenarios.

III. THE ORDER BUILDS A NEW DIALECTIC ARM IN CHINA

Just as we found the Bush family involved with the early development of the Soviet Union, then with financing the Nazis, and vaguely behind the scenes in Angola, so we find a Bush active in construction of the new dialectic arm: Communist China.

In 1971 Mr. Nixon appointed George "Poppy" Bush (The Order 1948) as U.S. Ambassador to the United Nations, irrespective of the fact that Bush had no previous experience in diplomacy. As chief U.S. delegate, Bush had responsibility for defense against the Communist Chinese attack on the Republic of China, an original free enterprise member of the United Nations. With the vast power of the United States at his disposal, Bush failed miserably: the Republic was expelled from United Nations and Communist China took its seat. Shortly after that fiasco, Bush left United Nations to take over as Chairman of the Republican National Committee.

This is not the place to tell the whole story of American involvement in China. It began with Wall Street intervention into the Sun Yat Sen revolution of 1911 - a story not yet publicly recorded.

During World War II the United States helped the Chinese Communists into power. As one Chinese authority, Chin-tung Liang, has written about General Joseph W. Stilwell, the key U.S. representative in China from 1942 to 1944: "From the viewpoint of the struggle against Communism . . . [Stilwell] did a great disservice to China."'

Yet Stilwell only reflected orders from Washington, from General George C. Marshall. And as Admiral Cooke stated to Congress, ". . . in 1946 General Marshall used the tactics of stoppage of ammunition to invisibly disarm the Chinese forces.

'Chin-Tun Liang, *General Stilwell In Chino, 1942-1944: The Full Story.* St. John's University *1972, p. 12.*

2 Ibid., p. 278.

But when we get to General Marshall we need to remember that in the U.S. the civilian branch has final authority in matters military and :',at gets us to then Secretary of War Henry L. Stimson, Marshall's superior and a member of The Order (1888). By an amazing coincidence, Stimson was also Secretary of War in 1911 - at the time of the Sun Yat Sen revolution.

The story of the betrayal of China and the role of The Order will have :o await yet another volume. At this time we want only to record the decision to build Communist China as a new arm of the dialectic - a ,decision made under President Richard Nixon and placed into operation by Henry Kissinger (Chase Manhattan Bank) and George "Poppy" Bush (The Order).

As we go to press (early 1984) Bechtel Corporation has established a new company, Bechtel China, Inc., to handle development, engineering and construction contracts for the Chinese government. The new ?resident of Bechtel China, Inc. is Sydney B. Ford, formerly marketing manager of Bechtel Civil & Minerals, Inc. Currently Bechtel is working on studies for the China National Coal Development Corporation and he China National Offshore Oil Corporation - both, of course, Chinese Communist organizations.

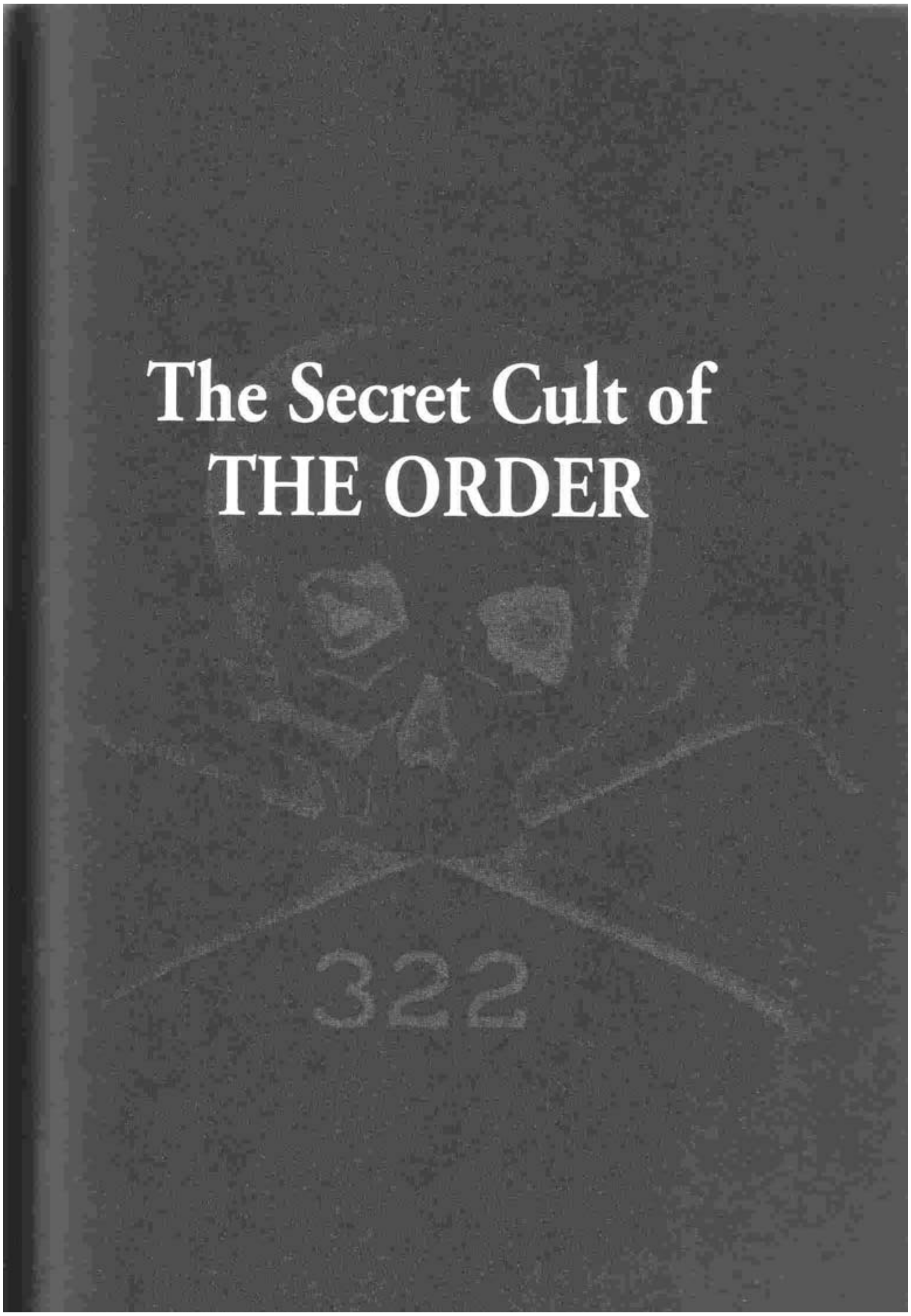
It appears that Bechtel is now to play a similar role to that of Detroit based Albert Kahn, Inc., the firm that in 1928 undertook initial studies and planning for the First Five Year Plan in the Soviet Union.

By about the year 2000 Communist China will be a "superpower" built by American technology and skill. It is presumably the intention of The Order to place this power in a conflict mode with the Soviet Union.

There is no doubt Bechtel will do its job. Former CIA Director Richard Helms works for Bechtel, so did Secretary of State George 5hultz and Defense Secretary Caspar Weinberger. That's a powerful, influential combination, if any Washington planner concerned with national Security gets out of line sufficiently to protest.

Yet, The Order has probably again miscalculated. What will be Moscow's reaction to this dialectic challenge? Even without traditional Russian paranoia they can be excused for feeling more than a little uneasy. And who is

to say that the Chinese Communists will not make their peace with Moscow after 2000 and join forces to eliminate the super-super-power - the United States?



Memorandum Number One:
An Introduction to the Secret Cult of the Order

Secret political organizations can be - and have been - extremely dangerous to the social health and constitutional vitality of a society. In a truly free society the exercise of political power must always be open and known.

Moreover, organizations devoted to violent overthrow of political structures have always, by necessity, been secret organizations. Communist revolutionary cells are an obvious example. In fact, such revolutionary organizations could only function if their existence was secret.

In brief, secrecy in matters political is historically associated with coercion. Furthermore, the existence of secrecy in organizations with political ambitions or with a history of political action is always suspect. Freedom is always associated with open political action and discussion while coercion is always associated with secrecy.

There are numerous historical examples to support this premise. Back in the late 17th century the Elector of Bavaria, the constitutional government of Bavaria, banned the Illuminati organization. Accidental discovery of Illuminati documents demonstrated that a secret organization was devoted to the overthrow of the Bavarian state and establishment of a world society run by elitist Illuminati.

More recently in England there have been startling discoveries involving use of the Masonic movement by the Soviet KGB to subvert and infiltrate British intelligence. True freemasonry is an establishment conservative organization, but its organizational structure can be - and has been - used for revolutionary purposes. Masonic aims are publicly stated to be fraternity and charity, but it is also well known that masons help each other in areas supposedly based on talent.

In The Brotherhood [1] Stephen Knight comments that many have suffered because freemasonry has entered segments of society where it has no place:

> . . . there can be no doubt that many . . . have suffered because of freemasonry entering into areas of life where, according to all its publicly proclaimed principles, it should never intrude. The abuse of freemasonry causes alarming miscarriages of justice" (p. 4).

1 Stephan Knight, The Brotherhood: The secret World of the Freemasons, Granada, London, 1984.

In England at any rate freemasonry has become a self-serving organization always discriminating in favor of its own members when it comes to contracts, jobs, careers and promotions. Moreover, we now know that the masonic movement in England was used by the Russian KGB to infiltrate, take over and finally head British intelligence organizations.

In September 1984 Scotland Yard in London advised all its police officers not to join the freemasons lest its reputation for impartiality be lost. Given this background, The Order, a secret society also known as Skull & Bones, is a clear and obvious threat to constitutional freedom in the United States. Its secrecy, power and use of influence is greater by far than the masons, or any other semi-secret mutual or fraternal organization.

How secret is Skull & Bones?

The most careful analysis of the society is by Lyman Bagg in Four Years At Yale1 published in 1871, but still the only source of documented information on the cultic aspects of The Order.

According to Bagg, The Order is intensely secret:

- "They (the senior societies at Yale) are the only Yale societies whose transactions are truly secret."
- "Their members never mention their names, nor refer to them in any way in the presence of anyone not of their own number, and as they are all seniors, there are no old members in the class above them to tell tales out of school."

This intense secrecy even extends to documents printed for internal use.

On the next page we reprint an internal circular distributed among Patriarchs which has disguised references as follows:

"P" i.e., Patriarch "P---s" Patriarchs

If The Order has this intense secrecy, then how are we able to reproduce its documents and memberships rolls?

Simply because secrecy attracts attention. Secrecy creates suspicion of intentions. This in turn generates action to break the secrecy.

This series of books is based on several sources, including contemporary "moles." However, information on the cultic aspects comes from a century-old Yale concern about the operations and intentions a= Skull & Bones. This concern generated two pamphlets, one issue of a journal and a chapter in a book, as follows:

(1) An anonymous pamphlet entitled Skull & Bones. This is an account of the 1876 break-in at the "Bones" Temple on the Yale campus

[1]Lyman Bagg, Four Years at Yale, Henry Holt & Co., New York, 1871. The chapter "Senior Societies" is reprinted in full as an appendix to this book.

[PRIVATE.]

The distribution of the accompanying pamphlets establishes the custom of mailing these and similar publications of the College authorities, annually, to every P. The issues of previous years, and other College publications will also be sent upon application. Badges and catalogues can also be obtained.

Within a few months the "old kitchen" will doubtless be transformed, through the generosity of some New Yorkers, into a library room, lighted from above, affording accommodations for the books, etc., which are over-crowding the present shelves.

The "Library" has three departments:

1. All books, pamphlets, etc., written or edited by P——s.
2. All printed matter having any reference to Yale.
3. Very old or curious volumes, or engravings.

Each of these departments is at present very defective. An effort is being made to fill up these deficiencies.

Of the first, little need be said. Every one will know whether he has anything to add thereto—and *many have.* It is hoped that these will take notice.

The scrap books, student publications, college histories and miscellaneous pamphlets relating to Yale, compose the second section. The scrap books have been well cared for during the past *few* years, but very little of the College memorabilia of previous years has been preserved. Such a collection, however, would be as interesting as valuable, and would become more so every year, forming in one sense a history of Yale, or at least of that side of it which seldom gets into history—the character and customs of student life. Very few who read this will probably have anything to furnish to such a complete collection of Yalensia as, it is hoped, will be gathered, and fewer still will be willing to part with what they may have. Therefore, let every one who has anything of this description, and has lost something of his interest in it, or who is willing to make this disposal of it, communicate at once with the undersigned. Anything which you may have, could not be deposited in a safer place surely, nor where it would be more permanently useful. If any duplicates should be obtained they will be returned, or given to a similar collection in the College Library.

The third department is yet in its infancy.

ADDRESS "HENRY E. NEVINS."

An extremely rare document, it is reproduced in full as an appendix to this book.

The pamphlet begins:

"As long as Bones shall exist the night of September 29th (1876) will be to its members the anniversary of the occasion when their temple was invaded by neutrals, their rarest memorabilia confiscated and their most sacred secrets unveiled to the eyes of the uninitiated."

This is reference to a break-in by a group of Yale students, and the pamphlet describes in minute detail the contents of the Temple. For example, it describes the walls, e.g., ". . . the walls are adorned with pictures of the founders of Bones at Yale and of the members of the Society in Germany when the Chapter was established here in 1832."

This sentence becomes of interest when the Illuminati aspect is discussed in Memorandum Five below.

Here's another interesting paragraph from this pamphlet:

"Bones is a chapter of a corps in a German University. It should properly be called, not Skull & Bones Society but Skull & Bones Chapter. General R------ (Russell), its founder, was in Germany before Senior Year and formed a warm friendship with a leading member of a German society. He brought back with him to college, authority to found a chapter here. Thus was Bones founded."

Think about this: **Skull & Bones is not American at all. It is a branch of a FOREIGN secret society**.

Presumably this is one reason why intense secrecy is vital. It also raises the question of just who and what this foreign organization is and whether its objectives are compatible with those of the Constitution of the United States.

(2) The Order, The Fall of *Skull* and Bones (New Haven, 1876) This is an anonymous satire published 1876 apparently in New Haven, Connecticut by a group calling itself The Order.

The subtitle reads "Compiled from the minutes of the 76th regular meeting of The Order of the File and Claw."

The opening paragraphs are as in *Skull* & Bones cited above (1). however, the text continues with considerably more detail and appears to have been written by another member of the break-in crew.

In particular, this book gives the identification of the owner of the human skull found in one of the rooms of the Temple:

"A light is always kept burning in the Jo (D) which is ornamented with a dilapidated human skull . . . here is also a tombstone marked SPERRY, seemingly taken from the same grave as the skull."

In brief, it appears this "respected" Order of Yale gentlemen is no more than a coven of grave robbers hoarding skulls, skeletons and tombstones.

Then further down is the following:

"In the Pantry (F) are large quantities of dishes, each piece of crockery ornamented with a picture of a skull and crossbones, each spoon and fork marked S.B.T." (Skull and Bones Trust).

This suggests a preoccupation with skulls and human bones is built into the cultic structure of The Order.

Then on page 4 we learn that each member of Skull & Bones (as well as Scroll & Key) has an "inside name" and these names bear a remarkable resemblance to those used by the Illuminati, e.g., Chilo, Eumenes, Glaucus, Prisaticus and Arbaces.

The conclusion of this pamphlet is:

". . . we will say that a thorough examination of every part of the Temple leads us to the conclusions that the most powerful of college societies is nothing more than a pleasant convivial club."

This conclusion ignores other evidence presented elsewhere. It is acceptable given only the findings of the break-in crew.

(3) The Iconoclast, New Haven 1873

Only one issue of this journal has been found, and only a single copy of that issue exists. It is reproduced as an appendix below. The editor of The Iconoclast considered Skull & Bones "a deadly evil" and emphasized their interest in political control. Moreover, the Iconoclast states that The Order obtained control of Yale, and its members care more for their society than for Yale:

> Out of every class Skull and Bones takes its men. They have gone out into the world and have become, in many instances, leaders in society. They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will.

(4) Chapter "Senior Societies" in Lyman Bagg, Four Years at Yale. This is the reference cited above at the beginning of this chapter. Other sources include an article in Esquire Magazine by Ron Rosenbaum entitled "The last secrets of Skull and Bones" (September 1977). From this article we learn such tidbits as:

"Supreme Court Justice Potter Stewart ... dressed up in a skeleton suit, howled wildly at an initiate in a red velvet room inside the tomb

"

"McGeorge Bundy wrestled naked in a mud pile as part of his initiation."

According to a dossier obtained by Ron Rosenbaum, the 1940 initiation ceremony went like this:

> New man placed in coffin - carried into central part of building. New man chanted over and reborn into society. Removed from coffin and given robes with symbols on it (sic). A bone with his name on it is tossed into bone heap at start of evening. Initiates plunged naked into mud pile.

Again, we have a sordid preoccupation with coffins, skeletons and death.

This about summarizes sources of information.

Strangely enough, the long-time proponent of conspiracy theories, the John Birch Society, has made little contribution to our knowledge of The Order. Apparently JBS recognizes its existence but considers it merely a "recruiting ground," which, of course, it is.

This "recruiting ground" interpretation suggests several points. Firstly, the documentary evidence is quite clear: Knights, i.e., the just recruited initiates, spend only one year as Knights. They become Patriarchs after leaving Yale and spend a lifetime as Patriarchs. Second, continual correspondence and meeting as Patriarchs continues after leaving Yale. In fact, the Deer Hand Club is specifically for annual meetings of Patriarchs and the Russell Trust Association is run entirely by Patriarchs.

In brief, the JBS "recruiting ground" theory just doesn't match all the facts.

Furthermore, The Order is the ONLY fully documented example we have of a secret society within the U.S. establishment. JBS has never produced membership lists of any other society and yet seems unwilling to recognize the existence of The Order.

Similarly, New Solidarity, i.e., the Lyndon LaRouche outfit, claims to have exposed The Order back in 1979. Unfortunately, neither Lyndon LaRouche nor anyone else can produce documents dated 1983 and 1984 in 1979. In any event, the degree of documentation in our volumes on The Order has not been matched elsewhere.

The answer is that this author does have - and fully admits to having - clandestine sources within The Order. We understand that for specific reasons these sources are not available to either JBS or Lyndon LaRouche. At that point we will leave our discussion of sources and move on to the ritual aspects of The Order.

Memorandum Number Two:
The Organization of The Order

The Yale Senior society system is unique to Yale University. There is nothing like it elsewhere in the United States or for that matter in the entire world. According to Lyman Bagg in Four Years at Yale, "the senior societies are such peculiarly Yale institutions that it will be difficult for an outsider fully to appreciate their significance" (Bagg, p. 142, see page following for full context). Nothing like them exists elsewhere and according to Bagg, "Harvard is the only college where, under similar conditions they possibly could exist."

There are three senior societies, Skull & Bones, Scroll & Key and Wolfs Head. Each year 15 male Yale juniors are tapped for admission. They spend only one year in the society, an entirely different procedure to fraternal organizations found on other campuses,

Skull & Bones was founded in 1833 and has initiated 15 members each year since 1833 (except for 1945 when only 10 were tapped). Every year during commencement week 15 Yale juniors receive an invitation "Skull & Bones. Accept or reject?" Those who accept, presumably the greater number, are invited to attend the Bones Temple on campus to undergo an initiation ceremony. (See next page)

Tap day in modern times is a private, almost concealed operation; it was not always that way.

Before 1953 juniors were herded into a yard and representatives from senior societies would circulate among assembled students, selecting those wanted for initiation.

In those days rejection by a senior society was considered social suicide, so Yale ordered tapping a private affair, to avoid the traumatic wait and fear of rejection by the assembled juniors.

For the ambitious, "tapping" is the magic password to a future career. Wherever he turns, the success of the Yale senior society system is obvious. Yale University President, A. Bartlett Giamatti, was a member of Scroll & Key, while George Bush, Vice President of the United States was a member of Skull & Bones.

The Yale campus student is well aware that the senior society system is geared to the affluent outside world, to the world after graduation. Money and connections flow from membership. Reportedly, Skull & Bones donates $15,000 and a grandfather clock to each initiate. Certainly alumni pay for everything associated with society meetings. In one case reported by New York Times (April 16, 1983), the alumni paid for a three-hour phone call from Colorado to Yale by two members of Scroll & Key unable to attend a meeting in the Scroll & Key tomb.

YALE UNIVERSITY COMMENCEMENT AND REUNION CALENDAR 1984

FRIDAY, MAY 25

2:00 p.m. President and Mrs. Giamatti's Reception for members of the Senior Class and their guests, 43 Hillhouse Avenue.

B:00 P.M. Commencement Review by the Yale Dramatic Association, University 'I heater 222 York Street.

SATURDAY MAY 26

8:00 p.m. Commencement Review. (See notice for Friday.)

9:00 p.m. Senior Dance, Branford College and Saybrook College Courtyards.

SUNDAY, MAY 27

)0:00 a.m. Baccalaureate Address by President Giamatti, Woolsey Hall for students in Berkeley, Branford, Davenport, Timothy Dwight, Morse, and Ezra Stiles Colleges.

11: 30 a.m. For students in Calhoun, Jonathan Edwards, Pierson, Saybrook, Silliman, and Trumbull Colleges. (Guest seating only at 11: 10.)

3:00 p.m. Class Day Exercises (in academic costume), Old Campus.

4:00 p.m. Receptions in Master:' [louses for Seniors and guests.

7:00 p.m. Concert by the Yale Band, Old Campus.

8:00 p.m. Commencement Review (see notice for Friday).

8:30 p.m. Concert by the Yale Glee Club and Whiffenpoofs of 1984, Woolsey Hail.

MONDAY, MAY 28

9:30 a.m. Assembly of 'Seniors (in academic costume), College Courtyards.

10:30 a.m. Commencement Exercises, Old Campus.

12:00 noon Presentation of diplomas at the individual Colleges and Schools by the Masters and Deans. (Presentation of Ph.D. diplomas in Woolsey Hall.)

THURSDAY, MAY 31

322 V111 S. B. T.

(Supper at 7:00 p.m.)

FRIDAY, JUNE I

Reunions for the Classes of 1919, 1919S, 1924-245, 1929, 1934, 1954, 1959: 1964, 1969 1974, and 1979. (The Classes of 1939, 1944, and 1949 held Fall 1983 Reunions.) Registration at Class headquarters. Rooms available Thursday, May 31 .

SATURDAY, JUNE 2

9:00 a.m. Panel discussion: "College Admissions and Financial Aid," W William L. Harkness Hall, Room 201.

11:00 a.m. Panel discussion: "Education at Yale College," Sprague Hall.

SUNDAY, JUNE 3

11:00 a.m. Yale-Harvard Boat Race, Now London.

11: 30 a.m. Interfaith Service of Remembrance, Sprague flail.

12:30 p.m. Picnic for All Reunion Classes on the Cross Campus.

Although the John Birch Society, the long time conservative promoter of conspiracy theory, emphasizes that these senior societies are merely recruiting grounds, in effect the societies are the source of a vast establishment network, a formalized "old boy" network that effectively shuts out the newcomers and the non-Yale talented from the halls of power. Because these are senior societies, the emphasis is not on campus activities but on post graduation ambitions. That is the fundamental difference to all other campus societies in the U.S.

As Bagg points out:

"The statement is therefore again repeated that Bones and Keys are peculiarly Yale institutions, genuine outgrowths of a system that flourishes nowhere else, the only organizations of the kind existing in -he country" (p. 183) and the senior society "is an association with no weak members whatever and the history of the matter shows that unless -his ideal is adhered to with reasonable closeness, such a society cannot live long at Yale" (p. 144).

CLUBS OF THE ORDER

Each annual class of new initiates forms a club consisting of 15 members. Initiates are called Knights in the first year and thereafter Patriarchs.

The annual announcement of new initiates has not varied over the ears. We reproduce on page 194 the announcement of new members =or 1917 and on pages 195-196 those for 1984 and 1985.

Each club has a number. This is located in the top right hand corner Of the announcement sheet (i.e., D 115 for 1917 and D 183 for 1984). Further, one member is designated a "club chairman" or agent, with the =unction to act as liaison with the Secretary of the Russell Trust Association in New York.

Y. 2113.	D. 113.
Alfred Raymond Bellinger,	Syracuse, N. Y.
Prescott Sheldon Bush,	Columbus, O.
Henry Sage Fenimore Cooper,	Albany, N. Y.
Oliver Baty Cunningham,	Evanston, Ill.
Samuel Sloan Duryee,	New York City
Edward Roland Noël Harriman,	Arden, N. Y.
Henry Porter Isham,	Chicago, Ill.
William Ellery Sedgwick James,	New York City
Harry William LeGore,	LeGore, Md.
Henry Neil Mallon,	Cincinnati, O.
Albert William Olsen,	Glenbrook, Conn.
John Williams Overton,	Nashville, Tenn.
Frank Parsons Shepard, Jr.,	St. Paul, Minn.
Kenneth Farrand Simpson,	New York City
Knight Woolley,	Brooklyn, N. Y.

P. 2183	D. 183
James Emanuel Boasberg	Washington, D.C.
William John Carr Carlin, Jr.	Brooklyn, New York
Ashok Jai Chandrasekhar	New York, New York
Scott David Frankel	Pepper Pike, Ohio
Jay Alan Grossman	Randolph, Massachusetts
Wei-Tai Kwok	Annandale, Virginia
Peter Barnes Lindy	Memphis, Tennessee
Timothy Charles Misner	Silver Spring, Maryland
Steven Terner Mnuchin	New York, New York
James Gerard Petela	Branford, Connecticut
Richard Hart Powers	Niantic, Connecticut
Morgan Robert Smock	New Hope, Minnesota
Horace Dutton Taft	New Haven, Connecticut
Gregory Allan Thomson	Brooklyn, New York
Kevin Sanchez Walsh	Pelham Manor, New York

1985

BOASBERG, James Emanuel, 3136 Newark Street, NW, Washington, D.C.20008
CARLIN, William John Carr, Jr., 21 Schermerhorn Street, Brooklyn, New York 11201.
CHANDRASEKHAR, Ashok Jai, 120 East 34th Street, New York. New York 10016.
FRANKEL, Scott David, 3290 Kersdale Road, Pepper Pike Ohio 44124.
GROSSMAN, Jay Alan, 48 Niles Road, Randolph, Massachusetts 02368.
KWOK, Wei-Tai, 5 109 Philip Road, Annandale, Virginia 22003. LINDY, Peter Barnes, 105 South Perkins, Memphis, Tennessee 38117.
MISNER, Timothy Charles, 1009 Crest Park Drive, Silver Spring, Maryland 20903.
MNU CHIN, Steven Terner, 721 Fifth Avenue, New York, York 10022.
PATELA, James Gerard, 47 Knollwood Drive, Branford, Connecticut 06405.
POWERS, Richard Hart, 21 Haigh 06357.
SMOCK, Morgan Robert, 4017 Hope, Minnesota 55427.
TAFT, Horace Dutton, 403 St. Ronan Street, New Haven ticut 06511.
THOMPSON, Gregory Allan, 118 Whitman Drive, Brooklyn, New York 11234.
WALSH, Kevin Sanchez, 1030 Clay Avenue, Pelham Manor, New York 10803.

THE SECRET CATALOGS

Each member of The Order receives an updated annual catalog of -:embers. At one time it was a single volume bound in black leather.

CATALOGUE

OCTOBER 1983 VOL. I LIVING MEMBERS

The latest practice is to issue the catalog in two clothbound volumes: Volume One for Living Members and Volume Two for Deceased Members.

Preceding is the title page of the October 1983 catalog, the latest =sued. Volume Two is the same with "Deceased Members" in place of Living Members."

Inside the title page is the address of the Secretary of the Russell Trust Association responsible for administration of the current affairs of The Order:

"Please send any corrections or changes of address to: The Secretary
RTA Incorporated

P.O. Box 2138 Yale Station New Haven, Conn. 06520"

Then follows an alphabetical listing of members and brief information on the following:

Name and class year with awarded degrees.

A brief notation of occupation, i.e., law, education, finance, business.

Date of birth is followed by current business and private addresses. Then follows a list of positions held starting with current position. Military and civilian awards and honors follow, usually extensive because The Order "old boy" network can guarantee awards to each other - an excellent means of mutual support to build up collective power and prestige.

The final item is a listing of wives and children.

ABERG, 1952, DONLAN VINCENT, JR.—(*Business*)—Born Nov. 18, 1928, Cleveland, O.; bus. Pres., Nutrition Products of America, 8929 S. Sepulveda Blvd., Suite 312, Los Angeles, Calif. 90045; res. 15843 Tobin Way, Sherman Oaks, Calif. 91403; Republican Committeeman, N.Y. '64-'69; m. July 16, '55, Jean Helen Brose; s. Donlan Vincent III, Peter Christopher ('81); d. Gretchen Marie.

ABRAMS, 1983, PETER MARK—add. 456 Concord St., Lexington, Mass. 02173.

ACHESON, 1943, DAVID CAMPION, LL.B.—(*Law*)—Born Nov. 4, 1921, Washington, D.C.; Ptnr. Drinker, Biddle & Reath, 1815 H St., N.W., Suite 1200, Washington, D.C. 20006; res. 3101 Garfield St., N.W., Washington, D.C. 20008; Assoc. '50-'58 & Ptnr. '58-'61, Covington & Burling; U.S. Attorney for Dist. of Columbia, '61-'65; Special Asst. to Sec. of Treasury, '65-'67; Senior V.P. & Gen. Counsel, Communications Satellite Corp., (COMSTAT), '67-'74; Ptnr., Jones Day Reavis & Pogue, '74-'78; Lieut. U.S.N.R., '42-'46; Campaign Ribbons—Pacific Theatre, Southwest Pacific—2 battle stars; Philippines—2 battle stars; Chmn., Leadership Gifts, Campaign for Yale, Washington, D.C. Area; Trustee, Washington Cathedral, '76-'82; Pres., National Cathedral Assn., '77-'80; Mbr. Bd. of Regents, Smithsonian Institution; Dir., Committee on the Present Danger; m. May 1, '43, Patricia James Castles; s. David C. Jr. ('72), Peter W. ('76); d. Eleanor Dean.

ACKERMAN, 1957, STEPHEN H., M.B.A.—(*Finance*)—Born August 22, 1935, Rhinebeck, New York; Vice President, Finance & Administration, Caesars World, Inc., 1801 Century Park East, Suite 2600, Los Angeles, Calif. 90067; res. 4145 Via Marina, Apt. 310, Marina Del Rey, Calif. 90291; Major, USMCR Sept. '57-Dec. '60; m. July 8, '60, Kaye Tamblin (divorced); d. Lani Ackerman Tulin.

DEER ILAND CLUB

The Order's retreat is the Deer Iland (spelled Iland after the request of Patriarch G.D. Miller) Alexandria Bay on the St. Lawrence River, New York. The island was donated in 1906 by Patriarch Miller and renovated over the years, but particularly in the 1950s and 1980s.

Here's an extract from the latest February 29, 1984, report to Patriarchs:

> Deer Iland had another successful year in 1983, the 76th season of the Club since its establishment under the direction of George Douglas Miller, D. 68' in 1907. Was it the best year ever? Maybe. They're getting better and better. The results of the past five or six years have seen the Club become a much more viable enterprise from the years of the late '60s and early '70s when its future was much in doubt.

The positive response made by Patriarchs is seen in the following paragraph from the same annual report:

> Increased use of the island is not the only factor in its present sound financial footing. Your generosity through your contributions to our annual fund drives has kept the Club going through lean times and supports it today. Most recently, the splendid response to the special capital fund drive in 1981-82, commemorating the 75th anniversary of the Club, has enabled us to make major capital improvements to our facilities - a process which is still underway. I should add that those special contributions are not being used to meet current operating expenses but are specially designated for capital improvements. Current income from all sources - guest receipts, the G.D. Miller trust, and the annual appeal - has met or exceeded our expenses for seven years, giving us both welcome security and the means to improve further the island's classic river-style structures. (I don't want to use the word "modernize" except perhaps in reference to the plumbing. You may so inform your wives.)

In brief: the organization of The Order both as Russell Trust Association and Deer Iland Corporation is essentially geared towards the post graduation world, the outside world. It is a senior society. Knights spend only one year as Knights. The rest of their lives are spent as Patriarchs in an active influential organization able to guarantee wealth and ambition.

* D. 68 - It is a practice for members to place their Club identification after their name in writing each other.

Memorandum Number Three:
The Ritual of The Order

The ritual of The Order is a closely held secret. The most that anyone can do at this stage is piece together some elements of the ritual and their probable meaning.

The extraordinary secrecy is itself part of a ritual. Members are sworn not to discuss the organization, its procedures or its objectives. Presumably, only an FBI or Congressional investigation could break this code of "omerta" (Mafia = silence).

The secrecy is carried to extraordinary lengths. Members may not remain in the room if The Order is under discussion. Words spoken within The Order may not be placed on paper, even in letters to fellow members. For example, witness the following extract from a letter circulated to members by W. lain Scott (D. 171), President of Deer Iland Club Corporation:

> But beyond these mere quantitative measures of success, it is the quality of the Deer Iland experience that commends the Club to your attention. There are few, if any, places where the B-n-s life thrives in such luxuriance outside the thick and tomblike walls in New Haven. Our Order is, to use an economic term, very much horizontally integrated. That is, our ties to it are strongest through a very narrow slice of time - one special year. Deer Iland, for me and I believe many others, has expanded these ties vertically through contact with younger and older members. Visitors to the island last summer ranged from D. 124 to D. 182, twelve of them. It serves as prelude to the music of the B-n-s for the "newly fledged exalted K---- ts" and as an endlessly rising canon on that wonderful theme to the p-tr--rchs."

Notice three abbreviations to conceal internal use of words from any possible outsider who may stumble on a copy of the letter:

B-n-s =Bones (cited twice)
k---- ts = Knights
p-tr--rchs = Patriarchs

The reader may consider this juvenile, and it may well be. On the other hand, these "juveniles" are the men today running the United States.

Chapter meetings of Patriarchs are announced using a format which has not changed since the early 19th century. An interesting and significant aspect of these announcements is the manner in which they reflect elements of the ritual: the skull and bones, the periods into which The Order has placed its history and the club numbers.

We reproduce below announcements for the following years:

1. July 28, 1859 - the earliest year for which we have a copy. Note the Roman letters VI in the center of the sheet.
2. July 23, 1868 - the last year for which we have a record of the VI appearing. We understand that 1869 was actually the last year with VI.
3. July 21, 1870 - the first year with VIII in the center. Note that VII appears to have been skipped completely.
4. June 17, 1936 - note that the format remains almost the same. This one was signed by Potter Stewart, later (1958-1981) Supreme Court Justice.
5. May 31, 1984 - the latest announcement notice. Note that the Club number D. 183 now appears, but in essence the sheet remains exactly as in 1859. It appears they even used the same skull and bones.

The initiation ceremony itself has been partially described in both the 1876 documents (reproduced below) and a century later by Ron Rosenbaum in "The Last Secrets of Skull & Bones" (Esquire, September 1917).

Each year 15 newly tapped members are put through what has been described as a "harrowing" ordeal - presumably to test their manhood - a manner traditional with fraternity hazing.

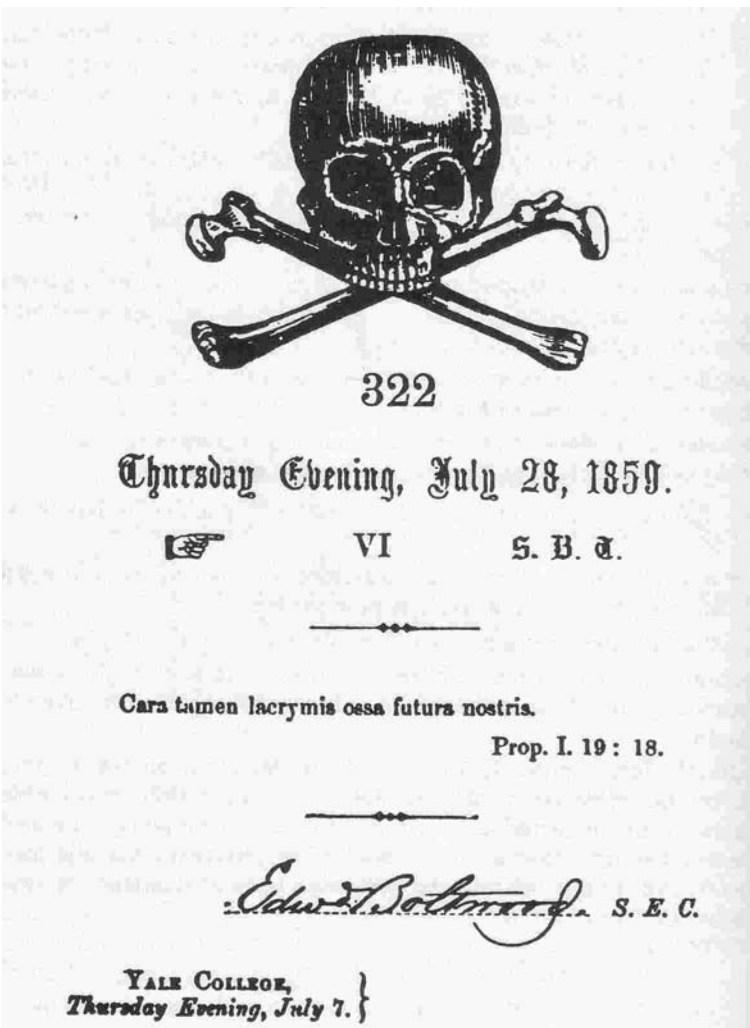
According to Rosenbaum, "one can hear strange cries and moans coming from the bowels of the tomb" during initiation.

Four elements of the initiation ceremony are recorded: • that the initiate has to lie naked in a sarcophagus,

- that he is required to tell the "secrets" of his sex life to fellow initiates,
- that Patriarchs dressed as skeletons and acting as wild-eyed lunatics howl and screech at new initiates.

• that initiates are required to wrestle naked in a mud pile. Undoubtedly there is more. However, the above is enough to warrant branding The Order as based on behavior more suited to juvenile delinquents. Undoubtedly the more serious part of the initiation process is peer pressure, the conversion of juveniles into presumably responsible -embers of an unelected elite. As Rosenbaum comments, "the real purpose of the institution was . . . devoted to converting the idle progeny of the ruling class into morally serious leaders of the establishment."

What happens in the initiation process is essentially a variation of brain-washing or encounter group processes. Knights, through heavy peer pressure, become Patriarchs prepared for a life of the exercise of power and continuation of this process into future generations. In brief, the ritual is designed to mold establishment zombies, to ensure continuation of power in the hands of a small select group from one generation to another. But beyond this ritual are aspects notably satanic.





322

Thursday Evening, July 23d, 1868.

☞ VI S. B. T.

Boni Bonos diligant, asciscantque sibi.

Cicero Laelius, XIV, 50.

John B. Isham S. E. C.

YALE COLLEGE,
Thursday Evening, July 9th. }



Thursday Evening July 21st, 1870.

☛ VIII. S. B. C.

Hoc quidem constat, bonis inter bonos quasi necessariam benevolentiam.

Cicero de Amicitia, xiv. 50.

A.B. Mason S. E. C.

YALE COLLEGE,
Thursday, July 7th.

322

Wednesday Evening, June 17th, 1936.

☞ VIII. S. B. C.

Servendis hic castra bonis

Claudian

Potter Stewart, S. E. C.

ALE COLLEGE,
une 1, 1936.



Thursday Evening, May 31, 1984

☞ VIII. S.B.T.

D. 183

Quamvis mors non sit bonum, bona tamen est bonis.
Holbein, Alphabetum Mortis. 14.

Douglas R. Henston, S.E.C.

YALE UNIVERSITY
APRIL 25, 1984

Memorandum Number Four:
Satanic Aspects of The Order

Even with our limited knowledge of the internal ritual of The Order we can make three definite statements about the links between The Order and satanic beliefs.

These observations should be seen as a start point for further research and consideration.

The first link is through photographic evidence of the association of Skull & Bones with satanic devices, i.e., the skull and crossed bones. The second link is through satanic symbolism.

The third link is through the association of The Order with the New Age Movement, well documented in a remarkable new book by Constance Cumbey, *The Hidden Dangers of the Rainbow* (Huntington House, Inc., Suite G, 1200 North Market Street, Shreveport, LA 71107).

THE PHOTOGRAPHIC EVIDENCE

Photographic evidence exists of the use of the satanic devices of a skull and crossed bones in ceremonies of The Order.

We reproduce on the following page a photograph of the "Class of 1869." Fifteen members of the Club, thirteen standing and two seated, are grouped around crossed thigh bones and a skull. A handwritten list of these men is also reproduced.

In the background is a grandfather clock. From 1833 to the present time a grandfather clock is presented to each Knight upon initiation and stays with him throughout his life as a memento of what is called "the Bones experience."

We also reproduce two other photographs of other classes seated around a skull and bones. According to other evidence, at least three sets of skulls and assorted bones are kept within the Bones Temple on the Yale campus.

An obvious point is that these bones and skulls are former human beings. Instead of sacred treatment, they are exhibited and used for ceremonial purposes. Where the bones should be resting decently in a grave, they have become the center of a secret ceremony. In brief, the photographs reveal the men portrayed as grave robbers who reject human dignity and decency and use satanic devices.

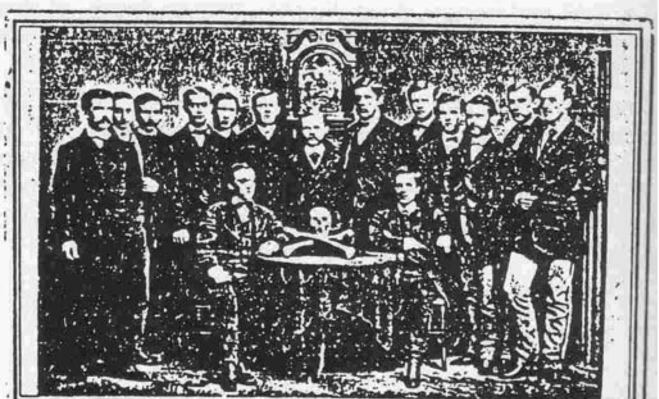
Class of 1869 left to right.

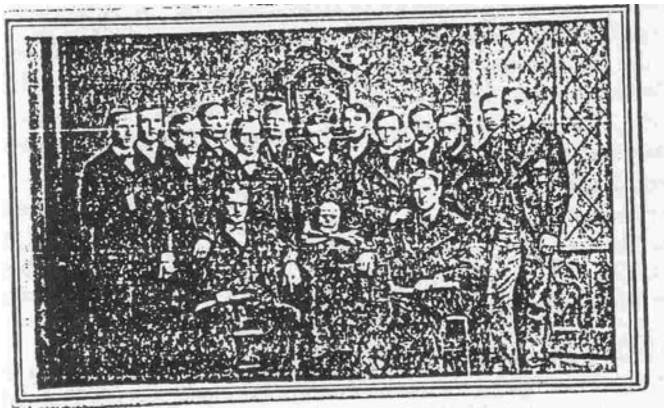
Standing.

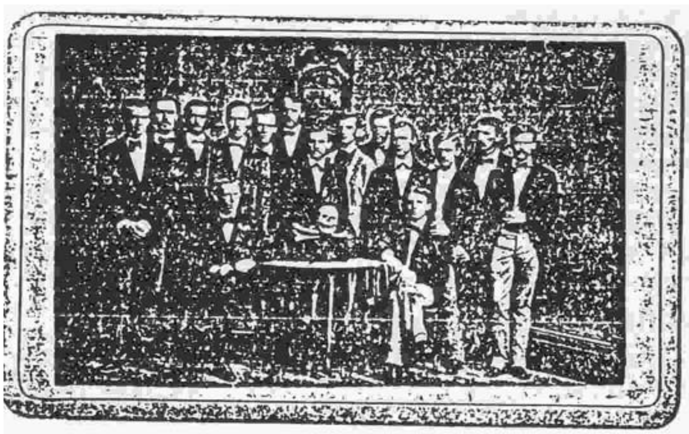
1 Heaton
2 Shirley
3 Lear
4 Foster
5 Hooker
6 Richardson
7 Raymond
8 Bissell
9 Bannard
10 Perrin
11 Freeman
12 Isham
13 Eno

Seated

1. Beers
2 Brown







THE SATANIC SYMBOLISM OF THE SKULL

Artist Elizabeth Stucki 1 has commented on the mask and the skull in modern art and the symbolic meaning. Says Stucki:

"The Skull - Mortality Unmasked

> The opposite of the mask is the skull. The face of the person is a fleshy skin worn between the two. People who deny the person as made in the image of God directly, and individually created and loved by Him, will seek either of these exits to being truly human - the mask which covers the mortal man or the skull which is left after mortal man has departed. Primitive minds who have not yet found God and sophisticates who have rejected Him, desire the mask and the skull."

Collectivist artist Picasso, darling of New York establishment elitists. was also preoccupied with skulls in a manner very similar to members of Skull and Bones. The preoccupation is portrayed by Leo Steinberg in *Art* News, October 1971. Artist Stucki comments on Picasso's morbid interest in skulls as follows:

In 1945, Picasso painted "Skull and Pitcher." Leo Steinberg states that in it "the light's character is consistently altered." The light is as hard as an axe-blade, not softly spiritual. Steinberg also gives the painting a Freudian interpretation of sexuality and interprets the pitcher to be the "receiving part in a Satanic annunciation." He refers to Morgenstern's poetry on sex and the skull. In this article he feels that Picasso projected himself into the skulls. He made eight skulls in one week as a method of mastering his fear o: death. In 1930, Picasso was self-projecting into the Minotaur monsters he painted. He had painted skulls all along; an earlier one in 1907, is in a still-life now in Leningrad. In the same year, he discarded the idea of using a skull in his "Demoiselles d'Avignon." In the mid-1940s, he used it as a mask, on an owl, or on a horse face."

THE HIDDEN DANGERS OF THE RAINBOW

Constance Cumbey in The *Hidden Dangers of the Rainbow* identifies several organizations linked to The Order and the objectives of The Order.

Cumbey identifies Benjamin Creme and the Tara Center based in New York, Los Angeles, Amsterdam and London as a New Age phenomenon. To Creme are linked Unity and Unitarian Church leaders. Unknown to Cumbey, The Order has long-standing and significant links to the relatively small Unitarian Church. In fact, former President William Taft, whose father co-founded The Order, was President of the Unitarian Association in his time.

Cumbey identifies the link between Hitler and the New Age movement and former research by this author linked The Order to the founding and growth of Naziism.

Most significantly, Cumbey states that the New Age movement plans to bring about a New World Order "which will be a synthesis between the U.S.S.R., Great Britain and the United States."

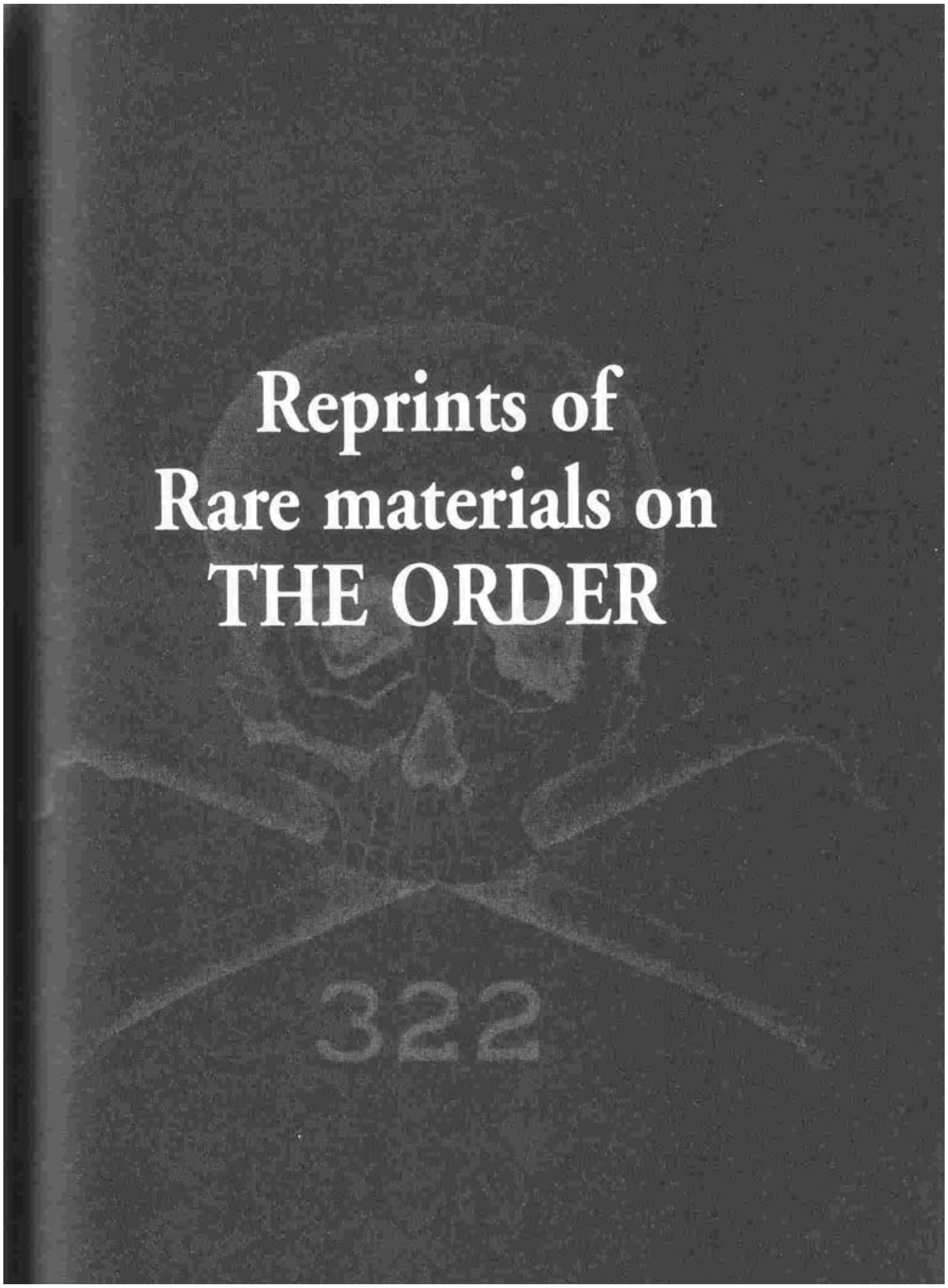
Finally, Cumbey points out that the anti-Christ and satanic aspects are woven into the cult of the New Age movement.

The period is constant at "2" while the Decade increases by one each ten years, i.e., decade 3, 4, 5, etc.

The "D" number is always less than the class number. Up to 1970 by 2 and after 1970 by 1. In other words the first list of members - the class of 1833 was designated "P. 231-D.31."

In brief, the organization started in the United States **was in the third decade of the second period**. So a sensible question is - where does that place the start? Presumably in Germany. The first decade of the second period would then begin in 1800 and the first period would have ended in the decade 1790 to 1800. **That places us in the time frame of the elimination of Illuminati by the Bavarian Elector.**

[1] Margaret Elizabeth Stucki, *War on Light: The Destruction of the Image of God in Man Through Modern Art* (Available from Freedom University Press), p. 7.

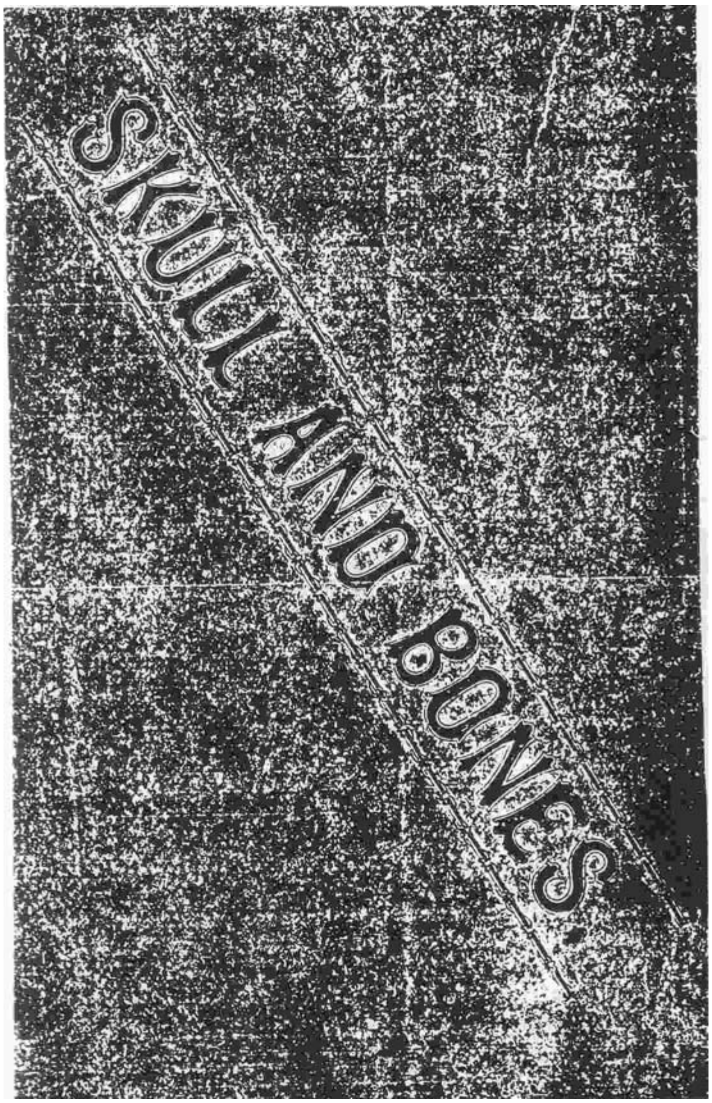

Reprints of
Rare materials on
THE ORDER
322

Anonymous

SKULL AND BONES

No date

An account of the break-in "Bones Temple" 1876.



Let it be stated in advance that this pamphlet is published solely with a view to clear away the "poppy-cock" which surrounds the greatest society in college. It has no malicious intent. The sole design of the publishers and those who made the investigations, is to cause this Society to stand before the college world free from the profound mystery in which it has hitherto been enshrouded and to lessen, at least in some degree, the arrogant pretensions of superiority.

Table of Contents:

APPENDIX

Plan of the Building

PART I. - METHODS OF INVESTIGATION

Any one who was noticing the Bones men of '77, on the morning of Sunday, Oct. 1st, 1876, was probably struck by the crestfallen air which characterized them all. As long as Bones shall exist, the night of September 29th will be to its members the anniversary of the occasion when their temple was invaded by neutrals, their rarest memorabilia confiscated and their most sacred secrets unveiled to the eyes of the uninitiated. We have thought a description of how this was done might be of interest to the collegeworld. The back cellar windows of the eulogian temple were fortified as follows: First, to one seeking entrance from the outside was a row of one inch iron bars; behind them was a strong iron netting fastened to a wooden frame; behind this another row of iron bars 1^1/a inches thick; and still behind this a heavy wooden shutter. Formidable as these defenses appear, we determined to effect an entrance. The work proceeded slowly and it was only after many hours of patient work that one of the outside iron bars was cut into. Next, by means of a powerful claw, the long nails that fastened the iron netting to the wooden frame were drawn out. Then the bar was refastened in it place by means of a little putty, and we retired to wait a favorable nigh: for completing the undertaking; 8 o'clock, Friday evening, Sept. 29. was the time selected. First, one of our number proceeded to remove the iron bar and netting; and then, for the sake of more room, he, with considerable difficulty, got out the strong wooden frame to which the latter had been fastened. Pushing head and shoulders into the opening thus made, there still remained a strong row of 1^1/a inch iron bars. Fortunately, there was no need to file these through. They were fastened above in a thick joist, but below, ran into a brick "damp-wall" that was built up inside and two inches from the stone foundation of the building By the aid of a hatchet, it was the work of but a very few moments to dig away about twenty inches of this wall and thus loosen an iron plate through which the lower ends of the bars ran. Upon pushing this plate inward, the bars all fell out of their own weight; the flimsy wooden shutter was then wrenched from its position, and, at just half-past ten, a-: entrance was effected. Passing in through the window, we broke open the wooden door at the top of the cellar stairs, opened the two iron shutters which close the back windows of the main hall and proceeded to examine the temple at our leisure.

A WARM SUMMER'S NIGHT

witnessed the other entrance and the fuller investigation which enables us to enlighten the hitherto mystified college world about the interior of the recent addition. It also supplied the missing links in the history of the society and the mode of working it, which the previous investigators neglected to secure.

One day in the Spring, a young man happened to be passing Bones hall, late Thursday night, and noticed a gleam of light from the skylight in the roof. Reasoning that where that ray appeared there must be some entrance, sometime afterwards several public spirited under-graduates made the exploration we chronicle.

They got a ladder, which the painters who were rejuvenating the old brick row were using, some stout rope, a dark lantern, a small crow bar, a hatchet, cold chisel and jimmy. One Sunday night, about eleven o'clock, they carried the ladder across the campus and placed it against the rear of the building. One man was stationed across High Street to act as watchman. The others ascended the ladder; previously, however, they took the precaution to remove their shoes and went up in their stocking feet, to avoid all noise. Going over the roof to the skylight, they easily pried it open with the crow bar. The opening would admit them, one at a time. The

rope was tied to the skylight.. Separately, with joy and trembling, the investigators slide down. They were now in the mystic recesses of Bones.

As the result of their investigations is summarized with the result of prior research, we need not go into it more at length here. Suffice to say that shortly before dawn they climbed the rope, refastened the skylight, descended to the ground and put the ladder back where they had got it. It may be safely said that no hearts in the whole college were more Joyful and no sincerer thanks went up in chapel that morning, than from chose daring men, who had taken such great risks to disclose the inner parts of our Yalensian Juggernaut.

PART II - INTERIOR OF SKULL AND BONES HALL

Besides the cellar the temple is divided into two stories Fig. 1 is a rough plan of the cellar:

a a a a - Windows. A - Entrance.
B - Furnace.
c c - Stairways to first floor. D - Jo.
E - Kitchen.
F - Storeroom

There is always kept burning in the Jo a lamp which is ornamented with a dilapidated human skull and a framed set of "Directions to new Eulogians." The kitchen is well appointed, and the furnace a new one. Each dish on the kitchen shelves is ornamented with the skull and bones. Each spoon and fork is marked S.B.T.

On ascending the stairs from the cellar, you find yourself, after bursting open the door C, in a entry, from which a winding staircase (M leads to the upper floor. The door C is of wood, but broken open easily.

H is the outside iron door covered on the inside with a pair of light frame doors. 8 is a small toilet room. D opens into the lodge called 324. is fitted up in black velvet, even the walls being covered with that material. A glass case here holds quite a quantity of memorabilia - among which may be seen a hat said to belong to Pret. Pierson, a number of base balls and several textbooks. G contains two side-boards of mahogany and one large table in the center. Besides these the walls are adorned with pictures of the founders of Bones at Yale, and of the members of the Society in Germany, when the Chapter was established here in 1832' There are also two smaller tables. The glassware, decanters; &c., on the side-board, all have the skull and the bones blown into the glass.

Ascending to the next floor, we come into a long hall (F) . Entering room A immediately on the left is seen a book-case which contains the Bones library and which is very complete, containing about every book of note ever published at Yale. Hanging on the wall toward High street was a handsomely-framed cushion of velvet on which were fastened the pins of every society ever in Yale University. On the south side of the room is a handsome open fireplace and above this a marble mantel a: and a mirror. On the mantel were two casts of the pin; one in silver and the other in bronze - the first about two inches in diameter, the second about three. Several mystical engravings hung on the walls. The room a handsomely furnished. Tobacco, pipes and cards are abundant.

Room B, called 322, is the "sanctum sanctorum" of the temple. Its distinguishing feature is a facsimile of the Bones pin, handsomely inlaid in the black marble hearth, just below the mantel, and also inlaid in marble is the motto: "Rari Quippe Boni," in old English text. This room is ~ furnished in red velvet, and is very luxurious. On the wall is a star with a finger pointed towards it. On the walls of the long hall *F* are hung groups of pictures of each Bones' crowd. H is an old plain lock safe. but contained nothing save a knife covered with blood stains. C is memorabilia room, and contains the old college bell, old boating flags old mss.,&c. D contains two Brunswick & Balke combination tables (billiard) and a `bouffe', beside cue racks &c. E is a Jo and toilet room.

PART III - HISTOLOGY OF THE SOCIETY

Bones has no constitution. Its grip &c., are handed down from fifteen to fifteen. The records though, which are made at each meeting, show all anybody could want to know. These records are profusely illustrated, making an interesting memorial to future Eulogians. Some well-skilled amateur has evidently spent much time illustrating them. The motto "Boni bonis adpacunt" constantly appears.

Bones is a chapter of a corps in a German University. It should properly be called, not Skull and Bones Society, but Skull and Bones Chapter. General R--, its founder, was in Germany before Senior Year and formed a warm friendship with a leading member of a German society. He brought back with him to college authority to found a chapter here. Thus was Bones founded. The 322 on the pin has been commonly supposed to mean, founded in '32 and 2nd chapter. But the Bones man has a pleasing fiction that his fraternity is the descendant of an old Greek patriotic society, dating back to Demosthenes 322, B.C. .he Bones records, 1881 for example, with huge pride, are headed Anno-Demostheni 2203. A secondary date is from the time of the fire in 'he hall or annoconflagrationis, as the records style it.

Immediately on entering Bones, the neophyte's name is changed. He s no longer known by his name as it appears in the college catalogue, but, like a monk or knight of Malta or St. John, becomes Knight so and so. The old Knights are then known as Patriarch so and so. The outside world are known as Gentiles and vandals.

We have tried to prepare this brief sketch without injuring the feelings :r susceptibilities of any PERSON. It has been done through an earnest belief that Bones, as at present conducted, is a blight on Yale College. It makes bitter the time when all should be pleasing. It forms emities and creates discussions when all should be harmony. But, above all, it lowers our standard of honor and detracts from that manliness which is our pride.

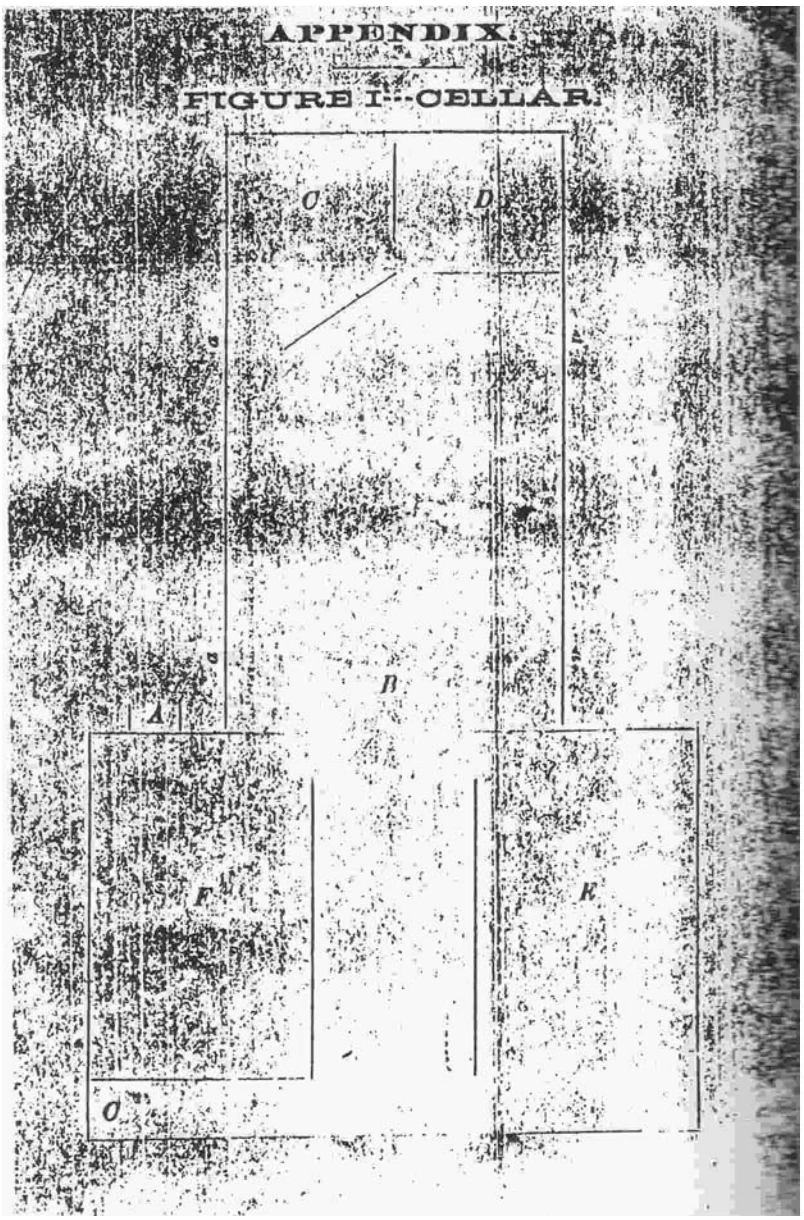


FIGURE II--FIRST FLOOR.

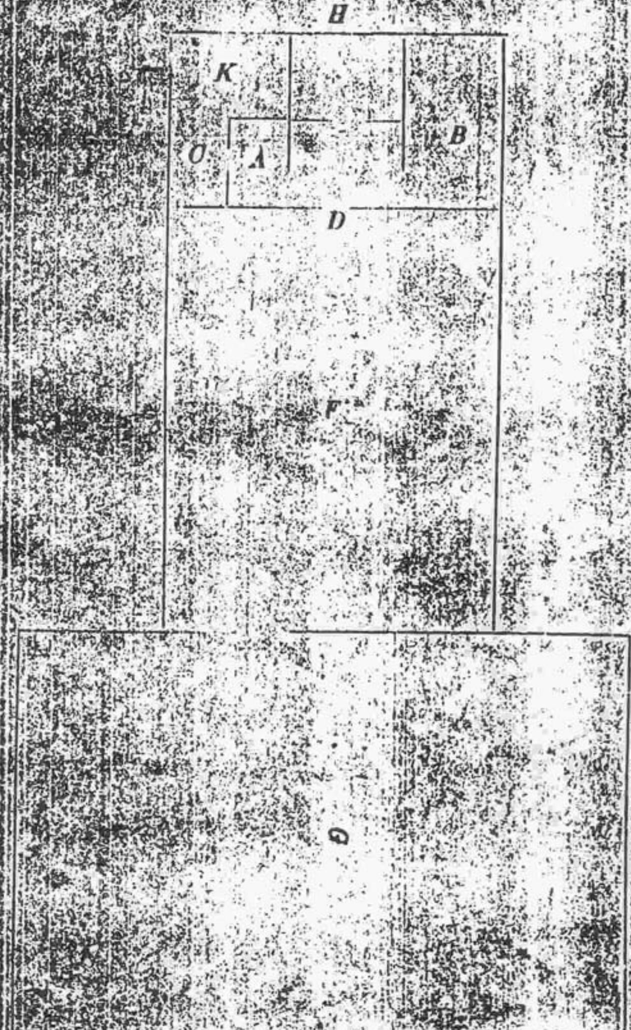


FIGURE III---SECOND FLOOR.



Anonymous
THE FALL OF SKULL AND BONES

Published by The Order, New Haven 1876.

Satirical essay.

THE

FALL OF

SKULL AND BONES.

COMPILED FROM THE MINUTES OF THE 76TH
REGULAR MEETING OF THE

ORDER OF THE FILE AND CLAW.

9,29,76.

De oesibus—quid dicam? Ilium fuit!

NEW HAVEN, CT.:
PUBLISHED BY THE ORDER.
1876.



FILE AND CLAW.

BADGE.

BABYLON IS FALLEN

Anyone who was noticing the Bones men of '77 on the morning of Sunday October 1st, 1876., was probably struck by the crest-fallen air which characterized all of them. At any rate there were those who observed that during the church services their eyes suspiciously scanned the faces of one neutral after another, and invariably dropped if their glance was returned. The reason for this is a simple one. As long as Skull and Bones Society shall exist, the night of September 29th will be to its members the anniversary of the occasion when their Temple was invaded by neutrals, some of their rarest memorabilia confiscated, and their most sacred secrets unveiled to the vulgar eyes of the uninitiated.

We have thought that a description of how this was done might be of interest to the college world. The back-cellar windows of the Eulogian Temple were fortified as follows:

First, to one seeking entrance from the outside, was a row of one inch iron bars; behind them a strong iron netting fastened to a wooden frame; behind this another row of iron bars, one and one quarter inches thick; and still behind this a heavy wooden shutter. Formidable as these defenses appear, the Order of the File and Claw,

having procured a supply of files, skeleton keys, etc., determined to attempt to effect an entrance. For reasons that need not be rehearsed here, the work proceeded slowly, and it was only after many hours of patient and cautious labor that one of the outside bars was cut in two. Next, by means of a powerful claw, the long nails that fastened the iron netting to the wooden frame were drawn out. Then the bar was re-fastened in its place by means of a little putty, and we retired to await a favorable night for finishing the job. Eight o'clock Friday evening, September 29th, was the hour selected.

First, one of our number proceeded to remove the iron bar and the netting, and then, for the sake of more room, he, with considerable difficulty, got out the strong wooden frame to which the latter had been fastened. Pushing head and shoulders into the opening thus made there still remained a strong row of one and one quarter inch iron bars Fortunately there was no need to file through these. It was found that they were fastened above in a thick joist, but below ran into a brick "damp-wall" that was built up inside, and two inches from the stone foundation-wall of the building. By the aid of a claw and a hatchet. It was the work of but a few moments to dig away about twenty inches of this wall, and thus loosen an iron plate through which the lower ends of the bars ran. Upon pushing this plate inward, the bars all fell out with their own weight; the flimsy wooden shutter was then easily wrenched from its position, and at just half past ten o'clock an entrance into the cellar was obtained. Passing in through the window, we broke open the wooden door at the top of the cellar stairs, opened the two iron shutters which close the back windows of the main hall, and proceeded to examine the Temple at our leisure. For the benefit of future explorers, and as a directory for new-fledged Bones men for all time, we will now give a brief description of

THE INTERIOR OF SKULL AND BONES HALL

Besides the cellar, the Temple is divided into two stories. Fig. 1 is a rough plan of the cellar:

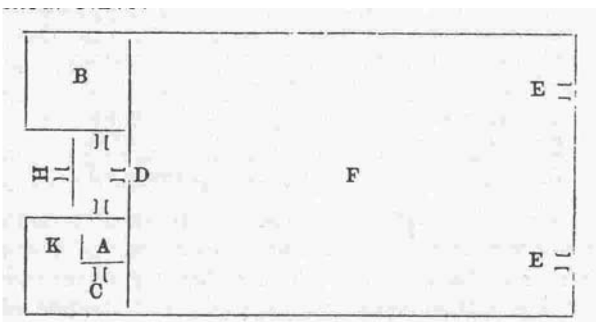


FIG. 2

A light is always kept burning in the Jo (D), which is ornamented with a dilapidated human skull and a framed set of "Directions to Freshmen," signed Thomas Clap, and dated *Yale College, 1752.* Here is also a tombstone marked Sperry, seemingly taken from the same grave as the skull. On the west wall of the kitchen (E), which contained the ordinary conveniences, hangs a picture of Napoleon Bonaparte. In the Pantry (F) are large quantities of dishes, each piece of crockery ornamented with a picture of a skull and crossbone and each spoon and fork marked. S.B.T.

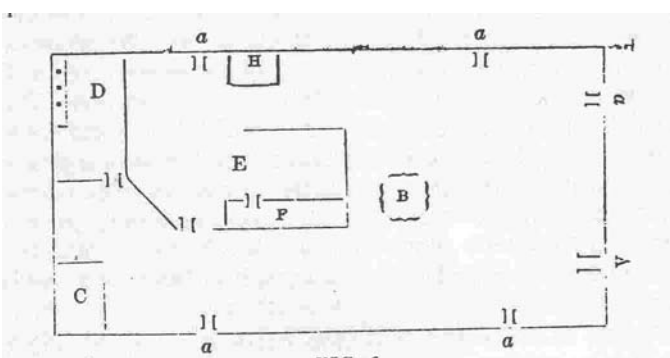


FIG. 1.

A—"Main Entrance."
B—Furnace.
C—Stairway to First Floor.
D—Jo.
E—Kitchen.
F—Pantry.
H—Sink.
a—Other Windows.

On ascending the stairs from the cellar, you find yourself, after bursting open the door C, Fig. 2, in an entry (A), from which a winding staircase (K) leads to the next floor. The door C, which is of wood, we found locked, but broke open without difficulty. H is the outside iron door, covered on the inside with a pair of light frame doors. B is a small toilet room. The door D, which is without a lock, opens into the main hall (F), called by the initiated "324". The floor is of colored tiles; the walls are rather gaudily frescoed, mainly in red and black, somewhat like those of D K hall. A few settees, resembling those in Linonia Hall, and a table, make up the furniture of the room. The wood work is painted white, and, like the walls, is in many places scratched and dirty. EE are two narrow windows, guarded by strong iron shutters. The latter are concealed from view by some light wooden blinds stained to look like walnut. The only objects of interest in the room were a glass case in the southeast corner containing a large number of gilded base-balls, each inscribed with the date, score, etc., of a university game, and a well-thumbed text-book, either a Physics or a Human Intellect, on the fly-leaf of which was inscribed the autograph of Bones' irrepressible annoyer, Arjayjay of '76.
Thus far we had found little to compensate us for our trouble, but on ascending to the next floor, and passing, on our right a little store-room and draw-bridge which extend over the front entrance from High Street, our pains was rewarded.

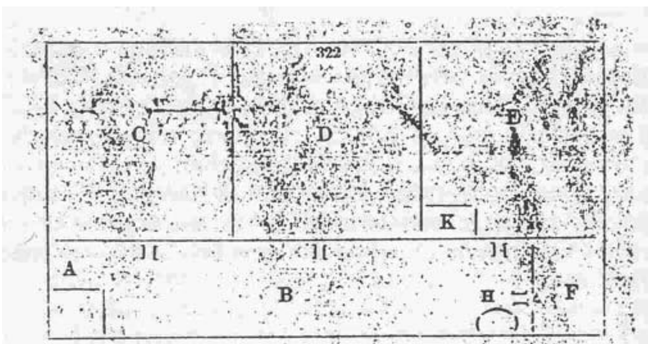


FIG. 3.

A—Staircase.
B—Hall.
C—Parlor 323.
D—Parlor 322.
E—Storeroom.
F—Storeroom.
H—Safe.
K—Closet.

Entering the room C, Fig. 3, immediately on the left is seen a bookcase, which contains the Skull and Bones library, including a complete set of the Yale Lit., handsomely bound college catalogues and books published by Bones men. Here, too, was the Constitution of the Ph Beta Kappa and a catalogue of Scroll and Key Society, containing a list of members down to 1868. It was bound in black, and had on the front cover the letters C.S.P. and on the back C.C.J. In Old English text. For -he year LI only eleven names are given, and for XLII only twelve. It contains several typographical errors, as for instance; D. Cady Eaton's first name is printed Samuel. Opposite the names of the first two Keys men for LXII, some one has written, in a bold hand, the mystic symbol "Ass". And at the top of the page which give the men of LII, is written, "Croud packed by Boies," and Boies is the name of a Keys man of that :ear. From the catalogues we learn that the President and Secretary of Scroll and Key are known "inside" as Chilo and Eumenes, and that, as n Bones, each member has a nickname given him. Some of these are handed down from class to class, of these Glaucus, Prisaticus and Arbaces appear to be the favorites.

Hanging on the wall towards High street was a handsomely-framed cushion of dark velvet, on which were fastened the pins of all the societies which have existed in college, including Spade and Grave, Bull and Stones, and the like. On the south side of the room is a fireplace, and above this a mantel and mirror. Upon the mantel were a Skull and Bones of silver, the skull about two inches in diameter, and engraved "32 from the S.E.C. of 1858;" another of bronze, a **little larger** than the silver one, and various other insignia relating to Skull and Bones. On the west wall hung, among other pictures, an old engraving representing an open burial vault, in which, on a stone slab, rest four human skulls, grouped about a fool's-cap and bells, an open cook, several mathematical instruments, a beggar's scrip, and a royal crown. On the arched wall above the vault are the explanatory words, :n Roman letters, "We War Der Thor, Wer Weiser, Wer Bettler Oder Kaiser?" and below the vault is engraved, in German characters, the sentence;

"Ob Arm, Ob Beich, im Tode gleich,"

The picture is accompanied by a card, on which is written, "From the German Chapter. Presented by Patriarch D.C. Gilman of D. 50" The room is handsomely furnished; tobacco and pipes were abundant, and packs of well worn cards served to indicate how the society manages to ;ill five or six hours every Thursday evening. The pipe-bowls, which are representations of skulls, and bear the stamp of M. Gambier, Paris, nave the Eulogian name of the owner and his decade written upon .hem with red ink; for instance the one belonging to the present Member from Bath" was marked "Trim, D. 75."

Room D, the Bones name of which is "322," is the sanctum sanctorum of the Temple. Its distinguishing feature is a life-size facsimile of the Bones pin handsomely inlaid in the black marble hearth. Just below the mantel, and also inlaid in marble, is the motto:

Bari Quippe Boui

in old English text. This room is even more richly furnished than "323", but contains no book-case, and no pictures of special significance.

On the walls of the long hall B are hung a couple of score of photographs, about 12x20 inches, each representing fifteen Bonesmen grouped around a table, on which rest a human skull and crossbones. As the finish of these pictures is poor and of an antiquated style, it is probable that they are taken each year with the apparatus belonging to the society. H is an old-fashioned plain-lock safe, size about 20x26 inches, and 15 inches deep, set in the wall. It is probably used as a place of deposit for money and valuables, but on the night of the 29th contained only a bunch of keys and a small gold-mounted flask half filled with brandy.

K is a small closet in which are kept unbound sheets of the Bones Society catalogues and a set of handsome memorable books, one for each year. Some of the old memorable is quite curious, and the collections relating to recent years are very complete.

The Bones catalogue is essentially as described in Four Years at Yale.

The doors to E and F, which are used as general storerooms, are protected by plates of sheet-tin, but the locks were not "what we may call" proof against skeleton keys. The memorabilia in these rooms was noteworthy for amount rather than quality. However, in the midst of a good deal of rubbish we found four or five boating flags, and a number of old Greek, Latin and German works in MS. None of these were society records, but works of well-known authors; into the genuine antiquity of the MSS. We have not as yet been able to examine.

In conclusion, we will say that a thorough examination of every part of the Temple leads us to the conclusion that "the most powerful of college societies" is nothing more than a pleasant convivial club. The kitchen contains the materials for serving refreshments for the inner man; there are neither billiard tables nor any kind of musical instrument in the building; there is a total absence of all the "machinery" which we had been led to expect; the bell heard on initiation nights is not "the old college bell;" Skull and Bones has no secrets beyond a few that may be handed down annually by word of mouth, and no written constitution beyond -a few directions similar to the suggestions appended to the Delta Kappa by-laws.

Before leaving the hall, it was asked whether we should inform other members of the college of what we had done, and throw open the hall to the public. We think no one will deny that we had it in our power at one stroke not only to take away forever all the prestige which her supposed secrecy has given this society, but to make her the laughing-stock of all college, and render her future existence extremely doubtful. But while we had no consideration for the mysterious poppiecock of Skull and Bones Society, we nevertheless remembered that some of the Bones men of '77 are our warm personal friends, and therefore we preferred a less radical course. To Bones as a pleasant convivial club, we have no objections. Let her live on as long as men enjoy good suppers and quiet whist. But her mystery and her secrecy are at an end, and we hope her absurd pretensions and her poppiecock are dead also.

The burglary was not discovered until the following evening, at about eight o'clock. All day Saturday the great Skull and Bones lay at the mercy of any one who might notice the back window.

How thoroughly the society was frightened can be seen by the way they have sealed up the window through which we entered, as well as more recently all of the other five basement openings. We have no idea that Skull and Bones will deny that their hall has been entered, for we are not without proofs that our tale is true. We have above spoken of different manuscripts, trinkets and memorabilia as existing in the Temple. In several

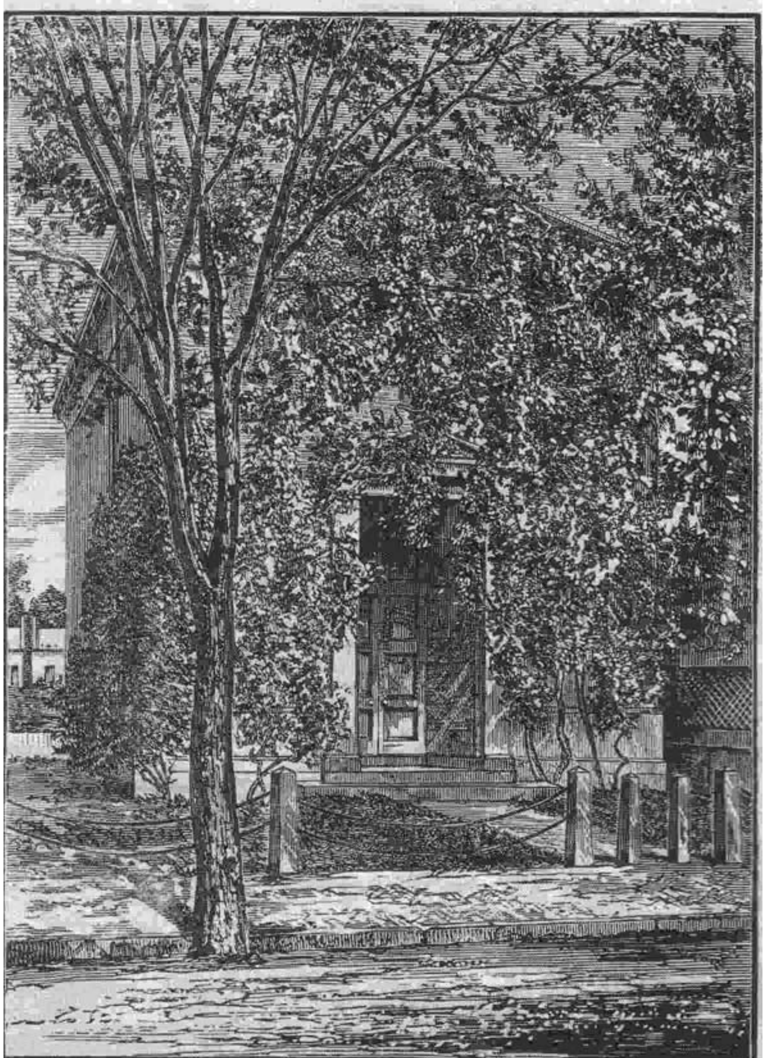
cases we should have written "existed" for the place that knew them shall know them no more forever. In short, while robbery was not our errand, on the principle that the second thief is the best owner we helped ourselves to a few pieces of memorable, which can be put on exhibition, and a few documents which can be printed, should any authoritative denial be made to any essential point in this statement. Nor will Bones usual policy of silence avail to throw discredit upon our story. Part of our memorable has been seen by Senior neutrals, and the remainder will be put where it will do the most good, as soon as the protection of a sheepskin has been placed between us and the Faculty and the law.

YALE COLLEGE, 1877.



SKULL AND BONES.

PIN.



SKULL AND BONES TEMPLE.

Anonymous
THE ICONOCLAST
New Haven, October 13, 1873
Volume 1 Number 1 (All published)
Strong Yale campus criticism of the Brotherhood of Death.

THE

ICONOCLAST.

Vol. I. NEW HAVEN, OCTOBER 13, 1873. No. 1.

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SALUTATORY.

"YOUR object and your reason for thrusting yourself so obtrusively upon us?" is the question with which every one greets a new publication. A few words in our case will be sufficient to answer this query.

Our object is to ventilate a few facts concerning "Skull and Bones," to dissipate the awe and reverence which has of late years enshrouded this order of Poppy Cock, and to enable its character and influence to be fully and rightly comprehended.

Our reason for doing this is, because we believe that false impressions are current concerning this society; because we believe that a society badge does not make a man, or entitle him to extra respect and consideration; because we believe the majority of the students are hoodwinked and deluded by a few outward signs and symbols, and because we believe that Skull and Bones, directly and indirectly, is the bane of Yale College.

We speak of the institution, not of its members personally, although if all were revealed that we know concerning members of Skull and Bones, how some of them wormed their way there, and how others felt after they had entered that tomb to be closeted six hours every Thursday night with those whom they could not respect, we believe that scales would fall from the eyes of many.

We ask our readers to weigh and consider what we have presented on this subject, rejecting what is false, if any, and maintaining what they find to be true.

We speak through a new publication, because the college press is closed to those who dare to openly mention "*Bones.*"

TO WHOM IT MAY CONCERN.

We come before the college now on Justice's side arrayed,
To claim redress for open wrongs that Vandal hands have made,
To give to college sentiment expression bold and free,
Asserting each man's native right, if such a thing there be.

We represent no clique or clan, but honest men and true,
Who never will submit to that which *fifteen* men may do,
Who feel the shameful yoke that long has on the college lain,
And who propose to do their best to break that yoke in twain.

We are not "soreheads." God forbid that we should cherish strong
Desires to be identified with principles that long
Have been a blight upon the life and politics of Yale,—
Before whose unjust aims the glow of "Boss Tweed's brass would pale.

We represent the neutral men, whose voices must be heard,
And never can be silenced by a haughty look or word—
Of those whose influence here at Yale would be but void and null
Did they not wear upon their breasts *two crossed bones and a skull.*

We hold no grudge 'gainst any man, but wish that all may be
United by the common bond of peace and harmony;
Yet, when a *few* do to themselves most proudly arrogate
The running of affairs, there can be no such happy state

What right, forsooth, have *fifteen* men to lord it over all?
What right to say the college world shall on their faces fall
When they approach? Have they, indeed, to "sickly greatness grown,"
And must each one with servile speech them his "superiors" own?

If they have grounds on which they base their claim as just and true,
We challenge them to set them forth exposed to public view,
That all may know the reasons why this oligarchy proud
Elect themselves as lords supreme o'er us, the "vulgar crowd."

We offer no objections to their existing clan,—
No one disputes with them this right, we question but the plan
On which they act,—*That only he who wears upon his breast*
Their emblem, he for every post shall be considered best.

We wish this understood by all. Let none who read this say
That we are moved by petty wrongs or private spite obey;
It is for principles of right that we with them contend,
For principles which they've ignored, but which we here defend.

O fellow students, who with us revere these classic halls,
O ye across whose pathway bright their sacred glory falls,—
Ye men of every class who feel our Alma Mater's care,
Shall college life beneath these elms this loathsome aspect wear?

Shall none assert the right to act as to each seemeth best,
But cringe and fawn to him who wears a *death's head* on his breast?

Nay, let all rise and break the spell whose sickly glamour falls
About all that originates within those brown stone walls.

And if they will not hear our claims, or grant the justice due,
But still persist in tarnishing the glory of the blue,
Ruling this little college world with proud, imperious tones,
Be then the watchword of our ranks—DOWN, DOWN WITH SKULL AND BONES!

BONES AND THE ALUMNI.

It is a world-wide law that a bad institution should either be changed to a good, or wholly removed. We have nothing to do with the fact that evil will work itself out in some way. If a thing be bad, the rule laid down should be applied. The case of changing for the worse we notice, but need not consider here.

Whether an established society deserves toleration, two questions, well answered, will decide. First, is it useful? Second, is it harmful? If the first seems to cover the second, we say that, in a mixture of good and evil, the former may preponderate and warrant our bearing with the evil. But if there be no good, and, beside this lack, real harm, then is the case doubly strong against that institution.

For more than forty years a secret society, called Skull and Bones, has existed in Yale College. It receives a certain number of men from each class. These are chosen nominally by the members of the class next previous, although it is understood that a prominent man's influence avails for his friends and relatives through several years after his graduation. By observing the men elected from year to year, we find that they are chosen with a distinct end in view, namely, that of obtaining for the society the most honors. Some of these honors are given to literary, some to wealthy men. This, then, is the case. Men receive marks of distinction from Yale College or from their entire class, because of which they are taken into this secret society. Since Yale honors men, this fraternity professes to honor them also. There is something in this double action that calls our attention. With respect to the first method, there are several ways in which distinguishing marks are given by the college. Prizes are distributed for excellence in composition or in scholarship. They are small, but are considered well worth striving for. Why? Because to receive honors at the hands of so venerable and respected an institution as Yale College is justly thought a mark of genuine ability. Then, after the college has given what it holds to be a proper degree of attention to worth and effort, this society steps in and by its action says: "Yale College cannot do these men justice. We will receive them into our sacred circle. To wear our gaunt badge is alone honor."

Again, an able man is not unnoticed by his classmates. There are many places of trust to be filled by men of means and executive ability. There are literary distinctions, too, which men receive at the hands of their fellows. One need only attend a few class-meetings to believe that these distinctions are eagerly sought. We often, in Junior year, hear the remark that "such a man's being on such a Committee will take him to Bones." So we are again called to listen to this assertion: "Your class cannot honor you aright. To be a member of our august body is alone true honor."

But what is this high power that thus assumes a place above class and college? It is just what we have said—a series of fifteens. It is made up of men—*mortal men*,—who, whatever their intrinsic worth, can, in the name of the society they form, lay no claim to the power they assume. The men whom they choose have, for the most part, been honored as they deserved. Every year, when Skull and Bones makes up its quota, it offers a direct insult to the succeeding class and to Yale College. Yet intense self-feeling blinds it to its own arrogance.

This, then, is the place which the fraternity fills, in regard to usefulness. In answering our second question, we pass over the many minor evils springing from the existence of Skull and Bones. The influence of continued stress upon members themselves, the discord among classmates, the favoritism shown to Bones men by members of the Faculty, the objections to it as a secret society, all give way before a graver charge. When Skull and Bones was founded, the evil which we are about to unfold did not exist. It is an evil which has grown up—

which is growing to-day. Why is it that Yale College is so lamentably poor?—so poor, indeed, that an officer said: "We do not feel able to have our magazines bound for use." Her powers are cramped in every direction for want of money. Many of her buildings are old and inconvenient. But three classes can find room in her dormitories. Her officers are poorly paid. She cannot furnish the instructors or aid the students she would. Let us not be understood to say that she does not do much. But she is poor, considering her aims and opportunities.

We are told that Yale's Alumni have not wealth to compare with that of the Alumni of other colleges. This idea has prevailed to such an extent that the saying, "Rich men go to Harvard," has become trite among us. Is it, then, true that our Alumni, cannot support the University? *No! it is false.* Her graduates have the power to place her before any college in America, so far as money is concerned. Then why have they not done so? We will show why.

Out of every class Skull and Bones takes its men. They have gone out into the world and have become, in many instances, leaders in society. They shut themselves off from others, and assume to be their superiors. But what return do they give? Let facts answer. They leave their Mother University in want, while they complain bitterly of her calls to them for help. Whether the refusal of the many to give is right, does not affect the matter. The reason stated avails for them. Moreover, no one but a Yale graduate can fully understand the case, just as none but slaves could appreciate the curse of slavery.

To tell the good which Yale College has done would be well nigh impossible. To tell the good she might do would be yet more difficult. The question, then, is reduced to this—on the one hand lies a source of incalculable good,—on the other a society guilty of serious and far-reaching crimes. *It is Yale College aganist Skull and Bones!!* We ask all men, as a question of right, which should be allowed to live?

BONES INITIATION.

When the Faculty prohibited Freshman society initiation in Yale College for this and all succeeding years, because those engaged in it made too much noise and acted in too barbarous a manner, we cannot see why they did not ex-

tend their decree so as to include the initiation in Skull and Bones. On the evening of May 27, 1873, when that ceremony took place in Bones Hall, the noise made by blowing fish-horns, stamping of feet, singing, yelling and howling, by those engaged in celebrating the solemn mysteries of the 322 order, was so loud that it could be heard over in the college yard. A view through the grating in the rear into the basement showed a number of '72 and '73 men stripped to their undershirts and washing off the dust and perspiration caused by their violent exercise. The writer recognized also a Congregational clergyman of this city, stripped to his shirt, who has several times preached to the unregenerate students in Yale College. What was *he* doing there? Is this Bones Hall a place where preachers, professors, tutors and students, such as have been thought worthy to enter the solemn precincts, congregate and have a jolly good time, pulling each other up and down stairs with bladders* on their heads, blowing fish-horns and stamping like the gallery gods in a Western theatre on Saturday night? With what consistency did those members of the Faculty, who are in the habit of visiting the old stone jug, vote to abolish Freshman initiations, while they knew that the society whose badge they wear on their vests, and at times display with pride, is accustomed to practice the same barbarities which by their vote they condemn? Appropriate pastime, is it not, for men of high scholarship, fine literary ability and gentlemanly qualities? stamping and yelling, blowing tin horns and howling, until an unprejudiced passer-by in the street would think that the door to the infernal regions had just been opened and that Davy Satan and all his demons were holding high carnival within. "*Fiat justitia, ruat coelum*;" and if society initiations are to be prohibited on account of their "barbarity," why should Skull and Bones escape?

* The heads of the neophytes are kept covered with bladders until the initiation ceremonies are over.

CAPT. COOK AND THE SENIORS.

IN order to remove the false impressions which pervade not only the college but also the outer world, with regard to the late boating difficulty, we here, though with much reluctance, revive the subject. "Let bygones be bygones," is the well-known maxim, but justice demands a somewhat clearer statement of the matter than has hitherto been made. It is evidently the prevailing idea that a certain portion of the neutrals of the Senior class were influenced in their late action merely by a prejudice against Senior societies, and, therefore, against any of their representatives. This idea is far from the truth. The Senior class will not allow personal prejudices to be a stumbling-block to the interests of the whole college, in proof of which witness their conduct in the choice of the President of the Ball Club. Not a murmur of disapprobation was uttered in this case, for the man chosen is best fitted to further the interests of this branch of athletic sports and to lift it up to a higher level than it now rests upon. In their action in regard to boating matters, the persons mentioned had the common interests at heart. The gentleman whom they desired to see President of the Navy seemed to them the more able of the two candidates proposed, and hence their unselfish, unprejudiced motives in acting as they did.

An impression also exists that the conduct of the Senior class was the result of animosity felt toward the Captain of our last University crew. This we strenuously deny. No one had fewer enemies or was more liked at the beginning of the term than Capt. Cook. To him, as has been said before, belongs the credit of our last and greatest achievement in boating, and to him we ascribe all possible honor and praise. The gentleman whom he proposed, however, did not meet with our honest approbation, and hence the contest,—not against Capt. Cook, but against his candidate, on the part of those who, from three years experience, were better qualified than himself to judge of

the abilities of Mr. Monroe and Mr. Dunning. We are heartily glad that the matter has been so amicably settled and that peace once more reigns.

THE INFLUENCE OF BONES UPON BASE BALL.

AT the close of the first boating meeting of the term, an enthusiast requested the assembly to remain and listen to a few words from him upon the subject of base ball. The speaker deprecated our lack of interest in that matter, and endeavored to raise our spirits in regard to future prospects. During his speech he asked, "Why have men lost their enthusiasm in matters pertaining to base ball?" but could not himself explain the cause, and, as it appeared to many of us, for the reason that, as he himself is a member of the so-called society of Skull and Bones, he was unconsciously blinded in regard to the injurious influences which that fraternity exerts upon ball.

Any one, who has been in college three weeks, knows that a Bones man is not at liberty to speak of his society or pin in the presence of other human beings, and that if reference is made to them he feels deeply wounded and insulted (poppy-cock!). Consequently, those of us who felt that we knew the secret of the lack of enthusiasm, deemed it imprudent to reply to the question, inasmuch as it would have placed the speaker in a somewhat unpleasant situation and have cast a damper on a most enthusiastic meeting. Since, then, that was not the place to express our opinion on the subject, and since we feel assured that our views are not without foundation, we now set forth in these pages the real cause of this universal apathy. Our ideas might have been sent to the college papers, had we not been certain that they would never have been allowed to appear in those publications. A delicate theme like this would not have met with the sanction of the Bones men on the *Record* or *Courant* boards, and, consequently, our piece would have lain in a waste basket. Our only resort, then, is this publication.

In the first place, we would state that the enthusiasm of one Bones man, though it be extraordinarily intense, cannot compensate for the pernicious influences which his society exerts. It may diminish them to a small extent, but it can by no means counterbalance them. His energy would be put to much better use, if he attempted to eradicate the evils of the fraternity and cause it to countenance base ball. Bones prefers to give her elections to the high-stand man and the literary man, as well as to the political toady, while she looks coldly on superior ball men and passes them by in disdain. If it were understood that the best base ball player in every class was as sure of an election to Bones as he who takes 1st prize compositions, would it not call out a great amount of latent talent? When a Freshman enters college, his head is turned in less than a week. He conceives that an election to Bones would be the crowning success of his course. He bethinks himself of the best means of attracting the attention of upper classmen. He lays his plans. According to the characters of the men, these plans are noble and honorable, or base and despicable. Thrice happy are those under classmen whose brains are not crazed by the sight of some haughty and conceited wearer of the Bones pin. But such men are few in every class. Freshmen will stare; Sophomores will not whisper in the presence of a Bones man, lest they should spoil their "chances;" and Juniors will stoop to any servility, if by that servility they can attract the attention of a superior being. Unaccountable as such a state of things may seem, every upper classman will bear testimony to the fact that most collegians are the personification of obsequiousness. Now, it is certain that if under classmen are striving to enter Bones, they will follow in the footsteps of previous successful men. They will study their methods and conform themselves to those methods. It is evi-

dent to all who witnessed the disappointment of '74 when her best ball player—we might add, one of the best players that has ever entered college,—failed to receive an election to Bones, and when men of no merit whatever supplanted him, that that society does not make it a point to encourage base ball. Here, then, lies the evil; all men want to go to Skull and Bones; playing ball will not take them; hence, men will not play base ball to get there.

Their energies will be applied elsewhere. Some play for the amusement they get; others take their exercise in this way; many enter the ranks for the honor of being on the University nine and the notoriety which such a position affords. But not a single soul takes up base ball as a means of helping him to Bones. If there were no such institution as Bones in existence, we might look for more proficiency with the bat. But as it is, the honor of being on the nine is thought far inferior to the glory of strutting round the college yard with a ghastly badge upon one's bosom. Under these circumstances, men in every class who are or would develop into superior players, are led to turn their abilities into other channels. Some seek the retirement of a study and work up high stands; others spend their spare moments in composing essays which tickle the judges and are rewarded with prizes; and some individuals, whose independence is reduced to zero and whose obsequiousness is only exceeded by their capacity for wire-pulling, slide into Bones as a bad oyster down the throat of a fastidious epicure, causing, only after it is too late, a sickening and highly uneasy sensation. Men come to college for the purpose of improving their literary abilities, and when they occupy their spare time in writing, the labor expended benefits them personally; that is to say, they improve themselves by the exercise and receive in addition a reward in the shape of an election to Skull and Bones. The base ball player, on the other hand, who equally needs literary culture, foregoes the benefit he might gain by writing, and spends the three hours a day which he could devote to self-improvement in exercising at Hamilton Park. At the expense of his own mental development, he works for the honor of the whole college, and is magnanimously rewarded with—nothing. Consequently, only those will take up base ball who care little for Bones, and who prefer to spend their leisure time in a pleasant and healthy game rather than in sitting on the fence or card-playing. One of the reasons why Harvard is victorious year after year is that she offers great attractions to ball men to join her classes. More than once has she induced an excellent player, who fitted for Yale, to enter her walls. Our Freshman classes have ceased to bring in fine players, and those who could be developed into prime men by practice, give little attention to the game. To the society of Skull and Bones, then, is this lack of enthusiasm attributable. These opinions are not from one who is unacquainted with the subject in hand, but, on the contrary, are the honest and heartfelt sentiments of a zealous and earnest adherent of base ball. †

"'A sound of revelry by night,"
A sound that seems to tell
That demons wild instead of men
Within its portals dwell.

And often at the dark midnight,
When earth is draped in gloom,
The beings weird are seen emerge
From out their living tomb.

They step so proud, they look so loud,
Their bearing is so high,
That common folk are fain to shrink,
Whenever they pass nigh.

Like spirits from another world,
Down, deeper down than ours,
They seem to come all furnishéd
With dark and deadly powers.

And on their breasts they wear a sign
That tells their race and name;
It is the ghastly badge of death,
And from his kingdom came.

The son of Satan, son of Sin,
The enemy of man,
Still claims these worthies as his own
And counts them in his clan.

The sign they bear, in former days
The pirates of the seas,
The foes of God and scourge of man,
Unfolded to the breeze.

Where'er they steered their bloody barks,
Their pennon stained the air;
They flung aloft the Skull and Bones
And bade the world beware.

Are these the pirates of our day?
Have they with petty crime
Together joined in evil league
In this, our later time?

Strive they to emulate the deeds
Whose fierce and fiendish thought
Upon the outlaws of the main
The curse of man has brought?

Whate'er they be, from whence they come,
Where'er they seek to go,
Their badge defies an honest world
And brands it as their foe.

O! may our Yale so fondly loved,
The Skull and Bones beware;
Avoid it like a faithless friend,
A serpent in his lair.

THE FAVORITISM SHOWN TO BONES MEN.

ARE not we coming to a sad state when open injustice can be done by the Faculty, and when the fact that a man is a member of Skull and Bones can prejudice them in his favor? Briefly, the case which calls forth this question is this: Two members of the Senior class, the one being a neutral, the other a Bones man, returned at the beginning of the college year laden with several conditions, some of which, upon examination, they failed to pass. Up to this point the cases were parallel, and the leniency, if there was to be leniency, should have been shown to the neutral, who has done all that lay in his power to further the interests of the college, rather than to the Bones man, who has, during his three years at Yale, accomplished nothing that we wot of. But, strange to say, the former has been suspended until the end of the term and obliged to leave town, not being permitted to pass another examination until he returns. The Bones man, on the contrary, is allowed to remain in New Haven, attends recitation daily, is called upon to recite, and will have a second examination in less than six weeks. Why is this distinction made? "O, Mr. So-and-so's is a *special* case," said a professor (a Bones man),—the specialty, we presume, being the fact that Mr. So-and-so wears a death's head and cross bones upon his bosom. We understand that Mr. So-and-so claims to have been ill during vacation and offers the illness as an excuse for not passing the examination; but the neutral gentleman was also ill, as the Faculty were expressly informed in a letter from his father.

The circumstance has caused a very lively indignation throughout the Senior class. It is certainly time for a radical reform when the gentlemen who superintend our destinies, and who should be just if nothing else, can allow themselves to be influenced by so petty a thing as society connections.

WHAT KILLED BROTHERS AND LINONIA?

WE put this question to the Corporation and Alumni for consideration. No one doubts that these societies were useful and necessary institutions in connection with the college. No satisfactory explanation as to the cause of their suspension has been offered in the *Record*, *Cour-*

ant, or *Lit*. In No. 2 of the *Record* an editorial consoles the lamentations of the Alumni over the death of Brothers and Linonia, by saying: "As to the causes of that loss of interest various opinions are entertained. But none seems to us so satisfactory as that which finds this cause in the lack of interest in mere speech-making and the rigidly observed class distinctions of these later days." It immediately adds: "We of course know nothing about the case." But what were these "lamentations" at the Alumni dinner? We quote from the *Palladium* of June 27: "J. Wayne McVeagh made a very brilliant speech, which we are sorry we cannot print in full. He made an irresistible plea for the resuscitation of Brothers and Linonia, attributing their death to the lack of fire and enthusiasm which he noticed here. THESE ARE NOT THE DAYS FOR SECRET METHODS. He was followed by Homer B. Sprague, who also asked for the revival of the two open societies." Those who know anything in regard to the history of the college will pronounce the *Record's* reasons groundless, after a moment's reflection. Since the other departments have grown so large, class feeling has been pretty much ignored. In our boating and ball meetings, any one who has anything to offer is listened to respectfully. Since the war, nearly all those customs which depended upon class feeling have been abolished. The *Record* by its "buncombe" stigmatizes one of the most laudable ambitions which an American student can cherish. When we remember under whose management the *Record* is, we know that said empty editorial could only have been written as a sweet morsel to the Alumni. Why does not this exponent of college feeling and opinion give respect to the judgment of many of the undergraduates, perhaps a large majority, and lay the charge where it justly belongs, upon the present society system, and more especially that of Senior year? What has been the deceitful opiate which has put to rest all literary "fire and enthusiasm" in college for the past fifteen or twenty years? Is it not high time that the whole college, Corporation, Faculty, Alumni, students and friends should rise up as a strong man and shake off these shackles which surround us in the form of "Trust Associations?" What necessary part do these independent and obtrusive Trust Companies play in the growth and development of intellectual culture in our midst? If they are an indispensable factor, why not advertise them as such in the college catalogue? We ask then that the Alumni who expect to attend next Commencement will come prepared to make this the topic of the occasion, that they will discuss thoroughly the merits and faults of the new and old systems—that if their verdict is against the former, they will petition the Legislature to recall the charters of these Senior societies as college Trust Associations.

BONESICULA.

Our publication is printed of its present size in order that it may be bound in with the *Record*.

A Bones man of '74 is said to have obtained his election by "knowing how to get drunk at the right time." A most laudable method, truly.

In its issue of Sept. 24, the *Record* states that the *Banner* was adorned with eight new cuts. But, if we are not mistaken, there was a *ninth* cut—"the most unkindest cut of all"—to the Bones men.

Is it not strange, to say the least, that on *Friday* the *Bones* men are invariably called up on the *review* by our Bones professor? Yesterday morning the first *five* men asked to recite were nearest the "crab." The remaining three Bones men in the division were allowed to escape entirely.

A Bones man of '74 is said to have asserted (before he received his election) that he wouldn't give ten cents to be in Bones. We assure him that he might have sold his "chances" for far more than that. He may still be open to offers. Any who care to apply may obtain the gentleman's name by speaking to the editors of this publication.

A gladiatorial contest between a certain dog haunting the north entry of Farnam, and a black cat dwelling in the north entry of South, and belonging to one of the mystic fifteen, will take place, if the weather be favorable, next Thursday evening at eight o'clock, in front of the premises known as 322 High street. Freshmen are advised not to attend, inasmuch as it might spoil their "chances." Immediately after the contest refreshments will be served within the "Old Brown Jug." Admission, free.

Anonymous (Lyman H Bagg)

FOUR YEARS AT YALE

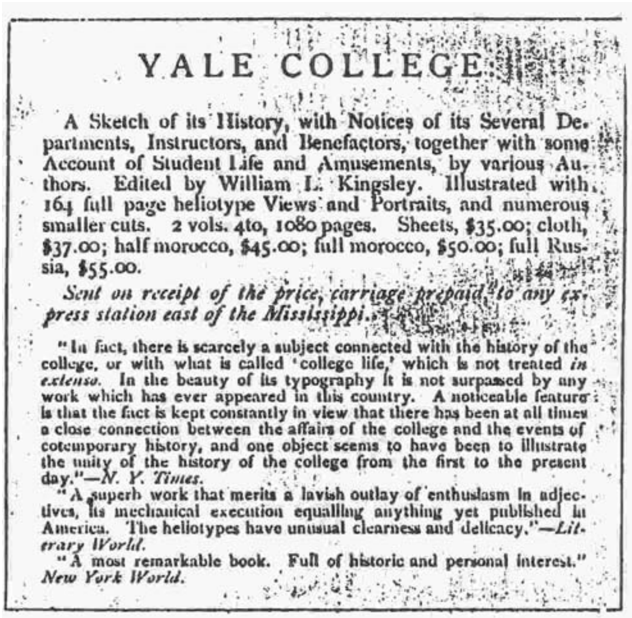
1871 Henry Holt & Company New York
An excellent account of the senior society system at Yale.

FOUR YEARS AT YALE

BY A GRADUATE OF '69

Lyman H. Bagg

NEW YORK
HENRY HOLT AND COMPANY
1871



YALE COLLEGE.

A Sketch of its History, with Notices of its Several Departments, Instructors, and Benefactors, together with some Account of Student Life and Amusements, by various Authors. Edited by William L. Kingsley. Illustrated with 164 full page heliotype Views and Portraits, and numerous smaller cuts. 2 vols. 4to, 1080 pages. Sheets, $35.00; cloth, $37.00; half morocco, $45.00; full morocco, $50.00; full Russia, $55.00.

Sent on receipt of the price, carriage prepaid, to any express station east of the Mississippi.

"In fact, there is scarcely a subject connected with the history of the college, or with what is called 'college life,' which is not treated *in extenso*. In the beauty of its typography it is not surpassed by any work which has ever appeared in this country. A noticeable feature is that the fact is kept constantly in view that there has been at all times a close connection between the affairs of the college and the events of cotemporary history, and one object seems to have been to illustrate the unity of the history of the college from the first to the present day."—*N. Y. Times.*

"A superb work that merits a lavish outlay of enthusiasm in adjectives, its mechanical execution equalling anything yet published in America. The heliotypes have unusual clearness and delicacy."—*Literary World.*

"A most remarkable book. Full of historic and personal interest." *New York World.*

CHAPTER IV.

SENIOR SOCIETIES

Peculiarities of these Societies - Skull and Bones - Its Badge Pin and Numeral - Hall and Corporate Title - Origin - Catalogue - Mode of Giving out Elections - Initiations - Mode of Summoning Members to the Annual Convention - Attendance upon the Regular and Special Meetings - Peculiar Customs and Traditions - Scroll and Key - Its Badge Pin and Vignette - Hall and Corporate Title - Origin and Growth - Customs and Traditions - Spade and Grave - Its Origin, Precarious Existence, Change of Name, and Final Catastrophe - the Societies and the Neutrals - Bull and Stones - The Coffin of '69 - The Tea-Kettle of '53 - Crown and Scepter - Star and Dart - Notable Members of the Existing Societies - Mode of Packing and Making up a Crowd - Comparison of the Societies - Their "Policies," Actual and Possible - Failure of their Imitators in Other Colleges - General Facts about all the Class Societies - Comparison of their Importance in Each Year - General Result of the System.

The societies of the first three years, though possessed of special characteristics, have yet such a general resemblance to one another and to those of other colleges, that their position in the system can be readily comprehended by any reader of these pages, - at least, if he be college-bred. But the senior societies are such peculiarly Yale institutions, that it will be difficult for an outsider fully to appreciate their significance. Nothing like them exists in other colleges; and Harvard is the only college where, under similar conditions, they possibly could exist. In the first place, they are the only Yale societies whose transactions are really secret. Their members never even mention their names, nor refer to them in any way, in the presence of anyone not of their own number; and, as they are all Seniors, there are no "old members in the :lass above them" to tell tales out of school. There is no electioneering nor pledging for these societies, and no Junior is approached upon the subject in any way until an election is actually offered him. The number of elections given out to each class is small and never varies, and no -lass nor honorary elections are ever allowed. Both societies combined comprise but little more than one fourth the members of an average :lass, and the part played by them in politics is simply a negative one. A man's chances for office are never bettered because he belongs to a senior society, but are frequently, for that simple reason, injured or destroyed altogether. The societies do not take their names from the initials of a Greek motto, but from the peculiar emblems adopted as a badge. This badge is constantly worn by active members; by day upon the shirt bosom or neck-tie, by night upon the night dress. A gymnast or coating man will be sure to have his senior badge attached to what little clothing he may be encumbered with while in practice; and a swimmer, divested of all garments whatever, will often hold it in his mouth or ¯and, or attach it to his body in some way, while in the water. Only graduate members wear the badge upon the vest, where for the first few years they display it quite regularly. Old graduates seldom "swing out" except on special occasions, or while visiting New Haven; and members of the faculty, except may be young

freshman tutors, never display a society badge when engaged in their official duties. Members who have ceased to show the badge openly, nevertheless may wear it about them pretty constantly, perhaps by night as well as day, for quite a number of years. The senior societies, in theory, are composed exclusively of "big men"; of those who, for whatever reason, have become preeminent above their fellows in college repute. In this they differ from those of the two preceding years, which of necessity are half made up of comparatively second-rate men. There are a certain number - say twenty - in each class, who, at the end of the third year, may be picked out as the confessed superiors of the others in popular esteem. Were it possible to do this a year or more earlier, and were one junior society preeminently "the best", it is doubtful if the twenty could all be persuaded to join it, or the society to elect them all; for it is plain that their individual political influence would be greater in separate societies, partly made up of less important men. The senior-society type, on the other hand, is an association with no weak members whatever; and the history of the matter shows that unless this ideal is adhered to with reasonable closeness such a society cannot live long at Yale.

There are two of these societies, but as one takes its tone from the other it may be well to describe them separately, and treat first of the oldest and most famous member of the modern system. Its name is "Skull and Bones," - formerly printed "Scull and Bone," - and its badge, of solid gold, consists of the face of a skull, supported by the crossed thigh bones, with a band, bearing the number "322," in place of the lower jaw. Its original badge was a rectangular gold plate, about the size and shape of the present Beta Xi pin, whereon the skull-and-bones design and the numeral were simply engraved. Its wood-cut vignette merely represents the emblems, and is identical with that employed for general purposes in college papers elsewhere. The number "322" is always printed below it, though the size of the type is not invariable. In the cut formally used, the design was smaller than that now than in vogue, but there never has been added to the simple emblems anything in the way of ornament or embellishment. Popularly the society !s known as "Bones," and its members as "bones men". The pin 'sometimes called a "crab" from its supposed resemblance to that animal. The hall, erected in 1856, is situated on High street, near the corner of Chapel, about opposite the Yale Art Building. It is a grim looking, windowless, tomb-like structure, of brown sandstone, rectangular in shape, showing a front of about 35 and a length of 44 feet is, at a guess 35 feet in height. The entrance in front is guarded by a pair of massive iron doors, a dozen feet high, finished off in panels, and of a dark green color; while heavy clasps of brass close over the keyholes and are secured by padlocks, beneath one of which the bell-pull is concealed. Previous to 1864, when these doors were put in position, their places were occupied by commoner ones of iron, upon which the society emblems were displayed. The roof is nearly flat, and is covered with half-inch plates of iron, which in 1867 took the place of the tin before employed. There is a skylight, similarly protected, and the chimneys and ventilators are ranged along the edges of the roof. Behind, are a pair of small windows barred with iron, and close to the ground are two or three scuttle holes, communicating with the cellar. The building is rapidly becoming covered with the "Virginia creeper," first planted there in 1864, and stands back a rod or more from the street, being separated from it by a post-and-chain fence. The dimensions of the lot upon which it stands are about 40 feet (front) by 70 (deep); and total value of the premises must be upwards of $30,000. Before taking possession of its present quarters, the society for many years, - perhaps from its original organization, - occupied a low-studded back room in the third story of what is now the Courant building, opposite. the college yard. At the May, 1856, session of the State Legislature the society was incorporated as the "Russell Trust Association," with the same legal formulas as those quoted in the case of Psi U. The names mentioned in the act were William H. Russell of '33, John S. Beach of '39, Henry B. Harrison of '46, Henry T. Blake of '48, Henry D. White of '51, and Daniel C. Gilman of '52; - the first of whom has since acted as president, the one next to the last as treasurer, of the association. All are residents of new Haven.

The society was originated in 1832 by fifteen members of the class which graduated the following year. General Russell, the valedictorian of that class, is its reputed founder, and the best known of his associates is Judge Alphonso Taft of Cincinnati. Some injustice in the conferring of Phi Beta Kappa elections seems to have led to its establishment, and apparently it was for some time regarded throughout college as a sort of burlesque convivial club. It is said that the faculty once broke in upon one of its meetings, and from what they saw determined upon its abolishment, but by the intercessions and explanations of its founder, then serving as tutor among them, were finally induced to spare it. The popular college tradition, that it was transplanted from a German university, is scouted by old neutral graduates as absurd. But, whatever be the facts as to its origin, the mystery now attending its existence is genuine, and forms the one great enigma which college gossip never tires of discussing. Its catalogue is a unique affair, having a page six inches by four, printed upon one side only. Each right-hand page contains the members of a year - fifteen names indicated in full and

alphabetically arranged - with the residences, printed in old-English text, and surrounded by a heavy border of black. A title page, bearing the society cut and the words "Period 2. Decade 3," precedes the list of the founders, and a similar one, "Period 2. Decade 4," stands before the class of '43, and so on for every successive ten years, the "Period" being always "2", but the "Decade" increasing each time by one. At the top of the first list of names - the class of '33 - and separated from them by a broad line of black, are the characters, "P.231.-D.31," which regularly increase by one with each succeeding class, and are therefore, for the class of 7 1, "P.269-D.69." The first page of the book displays, in full-faced old-English capitals, the letters. "Otirunbeditf," arranged in a semi-oval, between two black lines. The catalogue is black-edged, and is bound in black- leather, with the owner's name and "D.", stamped in gilt upon the cover, - though of late the "D." is less often indicated. It will be observed that the "D." is always two less than the class; thus, a catalogue labeled "John Smith. D.62", would belong to a member of the class of '64, and so on. What these "Periods" and "Decades" and "P.'s" and "D.'s" may signify is known only to the initiated; but, as the catalogue is never shown to out-siders, they were probably not put there for mystification solely. That the founders are put down as belonging to the "third decade of the second period" may seem to make in favor of the German university theory, in the minds of many; and the blank space in place of the eleventh man's name in the list of the founders, may perhaps be thought a straw in the same direction. The last edition of the catalogue was prepared in December, 1870, and was as usual sent out in unbound sheets to each surviving member of the society. The total membership of the 39 classes represented was of course 585.

The elections to this society are always given out on the Thursday evening which precedes Presentation Day. Since no Junior is eve' pledged or spoken to in advance, the excitement which prevails among the "likely men" is intense, though suppressed, as the hour of fate draws nigh. All college, too, is on the alert, to find what the result ma' be. It is said that formerly the fifteen Bones men, at midnight, silentl' moved from their hall to the rooms of the chosen ones, when the leader, in each case displaying a human skull and bone, said simply. "Do you accept?" and, whatever was the reply, the procession as silently departed. As the neutrals got into the way of tagging about, insulting and annoying the society on its march, this plan was abandoned in favor of the less formal one now in vogue. According to this, at an early hour of the appointed evening, a Bones Senior quietly calls at the room of a Junior, and having been assured that "we are alone," says: "1 offer you an election to the so-called Skull and Bones. Do you accept? If the answer is affirmative the Senior - and perhaps the graduate member who sometimes accompanies him - shakes hands with the neophyte, and bidding him to keep to his room for the present, hurries back to the hall to report the result. If the election is refused, the result is likewise reported to headquarters, and influential members are sometimes sent back to argue the case; but, as a rule, the few men who refuse elections are not offered a chance to repent. Bones will not be dictated to, and when a man says, "I accept, in case So-and-So is elected with me," or "in case Such-a-One is kept out," he is never allowed to carry his point; Yes or No is the only answer recognized. Suppose the elections begin to be given out about seven, in case there are no refusals the whole number will be made up before nine o'clock; if there are refusals it may take an hour longer. In anticipation of this possibility, a half-dozen extra men are chosen in Bones, in addition to the regular fifteen, and in case any of the latter fail to say Yes,, elections are offered to a corresponding number of these "second choices," in the order in which they were elected. By going quickly and quietly about their business the Bones men manage to elude in great part the attentions of the rabble, which ranges about the college yard on the night in question, - barring up the entry doors, raising false alarms, and otherwise disporting itself. The names of the chosen men, however, are known about as quickly as the elections are conferred, and many in the crowd make out complete lists of them, for circulation at the breakfast table or in the division-room upon the following morning, when they form the sole topic of discussion throughout the college. Usually, the names are first printed in the Courant of the Wednesday following; though for a year or two past some of the city dailies have had the tact to secure them for their next morning's issue. The initiation begins, after the close of the Wooden Spoon Exhibition, at midnight of the following Tuesday, and lasts till about daybreak. The candidates for the ceremony are assembled in a room of the college Laboratory, which is guarded by Bones men, and are singly escorted thence, by two of the latter, to the hall. As the grim doors open for each new member, there are sounds of a fish horn, as of many feet hurrying up an uncarpeted stairway, as of a muffled drum and tolling bell, - all mingling in a sort of confused uproar, like that from a freshman initiation a good many miles away. Perhaps, while being led to the hall, a candidate may pass between rows of neutral Juniors or other college men, some of whom may "bid him good bye," with expressions of congratulation and good will, if they think his election deserved, or insult and revile him, if their belief goes in the contrary direction. There is usually someone to flash a dark lantern upon each approaching candidate, and, if he makes no other personal comments, to at least shout forth his name, for the edification of the rest. To all this the Bones men of course pay no attention. It

perhaps takes an hour or more thus to initiate the fifteen candidates; and when the self-constituted leader of the outside hangers on announces that "the last man's in", his followers agree that the fun is over, and sullenly disperse. If they stayed longer perhaps they might hear songs sung to strange old tunes, and the tones of the orator's voice, and the applause which follows it, and the prolonged cheers for "the Skull and the Bones". And of course there is a supper. Every resident graduate attends the initiation, as well as many from New York and elsewhere, some of whom come to town as early as election night; and the initiation itself, at least the outside part of it, is conducted by graduates alone. Long ago, it is said, the initiation took place on the evening of Presentation Day.

"The annual convention of the Order" is held on the evening of Commencement. Three weeks previous to this, - which, of late years, is therefore at the time of the first regular meeting, two nights after initiation, - a printed invitation is sent to every living member of "the Club “, whose whereabouts are known. This invitation is upon the first page of a sheet of note paper. Below the society cut is the date - for example. "Thursday evening, July 22, 1869" - of Commencement night: followed by VI. S.B.T.;" a Latin quotation, playing upon the word "Bones"; the signature of the secretary, and the date. Upon the third page is the list of new members, printed alphabetically in old-English text, and surrounded by the black borders, exactly as in the catalogue. of which it in fact constitutes a new "P." and "D." Each one who receives it, by fitting the new leaf to his catalogue, thus keeps the same perfect from year to year. These pages are doubtless stereotyped, and preserved by the society, whose entire catalogue is thus always kept in readiness for the printer. With this invitation and catalogue-page, is also sent a printed slip specifying the exercises of Commencement week. A card-size photograph of the new members, grouped - in front of an antique clock whose hands point to the hour of eight - about a table on which lies a skull, is also sent to graduates, at this time or afterwards. In the picture, the thigh bones are held by certain members, - sometime_ the tablecloth has the emblems embroidered upon it, and the whole arrangement of the group is apparently significant. Official notes to old members are written upon black bordered paper of the catalogue size. with or without the society cut at the head; and society communication= sent through the mails are often enclosed in black-edged envelopes. - bearing at the end a printed request to the postmaster to return them to the society's post-office box if not delivered within a certain time. - sealed with a skull and bones and the letters "S.C.B.," impressed upon black wax. Bones men never display in their college rooms any posters or other reminders of their society, - though it is rumored that actual skulls were formerly used for this purpose, - but graduates often keep on the walls before them a richly-framed photographic group of the classmates who made up their own special "D.", - the picture being simply an enlargement of the card photograph before noted. As specimen jokes from the convention invitations the following may be quoted: "Nisi in bonis amicitia esse non potest" (Cic. de Am. 5.1); "Grandiaque effossis mirabitur ossa sepulchris" (Virg. Georgs. 1497); "Quid dicam de ossibus? Nil nisi bonum"; and, in 1856, at the time of erecting the hall, "Quid dicam de ossibus? (Cir. de Nat. Decorum. II. 55.) O fortunati, quorum jam moenia surgunt!" (Virg. A.En. I. 430). At the head of the editorial column of the city dailies, on Commencement morning, was usually displayed the "322 VI. S.B.T." notice, between parallel black rules, but for the past few years the practice has been abandoned. Up to about the same time printed announcements of the place and time of the Commencement meeting, headed by the cut, were posted about college, and upon the notice-boards of the different churches, a few days in advance. Formerly, too, similar warnings were printed, in connection with the society cut, among the advertisement of the city papers. As their hall is called "the Temple" by Bones men, a current guess - and a wrong one - interprets "S.B.T." as "Skull and Bones Temple". A more likely reading makes "T." stand for "time", and so interprets the notice, "Six minutes before eight", - the hour eight being "Bones time".

The meetings are held on Thursday evening, commencing exactly at eight o'clock, and every acting member is obliged to be in attendance from that time until the adjournment, at two or three in the morning. The society formerly had a way of marching from its hall in dead silence, - tramp, tramp, tramp, - to the north entry of North College, where it might leave a man or two, and so on, silently, in front of the row, growing smaller as it passed the different buildings, until at the south entry of South the few who were left disbanded. Formerly, too, it was customary, before breaking up, to sing a college song whose refrain was, "And I shall be his dad"; but this practice, for lack of voices perhaps, was abandoned some years ago. A Bones Senior is never seen about New Haven after eight o'clock of a Thursday evening. Nothing but actual sickness ever keeps him from his society, except it be absence from town, - and those who have been absent are apt to appear for the first time at Friday morning chapel. A good share of the fresh graduates who are residents, and many of the older ones, are also ordinarily in attendance at the regular weekly meetings. Aside from the annual convention on Commencement night, there are two other "bums" held during the year, - one each at about the middle of

the first and second terms - which bring many graduates from out of town. These usually reach the city just before the meeting, and leave it on the midnight trains, so that their coming and going is not known to outsiders, except from the hotel registers or a chance contact upon the street.

Each Bones man has a nick-name by which he is known to his initiated classmates. One or two of these names, probably official titles. are retained from year to year, but most of them change with the classes, and are apparently conferred according to individual peculiarity or caprice. All members of the society are also spoken of among themselves by a certain general title; another is conferred upon members of the other senior society, and a third is bestowed upon the neutrals. As these titles, especially the latter, might convey a wrong impression if generally known, they are not mentioned here. The society¯itself, among its members, is known as "Eulogia," or the "Eulogian. Club". It is believed to have little or no regard to any formal, written constitution, but to be governed chiefly by tradition in its customs and usages. The hall is reputed to be a sort of repository for old college mementos; like the "first college bell", the original "bully-club", the constitutions of defunct societies, etc., which are all said to be preserved there; and when anything of the kind disappears, this is surmised to be its final destination. Though Thursday night is the regular time of meeting, when attendance is compulsory, the hall is generally frequented on Saturday and other nights also, and is often visited in the day time besides. An old member often goes there as soon as he reaches town, especially, if in quest of information in regard to classmates who were formerly associated there with him. At convention time, the members who cannot in person attend, send to the society such facts as to their whereabouts and occupations for the year, as may interest old classmates and friends; and their letters are filed away for future reference. Every book or pamphlet written by a member is also preserved in the society archives; and its collection of printed and manuscript "Yalensia" is said to be very complete.

To discover the exact meaning of the inevitable numeral "322," has long been a problem for college mathematicians. According to some, :: signifies "1832," or the year the society was founded; others make :c "3 + 2 + 2" or "7," which is said to be the number of "founders" in the class of '33, who persuaded the other eight to join them in making up the original fifteen; still another surmise sets it at "3X2X2", or "12." which might refer to the midnight hour of breaking up, or something equally mysterious; while a fourth guess interprets it to mean "the year 322 B.C.", and connects it with the names of Alexander or Demosthenes. What these heroes may have in common with the Skull and Bones society, aside from departing this life on or just before the year in question, is not very plain; but it is pretty well established that Bones "322" refers to that year B.C., whatever may be its additional significance. While the class of '69 were in college the hall, according to report, was twice broken into by neutrals, and strange stories were circulated of the wonderful mysteries there discovered by the interlopers.

It is probably a fact that these men did really enter the hall, through the skylight in the roof; but there is no reason for trusting their own account of their exploits any further than this, since, if, as is not unlikely, the arrangement of things inside prevented their making any important discoveries, they would of course invent a sufficient number of suppositious mysteries, to clear themselves of the reproach of having venᵗured upon a fool's errand. None of their statements, therefore, have been thought worth repeating here. A surreptitious visit, real or pretended, was hardly necessary as a preliminary to assuring the college ¯.hat "Bones keeps its most valuable documents locked up in an iron safe," since the same fact holds good for every society after sophomore ,.'ear.

"Scroll and Key" is the name of the other senior society, which was founded nine years later than its more famous rival, that is to say, in 1841, by a dozen members of the class of '42. Popularly it is known as "Keys," though this abbreviation has only come into general use within .he last half-dozen years. Its pin, of plain gold, represents a key lying across a scroll, and its wood-cut simply copies it. The design is such that t is difficult to tell the right side from the wrong, and the cut, when printed bottom upwards, as it often is, is rarely noticed as possessing other than its ordinary look. The original badge was a rectangular gold plate, of the same size and shape as the old Bones pin, whereon were engraved an eagle, poised above, suspending a scroll, and a right hand below, grasping a key. This is still worn, by a single member at a time, in :)lace of the usual scroll and key, presumably as a mark of office, like society president or something of the sort. The letters "C.S.P.," 'C.C.J.," are always printed with the society cut, - the former above, ᵗhe latter below it, - and with it usually serve as the only introduction to the lists of members printed in the Banner and elsewhere, though the name

"Scroll and Key" is sometimes prefixed. The Bones lists, on the other hand, are always headed with the full name of the society. The posters which, until within a few years, were put up about the college yard and elsewhere at Commencement season, for the benefit of graduates, displayed an eagle poised above the ordinary emblems, with -o print - in addition to the inevitable letters - except the day and our of the meeting, - "9 P.M.," perhaps, - or the numeral "142," A small, seal-like wood-cut of the society, displays the clasped hands upon an open scroll, with "Adelphoi" in Green capitals at the top, 1852" below, and at the bottom two hieroglyphic characters, the one like a Gothic "T," the other like an old style Greek "T," while the only --ace of the key is its head, which projects from the top of the scroll. Another, steel-engraved, seal, represents the eagle, looking down from above upon the central scroll and key, upon which the letters are indicated, while an open right hand reaches up from below. The framework of the device is made up of fifteen oblong links, and its shape cannot be better described than by saying that if there were sixteen links it would be an eight-pointed star; as it is, the ten lower links make up five points, but the upper five - in place of the six, which would make the remaining three - are simply rounded together. This, too, was the shape of the inner frame-work of the old gold plate badge. The present pin has been said to be plain, because the eagle and hand, faintly outlined upon it, do not change this general appearance. Neither of the senior badges have their owners' names or anything of the sort engraved upon their backs. The invitations to the "Z.S." - or; "bum" held at the middle of the first and second terms - are printed within a scroll like design from which the key is absent; or else with the ordinary cut at the head of the note. The company of the "brother" is simply requested upon the appointed evening, and he is directed to answer the secretary. which officer is designated by the letter "G," and is his "in truth." Aside from these initial letters, there is no mystery about the affair, which is either printed in gilt, or, if in black, has mourning bands about the edges of the page. All society communications are also forwarded in black edged "return" envelopes, as in the case of Bones, sealed in black wax with the society emblems and letters. There have been several editions of the society catalogue; and it is probable that a printed list of the elections is forwarded each year to every old member, in connection with the invitation to the celebration of Commencement night. A card-size photograph of each new group of fifteen is doubtless similarly distributed, either then or afterwards. In this picture, the central figure holds a large gilt model of the society badge, - the six letters being indicated on the scroll, - and each of the end men grasps a large key pointed towards the center of the group. Eight are seated, including the three mentioned, and the remainder are standing, but the position of each individual is probably not significant. Enlarged photographs of the same sort are handsomely framed and hung in the rooms of graduate= The anniversary of Commencement night used to be announced among the ordinary advertisements of the city papers, in connection with the society cut. More recently, at the head of their editor,-&' columns of Commencement morning, "C.S.P. - P.V.S.P.M. - C.C.J.," or something of the sort, appeared, between double rules of black. But this practice has now been abandoned.

The hall hitherto (since 1847, when the house where it stayed was destroyed by fire) occupied by the society is in the fourth story of the Leffingwell Building, corner of Church and Court streets, across from the Tontine Hotel. The headquarters of the Yale "law department" are upon a lower floor of the same building, and a Masonic lodge-room divides the upper story with Keys. Judged from the outside, this hall must at the most be limited to two not very large rooms, and the Keys men, when assembled in force, be cribbed, cabined and confined together in uncomfortably close proximity. This old order of things, however, has recently come to an end, and Keys is now in possession of a hall, far superior in costliness and architectural beauty, not only to Bones hall, but to any college-society hall in America. It stands on the north-west corner of College and Wall streets, and its erection had been planned and talked about for a dozen years or more. At midnight of Thursday, Nov. 25, 1869, - the date of the fall "Z.S.," - the society, graduates and all, marched to the vacant lot, round which they formed a ring, while prayer was offered, and a society-song sung, after which, a graduate with a silver spade formally broke ground for the new edifice. Then came the singing of the "Troubadour" song, and the procession, dangling its keys, silently moved back to the old quarters on Church street. Only the foundation of the building was laid before the setting in of winter; but the work was resumed the following May, and rapidly pushed to completion; and it is presumed that the formal ceremonies of entering and taking possession will be celebrated at the next Commencement. The structure has a front of 36 feet on College street, with 6 feet of ground each side, and is 55 feet long, with an open space of about 20 feet before and behind, in other words, it stands in the center of a lot 48 by 92. Its height is perhaps 35 feet. The light yellow Cleveland stone is the chief material of which it is composed. This is set off by thin layers of dark blue marble, while four pillars of Aberdeen granite, with marble cappings, sustain the three projecting arches in front. Each arch surrounds a narrow opening, provided with three bull's eyes for the admission of air. Below the central arch are a pair of paneled, massive iron doors, to which entrance a flight of half-a-dozen stone steps leads up from either side.

Five similar arches, though without projections or supports, serve to adorn and ventilate each side, and a corresponding number of closely protected scuttle-windows communicate with the cellar below. Rows of short pillars - four at each end, six at each side - surround the top, - the central two at the rear end serving to hide the chimneys, - and a couple of stars are cut out in the stone between every pair of them. The architect was Richard M. Hunt of New York, and the builders were Perkins & Chatfield of New Haven. The value of the entire property cannot be much less than $50,000, and it is to be presumed that a good share of that amount has already been raised by the society. The "Kingsley Trust Association," which is the legal style thereof, was incorporated at the May, 1860, session of the State Legislature, in the names of John A. Porter, of '42, William L. Kingsley of '43, Samuel C. Perkins of '48, Enos N. Taft of '51, Lebeus C. Chapin, George E. Jackson, and Homer B. Sprague of '52, Charlton T. Lewis of '53, Calvin G. Child and Josiah W. Harmar of '55, and Edward G. Mason and Mason Young of '60. These comprise its best known names, and were perhaps chosen on that account, since only the president, Mr. Kingsley, is a resident of the city.

In the Yale Banger of 1845, published by the Sigma Theta Sophomores, is a burlesque of the Keys cut, representing the Scroll as a "Declaration of Independence from the Scull and Bone," signed by the "great seal", which consists of a view of the historical fox reaching after the equally celebrated sour grapes. This probably represents, with substantial accuracy, the motive which originated Keys. Its founder, not being lucky enough to secure elections to Bones, determined to start in business upon their own account, and hence the society. Its ceremonies, customs, hours of meeting, etc., have all been patterned after those of Bones, and the nearer it approaches to its model the more of a success it is judged to be, both by its own members and by the college at large. Its existence for the first dozen years was apparently a precarious one. In only three classes before 1852 did it obtain the regular number of members (15), which Bones has never varied in electing, but ranged from nine - the lowest, in '51 - to fourteen. Since that time exactly fifteen names for each class have always been printed in its public lists, and since 1860 exactly fifteen men and no more have joined the society from each class. Previous to the latter date, it was a common thing to give out one or two or more class or secret elections, so that in some classes there have been seventeen or eighteen members, and almost all the classes which at first fell below the regular number, now appear in the catalogue with their full complement of fifteen names apiece. The men who accepted these after-elections to the society usually displayed their badge like the others, though sometimes the fact of their membership was kept a secret and they were not allowed to wear them about the college, not until after graduation Hence in every class to the present day there are almost always one o• two men, who are believed by many to be "secret members" of Keys. because, being friends of the "crowd," they naturally associate with :as they would were there no such society in existence. It is also rumored, with less probability, that notable men are sometimes chosen as honorary members. George Vanderhoff, the reader, is one of them, according to the authority of the Banger, which, however, may have meant the statement for a joke. Similar rumors are also sometime; started in regard to Bones, but are far less generally credited, and are probably altogether groundless. Certain it is that the fact of there being a secret or honorary member, of there being more or less than fifteen members from each and every class since 1833, has never been in a single case authenticated. Up to as recent a date as 1860, Keys had great difficulty in making up its crowd, rarely being able to secure the full fifteen upon the night of giving out elections, but, by dint of electioneering and "packing" in the interval between that time and initiation night. managed - after 1851 - to swing out the orthodox number of new badges upon Presentation morning. Probably it would have given pledges in advance, like the lower-class societies, save that in those days any one standing the slightest chance for Bones preferred it to a ·'sure thing on" the other society. The true Caesar-or-no-one sentiment seems to have had full sway, and the best men of the class who did not secure Bones elections apparently preferred to go through senior year as neutrals rather than as members of a confessedly inferior society. The proportion of "big men" among the neutral Seniors was consequently much greater then than in these latter days. Keys, in fact, up to the time when it attained its twenty-first birthday, occupied a position in college regard very much analogous to that more recently held by the Diggers' society, to be described hereafter. It is only within the last lustrum that it has come to be a rival of Bones, and that the half-loaf sentiment has grown common, which prompts a man when his chances for the latter are spoiled, to "lay" diligently for the former.

The Keys mode of giving out elections - as well as the rest of its customs - corresponds as nearly as possible to the practice of Bones. Formerly the fifteen members, each carrying a key some two feet in Length, in a body silently marched to the rooms of the men who had . b^e^en chosen; and then the leader - possibly displaying the large gilt scroll-and-key model before mentioned - may have said simply, "Do you accept?" Of late, however, the practice is for two members, - one s Senior, the other a graduate, - each carrying one of the exaggerated

keys, to proceed together to the room of each chosen man. The Senior raps sharply with his key upon the door, and, both stepping in, says, "I offer you an election to the so-called Scroll and Key. Do you accept?" If the answer is Yes, both Keys men shake the Junior by the hand, and --amp back to their hall, where the result of the first election is received before the party start out to confer the second, and so on for the others. On this account the elections progress much more slowly than in the case of Bones, and more opportunities are given to the rabble in the yard to yell "Keys! Keys! Keys!" and surge about the bearers of those implements, whose approach is usually announced, by self-stationed outposts, in the neighborhood of the State House steps. In 1868, all the Bones elections had been given out for more than an hour, and the packed Keys crowd" of '69; had begun to feel a trifle nervous, when the first key-bearers appeared in the yard. There seems to be no very great significance in the order in which the elections are conferred, except that the one first received is perhaps to be interpreted as especially honorable; but on the other hand this is sometimes offered to a man, who is by no means the society's first choice, in order if possible to anticipate Bones in securing him.

The initiation takes place at the same time as the other one, and like it lasts till morning. The rendezvous for the candidates is probably some room in the neighborhood of the hall, at all events is outside the college yard, and as the hall is not so convenient to the colleges as that of Bones the neutrals pay less attention to what takes place there on initiation night. Visitors who may be stopping at the Tontine Hotel on the night of Wooden Spoon, however, seldom sleep very soundly, if their rooms chance to be situated upon the north side of the building. Resident and other graduates attend the initiations, and the regular meetings also. - though to a less extent than in Bones, - and the rule requiring the presence of active members on Thursday nights from eight o'clock till two, is also strictly enforced. An absent member of '68, suspected of make-believe sickness, was one time forcibly hurried off to the meeting by two classmates, who rushed up from the hall for that purpose, with a great display of crossed keys; and the procedure may be gone through with in other instances which excite less attention than did that, - though the cases where it is necessary to enforce discipline are of course uncommon. At the close of its meetings, the society was in the habit of marching up through the green, past the State House, to the college yard, singing on the way, or just before disbanding, the well-known song, "Gaily the Troubadour touched his Guitar." Though this was always finely done, and very acceptable to all who heard it, the faculty - induced, it is said, by the discordant howlings of the "Stones men" - included Keys in the general edict promulgated last year against society : singing, and ordered its discontinuance. The current traditions in regard to Keys are not very numerous, nor is the belief in its mysterious origin wide-spread, as in the case of Bones. Its letters are supposed to signify: "Collegium Sanctum Pontificum; Collegium Conservat Jupiter." Bone; having set up Demosthenes as its patron saint, Keys seemed deter-mined to "go one better" and claim the recognition of great Zeus himself. "Zenome" is one the society words supposed to possess mysterious significance. According to rumor, a magnificent stuff eagle forms one of the chief decorations of its hall; though as this report originated with a '66 neutral who professed to have "been there," not much reliance should be placed upon it. Keys, like Bones, also keeps the photographs of its members, a library, paintings, pictures, obsolete society badges, old college mementos, and general memorabilia.

A third senior society also existed during the time that the class of '6g was in college. Its name, taken from its badge, was "Spade and Grave." The spade, partly thrust into the grave, rested upon the footstone of the same, and upon the headstone was represented a crown, - gold of course being the material of the entire pin. The grave was perhaps a Little more than an inch in length, and the badge had one or two variations in size and shape. The "Bed and Broom," it was at first called by outsiders; and, by the more respectful ones, the society was known as "Graves," and its members as "Graves men." None of these -names were ever popular, however, and "Diggers" soon came to be the on."',;, title by which the society or its members were referred to. Bones men. among themselves, also adopted this name for them. "To give community and sweetness to the eating of sour grapes" was, even more notoriously than in the case of the original Keys men, the object for which the Diggers started their society. The immediate cause which banded them together in the scheme was a quarrel in the class of '64. Of the five Yale, *Lit.* editors in that class, three had been chosen to Bones and two were neutrals. One of these two published, as a leading article in the magazine for February of that year, a piece called "Collegial Ingenuity," reflecting on the mode by which men may worm their way into Bones, and, it was claimed, making personal insinuations against a particular member of that society; and on this latter ground the Bones editors, who formed a majority of the five, voted to suppress the article, and requested its writer to produce another to take the place of it, - themselves meanwhile seizing upon all the printed copies. The neutral editor refused to obey, and called a class meeting which voted to sustain him, and commanded the Bones editors to surrender the magazines with a certain time, or be expelled from office. As they paid no attention to

the order, the class elected three neutrals in their places, and these, with the two original neutral editors, duly brought out a new edition of the February number, "Collegial Ingenuity" and all, and edited the two following numbers, - with the latter of which their term of office expired by limitation. The Bones editors meanwhile issued the February number, - with an explanation of their action printed in place of the obnoxious "leader," but otherwise unchanged, - and duly published the two remaining numbers of their term, still keeping the five original names at the head of the title-page, as if nothing had happened. Thus, for three months, there were two issues of the *Lit.* each of which claimed to be the "regular" one. The Bones editors were really in the right, as the class had no legal power to interfere in the matter, and the three magazines issued by the other editors have been known as the "second issue." The five members of that second editorial board of '64 have the credit of founding Diggers,' and they with ten other classmates first swung out the Spade and Grave badge at the beginning of the summer term of that year. On the Thursday before Presentation Day, elections were given out to fifteen members of '65, who were the first Diggers to have their names in print (in the Banner of the following autumn). The grave scene in "Hamlet," wherein the digger tosses up the skull and bones with his spade, is said to have suggested the badge as a fit emblem to typify the hostility of the new society to the old one and its power ultimately to work the overthrow of the haughty Skull and Bones itself. Its hall was in the Lyon Building, on Chapel street, on the same floor with that of Gamma Nu; was supplied with common iron doors without and a billiard table within; and was reputed to be elegantly furnished, and among other things to have one of its rooms entirely covered with black velvet. 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In February, 1870, as already stated, its premises were taken possession of and have since been occupied by the sophomore society of Theta Psi. Its wood cut was simply a copy of its badge; and the same design, enlarged, carved in black-walnut and mounted in a frame of the same wood, was displayed in the rooms of members, as a sort of poster; though the practice was not much in vogue after the first year or two.

The society started under a cloud, and never emerged from it, but rather seemed to fall deeper and deeper into its shade the older it grew. It was always despised and looked down upon. Even those who joined it, in many cases cursed and ridiculed it by turns, up to the very moment of accepting their elections. In spite of careful packing and electioneering in advance, it always had difficulty in making up its crowd on the same

night with the other societies and it always had elections refused. No one standing the least chance for Bones or Keys could be got to go to it, and the best of those left out by these societies preferred to remain neutrals altogether. Psi U men used to boast that no member of their society ever became a Digger; and the four classes between the first and last were certainly composed exclusively of Delta Phi and DKE men. There was, however, one member of Psi U among the founders, and four in '69 accepted elections, - much to the chagrin of their comrades. Everyone sneered at the society, including many of course who would gladly have joined it had they been able; but the scrubbiest neutral of them all would affect to take offense were such an idea hinted at, and stoutly assert, that, "had the Diggers ventured to offer him an election, he would have indignantly hurled back the insult in their faces!" This show of independence after election time is past is quite a common thing; but the men of '69, even as Juniors, used to shout a sort of chorus, "Todtengraber ist gut," to the tune of "Truncadillo;" they equipped a burlesque `spade and grave" in the college yard one day; and in other ways so defied the powers above them that it became a problem whether the Diggers of '68 could secure any successors. There was the usual amount of electioneering and packing, but on election night only three men could by the most entreaties be secured, from the indefinite number to whom elections were offered; so these three were released and no new Digger pins were swung forth upon the morning of Presentation Day. The next public appearance of the society was on the first Friday morning of the following October, when fifteen senioric shirt bosoms were adorned by as many new badges, the design being a crown from within which projected the ends of a crossed sword and scepter. This was superseded the following term by a larger sized pin of the same pattern. By a pretty thorough canvassing of the class, in the three months' interval, these new members had been raked together, and induced to "run" the society for a year, in the hope that under a changed name the same old story could not be told concerning them. At least half of them were secretly pledged and initiated before Commencement, and wore the old Grave badge during vacation, in localities where they would be unlikely to meet with Yale undergraduates. From the headstone of this old badge, it will be observed, the crown itself was taken. Above the old cut, in the Banner, :he name "Spade and Grave" was printed in full; while above the new crown design were simply the letters, "S.L.M." (popularly translated "Slim" or "Slimy"), which had not before been made public, though reckoned among the original mysteries of Diggers'. Freshmen spoke of ˉ_he society as "Crown and Scepter," or "Sword and Crown," but upper-class men clung relentlessly to the old title, and the doom of Diggers' was sealed. Its usual arts were wasted upon the class of '70 not one of them would pledge, *either* before, on, or after, election night; and so, after a precarious existence of five years, it was forced to give up the hopeless fight and the ghost.

Like Keys', its customs were all modeled as closely as possible after :hose of Bones, which it was to spade out of existence so quickly. Three men always came up from the hall to give out each election, two of the trio walking abreast in front, and the third following close upon their rear. A dark lantern or a club was often carried by one of them. The yell and outcries with which the rabble greeted the approach of Digger election carriers were far more prolonged and uproarious than in the case of the other societies. The Juniors upon whom they called would be invoked with such cries as "Kick 'em out, Jim!" "Oh Tom! Don’ be a Digger!" "Shut your door on 'em Jack! Don't let 'em fool you!" and so on; while the Diggers themselves would be treated to all manner of compliments and personal attentions, such as were never bestowed upon the other election carriers. "How can I leave Thee," was the song sometimes sung outside at the close of the meetings, either while marching, or on arriving at the college yard; otherwise the procession silently tramped up Chapel street to South College, and so on in front of the row, dropping its men at each entry until none were left. It was believed to have had a good many secret members, - even including some from the Scientific School, - and several '63 men are known to have belonged to it. After the change of base in 1868, the graduate members ceased to wear the old Grave badge. The society was unincorporated, and had never printed any catalogue. Its letters were supposed to represent the motto, Sceptrum *Ligonibus* Mors.

Not only do senior-society men never mention their own society in the presence of others, but then never even refer to the existence of a rival society, and when an outsider mentions this in their presence, even to a third party, they appear to take offense, and perhaps withdraw. So, too, they are offended if a man sings, or even hums the air, of the songs which they sometimes sing in public; though these are familiar melodies, and have long been procurable in the form of sheet music.

This same fact holds true, to a lesser extent, in the case of the junior and sophomore societies. A certain air gets in a measure identified with a particular society song; and as members of the society never use it except in singing together, they dislike to hear it whistled by an outsider. A Sophomore, for instance, a few years

ago, by persistently whistling, "AI on a summer's day," would probably have injured his chances of a DKE election; and, in the case of Psi U, perhaps the same would still be true of one who should be constantly humming, "In a few days." Senior society men may also refuse to speak when passing in front of their hall, and in some cases to notice a neutral classmate whom they may chance to meet after eight o'clock of a Thursday evening. An instance is related in the class of '67 of two Bones men who brought from their meeting a sick classmate and put him to bed in his room, without paying any attention to his neutral chum who was there present, though he was also a classmate with whom they were on friendly terms. This exaggerated display of secrecy is quite a modern outgrowth, however, being altogether unknown to the old members of fifteen or twenty years ago. and it attained its highest pitch in the class just mentioned, - since when, senior-society men have conducted themselves much more sensibly. For many evident reasons, the costs of membership in a senior society are much greater than in any other, though most of their money is raised by voluntary contributions, and a man eligible in other respects is not kept out on account of his poverty. On the other hand, a man's wealth of course adds to his chances of election in senior years more than in any other. The annual running expenses of a society, in which graduates take so prominent a part, cannot and ought not to be borne by fifteen men alone, and there are doubtless permanent funds whose income is available for such purposes, - at least in Bones, whose property is fully paid for. To increase this fund, almost every old member sends in an annual contribution, according to his means, for five or ten years after graduation day.

It is in senior year alone that the neutrals largely outnumber the society men, that they have nothing to hope for in the way of class elections. and that they are not overawed by the presence of upper-class men. These three circumstances combine to foster in some of them a sort of reckless hostility towards these societies, such as is not felt towards those of the earlier years. This displays itself in a variety of ways. The conduct of the neutrals when the senior elections are given out has been already described, and the fact notice, at least by implication, that they never in the least interfere with the similar ceremonies of the other societies. Nor yet do they ever attempt to break into the halls of the latter. It was in the class of '66 that this hostility-first definitely displayed itself, in the institution of a sort of a mock "society" called "Bowl and Stones," - the name being a take-off on that of Bones, and the duties of its members being simply to range about the colleges at a late hour on Thursday night, or early on Friday morning when the senior societies disbanded, singing songs in ridicule of the latter, blocking up the entries, and making a general uproar. The refrain of one song, to the tune of "Bonnie Blue Flag" was "Hurrah! Hurrah! for jolly Bowl and Stones;" of another, to the tune of "Babylon," "Haughty Bones is fallen, and we gwine down to occupy the Skull." Another function of the `Stones men" was to offer bogus elections to simple minded classmates, or even to under-class men, - whom they were sometimes able to "sell." In the class of '67 they were at their worst, and wantonly smashed bottles of ink upon the front of Bones hall, and tore the chains from its fence. On the Thursday morning which preceded the Presentation Day of 1868, the Stones men of that class posted up a comic handbill, purporting to show the "order of exercises" which would be observed by the senior societies in giving out their elections that evening. There was some little wit employed in the composition of this notice, and it was the only thing emanating from the "society" that was not at once weak and discreditable. The modified name, "Bull and Stones," then first ap- peared; which form has since been retained. Some members of the class of '70 even went so far as to procure a small gilt representation of "a bull" standing upon "stones," which was worn as a burlesque badge pin, even in public, and in some cases quite regularly, during the first term of their senior year. Of course there is nothing to this "society" except what has been told; its "members" are few or many according to the state of the weather; and any neutral senior who is ready to join a crowd for making an uproar on Thursday night is, from that fact only, a good and regular "Stones man." Indeed, the name has of late come to be accepted as a synonym for any senior-society neutral whatever; and every one not elected to either of the two societies is said to "belong to Stones." At the time of the last initiation, the Stones men seized upon and confiscated for their own use the ice-cream and other good things which the confectioner was engaged in taking into Bones hall. Since then, one or two projected "raids" of the same sort have been frustrated by the presence of a policeman. Now-a-days, Thursday night is the favorite time for the more depraved Stones men to "go off on a bum" together, and afterwards wake the echoes of the college yard with their discordant howling.

That this "society" showed no signs of existence in the class of '69 was perhaps due in great measure to the existence of another more creditable organization, some of whose members would probably, save for it, have been leading "Stones men." On the morning of Presentation Day, 1868, fourteen men, who had been neutrals since freshman year, were noticed to wear upon their shirt bosoms, gilt coffin lids, about an inch in length.

Their names were printed in the annuals of the next term, under the "senior-society" heading, beneath a wood-cut of the badge, above which appeared the letters "E.T.L.," but no name. They were spoken of as `Coffin men," or "ETL's," when mentioned at all. and, so far as known, met quite regularly on Thursday nights, perhaps in some room rented for the purpose. They said nothing in regard to themselves or the regular senior societies, and they attempted to give no elections in the class of'70. The society passed in the class for a jokes but, for the negative benefit it effected in restraining some who would otherwise have been uproarious, as well as for the positive advantages it may have conferred upon all its members, it deserves to be held in grateful recollection. Perhaps somewhat similar to this was the "TeaKettle" society, established in the class of '53, which has left nothing behind it save the announcement of its birth in the Lit. Another short lived association was the "Sword and Crown" which was existing :n 1843 with fifteen members. Its badge was a rectangular gold plate, upon which, within an ornamental border, the appropriate emblems were engraved. These did not much resemble the last badge of the Diggers, as the crown was a much more elaborate and highly ornamented affair, and the sword and scepter were crossed behind rather than within it. An existing poster showing a wood-cut of the simple emblems bears the direct, "S.T.G. 8.30 a.m." Another poster, which perhaps had no connection with this or any other society, shows the three letter= "Iota Kappa Sigma," printed in heavy black type, with "24 D" appended. Still another, represents a naked figure just trundling over - precipice a wheelbarrow in which are loaded a skull and some bone` and a scroll and a key and a star and a dart. The "Star and Dart" society was established in 1843, and apparently occupied a position somewhat analogous to the present one of Bull and Stones, though it really had a7 organization of some sort. The frame-work of its rectangular gold-plate badge was an exact copy of that of the Bones pin, and the emblems of the two societies now existing formed the chief part of the engraved central design. The eagle of Keys, that is to say, was represented as fiercely picking to pieces the Skull and Bones at its feet, while a Dart. appearing in the right upper corner, was about to destroy the eagle, an: a Star in the left upper corner was supposed to denote "the prosper.-; and final success of the society over its rivals." A woodcut copy of this design surmounted the following notice printed among the advertisements of a New Haven newspaper: "Nos in vita fratres sumus. C 2954a F. 8 dd Z DL. There will be a general meeting in New Haven on Thursday evening, Aug. 15, 1944. Yale College, Aug. 10." Possibly there were other Commencement times at which a similar notice was printed, and doubtless posters to the same effect used also to be displayed about the college buildings at such seasons. After a period Cc suspended animation, the society was revived in the class of '49, and the members belonging to it in the classes of '50 and '51 (fifteen in one case, eleven in the other) had their names published in the Banner, in connection with the society cut and the numeral "2954." From this publicity, as well as the character of many of the members, it is to be inferred that there was really a little something to the society, and that its existence was not altogether contemptible. Whether it had a hall of its own, and regular weekly meetings and exercises; whether it made any pretensions to equality with the two reputable societies; whether it was so hostile to them as its badge would imply; whether its crowd was made up before, at the same time, of after the other elections were given out; and whether it died by choice or by necessity, - all these things, on the other hand, must remain uncertainties, until some traitorous ex-member thereof shall reveal to an anxiously expectant world the real history and mystery of the late Star and Dart.

Among the many Bones men worthy of mention are: Henry C. Kingsley of '34, treasurer of the college; Prof. Thomas A. Thacker of '35; Col. Henry C. Deming of '36; Attorney General William M. Evarts, Profs. Chester S. Lyman and Benjamin Silliman, of '37; Rev. Dr. Joseph P. Thompson of '38; Provost Charles J. Stille of '39; Prof. James M. Hopping of '40; Gen. William T.S. Barry and Donald G. Mitchell, of '41; Henry Stevens, F.R.S., of '43; Senator Orris S. Ferry of '44; Ge. Dick Taylor of '45; Henry B. Harrison of '46; Henry T. Blake and Dwight Foster, of '48; Charles G. Came, Profs. William B. Clark and Timothy Dwight, of '49; President Andrew D. White of '53; Dr. John W. Hooker of '54; Rev. Elisha Mulford of '55; William H.W. Campbell, editor of the Norwich Bulletin, Chauncy M. Depew, N.Y. secretary of State, and Prof. Lewis R. Packard, of '56; Gen. John T. Croxton and Prof. Cyrus Northrop, of '57; Addison Van Name of '58, librarian of the college; Eugene Schuyler of '59, U.S. consul at Moscow; Edward R. Sill of '61; and Prof. Edward B. Coe of '62. The most prominent Keys men have already been mentioned in naming its twelve incorporators, but additional names to be noticed are: Gen. Theodore Runyon of '42; Rev. Dr. Gordon Hall of '43; Robert P. Farris of '47, editor of the Missouri Republican; Rev. John E. Todd of '55; son of Rev. Dr. Todd, the opponent of college secret societies; Sidney E. Morse of '56, publisher of the N.Y. *Observer;* Gen. John W. Swayne of '56; Dr. Daniel G. Brinton of '58; Prof. Daniel C. Eaton of '60; and Joseph L. Shipley of '61 editor of the Scranton Republican. Five Keys men and one Digger make up the famous "Wilbur Bacon crew" of 1865.

Formerly, when Seniors took a more active part than now in the junior societies, men who did not belong to these were often chosen to the senior societies, but of late a membership in the former is a necessary stepping stone for admission to the latter; not confessedly, of course, but by the rule which is sure to force a junior society into electing every man eligible for election a year later, and to compel every such man to accept such election. It has been noticed of late years that Psi U generally has a majority in Bones, and DKE in Keys, though in '71 Psi U had six men in Bones and nine in Keys, to DKE's nine and six. It should not be inferred from this that senior-society men allow their junior year or earlier society connections to prejudice them in electing their successors. They apparently have regard for the interest of their senior society simply, and choose those whom they think will most benefit it, without much regard to outside considerations. Much of the excitement over the election of Cochs and Lit. Editors turns upon the question of senior societies. Each one of these officers is supposed to "stand a chance," and shortly after their election the two "crowds" begin definitely to be made up. There are always some "sure men" to form a nucleus, - the Spoon Man for instance, is always certain of receiving a Bone selection, - and about these the "Likely" ones who are not quite so "sure" try to "pack" themselves. Thus a "crowd" is made up in the interest of each society. Its members "run" together constantly, call one another by their first names, and make a great display of familiarity, - especially in the presence of "their" Seniors, - as much as to say, "We can't be separated. Take all of us or none." This sort of thing is practiced chiefly by prospective Keys men, who can make up their crowd with a tolerable certainty that their evident wishes will be respected by the society. It is seldom that Keys ventures to keep out more than a single man from a well defined pack, and substitute one of their own choosing in his place. Such a pack really has the power in its own hands, and should the members of it agree to "stand by one another" they could of course carry their point; but the refusal of a senior-society election, even conditionally, seems so terrible a thing, that they have rarely the courage to make a direct demand. Keys, however, has in some instances been obliged to submit to such dictation. The society undoubtedly winks at "packing," and indirectly gives it on occasions its official aid, - though not as frequently nor as extensively as is sometimes reported. There are so many conflicting elements in the Bones crowd that it is never organized into a regular pack, and there is always more doubt as to the way its elections will turn. The nearest approach to a pack is when two or three "sure men" take it upon themselves to persistently "run" another, and make such a display of their fondness for him as to secure his election also. However Bones may allow its action to be affected indirectly, it will not be dictated to when once its elections have been made up, and it is useless for a man to attempt to alter the result by conditionally refusing his election, in favor of or against some particular classmate. Though the Bones crowd may be pretty accurately guessed at for some days before the elections are issued, it is the chance of its individuals which are estimated, not of the crowd as such, as in the case of Keys. There is no such general collusion of all the members of the Bones crowd; it is rather made up of separate cliques of two and threes, and single individuals, who hope for Bones elections, but have not much else in common. The fact that elections to this latter society have been refused in favor of Keys is hence not very difficult of explanation. A man whose chances for Bones are rather doubtful may be willing to throw them away altogether for the sake of the comparatively "sure thing" which he gains by joining a pack for Keys. So, receiving an election to Bones, he is in honor bound to decline it, and cling to the men with whom he had joined his fortunes. It will be found that all the Bones refusals in '67 and '70, over which so much ado was made, came in every case from men previously packed for Keys. Thus, Bones' greater independence and ceremoniousness sometimes work to its own disadvantage. A man may go to Keys for the sake of taking a friend or two with him whose companionship he could not be sure of were he to become a Bones man; and in general one has less uncertainty as to whom he will have to fraternize with when he packs for the former society.

In a direct comparison of the societies, it is seen that Bones in reputation, influence and prestige is altogether superior to its rival; and it seems almost as certain that it must always retain this preeminence. It is, in its main features, essentially unique. No other college society can show so large a proportion of distinguished and successful members. It is probably not too much to add that of the Yale graduates of the past generation who have attained a fair degree of worldly eminence, nearly half will be found to have been included within the mystic fifteens of this organization. Its apparent aim is to secure at once the best of the good scholars, good literary men, and good fellows; the former to bring it dignity and "tone," the latter to preserve its social and convivial character; and its success in equalizing these three elements - one of which is apt to predominate in a society - has been remarkable. It develops in its members, too, a genuine pride and affection, such as they feel in or towards no other society. Men who are careless and frivolous and selfish as to everything else, manifest an earnestness and a generosity where Bones is concerned, that is really surprising. And this, too, in a way not calculated to attract attention, nor suggest an appearance of exaggeration or make-

believe. Keys men, on the other hand, are rather given to displaying their society zeal as much as possible. Old members who come from abroad to attend the "bums" are apt to make their presence generally known, and take pains to exhibit the extent of their "interest." Their affection for the society is no doubt genuine enough, but their carefulness in displaying it suggests the idea that its inspiration comes quite as much from an oppressive self-consciousness of the need of "going one better" than Bones, as from the simple force of pleasant associations. Since the time, say about 1860, when Keys came to be recognized as a reputable society, settled upon an invariable membership of fifteen, and ceased to give out any class, secret, or honorary elections, its policy has seemed to be the making prominent of the social elements, the choosing of good, jolly fellows, - men of ability if possible, but at all events congenial and in the college sense of the word gentlemanly. Ability in the absolute, that is to say, has been accounted of secondary importance as a qualification for membership. Upon a strict and more rigorous adherence to this policy in the future - if it be worth while to express a prevalent college opinion - the success of the society will in great measure depend. In the latter's own chosen field, it can never hope to seriously rival Bones. To the "solid," thoughtful men of the class - the big scholars and writers - Bones will always be the more attractive, and if Keys enters into competition for them it will as inevitably have to take up with second-rate representatives of the "heavy," "respectable" element, at the same time that, by this very action, it renders itself less alluring to the "popular men," who are and should be its "best hold." If, on the other hand, it has the tact to depart for once from its Bones model, and set up an independent standard of qualifications of its own, it may in time gain in its own particular field a recognized pre-eminence. Keys' real "mission," as it seems to an outsider, is to draw together a genial. gentlemanly crowd, rather than an "able" one. If a pleasant, agreeable fellow chances to be possessed of something more substantial than popularity, - if besides being a gentleman, he be also a scholar, a writer, and energetic worker, - he should of course be all the more desirable; yet the first mentioned, more trivial, qualities should be regarded as the essential ones, after all, which recommend him for election. Ability, real or reputed, should never of itself elect a man to Keys. The prestige the society may gain by taking a man simply for his reputation cannot make up for what it thereby loses in attractiveness for "popular men." Keys' great opportunity is, by excluding all others, to make itself the most desirable society for the agreeable, jolly fellow in every senior class. If it resolutely adopts this "lay," it may, with the help of its hall, ere many years, leave bones in the lurch, so far as "popular" men are concerned; and, by occupying an independent field, prevent the possibility of direct comparisons which must always be to its own disadvantage. This seems so manifest that nothing but a foolish overconfidence in its own strength can induce it to engage in a "straight fight" on Bones' own chosen field, where, with all the odds against it, it must ever suffer defeat. Bones, on the other hand, would do well to consider whether it will be worth its while much longer to take in men for their popularity and agreeableness simply. It is just here that it has met with its most humiliating rebuffs hitherto, and that it is likely to meet with worse ones hereafter, unless it changes its policy. Four of the five '70 men who rejected; Bones in favor of Keys, were simply "good fellows," who would have been somewhat out of .their element in the crowd of the former society; and the case in the class of %7 was very similar. If Bones should insist more strongly than now upon ability as a prime essential in all its members, and upon this basis, modified by a reasonable regard for social qualities and harmoniousness, elect them, it would secure itself almost absolutely from having an election rejected, as well as add to its own lasting reputation, - even at the sacrifice of one of its cherished traditions, which it has managed to perpetuate thus far on the whole with a fair share of success. Whether Bones makes this concession with good grace at the outset, or waits to be forced into it by the success of Keys, when the latter shall turn all its energies upon this one point, remains to be seen. But appearances certainly point to the coming, at no distant day, of what may be termed a senior society millennium, when Bones and Keys shall each occupy an undisputed field of its own, and each be recognized as in its own sphere preeminent; and when the only question in a man's mind shall be, "In which field, on the whole, is supremacy the more desirable?" Then shall the Death's head be, even more certainly than now, the badge of intellectual superiority in college repute, and the unfolded Scroll be, even more invariably, the emblem of gentlemanly good fellowship and social popularity.

It was remarked at the beginning of the chapter that societies like Bones and Keys would be possible only at one other college than Yale, and that as a matter of fact they are peculiar to the latter institution. They are not, however, without imitators. At Columbia College is an "Axe and Coffin;" at Michigan University an "Owl and Padlock;" and at Wesleyan University are a "Skull and Serpent" and an "Owl and Wand." None of them are of any importance, and with the possible exception of the second, are in every way inferior to the Greek-letter societies connected with their respective institutions. There is no special difficulty in imitating the peculiar names and mummeries of the Yale senior societies; but the gaining of a similar prestige and influence

is quite another matter. It is the high character of their members, not their names and forms and ceremonies, which give the Yale societies their fame. It was a belief in the power of these latter non-essentials that induced the Diggers to persist so long in a worse than hopeless fight. At Yale, the strictly class societies of the first three years supply the machinery by which every class is carefully sifted and its best men are "brought out" in readiness for the senior societies. Yet even here, with from one hundred to one hundred and twenty men to pick from, and the three years' sifting process reduced almost to an exact science, it has been absolutely demonstrated that no more than two societies, of fifteen men each, can exist. Indeed, it was for a long time a problem whether more than one could live, and even now the two, to be at their best, must occupy somewhat different fields. But at other colleges, where no such class system prevails, where the numbers to select from are much smaller, where the competing societies are more numerous, the attempt to ape Bones and Keys can succeed in nothing save in making the would-be societies ridiculous. In view of their real worth, people may be willing to overlook the silly practices of the Yale senior societies; but when mock mystery and cheap ceremonials are the only things which a society has to boast of, it cannot well help falling into contempt. The statement is therefore again repeated that Bones and Keys are peculiarly Yale institutions, genuine out-growths of a system that flourishes nowhere else, the only organizations of the kind existing in the country.

In concluding this account of the class societies, it may be well to add a few additional facts that are true alike of many or all of them, and to compare directly their general character in the different years. Each society, save Gamma Nu, has a "grip" of its own, but society men, in either of the four years, do not generally employ it in greeting one another. It is not a popular device with them, and comparatively few would be able, a year or two after graduation, to give the four different grips correctly, were they to try. Many of the active members, even, of these societies cannot remember their grips without an effort, and in junior year, when visitors from other chapters are expected, there is need of some preliminary practice before the guests can be welcomed in true mysterious fashion. At other colleges the society grips are constantly made use of, and when a Yale man who has forgotten his grip meets an outside brother he extends his hand with all the fingers separated, and returns the grip that he receives, in full faith that he has given "the right one" and concealed his ignorance. It is easy enough for an outsider to find out from someone or other the reputed grips of the dozen or less societies, and it is more than likely that these are really the true ones in many cases. But the whole matter is made so little of by Yale men that none of these peculiar hand shakings are worth describing. In the published report of a recent DKE convention, that society announced that it had adopted a new grip and motto, - presumably on account of the discovery of its old ones, and probably at the instance or - the outside chapters. Whether the changes were really made, or the announcement offered simply as a "blind," the result was of course the same. The only two Yale society mottoes that seem to be unknown to outsiders are, oddly enough, those of Delta Kap and Theta Psi. That or the former used to be, *aavpo; Kevqw;,* and was as well known as Sigma Eps' is at present, but the one which superseded it and is now invogue has been by some miracle prevented from leaking out. Every junior society man can find out without much difficulty the mottoes and "secrets" of the other societies in his class, but he feels in duty bound not to make public his knowledge, and the neutrals are generally in ignorance of these matters. At Yale, one society never thinks of breaking into the hall of another, and making public all its mysteries, as is the practice at some of the smaller colleges. It is through these that some of the Yale junior-society secrets are divulged. Chapters which think it a fine thing to steal the constitution and documents of as many rival societies as possible, when they chance to gain those of societies which are also rivals at Yale, may forward to their brothers at the latter place their ill-gotten knowledge: knowledge which the latter are usually honorable enough to keep to themselves. It is only in the songs of the first two years that the societies mention the names of their rivals - to ridicule them, of course, but in a good natured way. A secret ballot, upon each candidate separately, in which a single blackball rejects, is the mode of election in all these societies. Every society has a janitor whom it allows to wear its badge. While '69 was in college the same individual was at once janitor of Delta Kap, Theta Psi and Psi U, and wore either one of the badges indifferently, though never displaying two at a time. A senior-society janitor is not allowed to serve for under-class organizations. The present Bones janitor is a negro named Robert, who assists the professors in the experiments at the philosophical lectures, and is a sort of college supernumerary. His predecessor, also a black man, died in the service, and was followed to his grave by the whole Bones society, resident graduate, solemn professors, and all. The societies of the two upper years have boxes at the post office wherein is placed all mail matter directed either to their popular or official, trust association, titles. A letter directed to either of the lower-class societies is exposed to view beside the general-delivery window, until discovered and called for by one of the members. Society men as a rule preserve all their badges, - sometimes, in senior year, mounting their previously gained insignia in a velvet-lined, ornamental frame or case. Quite a

number of freshman pins are disposed of, however, when the time for wearing them is past, and some sophomore and a very few junior badges go the same way, but a senior-society pin is kept by its owner until death doth them part. By other college men their junior-society badge, usually the only one they ever possess, is as a rule always preserved, and is in many cases steadily worn for some years after graduation. Yale men, who were senior neutrals, sometimes display their junior badge, on special occasions, after graduation, but never the pin of lower society. When a Freshman leaves college he usually takes off his society pin, but a Sophomore, if a society man, is likely to wear his badge for some time after his withdrawal.

In taking a general look at the societies of the four years, the first seems a working ground where Freshmen may display their abilities, and induce the Juniors to pledge them; the second, a place where these pledged men as Sophomores may be kept quiet until they are further inspected, and the poor ones got rid of; the third, another working ground of narrower limits, where the select Juniors who have passed safely through two sifting processes may, by making the most of their talents before the Seniors, prevail upon the latter to spare them in the last grand turn of the sieve, and elect them into the fourth, beyond which there is nothing higher. It is a fault of the system that each society save the last is only a stepping stone to the next, and when the last is reached the time left to enjoy it in is short indeed. The size of the classes, and the class feeling thereby engendered, makes any other system impossible, while the system in turn tends to strengthen and perpetrate the class feeling. From his freshman society, a man usually gains considerable solid advantage, and a fair amount of pleasure. The direct benefit of a sophomore-society experience is not very great, and a man loses less by being a neutral this year than any other, - sophomore neutrals being often elected to senior societies, - but still. he does lose something, both in a peculiar sort of "fun," and in general social position. In a third-year society the advantages are many, and are of a general as well as local character. The occasions thus afforded for members of different colleges to fraternize together, the opportunities given for making pleasant acquaintances at unexpected places, are evidently of considerable value. A man's interest in his junior society is not as intense or as lasting at Yale as at other colleges, yet it is altogether greater than that which he feels toward any lower-class society. One Yale graduate would not be apt to claim introduction to another on the score of belonging to the same junior society, yet, once acquainted for some other reason, this fact would form a sort of bond between them. The attempt to make an outsider realize the overwhelming fascination. which a senior society exerts upon the mind of the average Yale undergraduate, would probably be useless. An election thereto is valued more highly than any other college prize of honor; and in fact these honors derive a good part of their attractiveness from their supposed efficacy in helping to procure the coveted election. There is nothing in the wide world that seems to him half as desirable. It is the one thing needful for his perfect happiness. And if he fails in gaining it. the chances are that he becomes a temporary misanthropist, that is to say, an ardent "Stones man." Though the advantages of membership are no doubt exaggerated in anticipation, the real benefit gained in belonging to a senior society is certainly considerable, - far more valuable in fact, than that which accrues from membership in any other. Quite aside from the enjoyment of the senior year itself, the facts that in after life a man is thus introduced to the best graduates of the college. wherever he may meet them, and that, whenever he visits New Haven, he is sure of being entertained by the best of the oldest undergraduates. and instructed as to the doings and whereabouts of the best of his former classmates, - these facts, other things being equal, of themselves make membership in a senior society especially desirable. College friendships do not at Yale run very closely in society lines. A pair of friends may be brought together or separated by almost numberless society combinations. They may belong to the same society in each of the four years, or in the first and last, or in the second and third, or in none at all, or one may be a society man and another a neutral for all the course, and so on through all the possible permutations. Still, it is pleasant for friends to keep in the same societies, and a general tendency of certain crowds to go together, year after year, has been already remarked upon. No neutral as such is looked down upon or avoided by society men. If the latter usually "run" together, it is because of similar tastes and proclivities, which would induce them to do so, were no societies in existence. In senior year there is hardly a society man without one or two special friends who are neutrals, and with whom he has quite as much to do as with his own regular associates. Such pairs often chum together than do - two from rival societies; though this sometimes happens and previous to senior year is not at all uncommon. Aside from a man's real or reputed ability, good nature, and popularity, a thing which often helps to elect him is his relationship to a former or active member of the society. If a father or an uncle or a brother has preceded him, the fact helps him to follow in their footsteps, especially if they were in any way famous. An older brother in the class above, or even one or two classes removed, is almost certain to secure the election of a younger one, unless the latter is peculiarly unqualified or obnoxious. This species of favoritism attracts the most attention in the case of the senior societies, into which nearly every year, by his relationship with an older

and worthier member, is dragged one man at least who is without other qualifications sufficient to recommend him. The cases of poor men taken in are, by the bye, a good deal more common and noticeable than those of desirable men left out. Every year almost there is a great show of indignation over the injustice in the senior-society elections which bring several big men to grief, yet it rarely happens that the good policy of the society in leaving them out is not vindicated within a twelve month. When fifteen men are to be shut up together for six successive hours, every week, and be thrown in with each other constantly, it is essential that they should be reasonably harmonious if not congenial; and an organization whose members should be chosen for their reputation and ability simply, could not be in the right sense of the word a society.

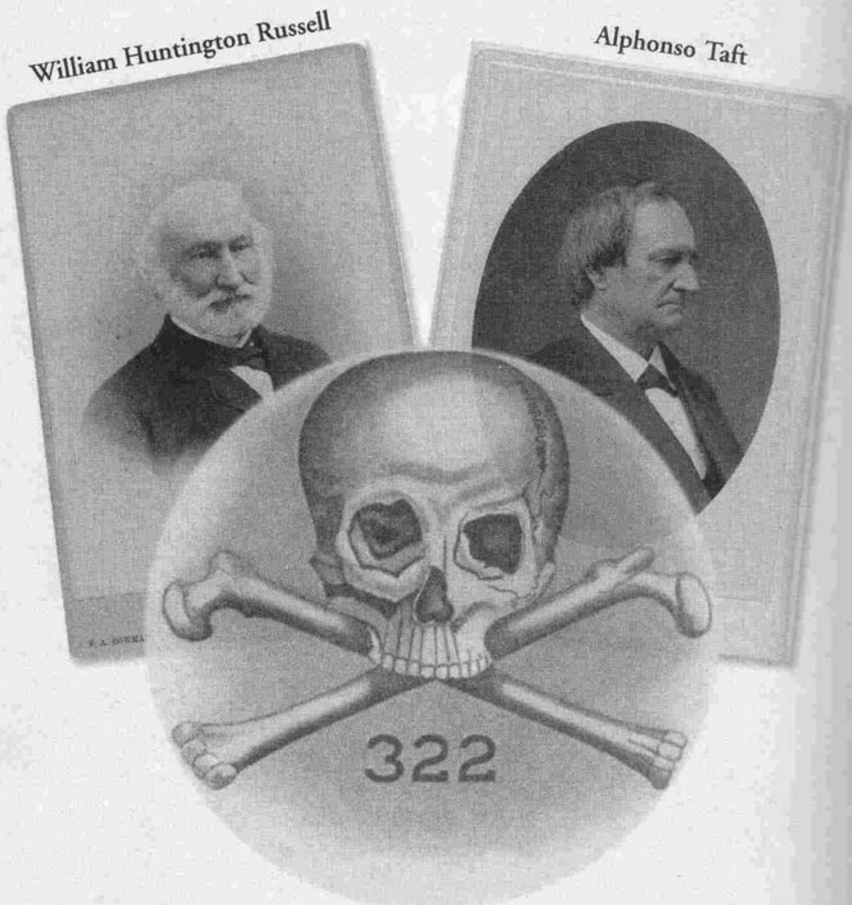
Without now discussing whether college opinion always awards men the positions they deserve, it may be said, in conclusion, that the society system, viewed as a means for separating those who, for whatever reason, are high in college esteem, from those who, for whatever reason, are not, must be admitted to be in the main a fair and successful one. No one can reasonably deny that it has this effect, and that the society men of every year are as a class superior in college repute to the neutrals. It would of course be foolish to judge an individual solely by his society connections, but it would be far less foolish than to judge him solely by the number of prizes, or scholarships, or honors he could lay claim to, as is not infrequently the practice. To set up any one arbitrary standards whereby to judge character is manifestly unfair, yet, if it is to be done, there is no single test which embraces so many, in making an estimate of a Yale man's importance, as his share in the society system. Blockheads and simpletons certainly find their way into the senior societies, yet there are few generalities of the sort deserving of more confidence than these, that in a Bones man you will find ability and force of character, in a Keys man politeness and geniality, and in both the most favorable samples of the Yale graduate of the period.

The Order of Skull & Bones Yale Catalogue

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This section compiled by Kris Millegan

FOUNDERS



The Order of Skull and Bones
1832

1833

Bates, Samuel Henshaw
Beach, John Campell
Bishop, Noah
Crump, John
Davis, Benjamin Franklin
Hart, Rufus Erastus
Lewis, Asahel Hooker
Marshall, Samuel Davies
Mather, Frederick Ellsworth
Miller, Phineas Timothy

Robertson, Robert
Russell, William Huntington
Taft, Alphonso
Wood, George Ingersoll

1834

Beaumont, George A. O.
Burr, William Shedden
Coffing, Churchill
Emerson, Alfred
Foster, Eleazar Kingsbury
Gordon, Alexander Blucher
Hall, Daniel Emerson
Houston, John Wallace
Kendall, John Newton
Kingsley, Henry Coit
Lea, James Neilsen
Southmayd, Samuel Gray
Spencer, George Gilman
Tweedy, John Hubbard
Washington, William Henry

1835

Anderson, Edwin Alexander
Davis, John
Howard, Oran Reed
Johnston, Frank
McLellan, William
Mills, Ethelbert Smith
Rafferty, John Chandler
Seeley, John Edward
Seymour, John Forman
Sheffey, Hugh White
Strong, Caleb
Stubbs, Alfred
Sturges, Thomas Benedict
Thacher, Thomas Anthony
Walsh, Hugh

1836

Darling, Thomas
Deming, Henry Champion
Dent, Henry Hatch
Dunwody, James Bulloch
Harris, Henry Reeder
Hurd, John Codman
Martin, John Griffith
Marvin, George Lockwood
Pierson, William Seward
Preston, Henry Kirk
Rowland, William Sherman
Sherman, Frederick Roger
Swift, John Morton
Tyler, George Palmer
Wray, James McAlpin

1837

Carter, Edwin Osgood
Coit, William
Day, Thomas Mills
Evarts, William Maxwell
Hatch, Walter Tilden
Hyatt, Robert Underwood
Law, William Fabian
Lyman, Chester Smith
Owen, Allen Ferdinand
Robeson, Abel Bellows
Scarborough, William Smith
Silliman, Benjamin Jr.
Waite, Morris Remmick
Williams, Henry
Yerkes, Stephen

1838

Bartlett, John Knowlton
Cooper, William Frierson
Dodd, Albert
Fleming, William Stuart
Jones, Seaborn Augustus
Key, Thomas Marshall
Law, William Lyon
Lynde, Charles James
Ribeiro, Carlos Fernando
Rich, Charles
Spaulding, Ebenezer
Talcott, Thomas Grosvenor
Thompson, Joseph Parrish
Varnum, Joseph Bradley
Williams, Thomas Scott

1839

Beach, John Sheldon
Biddle, Thomas Bradish
Chandler, William Henry
Eldridge, Charles St. John
Faulkner, Endress
Hubbard, Richard Dudley
Jackson, Henry Rootes
Norris, William Herbert
Putnam, James Osborne
Stille, Charles Janeway
Trotter, Silas Flournoy
Washington, George
Watson, John Marsh
Williams, William Perkins
Wolcott, Elizer

1840

Beirne, Christopher James
Benedict, Theodore Hudson
Burnham, Curtis Field
Chauvenet, William
Fisk, Stuart Wilkins
Hoppin, James Mason
Hoyt, Joseph Gibson
Hudson, Ward Woodridge
Jesup, James Riley
March, Daniel
McCall, Henry
Perkins, John
Perkins, William
Richards, George
Tiffany, William Henry

1841

Barry, William Taylor Sullivar
DeSa, Pompeo Ascenco
Emerson, Joseph
Eustis, William Tappan
Field, David Irvine
Gillette, Augustus Canfield
Helfenstein, Charles Philip
Leaf, Edmund
Learned, William Law
Mitchell, Donald Grant
Raymond, Henry Hunter
Sturges, Hezekiah
Willis, Richard Storrs
Woolfolk, William Grey
Yarnall, Thomas Coffin

1842

Benton, Joseph Augustine
Brown, Joseph Venen
Buttles, Albert Barnes
Edwards, Newton
Gready, William Postell
Halsey, Jacob
Henen, William Davison
Huggins, William Sidney
Lewis, Henry
MacWhorter, Alexander
Mathews, Albert
Miller, Francis William
Perkins, Nathaniel Shaw
Peters, John Andrew
Pratt, Julius Howard

1843

Baratte, Julius Adolphus
Chambers, William Lyon
Eames, Benjamin Tucker
Gachet, Charles Nicholas
Grammar, Christopher
Granger, Gideon
Hart, Roswell
Havens, Daniel William
Lambert, Alfred
Lane, William Griswold
Lent, John Abram
Moody, Thomas Hudson
Robb, John Hunter
Robinson, Lucius Franklin
Stevens, Henry

1844

Bell, Richard Dobbs Spaight
Breed, Edward Andrews
Elliot, William Horace
Felder, John Henry
Ferry, Orris Sanford
Fewsmith, William
Fisk, Samuel Augustus
Foote, Thaddeus
Lanier, Alexander Chalmers
Lovell, Joseph
Robb, James Madison
Walker, Joseph Burbeen
Washburn, William Barrett
Wetherell, John Walcott
Wilson, Archelaus

1845

Brickell, James Noaille
Conner, Lemuel Parker
Conner, William Gustine
Cushman, Isaac LaFayette
Esty, Constantine Canaris
Gould, James Gardner
Harding, John Wheeler
Hill, George Canning
Hyde, Alvan Pinney
Kennedy, Thomas
Metcalfe, Orrick
Nickerson, Sereno Dwight
Rankin, Robert
Taylor, Richard
Wales, Leonard Eugene

1846

Backus, Joseph Willes
Brisbrin, John Ball
Eakin, William Spencer
Harrison, Henry Baldwin
Hawley, David
Kellogg, Stephen Wright
Linton, Stephen Duncan
Mulford, David Humphrey
Nelson, Rensselaer Russell
Nevins, William Russell
Phinney, Elihu
Savage, Josiah
Steele, Henry Thornton
Stiles, Joseph
Trask, Charles Hooper

1847

Allison, Samuel Perkins
Baldwin, Roger Sherman
Bayne, Thomas Levingston
Coon, John
Fitch, James
Haight, Ducald Cameron
Hayden, William Hallock
McLallen, Philemon F.
Mills, Alfred
Moore, William Eves
Munn, John
Olmstead, John Hull
Sanford, Charles Frederick
Smith, John Donnell
Wilson, John

1848

Abbe, Frederick Randolph
Aitchison, William
Blake, Henry Taylor
Colton, Henry Martin
Condit, Charles
Emerson, Samuel
Foster, Dwight
Hitchcock, Henry
Kinne, William
Mesick, Richard Smith
Pinckard, Thomas Cicero
Strickler, Samuel Alexander
White, George
Willcox, Giles Buckingham
Young, Benham Daniel

1849

Brandegee, Augustus
Came, Charles Green
Campbell, James
Clarke, William Barker
Dwight, Timothy
Finch, Francis Miles
Fisk, Franklin Woodbury
Hough, Edward Clement
Hurlbut, Joseph
Kirby, Jacob Brown
Metcalfe, Henry Laurens
Miles, James Browning
Morris, Edward Dafydd
Richardson, Walker
Rockwell, John

1850

Bentley, Edward Warren
Bliss, Robert
Bliss, William Root
Camp, Clinton
Chase, Henry
Colton, Willis Strong
Condit, Albert Pierson
Converse, George Sherman
Dechert, Henry Martyn
Foote, Joseph Forward
Ludden, William
Manross, Newton Spaulding
Roberts, Ellis Henry
Storrs, Cordial
Woodford, Oswald Langdon

1851

Alexander, William Felix
Beman, Henry DeWitt
Brinsmade, Horatio Walsh
Crampton, Rufus Cowles
Dana, William Buck
Evans, Evan Wilhelm
Haldeman, Richard Jacobs
Hebard, Albert
Little, Robbins
Manice, William DeForest
Slade, John Milton
Vose, James Gardiner
Wells, Henry Dorrance
White, Henry Dyer
Whitney, Emerson Cogswell

1852

Bigelow, Albert
Blakeslee, Henry Clay
Bliss, Charles Miller
Cooper, Jacob
Crapo, William Wallace
Gilman, Daniel Coit
Helmer, Charles Downs
Houghton, Edward
Johnston, William Preston
Marmaduke, Vincent
McCormick, Henry
Ross, William Baldwin
Safford, George Blagden
Sill, George Griswold
Stanley, William

1853

Aiken, William Pope
Babcock, Henry Harper
Baldwin, George William
Capron, Samuel Mills
Coit, Joshua
Davies, Thomas Frederick
Gleason, William Henry
Grout, Alfred
Heard, Albert Farley
Jack, Thomas Mckinney
Johnson, George Asbury
Kent, Albert Emmett
White, Andrew Dickinson
Whiton, James Morris
Willard, Andrew Jackson

1854

Blackman, Samuel Curtis
Cutler, Carroll
Denny, Thomas
Fenn, William Henry
Hooker, John Worthington
Lambert, Edward Wilberforce
Lombard, James Kittredge
Lord, George DeForest
Morris, Luzon Burritt
Potwin. Lemuel Stoughton
Purnell, Charles Thomas
Slade, Francis Henry
Twombly, Alexander S.
White, Charles Atwood
Whitney, Edward Payton

1855

Alexander, William DeWitt
Barnes, William Henry L.
Bumstead, Nathaniel Willis
Child, Linus Mason
Cobb, Henry Nitchie
Granger, John Albert
Johnson, Charles Fredrick
Kittredge, George Alvah
Lampson, George
Mulford, Elisha
Spring, Andrew Jackson
Tyler, Charles Mellen
Wheeler, William
Woodward, Stanley
Yardley, Henry Albert

1855

Arnot, Matthias Hollenback
Barker, George Payson
Brown, John Mason
Campbell, William Harvey W.
Condit, Stephen
Depew, Chauncy Mitchell
Dickinson, Arthur
Eakin, Emmet Alexander
Fischer, Louis Christopher
Magruder, Benjamin Drake
Nettleton, Edward Payson
Packard, Lewis Richard
Paine, Levi Leonard
Robinson, George Chester
Whitney, James Lyman

1857

Blackman, Charles Seymour
Blake, Eli Whitney
Buckland, Joseph Payson
Butler, Francis Eugene
Croxton, John Thomas
Day, John Calvin
Edwards, Alfred Lewis
Green, James Payne
Holmes, John Milton
Jackson, Joseph Cooke
Northup, Cyrus
Pratt, George
Seymour, Storrs Ozias
Tyler, Moses Coit
Wells, Nathan Dana

1858

Blake, Edward Foster
Eichelberger, Martin Smyser
Grant, Edward Dromgoole
Haskell, Robert Chandler
Heermance, Edgar Laing
Hollister, Arthur Nelson
Kimball, John Edwin
Lee, Samuel Henry
MacLellan, George Boardman
Perkins, Thomas Albert
Porter, Edward Clarke
Scott, Eben Greenough
Stevens, Frederic William
Van Name, Addison
Woodward, William Herrick

1859

Bristol, Louis Henry
Brodhead, Henry
Carpenter, Robert John
Clay, Green
Dunham, George Elliott
Hall, William Kittredge
Hannahs, Diodate Cushman
Harrison, Burton Norvel
Robertson, Charles Franklin
Schuyler, Eugene
Smith, Eugene
Stiles, William Augustus
Taylor, Alfred Judd
White, Roger Sherman
Wilcox, Asher Henry

1860

Beckley, John Werle
Boies, Charles Alred
Boltwood, Edward
Daniels, Joseph Leonard
Davis, Lowndes Henry
Davis, Robert Stewart
Fowler, William
Furbish, Edward Brown
Hebard, Daniel
Johnston, William Curtis
Jones, Luther Maynard
Owen, Charles Hunter
Phelps, William Walter
Seeley, John Frank
Smith, William Thayer

1861

Baldwin, Simeon Eren
Brown, Hubert Sanford
Chamberlain, Robert Linton
Dexter, Franklin Bowditch
Fuller, William Henry
Higgins, Anthony
Kernochan, Francis Edward
Mitchell, John Hanson
Newel, Stanford
Park, William Edwards
Peck, Tracy
Root, Alexander Porter
Shearer, Sextus
Sill, Edward Rowland
Williams, Ralph Omsted

1862

Adams, Frederick
Chamberlain, Daniel Henry
Coe, Edward Benton
Day, Melville Cox
Eaton, Sherburne Blake
Johnston, Henry Phelps
Kitchel, Cornelius Ladd
Lampson, William
MacVeagh, Franklin
Ripley, George Coit
Seely, William Wallace
Stebbins, Henry Hamlin
Taylor, John Phelps
Ward, John Abbott
Weeks, Robert Kelley

1863

Allen, Walter
Arms, Charles Jesup
Bingham, Egert Byron
Bull, Cornelius Wade
Butler, John Haskell
Chamberlain, Leander T.
Dimock, Henry Farnam
Fowler, Horace Webster
Kernochan, Joseph Frederic
Perry, David Brainard
Sheffield, George St. John
Southworth, George C. S.
Sumner, William Graham
Wesson, Charles Holland
Whitney, William Collins

1864

Boltwood, Thomas Kast
Borden, Matthew C. D.
Boyden, Henry Paine
Clark, Albert Barnes
Hewitt, Thomas Browning
MacLean, Charles Fraser
Merriam, George Spring
Miller, Allanson Douglas
Owen, Henry Elijah
Palmer, William Henry
Pratt, William Hall Brace
Pugsley, Isaac Platt
Sterling, John Williams
White, Oliver Sherman
Woodruff, Francis Eben

1865

Bent, Joseph Appleton
Brooks, John Edward
Brown, Henry Armitt
Bulkey, Tuzar
Bushnell, William Benedick
Caskey, Taliaferro Franklin
Charnley, Charles Meigs
Ewell, John Lewis
Ford, George Tod
Merrill, Payson
Riggs, Benjamin Clapp
Smith, Charles Edgar
Stimson, Henry Albert
Stone, William
Warren, Henry Waterman

1866

Adams, Charles Hemmenway
Brand, James
Coffin, Edmund
Cole, Hamilton
Farnam, William Whitman
Foote, Harry Ward
Hall, John Manning
Hincks, Edward Young
Holt, George Chandler
Judson, Frederick Newton
Lampman, Lewis
Sloane, Henry Thompson
Southgate, Charles McClellan
Wade, Levi Clifford
White, George Edward

1867

Bissell, Arthur Douglas
Dexter, Morton
DuBois, John Jay
Dunning, Albert Elijah
Harding, Wilder Bennett
Hartshorn, Joseph William
Hedge, Thomas
Lamb, Albert Eugene
Libbey, Frank
Merriam, James Fiske
Seymour, Horatio
Spencer, James Magoffin
Taft, Peter Rawson
Wetmore, George Peabody
Woodward, Richard William

1868

Berry, Coburn Dewees
Brewster, Chauncey Bunce
Coffin, James
Colt, LeBaron Bradford
Dixon, William Palmer
Farnam, Charles Henry
Lewis, John
McKinney, William Allison
Sloane, Thomas Chalmers
Thacher, James Kingsley
Tinker, Anson Phelps
Tweedy, Samuel
Tytus, Edward Jefferson
Wood, William Curtis
Wright, Henry Park

1869

Bannard, Henry Clay
Beers, Henry Augustin
Bissell, Wilson Shannon
Brown, Alexander Lardner
Eno, John Chester
Foster, John Pierrepont C.
Freeman, Henry Varnum
Heaton, Edward
Hooker, Thomas
Isham, John Beach
Lear, Henry
Perrin, Bernadotte
Raymond, Henry Warren
Richardson, Rufus Byam
Shirley, Arthur

1870

Andrews, John Wallingford Jr.
Gulliver, William Curtis
Johnston, Ross
Learned, Dwight Whitney
Mason, Henry Burrall
McClure, James Gore King
McCutchen, Samuel St. John
Miller, George Douglas
Perry, John Hoyt
Selden, Edward Griffin
Shattuck, John Waldon
Stearns, Edwin Russell
Strong, Charles Hall
Tilney, Thomas Joseph
Welch, William Henry

1871

Clark, Charles Hopkins
Collin, Frederick
Elliot, Henry Rutherford
Hine, Charles Daniel
Kinney, Herbert Evelyn
Lea, Robert Brinkley
Mansfield, Howard
Mason, Alfred Bishop
Mead, Frederick
Perry, Wilbert Warren
Sperry, Watson Robertson
Strong, George Arthur
Sweet, Edwin Forrest
Thacher, Thomas
Townsend, William Kneeland

1872

Coe, Robert Elmer
Cushing, William Lee
Deming, Charles Clerc
Deming, Clarence
Deming, Henry Champion
Dennis, Frederic Shepard
Hincks, John Howard
Hoppin, Benjamin
Merriam, Alexander Ross
Moore, George Foot
Owen, Edward Thomas
Payson, Henry Silas
Ramsdell, Charles Benjamin
Spaldin, George Atherton
Woolsey, Theodore Salisbury

1873

Alexander, Eben
Allen, Arthur Huntington
Beebe, William
Daniels, Rensselaer Wilkinson
Denslow, Herbert McKenzie
Elder, Samuel James
Flagg, Wilbur Wells
Grubb, Charles Ross
Johnes, Edward Rudolph
Judson, Issac Nichols
Lathe, Herbert William
Ord, Joseph Pacificus
Prentice, Samuel Oscar
Tarbell, Frank Bigelow
Thomas, Charles Henry

1874

Aldis, Owen Franklin
Barnes, Pearce
Bushnell, Samuel Clarke
Farnam, Henry Walcott
Grover, Thomas Williams
James, Henry Ammon
Munroe, George Edmund
Parkin, William
Robbins, Edwards Denmore
Stapler, Henry Beidleman B.
Townsend, James Mulford
Walden, Russell
Wickes, Thomas Parmelee
Witherbee, Frank Spencer
Wood, John Seymour

1875

Avery, Charles Hammond
Brooks, James Wilton
Chester, Carl Thurston
Clarke, Thomas Slidell
Day, Robert Webster
Gulliver, Henry Strong
Hothhkiss, William Henry
Jenks, Almet Francis
Jones, Dwight Arven
Jones, Frank Hatch
Patton, John
Seymour, John Sammis
Smith, Edward Curtis
Southworth, Edward Wells
Tillinghast, Charles

1876

Allen, John DeWitt Hamilton
Andrews, John Wolcott
Bannard, Otto Tremont
Blaine, Walker
Bottum, Elisha Slocum
Cook, Robert Johnston
Dawes, Chester Mitchell
Fowler, Charles Newell
Hadley, Arthur Twining
Howe, Elmer Parker
Hyde, William Waldo
Marvin, Joseph Howard
Russell, Philip Gray
Smith, Rufus Biggs
Worcester, Edwin Dean

1877

Barnum, William Milo
Bigelow, Walter Irving
Brooks, Walter
Chapin, Charles Frederick
Collin, William Welch
Cooke, Eldridge Clinton
Eaton, Samuel Lewis
Gould, Anthony
Hoysradt, Albert
Kimball, Arthur Reed
Percy, Frederick Bosworth
Sears, Joshua Montgomery
Thacher, John Seymour
Tuttle, George Montgomery
Winston, Frederick Seymour

1878

Campbell, Treat
Carter, Charles Francis
Curtis, George Louis
Edwards, George Benjamin
Foster, Roger
James, William Knowles
Jenks, Tudor Storrs
Kelsey, Clarence
Knott, George Tapscott
Pollock, George Edward
Seely, Edward Howard Jr.
Spencer, Charles Langford
Stone, Charles Martin
Taft, William Howard
Whitney, Edward Baldwin

1879

Bowers, Lloyd Wheaton
Burpee, Lucien Francis
Foster, George Forris
Green, Henry Sherwood
Hitchcock, Henry
Hyde, Frank Eldridge
James, Walter Belknap
Livingston, Herman
Perrin, John
Platt, Lewis Alfred
Rodman, Robert Simpson
Swinburne, Louis Judson
Thompson, Oliver David
Tighe, Ambrose
Woodruff, Timothy Lester

1880

Allen, William Palmer
Amundson, John Arnold
Bentley, Edward Manross
Camp, Walter
Green, Edmund Frank
Jennings, Walter
Nichols, Alfred Bull
Ordway, Henry Choate
Parker, Wilbur
Partridge, Sidney Catlin
Peters, William Allison
Scudder, Doremus
Spencer, Edward Curran
Taft, Henry Waters
Witherbee, Walter Crafts

1881

Aiken, Edwin Edgerton
Barney, Danford Newton
Bartlett, Philip Golden
Burrel, Joseph Dunn
Coleman, John Caldwell
Evarts, Sherman
Fuller, Philo Carroll
Ives, Henry
Leighton, James
Osborne, Thomas Burr
Thompson, Norman F.
Van deGraaff, Adrian S.
Vernon, Frederick Richardson
Walden, Howard Talbott
White, Henry Charles

1882

Badger, Walter Irving
Brewster, Benjamin
Campbell, James Alexander
Eno, Wiliam Phelps
French, Asa Palmer
Johnson, Barclay
Knapp, Howard Hoyt
Lyman, Chester Wolcott
McBride, Wilber
Osborne, Arthur Sherwood
Platt, Henry Barstow
Pollock, William
Wells, John Lewis
Whitney, Joseph Ernest
Worcester, Franklin Eldred

1883

Burpee, Charles Winslow
Deming, Lawrence Clerc
Folsom, Henry Titus
Foote, Charles Seward
Frost, Elihu Brintnal
Hillard, Lord Butler
Hull, Louis Kossuth
Kellogg, Fred William
McLaughlin, Edward T.
Moore, Eliakim Hastings
Palmer, Harry Herbert
Parrott, Joseph Robinson
Taft, Horace Dutton
Thacher, Sherman Day
Woodward, John Butler

1884

Blodgett, George Reddington
Booth, Samuel Albert
Booth, Wilbur Franklin
Evarts, Maxwell
Foster, Reginald
Gruener, Gustav
Jenks, Paul Emmott
Jones, Frederick Scheetz
Lambert, Alexander
Lawrance, Thomas Garner
McMillan, William Charles
Painter, Henry McMahon
Tompkins, Ray
Twombly, Henry Bancroft
Wilder, Amos Parker

1885

Arnot, John Hulett
Baldwin, Henry DeForest
Bertron, Samuel Reading
Brandegee, Frank Bosworth
Bridgman, John Cloyse
Brooks, Henry Stanford
Flanders, Henry Richmond
Hidden, Edward
Hobbs, Charles Buxton
Mallon, Guy Ward
McHenry, John
Richards, Eugene Lamb
Robinson, Lucius Franklin
Terry, Wyllys
Worcester, Wilfred James

1886

Anthony, Benjamin Harris
Bremmer, Samuel Kimball
Cowles, Alfred
Crapo, Stanford Tappan
Day, Thomas Mills
Knapp, Wallace Percy
Lewis, Charlton Miner
Peters, Frank George
Phelps, Edward Johnson
Phelps, Sheffield
Pierson, Charles Wheeler
Schwab, John Christopher
Shipman, Arthur Leffingwell
Stewart, Philip Battel
Winston, Dudley

1887

Bennetto, John
Corwin, Robert Nelson
Cowles, William Hutchinson
Coxe, Alexander Brown
Douglass, Willard Robinson
Hare, Clinton Larue
Haven, George Griswold
Jennings, Oliver Gould
Kendall, William Burrage Jr.
Kent, William
Knight, Samuel
Pomeroy, John Norton
Rogers, John
Sheppard, Walter Bradley
Thacher, William Larned

1888

Cooley, Harlan Ward
Fisher, Irving
Gill, George Metcalf
Hurd, Richard Melancthon
Isbell, Orland Sidney
McMillan, James Howard
Morison, David Whipple
Roby, Samuel Sidney Brese
Seward, William Henry
Solley, Fred Palmer
Stagg, Amos Alonzo
Stevenson, Frederic Augustus
Stimson, Henry Lewis
Waite, Morrison R.
Walker, Samuel Johnson

1889

Buchanan, Thomas Walter
Corbin, William Herbert
Donnelley, Thomas Elliott
Fisher, Samuel Herbert
Gill, Charles Otis
Griggs, John Cornelius
McQuaid, William Adolph
Pinchot, Gifford
Reed, Harry Lathrop
Robinson, Henry Seymour
Smith, Herbert Augustine
Stokes, Horace Sheldon
Walker, Horace Flecher
Wells, Herbert Wetmore
Woodruff, George W.

1890

Bayard, Thomas Francis
Corwith, John White
Crosby, John
Day, Arthur Pomeroy
Farnham, John Dorrance
Harrison, Fairfax
Haslam, Lewis Scofield
James, Norman
Kellogg, Charles Poole
Kneeland, Yale
Morse, Sidney Nelson
Sage, Henry Manning
Simmons, Wallace Delafield
Stewart, Percy Hamilton
Tracy, Evarts

1891

Calhoun, Governeur
Cox, John Joughin
Doane, John Wesley Jr.
Estill, Joe Garner
Graves, William Phillips
Isham, Edward Swift
Kenerson, Vertner
McClintlock, Norman
Morison, Samuel Benjamin
Poole, William Frederick
Simms, William Erskine
Thomson, Samuel Clifton
Townsend, John Barnes
Tweedy, Henry Hallam
Walcott, Frederic Collin

1892

Bayne, Hugh Aiken
Boltwood, Edward
Cheney, Howell
Cheney, Knight Dexter Jr.
Crosby, Benjamin Lewis Jr.
Day, Clive
Graves, Henry Solon
Husted, James William
Ingersoll, James Wernham D.
Jay, Pierre
Kitchel, William Lloyd
McClung, Thomas Lee
Morison, Stanford Newel
Price, Frank Julian
Ryle, Ernest

1893

Begg, William Reynolds
Cooke, James Barclay
Dwight, Winthrop Edwards
Gallaudet, Edson Fessenden
Hay, Logan
Ives, Sherwood Bissell
Jones, Alfred Henry
Lambert, Adrian VanSinderen
Martin, George Greene
Parker, William White Wilson
Parsons, Francis
Robinson, John Trumbull
Roby, Joseph
Rogers, Derby
Wallis, Alexander Hamilton

1894

Case, George Bowen
Cochran, Thomas
Davies, Thomas Frederick
Hall, John Loomer
Hare, Meredith
Holter, Edwin Olaf
Howland, John
James, Robert Campbell
McMillan, Philip Hamilton
Paine, Ralph Delahaye
Stewart, Walter Eugene Jr.
Stillman, Leland Stanford
Walcott, William Stuart
Whitney, Harry Payne
Word, Charles Francis

1895

Beard, Anson McCook
Buckner, Mortimer Norton
Butterworth, Frank Seiler
Cable, Benjamin Stickney
Carter, Walter Frederick
Clark, Alexander Ray
Cooke, Walter Evans
Davis, Benjamin
Denison, Lindsay
Harrison, Francis Burton
Hinkey, Frank Augustus
McKee, Lanier
Phelps, Zira Bennett
Shepley, Arthur Behn
Sloane, William

1896

Beard, William Mossgrove
Brown, Alexander
Cheney, Ward
Cross, William Redmond
DeSibour, Jules Henri
Griggs, Maitland Fuller
McKee, McKee Dunn
Neale, James Brown
Smith, Winthrop Davenport
Stokes, Anson Phelps
Thorne, Samuel
Thorne, Samuel Brinckeroff
Treadway, Ralph Bishop
Trudeau, Edward L. Jr.
Weyerhaeuser, Frederick E.

1897

Bailey, Philip Horton
Brooke, George Clymer
Coffin, Henry Sloane
Fincke, Clarence Mann
Garrison, Elisha Ely
Gerard, Sumner
Gillette, Curtenius
Kerr, Albert Boardman
Kitchel, Cornelius Porter
Pinchot, Amos Richards Eno
Sage, Dean
Smyth, Nathan Ayer
Sumner, Graham
Wheelwright, Joseph Storer
Williams, Norman Alton

1898

Cheney, Clifford Dudley
Fearey, Morton Lazell
Gallaudet, Herbert Draper
Hale, Eugene Jr.
Hinsdale, Frank Gilbert
Kernochan, Frederic
Lord, Franklin Atkins
Montgomery, Grenville D.
Parker, Grenville
Rogers, David Francis
Simmons, Frank Hunter
Wadsworth, James Wolcott Jr.
Whitney, Payne
Wickes, Forsyth
Wright, Henry Burt

1899

Adams, Mason Tyler
Ames, Sullivan Dobb
Bowles, Henry Thornton
Brooke, Frederick Hiester
Brown, Jamot
Callahan, Hugh Andrew
Day, Dwight Huntington
Griswold, William Edward S.
Maffitt, Thomas Skinner
Magee, James McDevitt
Preston, Ord
Sweet, Carroll Fuller
Vanderbilt, Alfred Gwynne
Welles, Charles Hopkins Jr.
Whitehouse, William F.

1900

Adams, Frederick Baldwin
Allen, Frederick Winthrop
Camp, Stuart Brown
Cheney, Frank Dexter
Coffin, William Sloane
Cross, John Walter
Douglas, Malcolm
Greenway, James Cowan
Hopkins, John Morgan
Leavitt, Ashley
Lyon, George Armstrong
Paddock, Brace Whitman
Rockefeller, Percy Avery
Sullivan, Corlis Esmonde
Taft, Hulbert

1901

Allen, Arthur Dwight
Carlisle, James Mandeville
Cheney, Philip
Cheney, Thomas Langdon
Christian, Henry Hall
Coy, Sherman Lockwood
Edwards, Richard Henry
Eels, John Shepard
Hixon, Robert
Hoysradt, J Warren
Keppelman, John Arthur
Morris, Ray
Richardson, Allan Harvey
Welch, George Arnold
Wright, Alfred Parks

1902

Carpenter, George Boone
Cressler, Alfred Miller
Cushing, Charles Cyprian S.
Day, William Edwards
Ferguson, Alfred Ludlow
Guernsey, Raymond Gano
Potter, Roderick
Rumsey, Bronson Case
Sincerbeaux, Frank Huestis
Stebbins, Edwin Allen
Stone, Harold
Swan, Joseph Rockwell
Taylor, Alan McLean
Trowbridge, Mason
White, Percy Gardiner

1903

Chadwick, George Brewster
Clark, Harold Terry
Corning, Erastus
Dreisbach, John Martin
Hamlin, Chauncey Jerome
Hewitt, Brower
Holt, Henry Chandler
Lamb, Albert Richard
Moore, Frank Wood
Sutphin, Stuart Bruen
Thompson, Donald
Wallace, Henry Mitchell
Waring, Antonio Johnston
White, John Richards
Wilhelmi, Frederick William

1904

Adams, Charles Edward
Adams, George Webster
Cheney, Russell
Crane, Winthrop Murray
Cross, Walter Snell
Dodge, Francis Talmage
Jennings, Percy Hall
Kittle, John Caspar
Metcalf, Harold Grant
Miller, James Ely
Pierce, Frederick Erastus
Reed, Lansing Parmalee
Soper, Willard Burr
Thacher, Thomas Day
Wiggin, Fredrick Holme

1905

Bradford, Arthur Howe
Ellsworth, John Stoughton
Fish, Stuyvesant
Hogan, James Joseph
Hollister, Buell
Hughes, Berrien
Lathrop, John Hiram
Richardson, Gardner
Rogers, Edmund Pendleton
Sargent, Murray
Sloane, John
Tilney, Robert Fingland II
Turner, Harold McLeod
Van Reypen, William K. Jr.
Whitehouse, Edwin Sheldon

1906

Bruce, Donald
Dousman, Louis deVierville
Ely, Grosvenor
Flinn, Alexander Rex
Hoyt, Lydig
Magee, John Gillespie
McClure, James Gore K. Jr.,
McGee, Donald Ashbrook
Moorhead, William Singer
O'Brien, Frank
Perrin, Lee James
Rockwell, Foster Harry
Smith, Bruce Donald
Turner, Spencer
Wilson, Hugh Robert

1907

Barnes, William Deluce
Blair, William McCormick
Camp, Arthur Goodwin
Daniels, Forest Leonard
Danielson, Richard Ely
Dixon, Theodore Polhemus
Dodge, Philip Lyndon
Glaenzer, Georges Brette
Knox, Hugh Smith
Little, Mitchell Stuart
Morse, Samuel Finley Brown
Truesdale, Calvin
Tuttle, George Coolidge
Wells, Harold Sherman
Woolsey, Heathcote Muirson

1908

Biglow, Lucius Horatio
Dahl, George
Davis, Walter Goodwin
Dines, Tyson
Foster, Joseph Taylor
Griswold, Dwight Torrey
Perrin, Lester William
Seymour, Charles
Shepard, Roger Bulkley
Stanley, Harold
Thornton, James Carlton
Townsend, George Henry
Townsend, James Mulford Jr
Watkins, Charles Law
Williams, James Willard

1909

Bundy, Harvey Hollister
Burch, Robert Boyd
Campbell, Charles Soutter
Clark, Avery Artison
Dominick, Gayer Gardner
Howard, James Merriam
Howe, Henry Almy
Jefferson, Edward Francis
Klots, Allen Trafford
Lippitt, Henry
Perrin, John Bates
Rand, Stuart Craig
Sanderson, Benjamin Blethen
Seabury, Mortimer Ashmfad
Stokes, Harold Phelps

1910

Bayne-Jones, Stanhope
Coy, Edward Harris
DeSilver, Albert
Franchot, Charles Pascal
French, Robert Dudley
Harrison, George Leslie
Heron, John
King, Lyndon Marrs
Knight, Augustus
Logan, Walter Seth
Lohmann, Carl Albert
Murphy, Frederick James
Philbin, Stephen H II
Taft, Robert Alphonso
Wodell, Ruthven Adriance

1911

Badger, Paul Bradford
Corey, Alan Lyle
Daly, Frederick Joseph
Davis, Clinton Wildes
Day, Sherwood Sunderland
Dempsey, John Bourne
Gammell, Arthur Amory
Hyde, Frederick Walton
Lombardi, Cornelius Ennis
McDonnell, John Vincent
Randolph, Francis Fitz
Rowland, John Tilghman
Soule, Leslie
Van Sinderen, Henry B.
Wheeler, Lawrence Raymond

1912

Boyd, Francis T
Gardner, Robert Abbe
Hartley, Cavour
Howe, Arthur
Hyde, Donald Robertson
McClure, Archibald
Merritt, Henry Newton
Mullins, Frederic Parsons
Murphy, Gerald Clery
Paul, Charles Henry
Smith, James Gregory
Street, Henry Abbott
Strout, Edwin Augustus Jr.
Tener, Alexander Campbell
Twombly, Edward Bancroft

1913

Allen, Calvin Durand
Allen, Clarence Emir Jr.
Baker, Richard Wheeler
Colgate, Henry Auchincloss
Cortelyou, George Bruce
Cowles, Alfred
Harman, Archer
Harriman, William Averell
Lovett, August Sidney
McAndrew, Alexander
Philbin, Jesse Holladay
Sawyer, Homer Eugene Jr.
Schwab, Laurence vonPost
Shelden, Allan
Waters, William Otis

1914

Avery, Benjamin F.
Cornish, Percy Gillette Jr.
Daniels, Thomas Leonard
Gile, Clement Moses
Hobson, Henry Wise
Jenks, Almet Francis
Jones, George Gill
Ketcham, Henry Holman
King, Stoddard
Lippincott, William Jackson
Osborn, Richard
Patterson, George Washington
Rogers, Herman Livingston
Shepard, Lorrin Andrews
Warren, William Candee Jr.

1915

Burtt, Edwin Arthur
Carter, Lyon
Cornell, Thomas Hilary
Davenport, Stephen Rintoul
Denegre, Thomas Bayne
MacDonald, Ranald Hugh II
MacLeish, Archibald
Middlebrook, Louis Shelton
Paris, Irving
Pumpelly, Harold Armstrong
Reilly, John Sylvester
Shedden, William Martindale
Slocum, Edwin Lyon
Stackpole, Edward James
Swift, Walker Ely

1916

Darling, Arthur Burr
Gaillard, Samuel Gourdin Jr.
Hadley, Morris
Johnstone, Henry Webb
Knapp, Farwell
Oler, Wesley Mardon
Porter, Gilbert Edwin III
Putnam, Phelps
Roberts, Charles Holmes Jr.
Shepard, Donald Carrington
Stewart, Donald Ogden
Tener, Kinley John
Tighe, Laurence Gotzian
von Holt, Herman Vademar
Walker, Charles Rumford

1917

Bellinger, Alfred Rammond
Bush, Prescott Sheldon
Cooper, Henry Sage Fenimore
Cunningham, Oliver Bulg
Duryee, Samuel Sloan
Harriman, Edward Roland N.
Isham, Henry Porter
James, Ellery Sedgewick
LeGore, Harry William
Mallon, Henry Neil
Olsen, Albert William
Overton, John Williams
Shepard, Frank Parsons Jr.
Simpson, Kenneth Farrand
Woolley, Knight

1918

Ames, Allen Wallace
Baldridge, Howard Malcolm
Clay, Cassius Marcellus
Davison, Fredrick Trubee
Deans, Robert Barr
Farrar, John Chipman
Garfield, Newell
Gates, Artemus Lamb
Gould, James
Lovett, Robert Abercrombie
Snell, Raymond Franklin
Stewart, Charles Jacob
Taft, Charles Phelps
Vorys, John Martin
Woolley, John Eliot

1919

Allen, Parker Breese
Baldwin, Sherman
Campbell, Alan Barnette
Carter, Frederic Dewhurst
Depew, Ganson Goodyear
Gaillard, Edward McCrady
Hadley, Hamilton
Haffner, Charles Christian Jr.
Mallon, John Howard
McCormick, Alexander A. Jr.
McKee, Elmore McNeill
Mead, Winter
Otis, James Sanford
Smith, Traver
Walker, George Nesmith

1920

Adams, Lewis G.
Davison, Harry Pomeroy
Hadden, Briton
Heffelfinger, Frank Peavey
Hincks, John Morris
Hobson, Francis Thayer
Ingalls, David Sinton
Luce, Henry Robinson
McHenry, James
Patterson, Morehead
Safford, Theodore Lee
Sargent, Joseph Weir
Schermerhorn, Alfred Cosler
Van Slyck, DeForest
Winter, Daniel Robbins

1921

Acosta, John Sidney
Bradley, Charles Harvey
Brewster, Walter Rice
Bundy, Frederick McGeorge
Cowles, William Sheffield
Heminway, Bartow Lewis
Hord, Stephen Young
Jenckes, Marcien
Litt, Willard David
Lunt, Storer Boardman
Neville, James Eugene
Parsons, Langdon
Shevlin, Edward Leonard
Stewart, John
Winter, Edwin Wheeler II

1922

Aldrich, Malcolm Pratt
Bush, James Smith
Cheney, Ward
Crosby, Albert Hastings
Frost, Albert Carl, Jr.
Hilles, Frederick Whiley
Larner, Robert Johnson
Lord, William Galey
Page, Robert Guthrie
Root, Wells
Solley, Robert Folger
Strong, Henry Barnard
Thomas, John Allen Miner
Townsend, Frederic deP. Jr.
Woodward, Stanley

1923

Becket, George Campbell
Bulkey, Jonathan Ogden
Cooper, John Sherman
Davenport, Russell Wheeler
Day, Huntington Townsend
Foster, Maxwell Evarts
Hyde, Louis Kepler Jr.
Jones, Edwin A
Jordan, Ralph Edward
Luckey, Charles Pinckney
Matthessen, Francis Otto
Norton, George W. Jr.
Pelly, Bernard Berenger
Tighe, Richard Lodge
Wheeler, Alfred Newton

1924

Allen, Henry Elisha
Appel, George Frederick Baer
Blair, Edwin Foster
Diller, John Cabot
Ewing, Sherman
Haines, Thomas Frederick D.
Heffelfinger, George Wright P.
Hilles, Charles Dewey Jr.
Houghton, Walter Edwards
Lusk, William Thompson
Mallory, William Neely
McCallum, Revell
Melton, William Davis Jr.
Spofford, Charles Merville
Thomson, Clifton Samuel

1925

Ardrey, Rushton Leigh
Ashburn, Frank Davis
Bench, Edward Cajetan
Bissell, William Truesdale
Blair, James Grant
Gage, Charles Stafford
Ives, Gerard Merrick
Jones, Walter Clyde
Lovejoy, Winslow Meston
Lufkin, Elgood Moulton
Luman, Richard John
Norton, William Bunnell
Scott, Henry Clarkson
Stevens, Marvin Allen
Stevenson, Donald Day

1926

Allen, Daniel
Bronson, James Davis
Coke, Henry Cornice Jr.
Crosby, Henry Stetson
Cutler, Benjamin Crawford
Davenport, John
Ferguson, Alfred L. Jr.
Hoysradt, John McArthur
Kingsbury, Howard Thayer
Lord, Oswald Bates
Michel, Anthony Lee
Poore, Charles Graydon
Root, Reginald Dean
Russell, Frank Ford
Willard, Charles Hastings

1927

Bunnell, Phil W.
Look, Allen MacMartin
McIntosh, Harris
Noble, Lawrence Mason
Patterson, Thomas Cleveland
Post, Russell Lee
Ritchie, Wallace Parks
Robbins, William Wells
Robinson, Frederick Flower
Stokes, Anson Phelps Jr.
Wadsworth, James Jeremiah
Walker, George Herbert Jr.
Wardwell, Edward Rogers
Warren, John Davock
Watson, Charles 3rd

1928

Bartholomew, Dana Treat
Berger, Jr., George Bart
Bingham, Charles Tiffany
Fishwick, Dwight Brown
Griggs, Herbert Stanton Jr.
Haight, George Winthrop
Ives, Chauncey Bradley
Lapham, Raymond White
Mallory, Barton Lee Jr.
Prentice, John Rockefeller
Robertson, Arthur C.
Ross, "Lanny" Lancelot P.
Scott, Stewart Patterson
Stewart, Peter Hellwege
Walker, Stoughton

1929

Ashforth, Albert Blackhurst
Costikyan, Granger Kent
Crile, George Jr.
Decker, Edmund L. Jr.
Dodge, Washington
Eddy, Maxon Hunter
Garvey, John Joseph
Gillespie, Kenrick Samson
Grove, Manasses Jacob
Manville, Hiram Edward Jr.
Merrill, Henry Riddle
Paine, Ralph Delahaye Jr.
Smith, Lloyd Hilton
Wack, Damon deBlois
Wells, George

1930

Allison, Robert Seaman Jr.
Ellis, Harland Montgomery
Ellis, Raymond Walleser
Erskine, Albert DeW. Jr.
Garnsey, Walter Wood
Greene, Waldo Wittenmyer
Gwin, Samuel Lawrence
Hall, Robert Andrew
Janeway, Charles Anderson
Ladd, Louis Williams Jr.
Longstreth, George Brown
Look, Frank Byron
Musser, John Miller
Palmer, Arthur Edward
Prideaux, Tom

1931

Austen, David Edward
Donnelley, Gaylord
Heinz, Henry John II
Lapham, Lewis Abbot
Loeser, Frederic William
Lydgate, William A.
Messimer, Robert Laughlin Jr.
Peltz, William Learned
Rathborne, Joseph Cornelius
Stewart, James Ross
Sutherland, Richard Orlin
Swoope, Walter Moore
Tucker, Luther B.D.
Vincent, Francis Thomas
Walker, John Mercer

1932

Adams, Frederic Baldwin Jr.
Barres, Herster D.
Bates, Emmert Warren
Fitch, George Hopper
Fulton, Robert Brank
Gillespie, Samuel Hazard Jr.
Hodges, William VanD. Jr.
Laundon, Mortimer H. Jr.
Lindenberg, John Townsend
McCrary, John Reagan Jr.
Mills, James Paul
Ogden, Alfred
O'Neill, Eugene Gladstone, Jr
Savage, Boutelle Jr.
Williams, Samuel Goode

1933

Caldwell, Samuel Smith Jr.
Cooke, Francis Judd
Davis, Richard Marden
Fletcher, Alexander Charles
Garnsey, William Smith
Hall, Frederick Bagby Jr.
Jones, Theodore Stephen
Levering, Walter Barnum
Lindley, Frances Vinton
McGauley, John Michael
Newton, James Quigg Jr.
Parker, Robert Boyd
Parsons, Henry McIlvaine
Stebbins, Hart Lyman
Wilbur, John Smith

1934

Bradford, Amory Howe
Cunningham, Hugh Terry
Gordon, George Arthur
Hallett, John Folsom
Hambleton, Thomas Edward
Harper, Harry Halsted Jr.
Holmes, John Grier
Jackson, John Herrick
Kilcullen, John MacHale
Kimball, Walter Sugden
Mills, Edward Ensign
Morse, John Bolt
Nichols, Edward
Ranney, George Alfred
Stetson, Eugene William Jr.

1935

Bowles, John Eliot
Collier, Samuel (Sam) Carnes
Curtin, Francis Clare
Fuller, Stanley Evert
Haas, Frederick Peter
Johnson, Joseph(Joe) Hale
Kilborne, William Skinner
Pillsbury, John Sargent Jr.
Rodd, Thomas
Seymour, Charles Jr.
Shepard, Roger Bulkley Jr.
Spitzer, Lyman B. Jr.
Stillman, George Schley
Terry, Henry Porter Baldwin
Tufts, Bowen (Sonny) C.

1936

Barr, Richard James Jr.
Bingham, Jonathan Brewster
Cooke, Robert Barbour
Davis, Horace Webber II
Gill, Brendan
Hall, Jesse Angell
Hersey, John Richard
Knapp, John Merrill
Moore, Richard Anthony
Pillsbury, Edmund P.
Rankin, Bernard Courtney
Shepard, Blake
Train, Robert
Walker, Louis
Whitehead, Mather Kimbal

1937

Blake, Dexter B.
Brooke, Frederic Hiester Jr.
Burke, Charles Clinton Jr.
Cross, Richard James
Draper, Arthur Joy
Field, John Warner
Kelley, Lawernce Morgan
McLemore, John Briggs Jr.
Miles, Richard Curtis
Orrick, William Horsley Jr.
Robinson, John Trumbull
Runnalls, John Felch Bertram
Stewart, Potter.
Stone, Louis Talcott Jr.
Turner, Harold McLeod

1938

Davenport, Bradfute Warwick
Dempsey, James Howard Jr.
Dilworth, Joseph Richardson
Dunham, Lawrence B. Jr.
Ecklund, John Edwin
Fox, Joseph Carrere
Frank, Clinton E.
Gordon, Edward McGuire
Hessberg, Albert II
Schermerhorn, Amos Egmont
Stevens, Joseph Benson Jr.
Thompson, John R.
Weed, George Haines
Whitman, Francis Slingluff Jr.
Wilbur, Richard Emery

1939

Belin, Gaspard d'Andelot
Blanchard Jerred Gurley
Bundy, William Putman
Chittenden, George Hastings
Clucas, Lowell Melcher
Dyess, Arthur Delma Jr.
Gile, Clement Dexter
Hoxton, Archibald R. Jr.
Kellogg, William Welch
Miller, Andrew Otterson
Miller, Charles Lewis Jr.
Mitchell, Harry Hartwood
Shepard, Jr., Lloyd M.
Wilhelmi, Frederick W. Jr.
Williams, Burch

1940

Bundy, McGeorge
Erickson, Thomas Franklin
Glover, Charles Carroll III
Grayson, James Gordon
Holden, Reuben Andrus
Howe, Harold II
Orrick, Andrew Downey
Rodd, David Beckwith
Stack, Jr., Joseph William
Stevens, Albert B.
Stillman, Peter Gordon B.
Stucky, William McDowell
Swenson, Edward Francis Jr.
Thorne, Peter Brinckerhoff
Watson, Jr., William Berkley

1941

Cross, Walter Redmond Jr.
Devor, Donald S. Jr.
Ellis, Franklin Henry Jr.
Hall, Edward Tuck
Jackson, William Eldred
Kiphuth, Delaney
Madden, John Beckwith
Pickett, Lawrence Kimball
Price, Charles Baird Jr.
Solbert, Peter O.A.
Stevenson, Charles Porter
Thomas, Walton Dowdell
Tighe, Laurence Gotzian Jr.
White, Warren Benton
Zorthian, Barry

1942

Aycrigg, William Anderson II
Bartholemy, Alan Edmund
Bell, William Tompkins
Chouteau, Rene Auguste
Ford, William
Grayson, Cary Travers, Jr.
Halsey, Ralph Wetmore Jr.
Harrison, Fred Harold
Jessup, John Baker
Kemp, Frank Alexander
Kirchwey, George Washington
Smith, Howard Freeman Jr.
Sprole, Frank Arnoit
Walker, John Stanley
White, William Gardiner

1943

Acheson, David Campion
Caulkins, George Peck
Daniels, John Hancok
Doolittle, Duncan Hunter
Drain, Richard Dale
Healy, Harold Harris Jr.
Hoagland, Donald Wright
Klots, Allen Trafford Jr.
Liley, Frank Walder Jr.
MacLean, John Helm
Miller, Dudley Livingston
Moseley, Spencer Dumaresq
Stewart, Zeph
Tabor, John Kaye
Vogt, Tom D.

1944

Brown, Samuel Taylor Glover
Buckley, James Lane
Elebash, Shehand Daniel
Ellis, Alexander Jr.
Ferguson, James Lord
Goodenough, John Bannister
Grayson, William Cabell
Holden, John Morgan
Hoopes, Townsend Walter
Kelley, William Cody II
Lindsay, David Alexander
Little, Stuart West
Walker, Jeffrey Pond
Whitmore, James Allen Jr.
Witter, Dean Jr.

1945

Allen, Archibald John Jr.
Blake, Gilman Dorr Jr.
Connick, Louis Jr.
Dale, Edwin Lyon Jr.
Davison, Endicott Peabody
Early, Hobart Evans
Elwell, Francis Bolton Jr.
Harman, Archer Jr.
Lynch, Russell Vincent
McElroy, Benjamin Thomas
McGaughey, Guy Ennis Jr.
Moorhead, William Singer Jr.
Seaman, Irving Jr.
Spaulding, Josiah Augustus
Sumner, William Sayre

1945W

Brown, Walter Henderson
Carey, John
Finney, J.John Warren
Holmes, George Burgwin
Hurlbut, Gordon Buckland Jr.
Mallon, Thomas Ridgway
O'Brien, Phillip Jr.
Twichell, Charles Pratt
Vose, Elliot Evans
Warren, George Upson

1947

Alling, Charles Booth Jr.
Andrews, Edward W.Jr.
Boulos (Bouliaratis), W. M.
Bronson, David Bennet
Chafee, John Hubbard
Finley, John George Gilpin
Goedecke, William Skinner
Leavenworth, Donald Loyal
Moore, James I.
O'Brien, Frank Jr.
Palmer, Charles Edgar
Read, Richard Rollins
Robinson, Howard C.Jr.
Tucker, Carl Jr.
Whitehouse, Charles Sheldon

1948

Ashley, Thomas William L.
Biglow, Lucius Horatio Jr.
Bush, George Herbert Walker
Caulkins, John Ervin
Clark, William Judkins
Connelly, William James Jr.
Cook, George III
Grimes, David Charles
Jenkins, Richard Elwood
Mack, Richard Gesrtle
Moseley, Thomas Wilder
Pfau, George Harold Jr.
Walker, Samuel Sloan Jr.
Weaver, Howard Sayer
Wilkie, Valleau Jr.

1949

Baribault, Richard Pfeifer
Bassett, Barton Bradley II
Coffin, William S. Jr.
Davison, Daniel Pomeroy
Goodyear, Robert M.
Hollister, John Baker Jr.
Lavelli, Anthony Jr.
Leiper, Joseph McCarrell II
Lippincott, David McCord
Lord, Charles Edwin II
Lufkin, Sr., Peter Wende
Raymond, George T. Perkins
Sherrill, Franklin Goldwaithe
Van Dine, Vance
Wickwire, Winthrop Ross

1950

Breen, John Gerald
Buckley, William Frank Jr.
Draper, William Henry III
Frank, Jr., Victor Harry
Galbraith, Evan Griffith
Guinzburg, Thomas Henry
Henningsen, Victor W. Jr.
Kemp, Philip Sperry
Lambert, Paul Christopher
Lovett, Sidney
Luckey, Charles Pinckney
MacLeish, William Hitchcock
McLean, Robert III
Pionzio, Dino John
Shepard, Donald C. Jr.

1951

Anderson, Thomas Hill
Eden, John W.
Ellis, Garrison McClintock N.
Ellis, George Corson Jr.
Love, Ralph Frank
Lufkin, Chauncey Forbush
Mathews, Craig
Mayer, Charles Theodore
McNamara, Thomas Philip
Price, Raymond Kissam Jr.
Reid, Edward Snover III
Ross, Thomas Bernard
Russell, Richard Warren
Ryan, Joseph Mather
Shepard, Charles Robinson S.

1952

Aberg, Donlan Vincent Jr.
Buckley, Fergus Reid
Claude, Abram Jr.
Connick, Andrew Jackson
Cruikshank, Paul F. Jr.
Eisler, Colin Tobias
Finney, Graham Stanley
Haight, Charles Seymour Jr.
Hincks, John Winslow
Kittredge, Frank Dutton
Roberts, George Brooke Jr.
Senay, Edward Charles
Spears, Robert Samuel
Steadman, John Montague
Vorys, Martin West

1953

Bulkey, Jonathan Duncan
Bush, Jonathan James
Donaldson, William Henry
Durham Edwin A. II
Emerson, Christy Payne
Lufkin, Dan Wende
Marshall, John Birnie
McLane, James Price
Menton, John Dennis
Mitinger, Joseph Berry
Noble, Lawerence Mason Jr.
Novkov, David Arthur
Walker, George Herbert III
Weber, John William
Woodsum, Harold Edward Jr.

1954

Benninghoff, Harry Bryner
Evans, Tilgham Boyd
Fortunato, S. Joseph
Giesen, Arthur Rossa, Jr.
Gifford, Richard Cammann
Hiers, Richard Hyde
Kilrea, Walter Charles
Meyer, Russell William Jr.
Morton, Thruston Ballard Jr.
Polich, Richard Frank
Price, Ross Edward
Reponen, Robert Gordon
Ryan, Allan A. III
Schnaitter, Spencer Jason
Thornton, Edmund Braxton

1955

Bryan, Lloyd Thomas Jr.,
DeForest, Stephen Elliott
Fehr, Gerald F.
Gow, Richard Haigh
Green, Charles Grady
Guidotti, Hugh George Jr.
Hansen, Roger Allen
Hudson, Franklin Donald
Johanson, Stanley Morris
Mathias, Philip Hoffman II
McCullough, David Gaub
Searles, Paul David
Shugart, Thorne Martin
Steadman, Richard Cooke
Walker, Ray Carter

1956

Banks, Howard Daniel
Boasberg III, James Emanuel
D'Avanzo, Louis A.
Dempsey, Andrew Squire
Durfee, Charles Gibson Jr.
Esselstyn, Caldwell B.Jr.
Gaines, Milton John
Ingalls, David Sinton Jr.
Jamieson, Thomas C. Jr.
Malloy, Terrence Reed
McGregor, Jack Edwin
Menton, James Paul
Orr, Andrew Alexander
Speed, James Breckinridge
Traphagen, Peter Abraham

1957

Ackerman, Stephen Harry
Bowman, Ralph David
Carlsen, Ray Allen
Clark, Russell Inslee Jr.
Cushman, Charles W.
Dunn, George J.
Fritzche, Peter B.
Loucks, Vernon Reece Jr.,
Loughran, Anthony Hookey
Lumpkin, Richard Anthony
Owseichik, John Philip
Palmer, Lindley Guy II
Ritchie, Wallace Parks Jr.
Somerville, John Wheeler
Williams, William Bruce

1958

Allen, Charles Edward
Blue, Linden Stanley
Cassel, John A.
Cheney, Ronald Lawton
Cushman, Robert Edgar Jr.
Embersits, John Frank
Howe, Gary Woodson
Morey, Robert Willis Jr.
Pendexter, John Fowler
Phelan, Howard Taylor
Post, Russell Lee Jr.
Preston, John Louis
Shackelford, Robert Campbell
Van Antwerp, William M. Jr
Wheeler, Thomas Beardsley

1959

Adams, Stephen
Bodman, William Camp
Connors, James Joseph III
Cooke, John Parick
Ercklentz, Alexander Tonio
Esselstyn, Erik Canfield
Hemphill, James Tierney
Holbrook, John Jr.
Kingsley, Charles Capen
Lightfoot, Richard Bissett
Lord, Winston
Mayor, Michael Brook
Sheffield, James Rockwell
Thorson, Peter Andreas
Tyler, Cheever

1960

Ball, David George
Beane, Frank Eastman Jr.
Capron, Paul III
Dominick, David DeWitt
Ernst, Frederick Vincent
Garnsey, William Herrick
Giegengack, Robert Francis Jr.
Holbrook, David Doubleday
Lindgren, Richard Hugo
Lusk, Peter Anthony
McCarthy, Charles Edward
Meek, John Burgess
Northrop, Robert Smitter
Scott, Eugene Lytton
Smith, Bruce Donald III

1961

Bissell, George Thomas
Bockrath, Richard Charles Jr.
Bowles, William Carter Jr.
Clark, Thomas Whitton
Cogswell, John Marshall
DeNeufville, John Phillip
Hamlin, Charles B.
Lindsay, Dale Alton Jr.
MacLean, Kenneth Jr.
Pyle, Michael Johnson
Seeley, George Wheeler
Singleton, Thomas Hall
Stewart, James Corb
Waddel, Geoffrey Hamilton
Walsh, John Joseph Jr.

1962

Back, Samuel Hutchins
Brandt, John Henry
Brewster, James Henry IV
Brooks, Tristam Anthony
Burr, Charles Bentley II
Childs, Henry Clay
Chimenti, Norman Victor
Hamilton, William
Holland, Henry Thompson
LeFevre, Ronald Eaton
Ligon, Thomas B.
Peck, Arthur John Jr.
Spitz, Robert Wayne
Terry, Wyllys III
Zucker, Bernard Benjamin

1963

Ahlbrandt, Roger S. Jr.
Becket, Peter Logan
Borne, Senator David Lyle
Clay, Jesse Loring
Frank Charles Augustus III
Gill, Michael Gates
Gwin, Samuel Lawrence Jr.
Hewitt, Henry Hollis
Jones, Theodore Stephen
Marsh, William Lee
Moser, Richard Eugene
Nordhaus, William Dawbney
O'Connell, Timothy James
Rose, Jonathan Chapman
Rulon-Miller, Patrick

1964

Best, Geoffry Donald Charles
Cirie, John Arthur
Clay, Alexander Stephens
Francis, Samuel Hopkins
Gillette, Howard Frank Jr.
Kaminsky, Robert Isadore
Lynch, Dennis Patrick
McBride, Jonathan Evans
Prindle, Thomas Harrison
Pulaski, Charles Alexander Jr.
Rowe, Thomas D. Jr.
Straw, Ralph Lynwood
Van Loan, Eugene
Wilbur, John Smith Jr.
Wolfe, Stephen II

1965

Ali, Mehdi Raza
Benoit, Charles Edward Jr.
Clark, Gerald Holland
Clark, Stephen Edward
Clay, Timothy J.
Coombs, Orde Musgrave
Corey, Alan Lyle III
Desjardins, Peter Earl
Fetne, Philip Jay
Lagercrantz, Bengt Magnus
Pinney, John Mercer
Pond, Jeffrey Craig
Quarles, James Perrin III
Shattuck, HF John III
Zallinger, Peter Franz

1966

Bockstoce, John R.
Bradford, Timothy McFall
Brown, George Clifford
Cross, Alan Whitmore
Dalby, Michael Thomas
Howard, James Ernest
Kerry, John Forbes
Laidley, Forrest David
Pershing, Richard Warren
Rumsey, David McIver
Singer, Ronald Leonard
Smith, Frederick Wallace
Stanberry, William Burks Jr.
Thorne, David Hoadley
Vargish, Thomas

1967

Afeoju, Bernard Ikecukwu
Ashe, Victor Henderson
Bush, Derek George
Foster, David John
Garnsey, Walter W., Jr.
Lilley, Robert McGregor
Miller, James Whipple
Mitchell, H. Coleman Jr.
Neighe, Geoffrey Mark
Preston, James Marshall
Richards, Davi Alan
Saxon, James M
Snell, Bradford Curie
Swil, Roy Anthony
Thompson, Stepehn Eberly Jr.

1968
Austin, Roy Lesley
Birge, Robert Richards
Brown, Christopher Walworth
Bush, George Walker
Cohen, Kenneth Saul
Cowdry, Rex William
Etra, Donald.
Gallico, G.Gregory III
Guthri, Robert Karle III
Kolar, Bruton Ward (Britt)
McCallumx, Robert Davis Jr.
Saleh, Muhammad Ahmed
Schmidt, Thomas Carl
Schollander, Donald Arthur
Thorne, Brinkley Stimpson

1969
Arras, Robert Edward Jr.
Bouscaren, Michael Frederic
Buck, Charles Henry III
Cosgrove, Thomas Francis Jr.
Demares, Frank Edward II
Dowling, Brian J.
Fuller, Henry W.
Livingston II, Richard H.B.
Madden, Bernard Patrick
Miller, Wentworth Earl
O'Leary, John Joseph Jr.
Schwarzman, Stephen Allen.
Selander, Duane Arthur
Thompson, William McI. Jr.
Woodlock, Douglas Preston

1970
Brown, William Scott
Case, Philip Benham Jr.
Downing, Earl S. III
Eyre, Lawrence L.
Friedland, Johnathan David
Greenberg, Stephen David
Hodes, Douglas Michael
Jackson, Terrence John
Miller, Thomas Clairborne
Morgan, Robert McNair
Ohene-Frempong, Kwaku
Peters, Daniel James
Scattergood, Thomas Bevan
Thompson, Jonathan Penfield
Trower, C. Christopher

1971
Babst, James Anthony
Bryan, James Taylor
Ekfelt, Richard (Dick) Henry
Feinerman, James Vincent
Fortgang, Jeffrey
Galvin, Michael Gerard
Halpin, Thomas Michael
Hernandez, Carols Arturo
Inman, Robert Davies
Johnson, Wilbur John Jr.
Kosturko, William Theodore
Levin, Charles Herbert
Morgan, James Wallace
Noyes, Edward MacArthur
Taft, Thomas Prindle

1972
Cangelosi, Russell Joseph
Clark, Douglas Wells
Csar, Michael F.
Evans, Peter Seelye
Fisher, Scott B.
Lewis, Mark Sanders
Lutz, Karl Evan
MacDonald, Richard J. II
McLaren, Michael Glenn
Moyer, Douglas Richard
Ritterbush, Stephen Grover Jr.
Sauber, Richard Alan
Walden, Robert Stewart
Wilson, Zebuon Vance
Ziegler, Stan Warren

1973*
Barasch, Alan Sidney
Bellis, Tedric Lawrence
Finney, C. Roger
Green, Benjamin P.
Highfill, Philip Henry III
Huey, Mark Christopher
Liles, Coit Redfearn
Lonsdorf, David B.
MacDonald, Stephen Joseph
Mattlin, Fred Walter
McPhee, Stephen Joseph
Moore, David Clement
Scott, William Iain
Sulzer, James Sothern

1974*
Barge, Richard Mason
Bellis, Jon Michael
Bisaro, Larry R.
Cohen, Robert Lewis
Connors, David Michael
Diamond, Peter C.
Doyle, Thomas James Jr.
Eisenberg, Bruce Alan
Gonzalez, Timoteo F.
Lewis, George Emanuel
Murchison, Brian Cameron
Spear, Wesley John
Thorne, Charles H. McK.

1975*
Ashenfelter, Alan Thompson
Bender, Kenneth Arthur
Buckley, Christopher Taylor
Burke III, James Eugene
English, William Deshay Jr.
Gaines, Edwin Frank
Green, Rudolph
MacKenzie, Kenneth Malcolm
Reigeluth, Douglas Scott
Saffen, David
Struzzi, Thomas Allen
Wald, Stephen George
Zorthian, Gregory Jannig

1976*
Blattner, Robert William
Brubaker, John Kim
Capozzalo, Douglas Daniel
Casscells, Christopher Dyson
Childs, Starling Winston
Davies, Philip Turner
Fort, Donald Kenneth
Gates, Edward Raymond
Gibson, Richard Channing Jr.
Hart, Dennis Charles
Leverett, Miles Watson
Mehta, Arjay Singh
Morgenstern, Marc Jaime
Oler, Clark Kimberly Jr.
Williams, Darryl L.

1977*

Blakely, Marvin
Brubaker, James Robert
Cooper, Carnell
Fredericks, Joel Richard
Goldberg, Richard Julius
Grayson, William Cabell, Jr.
Lalley, Patrick William
Lawler, Quentin John
Newman, Thomas M.
Perry, David Bulkey
Rimar, Stephen III
Schlesinger, Daniel Adam
Scott, Larry Glenn
Tom Chan Bruce III

1978*

Albritton, Paul Berem
Baran, Mark R.
Bassi, Keith Alan
Clark, J. Bruce
Gile, Lawrence Maclester
Holmes, Peter Samuel
Hook, Noble
Marinelli, David Leonard
Owens, Samuel L.
Piel, Geoffrey D.
Rizzo, Robert John
Roy, John Marcus
Sullivan, Charles S.
Turner, Elvin D.

1979*

Brown, Robert Nelson
Edozien, Anthony O.
Fore, John Arthur
Holmbee, Jeffrey Arthur
Lorenson, David Harold
McNally, Edward E.
Moses, Jack Thomas
Nondorf, Kurt D.
O'Brien, Donald Patrick
Peters, Eric Brooks
Skrovan, Stephen Thomas
Stevenson, Charles P.
Westerfield, Richard H.
Wilson, Daniel Richard
Yent, James B. Jr.

1980*

Austin, Samuel Monroe
Chibundu, Maxwell O.
Davenport, George Leovy
DeVore, Mark Samuel
Dilworth, George Toby
Fleming, Andrew T.
Hatem, John J.
Lawrence, Gary Martin
Mulhern, Daniel Kevin
Peters, Elliot Remsen
Stevens, Eric Eugene
Teig, Joseph Benjamin
Tumpane, Timothy Michael
Zigerelli, Lawrence John

1981*

Bullock, Stanton B.
Campbell, Kimberly C.
Carlsson, Mats Erik
Choa, Christopher James
Conway, Joseph Leo Jr.
Grandine, Thomas Allan
Novosel, David Gerard
O'Keefe, Regis James
Peters, Kenneth Graham
Peterson, Paul Clifford
Russell, Richard George
Staven, Karl Eric
Stratton, Daniel James
Tingey, Douglas Stuart
Troy, Alexander

1982*

Bass, James Edward
Breslau, Jonathan
Burkus, Gregory James
Campbell, Gavin Elliott
Devlin, Michael William
Leone, Frederick Anthony
McAfee, William Andrew
Meyers, Bryan Fitch
Murchison, Robert W.
Rachlin, David Isaiah
Reid, Jasper
Salzman, Mark Joseph
Sanhago, Eddie
Towers, Jonathan David
Wright, William Henry II
Yang, James Ting-Yeh

1983*

Abrams, Peter Mark
Brooks, Peter Moody
Cerveris, Michael Ernest
Franklin, Richard David
Gale, Frederick Scott
Montesano, Michael John III
Noel, Christopher
Pinela, Carlos
Sharp, Jonathan Douglas
Sheffield, John Van Loon
Wagner, Victor Edmond

1984*

Alling, Wilbur M.
Andrie, Paul James
Coggins, Daniel Seton
Crawley, Brian Scott
Graves, Earl Gilbert Jr.
Henston, Douglas Robert
Herskovits, David Nathaniel
Lambert, Edward Scott
Litt, David Geoffrey
Skibell, Steven Alan
Urquijo, Conzalo
Weinstein, Adam
Wiseman, Stephen II

1985

Boasberg, James Emanuel
Carlin, William John Carr JR
Chandrasekhar, Ashok Jai
Frankel, Scott David
Grossman, Jay Alan
Kwok, Wei-Tai
Lindy, Peter Barnes
Misner, Timothy Charles
Mnu Chin Steven Terner
Petela, James Gerard
Powers, Richard Hart
Smock, Morgan Robert
Taft, Horace Dutton
Thomson, Gregory Allan
Walsh, Kevin Sanchez

BUSH, 1967, DEREK GEORGE—(*Student*)—Born Oct. 15, 1943, Buenos Aires, Argentina, S.A.; M.B.A. expected in '71, Harvard Sch. of Bus. Adminis,; res., Rocky Run Farms, McLean, Va.; m. June 15, '68, Emily Blair Chewning.

BUSH, 1948, GEORGE HERBERT WALKER—Born June 12, 1924, Milton, Mass.; res., Apt. 8, 5000 Longmont Dr., Houston, Texas 77002; U.S. Congressman, '66-'70; Lieut.(j.g.), USNR Aug. '42-Sept. '45; DFC, 3, Air Medals; m. Jan. 6, '45, Barbara Pierce; s. George W., ('68), John Ellis, Neil Mallon, Marvin Pierce; d. Dorothy W.

BUSH, 1968, GEORGE WALKER—(*Armed Services*)—Born July 6, 1946, New Haven, Conn.; Lieut., Pilot, USAF, June '68-June 70'; res., Apt. 8, 5000 Longmont Dr., Houston, Texas 77027.

BUSH, 1922, JAMES SMITH—(*Finance*)—Born April 11, 1901, Milwaukee, Wis.; Pres., Inter Mundis, Ltd. (domestic and internatl. finance), 745 5th Ave., New York, N.Y. 10022; res., 450 E. 63rd St., New York 10021; Curator, Univ. of Missouri, '50-'56; Pres., Yale Club of St. Louis, '50-'52; Managing Dir., Export-Import Bank of Washington, '59-'63; Lieut. Col., USAF, '42-'45; Bronze Star; m. I, Jan. 19, '29, Caroline Patterson; II, Dec. 21, '53, Lois Kieffer; s. Samuel Prescott II; d. Shelley (*Jansing*), Caroline (*Cole*), Mary Livingston, Ethel Walker Smith.

BUSH, 1953, JONATHAN JAMES—(*Investments*)—Born May 6, 1931, Greenwich, Conn.; Pres., Broker, J. Bush & Co., 76 Beaver St., New York, N.Y. 10005; res., 130 East End Ave., New York 10028; Gen. Ptnr., G. H. Walker & Co., June '60-July '70; Lieut., Army, '53-'55; m. Dec. 2, '67, Josephine Colwell Bradley; s. J.J.B., Jr.

BUSH, 1917, PRESCOTT S., M.A., LL.D.—(*Finance retired*)—Born May 15, 1895, Columbus, Ohio.; res., Pheasant Lane, Greenwich, Conn. 06830; Greenwich Rep. Town Meeting, '32-'52 (Moderator, '35-'52); Yale Corporation, '44-'58; U.S. Senator (R.-Conn.), '52-'63; formerly Ptnr., Brown Brothers Harriman & Co., N.Y.; m. Aug. 6, '21, Dorothy Walker; s. P.S.B., Jr. ('44), George, ('48), Jonathan, ('53), William T., ('60); d. Nancy (*Ellis*).

Bush surnames from Skull & Bones 1971 Membership Catalogue

How the Order CONTROLS EDUCATION

Antony C. Sutton



Wednesday Evening, June 28th, 1882.

How the Order CONTROLS EDUCATION

Volume three of a series

Antony C. Sutton

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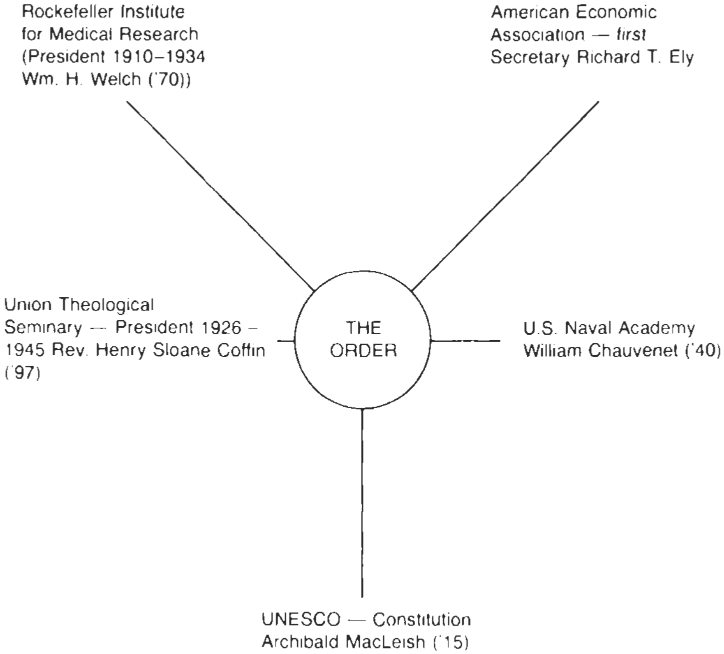
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Contents

Further Influence Of The Order — Post-1900



Memorandum Number One: It All Began At Yale

The first volume of this series introduced The Order, presented three preliminary hypotheses with examples of the evidence to come.

We also asserted that any group that wanted to control the future of American society had first to control education, i.e., the population of the future. This volume will outline the way in which education has been controlled by The Order.

It all began at Yale. Even the official Yale history is aware of Yale's power and success:

> "The power of the place remain(s) unmistakable. Yale was organized; Yale inspired a loyalty in its sons that was conspicuous and impressive; Yale men in after life made such records that the suspicion was that even there they were working for each other. In short, Yale was exasperatingly and mysteriously successful. To rival institutions and to academic reformers there was something irritating and disquieting about old Yale College."[1]

"Yale was exasperatingly and mysteriously successful," says the official history.

And this success was more than obvious to Yale's chief competitor, Harvard University. So obvious, in fact, that in 1892 a young Harvard instructor, George Santanyana, went to Yale to investigate this "disturbing legend" of Yale power. Santanyana quoted a Harvard alumnus who intended to send his son to Yale—because in real life "all the Harvard men are working for

[1] George Wilson Pierson, *Yale College* 1871-1922 (Yale University Press, New Haven, 1952) Volume One, p. 5.

Yale men."[1]

But no one has previously asked an obvious question—Why? What is this "Yale power"?

A REVOLUTIONARY YALE TRIO

In the 1850s, three members of The Order left Yale and working together, at times with other members along the way, made a revolution that changed the face, direction and purpose of American education. It was a rapid, quiet revolution, and eminently successful. The American people even today, in 1983, are not aware of a coup d'etat.

The revolutionary trio were:

- Timothy Dwight ('49), Professor in the Yale Divinity School and then 12th President of Yale University.
- Daniel Coit Gilman ('52), first President of the University of California, first President of the Johns Hopkins University and first President of the Carnegie Institution.
- Andrew Dickson White ('53), first President of Cornell University and first President of the American Historical Association.

This notable trio were all initiated into The Order within a few years of each other (1849, 1852, and 1853). They immediately set off for Europe. All three went to study philosophy at the University of Berlin, where post-Hegelian philosophy had a monopoly.

- Dwight studied at the Universities of Berlin and Bonn between 1856 and 1858;
- Gilman was at the University of Berlin between 1854 and 55 under Karl von Ritter and Friedrich Trendelenberg, both prominent "Right" Hegelians; and
- White studied at the University of Berlin between 1856 and 1858.

Notably also at the University of Berlin in 1856 (at the Institute

[1] E.E. Slosson, *Great American Universities* (New York, 1910) pp. 59-60.

of Physiology) was none other than Wilhelm Wundt, the founder of experimental psychology in Germany and the later source of the dozens of American PhDs who came back from Leipzig, Germany to start the modern American education movement.

Why is the German experience so important? Because these were the formative years, the immediate post graduate years for these three men, the years when they were planning the future, and at this period Germany was dominated by the Hegelian philosophical ferment.

There were two groups of these Hegelians. The right Hegelians, were the roots of Prussian militarism and the spring for the unification of Germany and the rise of Hitler. Key names among right Hegelians are Karl Ritter (at the University of Berlin where our trio studied), Baron von Bismarck and Baron von Stockmar, confidential adviser to Queen Victoria over in England. Somewhat before this, Karl Theodor Dalberg (1744-1817), arch-chancellor in the German Reich, related to Lord Acton in England and an Illuminati (Baco v Verulam in the Illuminati code), was a right Hegelian.

There were also Left Hegelians, the promoters of scientific socialism. Most famous of these, of course, are Karl Marx, Friedrich Engels, Heinrich Heine, Max Stirner and Moses Hess.

The point to hold in mind is that both groups use Hegelian theory of the State as a start point, i.e., the State is superior to the individual. Prussian militarism, Naziism and Marxism have the **same** philosophic roots.

And it left its mark on our trio.

DANIEL COIT GILMAN

Gilman wrote his sister in 1854 that what he most desired to do on returning home to America was to "influence New England minds."

An extract from one Gilman letter is worth quoting at length. Gilman wrote his sister from St. Petersburg in April, 1854:

DANIEL COIT GILMAN



Daniel C. Gilman in 1852 as a senior in Yale College.



Daniel C. Gilman in the early seventies as president of the University of California.

And what **do you think I am "keeping" for?** Tell me, some day when you write, for every year makes me feel that I must draw nearer to a point. When I go home to America I must have some definite notions. Day and night I think of that time, and in all I see and do I am planning for being useful at home. I find my wishes cling more and more towards a home in New England, and I long for an opportunity to influence New England minds. If I am an editor, New York is the place; but, to tell the truth, I am a little afraid of its excitements, its politics, its money-making whirl. I look therefore more and more to the ministry as probably the place where I can do more good than anywhere else; that is to say, if I can have a congregation which will let me preach such things as we have talked over so many times in our up-stairs confabs. I am glad you remember those talks with pleasure, for I look upon them as among the greatest "providences" of my life. If ever I make anything in this world or another I shall owe it to the blessed influences of **home.** For me, it seems as though new notions and wider views of men and things were crowding upon me with wonderful rapidity, and every day and almost every hour I think of some new things which I wish to have accomplished in America. . . . I find my thoughts, unconsciously, almost, dwelling on the applications of Christianity or the principles of the New Testament to business, study, public education, political questions, travel, and so forth. I had a long talk with Mr Porter in Berlin (it was three days long with occasional interruptions) on topics related to such as I have named, and he assures me that there are many places in New England ripe for the advocacy of some such views upon these questions as I have often hinted to you at home. I told him a great deal about my thoughts on such things, talking quite as freely and perhaps more fully than I have ever done with you girls

> at home. He seemed exceedingly interested. . . He told me that the kind of preaching I spoke of was the kind now needed—the kind which would be most influential of good—and on the whole he encouraged me to attempt it. I feel more and more desirous to do so, and shall keep on, in all I see and hear abroad, with the examination of every influence now working upon men—churches and schools, politics and literature. . . [1]

Daniel Coit Gilman is the key activist in the revolution of education by The Order. The Gilman family came to the United States from Norfolk, England in 1638. On his mother's side, the Coit family came from Wales to Salem, Massachusetts before 1638.

Gilman was born in Norwich, Connecticut July 8, 1831, from a family laced with members of The Order and links to Yale College (as it was known at that time).

Uncle Henry Coit Kingsley (The Order '34) was Treasurer of Yale from 1862 to 1886. James I. Kingsley was Gilman's uncle and a Professor at Yale. William M. Kingsley, a cousin, was editor of the influential journal *New Englander.*

On the Coit side of the family, Joshua Coit was a member of The Order in 1853 as well as William Coit in 1887.

Gilman's brother-in-law, the Reverend Joseph Parrish Thompson ('38) was in The Order.

Gilman returned from Europe in late 1855 and spent the next 14 years in New Haven, Connecticut—almost entirely in and around Yale, consolidating the power of The Order.

His first task in 1856 was to incorporate Skull & Bones as a legal entity under the name of The Russell Trust. Gilman became Treasurer and William H. Russell, the co-founder, was President. It is notable that there is no mention of The Order, Skull & Bones, The Russell Trust, or any secret society activity in Gilman's biography, nor in open records. The Order, so far as its members are concerned, is designed to be secret, and apart from one or two inconsequential slips, meaningless unless one has the whole picture.

[1] Fabian Franklin, *The Life of Daniel Coit Gilman* (Dodd, Mead. New York, 1910), pp. 28-9.

The Order has been remarkably adept at keeping its secret. In other words, The Order fulfills our first requirement for a conspiracy—i.e., IT IS SECRET.

The information on The Order that we are using surfaced by accident. In a way similar to the surfacing of the Illuminati papers in 1783, when a messenger carrying Illuminati papers was killed and the Bavarian police found the documents. All that exists publicly for The Order is the charter of the Russell Trust, and that tells you nothing.

On the public record then, Gilman became assistant librarian at Yale in the fall of 1856 and "in October he was chosen to fill a vacancy on the New Haven Board of Education." In 1858 he was appointed Librarian at Yale. Then he moved to bigger tasks.

THE SHEFFIELD SCIENTIFIC SCHOOL

The Sheffield Scientific School, the science departments at Yale, exemplifies the way in which The Order came to control Yale and then the United States.

In the early 1850s, Yale science was insignificant, just two or three very small departments. In 1861 these were concentrated into the Sheffield Scientific School with private funds from Joseph E. Sheffield. Gilman went to work to raise more funds for expansion.

Gilman's brother had married the daughter of Chemistry Professor Benjamin Silliman (The Order, 1837). This brought Gilman into contact with Professor Dana, also a member of the Silliman family, and this group decided that Gilman should write a report on reorganization of Sheffield. This was done and entitled "Proposed Plan for the Complete Reorganization of the School of Science Connected with Yale College."

While this plan was worked out, friends and members of The Order made moves in Washington, D.C., and the Connecticut State Legislature to get state funding for the Sheffield Scientific School. The Morrill Land Bill was introduced into Congress in 1857, passed in 1859, but vetoed by President Buchanan. It was

later signed by President Lincoln. This bill, now known as the Land Grand College Act, donated public lands for State colleges of agriculture and sciences. . . and of course Gilman's report on just such a college was ready. The legal procedure was for the Federal government to issue land scrip in proportion to a state's representation, but state legislatures first had to pass legislation accepting the scrip. Not only was Daniel Gilman first on the scene to get Federal land scrip, he was first among **all** the states and grabbed all of Connecticut's share for Sheffield Scientific School! Gilman had, of course, tailored his report to fit the amount forthcoming for Connecticut. No other institution in Connecticut received even a whisper until 1893, when Storrs Agricultural College received a land grant.

Of course it helped that a member of The Order, Augustus Brandegee ('49), was speaker of the Connecticut State Legislature in 1861 when the state bill was moving through, accepting Connecticut's share for Sheffield. Other members of The Order, like Stephen W. Kellogg ('46) and William Russell ('33), were either in the State Legislature or had influence from past service.

The Order repeated the same grab for public funds in New York State. All of New York's share of the Land Grant College Act went to Cornell University. Andrew Dickson White, a member of our trio, was the key activist in New York and later became first President of Cornell. Daniel Gilman was rewarded by Yale and became Professor of Physical Geography at Sheffield in 1863.

In brief, The Order was able to corner the total state shares for Connecticut and New York, cutting out other scholastic institutions. This is the first example of scores we shall present in this series—how The Order uses public funds for its own objectives.

And this, of course, is the great advantage of Hegel for an elite. The State is absolute. But the State is also a fiction. So if The Order can manipulate the State, it in effect becomes the absolute. A neat game. And like the Hegelian dialectic process we cited in the first volume, The Order has worked it like a charm.

Back to Sheffield Scientific School. The Order now had funds

for Sheffield and proceeded to consolidate its control. In February 1871 the School was incorporated and the following became trustees:

Charles J. Sheffield
Prof. G. J. Brush (Gilman's close friend)
Daniel Coit Gilman (The Order, '52)
W. T. Trowbridge
John S. Beach (The Order, '39)
William W. Phelps (The Order, '60)

Out of six trustees, three were in The Order. In addition, George St. John Sheffield, son of the benefactor, was initiated in 1863, and the first Dean of Sheffield was J.A. Porter, also the first member of Scroll & Key (the supposedly competitive senior society at Yale).

HOW THE ORDER CAME TO CONTROL YALE UNIVERSITY

From Sheffield Scientific School The Order broadened its horizons.

The Order's control over all Yale was evident by the 1870s, even under the administration of Noah Porter (1871-1881), who was not a member. In the decades after the 1870s, The Order tightened its grip. *The Iconoclast* (October 13, 1873) summarizes the facts we have presented on control of Yale by The Order, without being fully aware of the details:

> "They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will. No doubt they are worthy men in themselves, but the many whom they looked down upon while in college, cannot so far forget as to give money freely into their hands. Men in Wall Street complain that the college comes straight to them for help, instead of asking each graduate for his share. The reason is found in a remark made by one of Yale's and America's first men: "Few will give but Bones men, and they care far more for their

society than they do for the college.' The Woolsey Fund has but a struggling existence, for kindred reasons."

"Here, then, appears the true reason for Yale's poverty. She is controlled by a few men who shut themselves off from others, and assume to be their superiors. . . "

The anonymous write of *Iconoclast* blames The Order for the poverty of Yale. But worse was to come. Then-President Noah Porter was the last of the clerical Presidents of Yale (1871-1881), and the last without either membership or family connections to The Order.

After 1871 the Yale Presidency became almost a fiefdom for The Order.

From 1886 to 1899, member Timothy Dwight ('49) was President, followed by another member of The Order, Arthur Twining Hadley (1899 to 1921). Then came James R. Angell (1921-37), not a member of The Order, who came to Yale from the University of Chicago where he worked with Dewey, built the School of Education, and was past President of the American Psychological Association.

From 1937 to 1950 Charles Seymour, a member of The Order, was President followed by Alfred Whitney Griswold from 1950 to 1963.

Griswold was not a member, but both the Griswold and Whitney families have members in The Order. For example, Dwight Torrey Griswold ('08) and William Edward Schenk Griswold ('99) were in The Order. In 1963 Kingman Brewster took over as President. The Brewster family has had several members in The Order, in law and the ministry rather than education.

We can best conclude this memorandum with a quotation from the anonymous Yale observer:

"Whatever want the college suffers, whatever is lacking in her educational course, whatever disgrace lies in her poor buildings, whatever embarrassments have beset her needy students, so far as money could have availed, the weight of blame lies upon this ill-starred society. The

pecuniary question is one of the future as well as of the present and past. Year by year the deadly evil is growing. The society was never as obnoxious to the college as it is today, and it is just this ill-feeling that shuts the pockets of non-members. Never before has it shown such arrogance and self-fancied superiority. It grasps the College Press and endeavors to rule in all. It does not deign to show its credentials, but clutches at power with the silence of conscious guilt."

APPENDIX TO MEMORANDUM NUMBER ONE: THE ORDER IN THE YALE FACULTY

Member	Date Initiated	Position at Yale
BEEBE, William	1873	Professor of Mathematics (1882-1917)
BEERS, Henry A	1869	Professor of English Literature (1874-1926)
BELLINGER, Alfred R.	1917	Professor of Greek (1926-
DAHL, George	1908	Professor Yale Divinity School (1914-1929)
DARLING, Arthur B.	1916	Professor of History (1925-1933)
DAY, Clive	1892	Professor of Economic History (1902-1938)
DEXTER, Franklin B.	1861	Secretary, Yale University (1869-99)
DWIGHT, Timothy	1849	President of Yale University (1886-98)
FARNAM, Henry	1874	Professor of Economics (1880-1933)
FARNAM, William	1866	Trustee Sheffield Scientific School (1894-1923)
FRENCH, Robert D.	1910	Professor of English (1919-1950)
GILMAN, Daniel C.	1852	See text.
GRAVES, Henry S.	1892	Dean, Yale School of Forestry (1900-1939)
GRUENER, G.	1884	Professor of German (1892-1928)
HADLEY, Arthur T.	1876	President of Yale (1899-1921)
HILLES, Frederick W.	1922	Professor of English (1931-
HOLDEN, Reuben A.	1940	Assistant to President (1947-
HOPPIN, James M.	1840	Professor of History of Art (1861-99)
INGERSOLL, James W.	1892	Professor of Latin (1897-1921)
JONES, Frederick S.	1884	Dean, Yale College (1909-1926)
LEWIS, Charlton M.	1886	Professor of English (1898-1923)
LOHMAN, Carl A.	1910	Secretary, Yale University (1927-
LYMAN, Chester	1837	Professor of Mechanics (1859-1890)

APPENDIX TO MEMORANDUM CONTINUED

Member	Date Initiated	Position at Yale
McLAUGHLIN, Edward T.	1883	Professor of English (1890-93)
NORTHROP, Cyrus	1857	Professor of English (1863-84)
PACKARD, Lewis R	1856	Professor of Greek (1863-84)
PECK, Tracy	1861	Professor of Latin (1889-1908
PERRIN, Bernadotte	1869	Professor of Greek (1893-1909)
PIERCE, Frederick E.	1904	Professor of English (1910-35)
ROOT, Reginald D.	1926	Yale football coach (1933-48)
SCHWAB, John C.	1886	Professor of Political Economy (1893-1906)
SEYMOUR, Charles	1908	Professor of History (1915-37) President (1936-1950)
SEYMOUR, Charles Jr	1935	Professor of Art (1949-
SILLIMAN, Benjamin Jr	1837	Professor of Chemistry (1846-85)
STOKES, Anson P.	1896	Secretary of Yale (1899-1921)
SUMNER, William G.	1863	Professor of Economics (1872-1909)
TAFT, William H.	1878	Professor of Law (1913)
TARBELL, Frank B.	1873	Professor of Greek (1882-87)
THACHER, Thomas A.	1835	Professor of Latin (1842-86)
THOMPSON, John R.	1938	Professor of Law (1949-
WALKER, Charles R.	1916	Assistant Secretary (1943-45)
WOOLSEY, Theodore S.	1872	Professor of International Law (1878-1929)
WRIGHT, Henry B.	1898	Professor of History (1907-11)
WRIGHT, Henry P.	1868	Professor of Latin (1871-1918) Dean, Yale College (1884-1909)

Memorandum Number Two: The Look-Say Reading Scam

A tragic failure of American education in this century has been a failure to teach children how to read and write and how to express themselves in a literary form. For the educational system this may not be too distressing. As we shall see later, their prime purpose is not to teach subject matter but to condition children to live as socially integrated citizen units in an organic society—a real life enactment of the Hegelian absolute State. In this State the individual finds freedom only in obedience to the State, consequently the function of education is to prepare the individual citizen unit for smooth entry into the organic whole.

However, it is puzzling that the educational system allowed reading to deteriorate so markedly. It could be that The Order wants the citizen components of the organic State to be little more than automated order takers; after all a citizen who cannot read and write is not going to challenge The Order. But this is surmise. It is not, on the basis of the evidence presently at hand, a provable proposition.

In any event, the system adopted the look-say method of learning to read, originally developed for deaf mutes. The system has produced generations of Americans who are functionally illiterate. Yet, reading is essential for learning and learning is essential for most occupations. And certainly those who **can** read or write lack vocabulary in depth and stylistic skills. There are, of course, exceptions. This author spent five years teaching at a State Unversity in the early 1960s and was appalled by the general inability to write coherent English, yet gratified that some students

had not only evaded the system, acquired vocabulary and writing skills, but these exceptions had the most skepticism about the establishment.

The Order comes into adoption of the look-say method directly and indirectly. Let's start at the beginning.

THE FOUNDER OF DEAF MUTE INSTRUCTION

Look-say reading methods were developed around 1810 for deaf mutes by a truly remarkable man, Thomas Hopkins Gallaudet. Thomas H. Gallaudet was the eldest son of Peter Wallace Gallaudet, descended from a French Huguenot family, and Jane Hopkins. Jane Hopkins traced her ancestry back to John Hopkins and the Reverend Thomas Hooker in the seventeenth century, who broke away from the Congregational Church to help found Hartford, Connecticut. This parallels the story of the Lord family (see Volume One). The Lords also traced their ancestry back to Hopkins and Hooker and the Lords founded Hartford, Connecticut. And it was in Hartford, Connecticut in 1835 that a printer named Lord produced Thomas Gallaudet's first look-say primer, *Mother's Primer.*

Gallaudet's original intention was to use the look-say method only for deaf mutes who have no concept of a spoken language and are therefore unaware of phonetic sounds for letters. For this purpose, Gallaudet founded the Hartford School for the Deaf in 1817. The Gallaudet system works well for deaf mutes, but there is no obvious reason to use it for those who have the ability to hear sounds.

Anyway, in 1835 *Mother's Primer* was published and the Massachusetts Primary School Committee under Horace Mann immediately adopted the book on an experimental basis. Later we shall find that Horace Mann ties directly to The Order—in fact, the co-founder of The Order. On pages 20 and 21 we reproduce two pages from the second edition of 1836, with the following directions to the teacher:



"... pointing to the whole word Frank, but not to the letters. Nothing is yet to be said about letters..."

Why did Horace Mann push a method designed for deaf mutes onto a school system populated with persons who were not deaf mutes?

There are two possible reasons. The reader can take his or her pick.

First, in 1853 Mann was appointed President of Antioch College. The most influential Trustee of Antioch College was the co-founder of The Order—Alphonso Taft.

Second, Mann never had a proper education and consequently was unable to judge a good method from a bad method for reading. Here's a description of Mann's school days:

THE

MOTHER'S PRIMER,

TO

TEACH HER CHILD ITS LETTERS,

AND

HOW TO READ.

DESIGNED ALSO FOR THE

LOWEST CLASS IN PRIMARY SCHOOLS.

ON A NEW PLAN.

BY REV. T. H. GALLAUDET,
Late Principal of the Deaf and Dumb Asylum, Hartford.

SECOND EDITION.

HARTFORD.
DANIEL BURGESS & CO.
1836.





frank **jane**

---

frank **jane**

jane **frank**

frank

jane

Directions to the Teacher.—Say to the child, pointing to the first picture, "What is that? Do you know his name? I wonder if he has a name. Suppose we call him *Frank*. O there is his name, right under him," pointing to the *whole word, Frank, but not to the letters. Nothing is yet to be said about letters.* "Here is his name again. And here it is again. And here it is once more. What is that?" pointing to the other picture. "Perhaps it is Frank's sister. What is her name? O here is her name. It is Jane. Can you show me her name again?—again—once more." Repeat till the child can tell the words readily.





dog **cat**

---

dog **cat**

cat **dog**

dog

cat

frank

jane

Point to the first picture, "What is that? Here is the word *dog* under the picture. Can you show me the word *dog* again?—again,—once more. That is Frank's dog. Well here is Jane's"——(pointing to the second picture.) "What? Can you tell me? What word do you think that is right under Jane's cat? Can you show me the word *cat* again?—again,—once more." Pointing to the word *Frank*, "What word is this?" So with the word *Jane*. Repeat till the words are thoroughly learned.

> "The opportunities for the lad's schooling were extremely meagre. The locality enjoyed the reputation of being the smallest school district, with the poorest school house and the cheapest teacher in the State."

Mann's teacher was Samuel Barratt and we quote:

> "In arithmetic he was an idiot. He could not recite the multiplication table and could not tell the time of day by the clock. . . Six months of the year he was an earnest and reliable teacher, tasting nothing stronger than tea, then for another six months he gave himself to a state of beastly drunkeness. . . "

By 1840 there was a backlash, and the look-say system was dropped in Massachusetts.

THE SECOND ATTEMPT

Towards the end of the 19th century The Order came on the scene—and the look-say method was revived. The youngest son of Thomas Hopkins and Sophia Gallaudet was Edward Miner Gallaudet. Two of his sons went to Yale and became members of The Order:

- Edson Fessenden Gallaudet ('93) who became an instructor of physics at Yale, and
- Herbet Draper Gallaudet ('98), who attended Union Theological Seminary and became a clergyman.

Then the method was adopted by Columbia Teachers' College and the Lincoln School. The thrust of the new Dewey-inspired system of education was away from learning and towards preparing a child to be a unit in the organic society. Look-say was ideal for Deweyites. It skipped one step in the learning process. It looked "easy", and de-emphasized reading skills.

The educational establishment rationalized look-say by claiming that up to the turn of the century reading was taught by "synthetic" methods, i.e., children were taught letters and an

associated sound value. Then they learned to join syllables to make words. This was held to be uninteresting and artificial. Educational research, it was claimed demonstrated that in reading words are not analyzed into component letter parts but seen as complete units. Therefore, learning to read should start with complete units.

EDUCATION

Of course, there is a gigantic non-sequitur in this reasoning process. Certainly a skilled reader does see words as complete units. And a really skilled reader does see lines and paragraphs at a glance. But the accuracy of perceiving the whole is based on the degree of understanding and knowledge of the component parts.

The educational establishment argues today in the 1980s that, based on further experimental testing, it is easier for a child to read the line "the rocket zoomed into space" than "the cat sat on the mat." The first line has "contrasting visual structure" and the second quote has a "similar visual pattern."

What they have done now is to make a mountain out of a molehill, convert the relatively simply task of learning to read into an unnecessarily complex system.

Why? That we shall see as the story progresses.



The visual patterns of words in two sentences

Memorandum Number Three: The Illuminati Connection

We need to trace three historical lines in modern education: the first we looked at in Memorandum Number Two, the development of the look-say method of reading, its abandonment and its later adoption around the turn of the century.

Another line is the import of the experimental psychology of Wilhelm Wundt into the United States by The Order. This we shall examine in Memorandum Number Four.

For the moment we want to briefly trace the influence of Johann Friedrich Herbart, a major German philosopher of the early 19th century. There was at one time in the United States a National Herbart Society for the Scientific Study of Education to adapt Herbartian principles to American education. Later, this became just National Society for the Study of Education. You don't hear too much about Johann Herbart today, but his influence survives in the so-called "enriched" school curricula and in current educational methodology.

Our purpose in this memoradum is twofold: to show the Hegelian aspects of Herbartian theory and to trace the Illuminati connection. There is no direct connection to The Order. However, in a subsequent book, we will trace The Order to the Illuminati and this section will then fall into a logical place.

Herbart was an educational theorist as well as philosopher and psychologist, and strongly influenced Wilhelm Wundt. For Herbart, education had to be presented in a scientifically correct manner, and the chief purpose of education for Herbart is to prepare the child to live properly in the social order of which he is an integral part. Following Hegel, the individual is not important. The mere development of individual talent, of individual fitness,

INTERNATIONAL EDUCATION SERIES

HERBART'S A B C OF SENSE-PERCEPTION

AND MINOR PEDAGOGICAL WORKS

TRANSLATED, WITH INTRODUCTION, NOTES, AND COMMENTARY, BY

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1896

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mental power and knowledge is not the purpose of education. The purpose is to develop personal character and social morality, and the most imporant task of the educator is to analyze the activities and duties of men within society.

The function of instruction is to fulfill these aims and impart to the individual socially desirable ideas. Morality for Herbart, therefore, is what is good for society, following Hegelian theory.

Herbartians favor grouping of subjects around a core topic, i.e., the grouping of history, social science and English literature. This enables the teacher to more easily draw out those notions useful to the objective.

All of these ideas we can recognize in today's educational philosophy came into American education through the Herbartian groups.

THE ILLUMINATI CONNECTION

Johann Herbart studied at the University of Jena, and came under the influence of Johann Herder, Friedrich Schiller, Johann Fichte and Johann Goethe. Later, in Switzerland, Herbart came into contact with Johann Pestalozzi.

What is interesting about these names, and they comprise the most imporant influence on Herbart, is that they are either known members of the Illuminati or reputed to be close to the Illuminati Order.

Let's take each name in turn:

- Johann Gottried Herder (1744-1803) was "Damascus pontifex" in the Illuminati.
- Johann Fichte, we have already noted in the previous volume, was close to the Illuminati and pushed by Goethe ("Abaris") for the post at the University of Jena, where Johann Herbart was studying.
- Friedrich Schiller (1759-1805) was known in the circle but not reliably recorded as an Illuminati member.
- Johann Wolfgang Goethe (1749-1832) was "Abaris" in the Illuminati.

We have an even more precise connection for another prominent Illuminati, Johann Heinrich Pestalozzi (1746-1827), a Swiss teacher of some renown living at Interlaken, and known as "Alfred" in the Illuminati code.

Before Herbart completed his doctorate, just after the turn of the 19th century, he spent three years at Interlaken in Switzerland. Out of his contact with Pestalozzi came a book on Pestalozzi's educational theories, much of which rubbed off onto Herbart. The book is *Pestalozzi's Idee Eines ABC Der Anschaung Untersucht Und Wissenschaftlich Asugefuhrt* (Pestalozzi's idea of an ABC of sense impression). This book has been translated and we reproduce a copy of the title page of the 1896 New York edition. This is not insignificant. It is a commentary by a prominent influence on today's education upon an Illuminati book.

WHY IS THE ILLUMINATI CONNECTION SIGNIFICANT?

The Illuminati was founded May 1, 1776 by Professor Adam Weishaupt of the University of Ingolstadt. It was a secret society, but in 1785 and 1787 several batches of internal documents came to the Bavarian Government. Subsequent investigation determined that the aim of the Illuminati was world domination, using any methods to advance the objective, i.e., the end always justifies the means. It was anti-Christian, although clergymen were found in the organization. Each member had a pseudonym to disguise his identity.

During its time, the Illuminati had widespread and influential membership. After suppression by the Bavarian Government in 1788 it was quiet for some years and then reportedly revived.

The significance for this study is that the methods and objectives parallel those of The Order. In fact, infiltration of the Illuminati into New England is known and will be the topic of a forthcoming volume.

So far as education is concerned, the Illuminati objective was as follows:

"We must win the common people in every corner. This will be obtained chiefly by means of the schools, and by open, hearty behaviour, show, condescension, popularity and toleration of their prejudices which we shall at leisure root out and dispel."

As Rosenbaum has pointed out in his *Esquire* article, the Illuminati ceremony has similarities to The Order. For example, John Robison in *Proofs of a Conspiracy:*[1]

"The candidate is presented for reception in the character of a slave; and it is demanded of him what has brought him to this most miserable of all conditions. He answers—Society-the-State-Submissiveness-False Religion. A skeleton is pointed out to him, at the feet of which are laid a Crown and a Sword. He is asked whether that is the skeleton of a King, a Nobleman or a Beggar?

As he cannot decide, the President of the meeting says to him, "the character of being a man is the only one that is of importance."

Finally, in conclusion, we can trace the foundation of three secret societies, in fact the most influential three secret societies that we know about, to Universities. The Illuminati was founded at University of Ingolstadt. The Group was founded at All Souls College, Oxford University in England, and The Order was founded at Yale University in the United States.

The paradox is that institutions supposedly devoted to the search for truth and freedom have given birth to institutions devoted to world enslavement.

[1] John Robinson, *Proofs of a Conspiracy* (Americanist Classics, Belmont, 1967), p. 110.

Memorandum Number Four: The Leipzig Connection*

The link between German experimental psychology and the American educational system is through American psychologist G. Stanley Hall, in his time probably the foremost educational critic in the U.S.

The Hall family is Scottish and English and goes back to the 1630s, but Hall was not a Yale graduate, and **at first sight** there is no connection between Hall and The Order.

On the other hand, Hall is a good example of someone whose life has major turning points and on probing the turning points, we find The Order with its guiding hand. The detail below is important to link Hall with The Order. It is an open question how much Hall knew, if he knew anything at all, about The Order and its objectives.

After graduation from Williams College, Hall spent a year at the Union Theological Seminary, New York. Our "Addresses" books for The Order do not give church affiliations for members citing the ministry as their occupation. We do know that Rev. Henry Sloane Coffin ('97) was Associate Professor of Practical Theology at Union from 1904-1926 and President of Union Seminary from 1926 to 1945, but we cannot trace any members at Union before 1904.

Fortunately, Hall was an egocentric and wrote two long, tedious autobiographies: *Recreations of a Psychologist* and *Life*

* *The Leipzig Connection* is the title of an excellent little booklet by Lance J. Klass and Paoli Lionni, published by The Delphian Press, Route 2, Box 195, Sheridan, Oregon 97378 ($4.00 postpaid). The book came out in 1967 and was the first to trace the Wundt link. It has more detail on Wundt than this memorandum, but, of course, is not concerned with The Order.

and Confessions of a Psychologist. This is how Hall described his entry to Union in the latter book (pp. 177-8):

> "Recovering from a severe attack of typhoid fever the summer after graduation and still being very uncertain as to what I would be and do in the world, I entered Union Theological Seminary in September 1867."

Later Hall adds,

> "The man to whom I owe far more in this group than any other was Henry B. Smith, a foreign trained scholar, versed more or less not only in systematic theology, which was his chair, but in ancient and modern philosophy, on which he gave us a few lectures outside the course. Of him alone I saw something socially. He did me perhaps the greatest intellectual service one man can render another by suggesting just the right reading at the right time. It was he, too, who seeing my bent advised me to go to Europe."

The Rev. Henry Boynton Smith cited by Hall was Professor of Church History at Union Seminary from 1850 to 1874, and in the "liberal" wing of the Presbyterian Church, he edited *Theological Review* from 1859-1874 and translated several German theological works. Smith was not a member of The Order.

How did Hall, who says he was broke, get from New York to Europe, specifically to Germany?

Here's the interesting twist. Someone he didn't know (but whom today we can trace to The Order) gave him $1,000—a lot of money in those days. Here's how it happened. While preaching in Pennsylvania in 1868, Hall received a letter from Rev. Henry Ward Beecher, whose church he attended in New York:

> ". . . asking me to call on him. I immediately took the train and Beecher told me that through the Manns (friends) he had learned that I wished to study philosophy in Germany but lacked the means. . . (he) gave me a sealed note to the lumber magnate Henry Sage, the benefactor of Cornell, which I presented at his office without knowing its contents. To my

amazement, after some scowling and a remark to the effect that his pastor took amazing liberties with his purse, he gave me a check for one thousand dollars. Taking my note to repay it with interest, he told me to sail for Germany the next day" *(Confessions,* p. 182).

Who was "lumber magnate Henry Sage, the benefactor of Cornell"?

The Sage family had several "Henrys" involved with Yale and Cornell Universities in those days. The "Henry Sage" cited is probably William Henry Sage (1844-1924) who graduated Yale 1865 and then joined the family lumber company, H.W. Sage & Company in New York. Henry Sage was a member of Scroll & Key—the sister Senior Society to Skull & Bones at Yale. Furthermore, two of Henry Sage's nephews were in The Order, but well after 1868:

- Dean Sage ('97)
- Henry Manning Sage ('90)

Both Sages entered the family lumber business, by then renamed Sage Land & Lumber.

In brief: the funds to get Hall to Germany on his first trip came from a member of Scroll & Key, i.e., Henry Sage, while Sage's two nephews joined The Order later in the century.

In Germany, Hall studied philosophy at the University of Berlin for two years under Hegelians Trendelenberg (Gilman of The Order also studied under Trendelenberg) and Lepsius. There were few American students in Berlin at this time. So few that the American Minister George Bancroft could entertain them at the U.S. Embassy to meet German Chancellor von Bismarck.

HALL AT ANTIOCH COLLEGE

Hall returned to the U.S. from Germany in 1871 and by design or accident found himself under the wing of The Order.

Again, the detail is important. There are two versions of Hall's life immediately after returning from his first trip to Germany.

According to Hall's *Confessions,* he became tutor for the Seligman banking family in New York and was then contacted by James K. Hosmer, Professor at Antioch College, Yellow Springs, Ohio. Hosmer asked, and this is **very** unusual, if Hall would like his professorial post at Antioch. Said Hall, "I gladly accepted."

There is another version in *National Cyclopaedia of American Biography* which states, "In 1872 he (Hall) accepted a professorship at Antioch College, Ohio, that formerly was held by Horace Mann."

In any event Hall went to Antioch, a "liberal" Unitarian college with a more than "liberal" view of education. And at Antioch College, G. Stanley Hall was at the core of The Order.

Horace Mann, whom we met in Memorandum Two as the promoter of "look-say" reading, was the first President of Antioch (1853-1860). The most prominent trustee of Antioch College was none other than the co-founder of The Order, Alphonso Taft. According to Hall, "(I) occasionally spent a Sunday with the Tafts. Ex-President Taft was then a boy and his father, Judge Alonzo (sic) Taft was a trustee of Antioch College" (*Confessions,* p. 201).

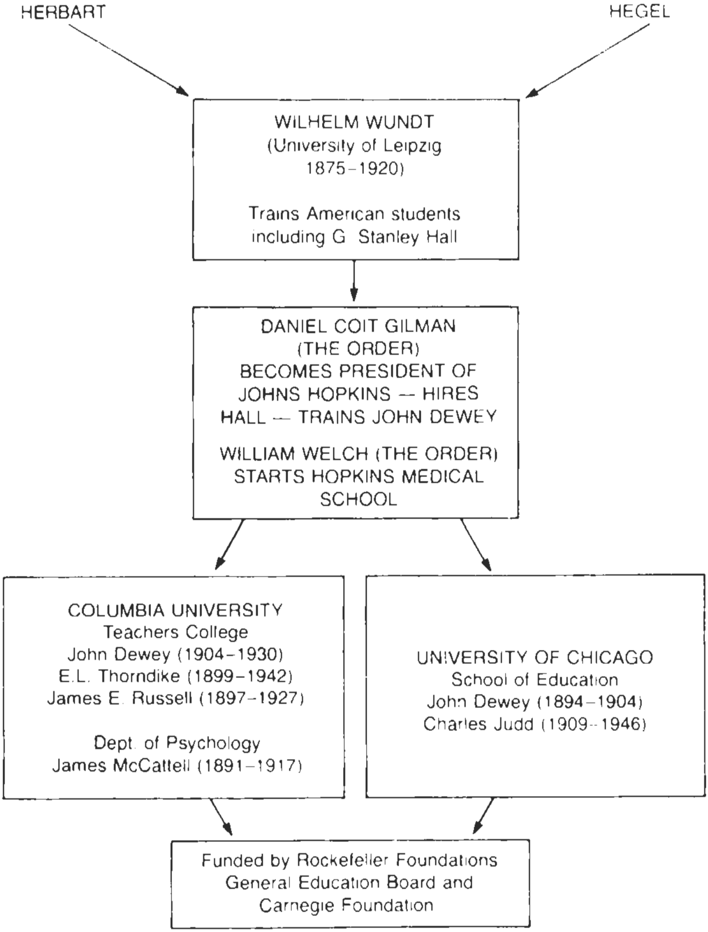
Furthermore, Cincinnati, Ohio, at that time was the center for a Young Hegelian movement including famous left Hegelian August Willich, and these were well known to Judge Alphonso Taft.

In brief, while at Antioch College in Yellow Springs, Ohio, Hall came under the influence of four groups:

(a) the legend of Horace Mann, a hero of the modern education movement,
(b) the Unitarian Church, which will enter our later reports,
(c) a Hegelian discussion group comprised of left Hegelians, and
(d) the co-founder of The Order, Alphonso Taft. And Hall knew William Howard Taft, also a member of The Order ('78) and future President and Chief Justice of the United States.

Hall stayed four years at Antioch, then took off again for

The Americanization of Wilhelm Wundt



Europe, while Alphonso Taft went to Washington, D.C. as Secretary of War, then as Attorney General in the Grant Administration. Hall paused a while in England and then went on to Germany, to Leipzig and Wilhelm Wundt. He became the first of a dozen Americans to receive a Ph.D. in psychology (a new field) under Wundt.

THE HEGELIAN INFLUENCE ON HALL

So between 1870 and 1882, a span of twelve years, Hall spent six years in Germany. As Hall himself comments,

> "I do not know of any other American student of these subjects (i.e., philosophy and psychology) who came into even the slight personal contact it was my fortune to enjoy with Hartmann and Fechner, nor of any psychologist who had the experience of attempting experimental work with Helmholtz and I think I was the first American pupil of Wundt. The twelve years included in this span, more than any other equal period, marked and gave direction to modern psychology. . . "[1]

Who were these four German philosophers who so influenced Stanley Hall?

Eduard von Hartmann (1842-1906), a prominent philosopher. Hartmann's views on individual rights are entirely contrary to our own, i.e., "The principle of freedom is negative. . . in every department of life, save religion alone, compulsion is necessary. . . What all men need is rational tyranny, if it only holds them to a steady development, according to the laws of their own nature."

There isn't too much difference between Hegel and Hartmann on the idea of social progress. Individual freedom is not acceptable to these philosophers, man must be guided by "rational tyranny".

Gustav Theodor Fechner (1801-1887). Fechner disliked Hegel,

[1] G. Stanley Hall, *Founders of Modern Psychology.* Appleton & Co., London, 1912, pp. v-vi.

who Fechner said, "unlearned men to think." However, Fechner was mainly interested in psycho-physics, i.e., parapsychology:

> ". . . he was particularly attracted to the unexplored regions of the soul and so he became interested in somnambulism, attended seances when table tapping came into vogue."

Hermann L.F. von Helmholtz (1821-1894) was undoubtedly Germany's greatest scientist in the 19th century and was rooted in Kant, the predecessor of Hegel.

For Helmholtz:

> "The sensible world is a product of the interaction between the human organism and an unknown reality. The world of experience is determined by this interaction but the organism itself is only an object of experience and is to be understood by psychology and physiology."

WILHELM MAXIMILIAN WUNDT

Wilhelm Wundt (1832-1920), Professor of Philosophy at University of Leipzig, was undoubtedly the major influence on G. Stanley Hall. Modern education practice stems from Hegelian social theory combined with the experimental psychology of Wilhelm Wundt. Whereas Karl Marx and von Bismarck applied Hegelian theory to the politicial field, it was Wilhelm Wundt, influenced by Johann Herbart, who applied Hegel to education, which in turn, was picked up by Hall and John Dewey and modern educational theorists in the United States.

Wilhelm Maximilian Wundt was born August 16, 1832 at Neckarau, a suburb of Mannheim, Germany. His father Maximilian (1787-1846) was a minister. Wundt's grandfather on the paternal side is of significant interest: Kirchenrat Karl Kasimir Wundt (1744-84) was Professor at Heidelberg University in the history and geography of Baden and pastor of the church at Wieblingen, a small neighbourhood town.

The Illuminati-Order documents show that "Raphael" in the Illuminati is identified as this same Professor Karl Kasimir Wundt

and is referred to in the Illuminati Provincial Report from Utica (i.e., Heidelberg) dated September 1782.[1]

The magnum opus of Wilhelm Wundt, i.e., *Volkerpsychologie,* is also today, a recommended book in *Internatinales Freimaurer Lexikon* (page 50).

Historical links aside, Wundt is important in the history of American education for the following reasons:

(1) He established in 1875 the world's first laboratory in experimental psychology to measure individual responses to stimuli.

(2) Wundt believed that man is only the summation of his experience, i.e., the stimuli that bear upon him. It follows from this that, for Wundt, man has no self will, no self determination. Man is, in effect, only the captive of his experiences, a pawn needing guidance.

(3) Students from Europe and the United States came to Leipzig to learn from Wundt the new science of experimental psychology. These students returned to their homelands to found schools of education or departments of psychology, and trained hundreds of Ph.D.s in the new field of psychology.

The core of our problem is that Wundt's work was based on Hegelian philosophical theory and reflected the Hegelian view of the individual as a valueless cog in the State, a view expanded by Wundt to include man as nothing more than an animal influenced solely by daily experiences.

This Wundtian view of the world was brought back from Leipzig to the United States by G. Stanley Hall and other Americans and went through what is known among psychologists as "The Americanization of Wundt."

Although Hall was primarily psychologist and teacher, his political views were partially Marxist, as Hall himself writes:

[1] Richard van Dulman, *Der Geheimbund Der Illuminaten* (Stuttgart, 1977, p. 269).

> ". . . (I) had wrestled with Karl Marx and half accepted what I understood of him" (*Confessions,* p. 222).

In the next Memorandum, Number Five, we will link Hall with Gilman and trace their joint influence on American education.

Memorandum Number Five: The Baltimore Scheme

While G. Stanley Hall was in Leipzig working under Wilhelm Wundt, the revolutionary trio Gilman-Dwight-White were moving events back home—and The Order ran into its first organized opposition.

The protesting "neutrals" at Yale had no hope of winning. Even under independent President Noah Porter in the 1870s, The Order had Yale University under its control. But while Yale students were watching, protesting and writing bad verse, Daniel Gilman ran into opposition 3000 miles away—and if the leaders of this counter revolution had known the story we are recounting here, they might just have stopped The Order dead in its tracks.

In 1867 Daniel Gilman received an offer as President of the University of Wisconsin. This he declined. In 1872 Gilman was offered the Presidency of the newly established University of California. This offer he accepted.

In California Gilman found a political hornets' nest. For some years there had been increasing popular concern about the railroad monopolies, government subsidies to railroads and—oddly enough—the Morrill Bill which gave federal land grants to agricultural and scientific colleges. The reader will recall that in Connecticut and New York. The Order had grabbed the total state's share for Yale and Cornell respectively. Californians believed that the University of California, a land grant college, should teach agriculture and science, whereas Gilman had different

ideas. Unrest over corruption, including corruption among University of California Regents and the railroads (in which members of The Order had widespread interests), led to formation of a new California political party.

In 1873 the party was known as the Patrons of Husbandry or the Grangers. Then members of the Republican Party broke away and joined with the Grangers to form the Peoples Independent Party (known also as the Dolly Varden Party). They won a decisive victory in the 1873 California elections and following investigations by the Grangers, a petition was sent to the Legislature concerning operation of the University of California under Daniel Gilman.

At that time Henry George was editor of the San Francisco *Daily Evening Post* and George used his considerable journalistic skills to attack the University, the Regents, Gilman, and the land grants. Although Henry George is known as a socialist, we classify him as an independent socialist, not part of the Hegelian right-left spectrum. His main target was land **monopoly,** whereas the "scientific" Hegelian socialism of Karl Marx is geared to establishing monopolies of all kinds under state control, following the Hegelian theory of the supremacy of the State.

This populist furor scared Gilman, as he freely admits:

> ". . . there are dangers here which I could not foresee. . . This year the dangers have been averted but who can tell what will happen two years hence? I feel that we are building a superior structure but it rests over a powder mill which may blow it up any day. All these conditions fill me with perplexity."

Reading between the lines, Daniel Gilman was not too anxious to face the populist west. He needed a more stable base where prying journalists and independent politicians could be headed off. And this base presented itself in the "Baltimore scheme".

DANIEL GILMAN BECOMES PRESIDENT OF JOHNS HOPKINS

Johns Hopkins, a wealthy Baltimore merchant, left his fortune

to establish a University for graduate education (the first in the United States along German lines) and a medical school.

Hopkins' trustees were all friends who lived in Baltimore. How then did they come to select Daniel Coit Gilman as President of the new University?

In 1874 the trustees invited three university presidents to come to Baltimore and advise on the choice of a President. These were Charles W. Eliot of Harvard, Andrew Dickson White of Cornell, and James B. Angell of Michigan. Only Andrew Dickson White was in The Order. After meeting independently with each of these presidents, half a dozen of the trustees toured several American Universities in search of further information—and Andrew D. White accompanied the tour. The result was, in the words of James Angell:

> "And now I have this remarkable statement to make to you, that without the least conference between us three, we all wrote letters telling them that the one man was Daniel C. Gilman of California."[1]

The truth is that Gilman not only knew what was going on in Baltimore, but was in communication with Andrew White on the "Baltimore scheme," as they called it.

In a letter dated April 5, 1874, Gilman wrote as follows to Andrew D. White:

> "I could not conclude on any new proposition without conferring upon it with some of my family friends, and I have not felt at liberty to do so. I confess that the **Baltimore** (italics in original) scheme has oft-times suggested itself to me, but I have no personal relations in that quarter."[2]

Here's the interesting point: the board appointed by Johns Hopkins to found a university did not even meet to adopt its by-laws and appoint committees until **four weeks** before this letter i.e., March 7, 1974. Yet Gilman tells us "the **Baltimore** scheme has

[1] John C. French, *A History of the University Founded by Johns Hopkins* (The Johns Hopkins Press, Baltimore, 1946), p. 26.
[2] *Life of Daniel Coit Gilman,* p. 157.

oft-times suggested itself to me . . . ''

In brief: Gilman knew what was happening over in Baltimore BEFORE HIS NAME HAD BEEN PRESENTED TO THE TRUSTEES!

Gilman became first President of Johns Hopkins University and quickly set to work.

Johns Hopkins had willed substantial amounts for both a University and a medical school. Dr William H. Welch ('70), a fellow member of The Order, was brought in by Gilman to head up the Hopkins medical school. (Welch was President of the Board of Directors of the Rockefeller Institute of Medical Research for almost 25 years, 1910-1934. This we shall expand upon later in the series when we examine how The Order came to control medicine). For the moment let's return to G. Stanley Hall who was in Leipzig while Johns Hopkins was acquiring its new President.

GILMAN STARTS THE REVOLUTION IN AMERICAN EDUCATION

When he returned to the United States Hall was feeling pretty low:

> "I came home, again in the depths because of debt and with no prospects, took a small flat on the edge of Somerville, where my two children were born, and waited, hoped and worked. One Wednesday morning President Eliot (of Harvard University) rode up to the house, rapped on the door without dismounting from his horse and asked me to begin Saturday of that week a course of lectures on education. . . "

As Hall recounts it, he had a "very impressive audience" for these lectures. Sometime later,

> "In 1881 I was surprised and delighted to receive an invitation from the Johns Hopkins University, then the cynosure of all aspiring young professors, to deliver a course of twelve semi-public lectures on psychology."

At the end of the lecture series, Gilman offered Hall the chair

of Professor of Psychology and Pedagogy. This puzzled Hall because others at Johns Hopkins were "older and more able" than himself and

> "Why the appointment, for which all of them had been considered, fell to me, I was never able to understand, unless it was because my standpoint was thought to be a little more accordant with the ideals which then prevailed there."

Hall was given a psychological laboratory, a thousand dollars a year for equipment and, with the encouragement of Gilman, founded *The American Journal of Psychology.*

And what did Hall teach? Again in his own words:

> "The psychology I taught was almost entirely experimental and covered for the most part the material that Wundt had set forth in the later and larger edition of *Physiological Psychology*."

The rest is known. The chart demonstrates how doctoral students from Wundt and Hall fanned out through the United States, established departments of psychology and education by the score; 117 psychological laboratories just in the period up to 1930. Prominent among these students were John Dewey, J.M. Cattell and E.L. Thorndike—all part of the founding of Columbia Teachers' College and Chicago's School of Education—the two sources of modern American education.

Their activities can be measured by the number of doctorate in

American Students of Wundt Teaching at U.S. Universities	**Career At**	**Number of Doctorates they Awarded up to 1948**
G. Stanley Hall	Johns Hopkins and Clark University	149 doctorates
J. McKeen Cattell	Columbia University	344 doctorates
E.W. Scripture	Yale University	138 doctorates
E.B. Titchener	Cornell University	112 doctorates
H. Gale	Minnesota University	123 doctorates
G.T.W. Patrick	Iowa University	269 doctorates
C.H. Judd	University of Chicago	196 doctorates

educational psychology and experimental psychology granted in the period up to 1948. The following list includes psychologists with training in Germany under Wilhelm Wundt before 1900, and the number of doctorates they in turn awarded up to 1948:

Of these only E.B. Titchener at Cornell could be called a critic of the Wundt school of experimental psychology. The rest followed the party line: an amalgamation of Hegelian philosophy and Wundtian animal psychology.

So from the seed sown by Daniel Coit Gilman at Johns Hopkins grew the vast network of interlocking schools of education and departments of psychology that dominates education today.

Memorandum Number Six: The Troika Spreads Its Wings

Around the turn of the century The Order had made significant penetration into the educational establishment. By utilizing the power of members in strategic positions they were able to select, groom and position non-members with similar philosophy and activist traits.

In 1886 Timothy Dwight (The Order) had taken over from the last of Yale's clerical Presidents, Noah Porter. Never again was Yale to get too far from The Order. Dwight was followed by member Arthur T. Hadley ('76). Andrew Dickson White was secure as President of Cornell and alternated as U.S. Ambassador to Germany. While in Berlin, White acted as recruiting agent for The Order. Not only G. Stanley Hall came into his net, but also Richard T. Ely, founder of the American Economic Association. Daniel Gilman, as we noted in the last memorandum, was President of Johns Hopkins and used that base to introduce Wundtian psychology into U.S. education. After retirement from Johns Hopkins, Gilman became the first President of the Carnegie Institution of Washington, D.C.

The chart overleaf summarizes the achievement of this remarkable troika.

Now let's see how The Order moved into more specialized fields of education, then we need to examine how The Order fits with John Dewey, the source of modern American educational

philosophy, then how The Order spread Dewey throughout the system.

FOUNDING OF THE AMERICAN ECONOMIC ASSOCIATION

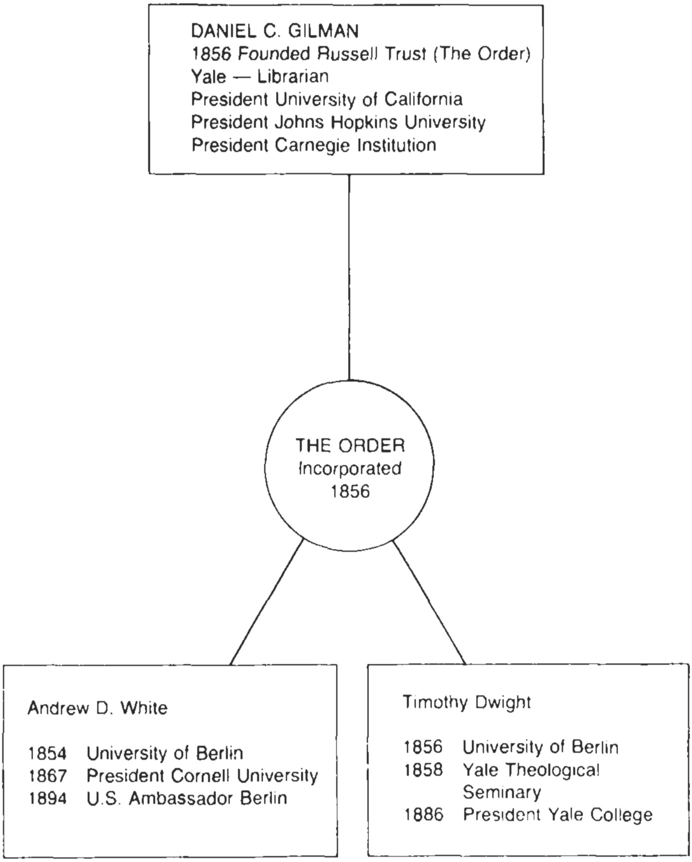
Academic associations are a means of conditioning or even policing academics. Although academics are great at talking about academic freedom, they are peculiarly susceptible to peer group pressures. And if an academic fails to get the word through his peer group, there is always the threat of not getting tenure. In other words, what is taught at University levels is passed through a sieve. The sieve is faculty conformity. In this century when faculties are larger, conformity cannot be imposed by a President. It is handled equally well through faculty tenure committees and publications committees of academic associations.

We have already noted that member Andrew Dickson White founded and was first President of the American Historical Association and therefore was able to influence the constitution and direction of the AHA. This has generated an official history and ensured that existence of The Order is never even whispered in history books, let alone school texts.

An economic association is also of significance because it conditions how people who are not economists think about the relative merits of free enterprise and state planning. State economic planning is an essential part of State political control. Laissez faire in economics is the equivalent of individualism in politics. And just as you will never find any plaudits for the Ninth and Tenth Amendments to the Constitution in official history, neither will you find any plaudits for individual free enterprise.

The collectivist nature of present day college faculties in economics has been generated by the American Economic Association under influence of The Order. There are very few outspoken preachers of the Austrian School of Economics on American campuses today. They have been effectively weeded out. Even Ludwig von Mises, undisputed leader of the school, was

Achievements Of The Trioka



unable to find a teaching post in the United States. So much for academic freedom in economics. And it speaks harshly for the pervasive, deadening, dictatorial hand of the American Economics Association. And the controlling hand, as in the American Psychological Association and the American Historical Association, traces back to The Order.

The principal founder and first Secretary of the American Economic Association was Richard T. Ely. Who was Ely?

Ely descended from Richard Ely of Plymouth, England who settled at Lyme, Connecticut in 1660. On his grandmother's side (and you have heard this before for members of The Order) Ely descended from the daughter of Rev. Thomas Hooker, founder of Hartford, Connecticut. On the paternal side, Ely descended from Elder William Brewster of Plymouth Colony.

Ely's first degree was from Dartmouth College. In 1876 he went to University of Heidelberg and received a Ph.D. in 1879. Ely then returned to the United States, but as we shall describe below, had already come to the notice of The Order.

When Ely arrived home, Daniel Gilman invited Ely to take the Chair of Political Economy at Johns Hopkins. Ely accepted at about the same time Gilman appointed G. Stanley Hall to the Chair of Philosopy and Pedagogy and William Welch, a member of The Order we have yet to describe, to be Dean of the Johns Hopkins medical school.

Fortunately, Richard Ely was an egocentric and left an autobiography, *Ground Under Our Feet,* which he dedicated to none other than Daniel Coit Gilman (see illustration). Then on page 54 of this autobiography is the caption "I find an invaluable friend in Andrew D. White." And in Ely's first book, *French and German Socialism,* we find the following:

> "The publication of this volume is due to the friendly counsel of the Honourable Andrew D. White, President of Cornell University, a gentleman tireless in his efforts to encourage young men and alive to every opportunity to speak fitting words of hope and cheer. Like many of the younger scholars of our country, I am indebted to

him more than I can say."

Ely also comments that he never could understand why he always received a welcome from the U.S. Embassy in Berlin, in fact from the Ambassador himself. But the reader has probably guessed what Ely didn't know—White was The Order's recruiter in Berlin.

Ely recalls his conversations with White, and makes a revealing comment:

> "I was interested in his psychology and the way he worked cleverly with Ezra Cornell and Mr Sage, a benefactor and one of the trustees of Cornell University."

The reader will remember it was Henry Sage who provided the first funds for G. Stanley Hall to study in Germany.

Then Ely says,

> "The only explanation I can give for his special interest in me was the new ideas I had in relation to economics."

And what were these new ideas? Ely rejected classical liberal economics, including free trade, and noted that free trade was "particularly obnoxious to the German school of thought by which I was so strongly impressed." In other words, just as G. Stanley Hall had adopted Hegelianism in psychology from Wundt, Ely adopted Hegelian ideas from his prime teacher Karl Knies at University of Heidelberg.

And both Americans had come to the watchful attention of The Order. The staff of the U.S. Embassy in Berlin never did appreciate why a young American student, not attached to the

Embassy, was hired by Ambassador White to make a study of the Berlin City Government. That was Ely's test, and he passed it with flying colours. As he says,

> "It was this report which served to get me started on my way and later helped me get a teaching post at the Johns Hopkins."

The rest is history. Daniel Coit Gilman invited Richard Ely to Johns Hopkins University. From there Ely went on to head the department of economics at University of Wisconsin. Through the ability to influence choice of one's successor, Wisconsin has been a centre of statist economics down to the present day.

Before we leave Richard Ely we should note that financing for projects at University of Wisconsin came directly from The Order—from member George B. Cortelyou ('13), President of New York Life Insurance Company.

Ely also tells us about his students, and was especially enthralled by Woodrow Wilson:

> "We knew we had in Wilson an unusual man. There could be no question that he had a brilliant future."

And for those readers who are wondering if Colonel Edward Mandell House, Woodrow Wilson's mysterious confidant, is going to enter the story, the answer is Yes! He does, but not yet.

The clue is that young Edward Mandell House went to school at Hopkins Grammar School, New Haven, Connecticut. House knew The Order from school days. In fact one of House's closest classmates at Hopkins Grammar School was member Arthur Twining Hadley ('76), who went on to become President of Yale University (1899-1921). And it was Theodore Roosevelt who surfaced Hadley's hidden philosophy:

> "Years later Theodore Roosevelt would term Arthur Hadley his fellow anarchist and say that if their true views were known, they would be so misunderstood that they would both lose their jobs as President of the United States and President of Yale."[1]

[1] Morris Hadley, *Arthur Twining Hadley,* Yale University Press, 1948, p. 33.

House's novel, *Philip Dru,* was written in New Haven, Connecticut and in those days House was closer to the Taft segment of The Order than Woodrow Wilson. In fact House, as we shall see later, was The Order's messenger boy. House was also something of a joker because part of the story of The Order is **encoded** within *Philip Dru*!.

We are not sure if The Order knows about House's little prank. It's just like House to try to slip one over on the holders of power.

AMERICAN MEDICAL ASSOCIATION

Your doctor knows nothing about nutrition? Ask him confidentially and he'll probably confess he had only one course in nutrition. And there's a reason.

Back in the late 19th century American medicine was in a deplorable state. To the credit of the Rockefeller General Education Board and the Institute for Medical Research, funds were made available to staff teaching hospitals and to eradicate some pretty horrible diseases. On the other hand, a chemical-based medicine was introduced and the medical profession cut its ties with naturopathy. Cancer statistics tell you the rest.

For the moment we want only to note that the impetus for reorganizing medical education in the United States came from John D. Rockefeller, but the funds were channeled through a single member of The Order.

Briefly, the story is this. One day in 1912 Frederick T. Gates of Rockefeller Foundation had lunch with Abraham Flexner of Carnegie Institution. Said Gates to Flexner:

> "What would you do if you had one million dollars with which to make a start in reorganizing medical education in the United States?"[1]

As reported by Fosdick, this is what happened:

[1] Raymond D. Fosdick, *Adventure in Giving* (Harper & Row, New York, 1962), p. 154.

> "The bluntness was characteristic of Mr Gates, but the question about the million dollars was hardly in accord with his usual indirect and cautious approach to the spending of money. Flexner's reply, however, to the effect that any funds—a million dollars or otherwise—could most profitably be spent in developing the Johns Hopkins Medical School, struck a responsive chord in Gates, who was already a close friend and devoted admirer of Dr William H. Welch, the dean of the institution."

Welch was President of the Rockefeller Institute for Medical Research from 1901, and a Trustee of the Carnegie Institution from 1906.

William H. Welch was also a member of The Order and had been brought to Johns Hopkins University by Daniel Coit Gilman.

OTHER AREAS OF EDUCATION

We should note in conclusion, other educational areas where The Order had its influence. In theology we have already noted that The Order controlled Union Theological Seminary for many years, and was strong within the Yale School of Divinity.

The constitution for UNESCO was written largely by The Order, i.e., member Archibald MacLeish. And member William Chauvenet (1840) was "largely responsible for establishing the U.S. Naval Academy on a firm scientific basis." Chauvenet was director of the Observatory, U.S. Naval Academy, Annapolis from 1845 to 1859 and then went on to become Chancellor of Washington University (1869).

Finally, a point on methodology. The reader will remember from Memorandum One (Volume One) that we argued the most "general" solution to a problem in science is the most acceptable solution. In brief, a useful hypothesis is one that explains the most events. Pause a minute and reflect. We are now developing a theory that includes numerous superficially unconnected events. For example, the founding of Johns Hopkins University, the

introduction of Wundtian educational methodology, a psychologist G. Stanley Hall, an economist Richard T. Ely, a politician Woodrow Wilson—and now we have included such disparate events as Colonel Edward House and the U.S. Naval Observatory. The Order links to them all. . . . and several hundred or thousand other events yet to be unfolded.

In research when a theory begins to find support of this pervasive nature it suggests the work is on the right track.

So let's interpose another principle of scientific methodology. How do we finally know that our hypothesis is valid? If our hypothesis is correct, then we should be able to **predict** not only future conduct of The Order but also events where we have yet to conduct research. This is still to come. However, the curious reader may wish to try it out. Select a major historical event and search for the guiding hand of The Order.

MEMBERS OF THE ORDER IN EDUCATION

(For Yale University see list at end of Memorandum Number One)

Name	Date Initiated	Affiliations
BURTT, Edwin A.	1915	Professor of Philosophy, University of Chicago (1924-1931) and Cornell University (1931-1960)
ALEXANDER, Eben	1873	Professor of Greek and Minister to Greece (1893-97)
BLAKE, Eli Whitney	1857	Professor of Physics, Cornell (1868-1870) and Brown University (1870-95)
CAPRON, Samuel M.	1853	Not known
CHAUVENET, William	1840	U.S. Naval Academy (1845-59) and Chancellor Washington University (1862-9)
COLTON, Henry M.	1848	Not known
COOKE, Francis J.	1933	New England Conservatory of Music
COOPER, Jacob	1852	Professor of Greek, Centre College (1855-1866), Rutgers University (1866-1904)
CUSHING, William	1872	Not known
CUSHMAN, Isaac LaFayette	1845	Not known
CUTLER, Carroll	1854	President, Western Reserve University (1871-1886)
DALY, Frederick J.	1911	Not known
DANIELS, Joseph L.	1860	Professor of Creek, Olivert College, and President (1865-1904)

Name	Date Initiated	Affiliations
EMERSON, Joseph	1841	Professor of Greek, Beloit College (1848-1888)
EMERSON, Samuel	1848	Not known
ESTILL, Joe G.	1891	Connecticut State Legislature (1932-1936)
EVANS, Evan W.	1851	Professor of Mathematics, Cornell University (1868-1872)
EWELL, John L.	1865	Professor of Church History, Howard University (1891-1910)
FEW SMITH, W.	1844	Not known
FISHER, Irving	1888	Professor of Political Economy, Yale (1893-1935)
FISK, F.W.	1849	President, Chicago Theological Seminary (1887-1900)
GREEN, James Payne	1857	Professor of Greek, Jefferson College (1857-59)
GRIGGS, John C.	1889	Vassar College (1897-1927)
GROVER, Thomas W.	1874	Not known
HALL, Edward T.	1941	St. Mark's School, Southborough, Mass.
HARMAN, Archer	1913	St Paul's School, Concord, N.H.
HARMAN, Archer, Jr	1945	St. Paul's School, Concord, N.H.
HEBARD, Daniel	1860	Not known
HINCKS, John H.	1872	Professor of History, Atlanta University (1849-1894)
HINE, Charles D.	1871	Secretary, Connecticut State Board of Education (1883-1920)
HOLLISTER, Arthur N	1858	Not known
HOPKINS, John M.	1900	Not known
HOXTON, Archibald R	1939	Episcopal High School
HOYT, Joseph G.	1840	Chancellor, Washington University (1858-1862)
IVES, Chauncey B	1928	Adirondack-Florida School
JOHNSON, Charles F	1855	Professor of Mathematics, U.S. Naval Academy (1865-1870), Trinity College (1884-1906)
JOHNSTON, Henry Phelps	1862	Professor of History N.Y. City College (1883-1916)
JOHNSTON, William	1852	Professor English Literature, Washington & Lee (1867-1877) and Louisiana State University (1883-1899)
JONES, Theodore S.	1933	Institute of Contemporary Art
JUDSON, Isaac N.	1873	Not known
KELLOGG, Fred W.	1883	Not known
KIMBALL, John	1858	Not known

Name	Date Initiated	Affiliations
KINGSBURY, Howard T	1926	Westminster School
KINNE, William	1948	Not known
KNAPP, John M.	1936	Princeton University
KNOX, Hugh	1907	Not known
LEARNED, Dwight Whitney	1870	Professor of Church History, Doshiba College, Japan (1876-1928)
McCLINTOCK, Norman	1891	Professor of Zoology, University of Pittsburgh (1925-30), Rutgers (1932-6)
MACLEISH, Archibald	1915	Library of Congress (1939-1944), UNESCO, State Dept., (OWI, Howard University
MACLEISH, William H.	1950	Not known
MACLELLAN, George B.	1858	Not known
MOORE, Eliakim H.	1883	Professor of Mathematics, University of Chicago (1892-1931)
MORSE, Sidney N.	1890	Not known
NICHOLS, Alfred B.	1880	Professor of German, Simmons College (1903-1911)
NORTON, William B.	1925	Professor of History, Boston Univ.
OWEN, Edward T.	1872	Professor of French, University of Wisconsin (1879-1931)
PARSONS, Henry Mcl	1933	Columbia University
PERRY, David B.	1863	President, Douana College (1881-1912)
PINCKARD, Thomas C.	1848	Not known
POMEROY, John	1887	Professor of Law, University of Illinois (1910-1924)
POTWIN, Lemuel S.	1854	Professor, Western Reserve University (1871-1906)
REED, Harry L.	1889	President, Auburn Theological Seminary (1926-1939)
RICHARDSON, Rufus B.	1869	Director of American School of Classical Studies, Athens (1893-1903)
RUSSELL, William H.	1833	Collegiate School, Hartford
SEELY, Wm. W.	1862	Dean, Medical Faculty, University of Cincinnati (1881-1900)
SHIRLEY, A.	1869	Not known
SOUTHWORTH, George CS	1863	Bexley Theological Seminary (1888-1900)
SPRING, Andrew J.	1855	Not known
STAGG, Amos A.	1888	Director Physical Education, University of Chicago
STILLMAN, George S.	1935	St. Paul's School
SUTHERLAND, Richard O.	1931	Not known
THACHER, William L.	1887	Not known
TIGHE, Lawrence G.	1916	Treasurer of Yale
TWICHELL, Charles P.	1945	St. Louis Country Day School

Name	Date Initiated	Affiliations
TYLER, Charles M.	1855	Professor of History, Cornell University (1891-1903)
TYLER, Moses Coit	1857	Professor at Cornell (1867-1900)
VOGT, T.D.	1943	Not known
WALKER, Horace F.	1889	Not known
WATKINS, Charles L.	1908	Director, Phillips Art School
WHITE, John R.	1903	Not known
WHITNEY, Emerson C.	1851	Not known
WHITNEY, Joseph E.	1882	Not known
WILLIAMS, James W.	1908	Not known
WOOD, William C.	1868	Not known
YOUNG, Benham D.	1848	Not known
YARDLEY, Henry A.	1855	Berkeley Divinity School (1867-1882)

Memorandum Number Seven: The Order's Objectives For Education

We can deduce The Order's objectives for education from evidence already presented and by examining the work and influence of John Dewey, the arch creator of modern educational theory.

How do we do this? We first need to examine Dewey's relationship with The Order. Then compare Dewey's philosophy with Hegel and with the philosophy and objectives of modern educational practice.

These educational objectives have not, by and large, been brought about by governmental action. In fact, if the present state of education had been brought about by legislation, it would have been challenged on the grounds of unconstitutionality.

On the contrary, the philosophy and practice of today's system has been achieved by injection of massive private funds by foundations under influence, and sometimes control, of The Order. This implementation we will describe in a future volume, *How The Order Controls Foundations.* In fact, the history of the implementation of Dewey's objectives is also the history of the larger foundations, i.e., Ford, Carnegie, Rockefeller, Peabody, Sloan, Slater and Twentieth Century.

HOW JOHN DEWEY RELATES TO THE ORDER

John Dewey worked for his doctorate at Johns Hopkins

University from 1882-86 under Hegelian philosopher George Sylvester Morris. Morris in turn had his doctorate from University of Berlin and studied under the same teachers as Daniel Gilman, i.e., Adolph Trendelenberg and Hermann Ulrici.

Neither Morris nor Dewey were members of The Order, but the link is clear. Gilman hired Morris, knowing full well that Hegelianism is a totally integrated body of knowledge and easy to recognize. It is as different from the British empirical school of John Stuart Mill as night and day.

John Dewey's psychology was taken from G. Stanley Hall, the first American student to receive a doctorate from Wilhelm Wundt at University of Leipzig. Gilman knew exactly what he was getting when he hired Hall. With only a dozen faculty members, all were hired personally by the President.

In brief, philosophy and psychology came to Dewey from academics hand-picked by The Order.

From Johns Hopkins Dewey went as Professor of Philosophy to University of Michigan and in 1886 published *Psychology,* a blend of Hegelian philosophy applied to Wundtian experimental psychology. It sold well. In 1894 Dewey went to University of Chicago and in 1902 was appointed Director of the newly founded—with Rockefeller money—School of Education.

The University of Chicago itself had been founded in 1890 with Rockefeller funds—and in a future volume we will trace this through Frederick Gates (of Hartford, Connecticut), and the Pillsbury family (The Order). The University of Chicago and Columbia Teachers' College were the key training schools for modern education.

THE INFLUENCE OF DEWEY

Looking back at John Dewey after 80 years of his influence, he can be recognized as the pre-eminent factor in the collectivisation, or Hegelianization, of American Schools. Dewey was consistently a philosopher of social change. That's why his impact has been so deep and pervasive. And it is in the work and implementation of

the ideas of John Dewey that we can find the objective of The Order.

When The Order brought G. Stanley Hall from Leipzig to Johns Hopkins University, John Dewey was already there, waiting to write his doctoral dissertation on "*The Psychology of Kant.*" Already a Hegelian in philosophy, he acquired and adapted the experimental psychology of Wundt and Hall to his concept of education for social change. To illustrate this, here's a quote from John Dewey in *My Pedagogic Creed:*

> "The school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends. Education, therefore, is a process of living and not a preparation for future living."

What we learn from this is that Dewey's education is not **child** centered, but **State** centred, because for the Hegelian. "social ends" are always State ends.

This is where the gulf of misunderstanding between modern parents and the educational system begins. Parents believe a child goes to school to learn skills to use in the adult world, but Dewey states specifically that education is "not a preparation for future living." The Dewey educational system does not accept the role of developing a child's talents but, contrarily, only to prepare the child to function as a unit in an organic whole—in blunt terms, a cog in the wheel of an organic society. Whereas most Americans have moral values rooted in the indiviudal, the values of the school system are rooted in the Hegelian concept of the State as the absolute. No wonder there is misunderstanding!

THE INDIVIDUAL CHILD

When we compare Hegel, John Dewey, and today's educational thinkers and doers, we find an extraordinary

similarity.

For Hegel the individual has no value except as he or she performs a function society:

> "The State is the absolute reality and the individual himself has objective existence, truth and morality only in his capacity as a member of the State."

John Dewey tried to brush the freedom of the individual to one side. In an article, *"Democracy and Educational Administration"* (School & Society, XVL, 1937, p. 457) Dewey talks about the "lost individual," and then restates Hegel in the following way: "freedom is the participation of every mature human being in formation of the values that regulate the living of men together." This is pure Hegel, i.e. man finds freedom only in obedience to the State. As one critic, Horace M. Kallen stated, John Dewey had a "blindness to the sheer individuality of individuals."

In other words, for Dewey man has no individual rights. Man exists only to serve the State. This is directly contradictory to the Declaration of Independence and the Constitution with the preamble "*We the people.*" They then go on to define the rights of the **state** which are **always** subordinate and subject to the will of "*We the people.*"

This, of course, is why modern educationists have great difficulty in introducing the Constitution into school work. Their ideas follow Hegel and Dewey and indirectly the objectives of The Order. For example:

> "An attempt should be made to redress the present overemphasis on individualism in current programs. . . students need to develop a sense of community and collective identity." (Educational Leadership, May 1982, William B. Stanley, Asst. Professor, Dept of Curriculum and Instruction, Louisiana State University).

THE PURPOSE OF EDUCATION

What then is the purpose of education, if the individual has no

rights and exists only for the State?

There was no need for Hegel to describe education, and so far as we know there is no statement purely on education in Hegel's writings. It is unnecessary. For Hegel **every** quality of an individual exists only at the mercy and will of the State. This approach is reflected in political systems based on Hegel whether it be Soviet Communism or Hitlerian national socialism. John Dewey follows Hegel's organic view of society. For example:

> "Education consists either in the ability to use one's powers in a social direction or else in ability to share in the experience of others and thus widen the individual conscienceness to that of the race" (LECTURES FOR THE FIRST COURSE IN PEDAGOGY).

This last sentence is reminiscent of the Hitlerian philosophy of race (i.e., right Hegelianism).

And today's educators reflect this approach. Here's a quote from Assemblyman John Vasconcellos of California, who also happens to be Chairman of the Joint Committee on the Master Plan for Higher Education and the Education Goals Committee for the California State Assembly—a key post:

> "It is now time for a new vision of ourselves, of man, of human nature and of human potential, and a new theory of politics and institutions premised upon that vision. What is that vision of Man? That the natural, whole, organismic human being is loving. . . that man's basic thrust is towards community" (quoted in Rex Myles, *Brotherhood and Darkness,* p. 347).

What is this "widen(ing) the individual conscienceness" (Dewey) and "thrust. . . towards community" (Vasconcellos)?

Stripped of the pedantic language it is new world order, a world organic society. But there is no provision for a global organic order within the Constitution. In fact, it is illegal for any government officer or elected official to move the United States towards such an order as it would clearly be inconsistent with the Constitution. To be sure, Dewey was not a government official, but Vasconcellos has taken an oath of allegiance to the Constitution.

The popular view of a global order is probably that we had better look after our problems at home before we get involved in these esoteric ideas. Political corruption, pitifully low educational standards, and insensitive bureaucracy are probably of more concern to Americans.

It's difficult to see what the new world order has to do with education of children, but it's there in the literature. Fichte, Hegel's predecessor from whom many of his philosophical ideas originated, had a definite concept of a League of Nations (Volkerbund) and the idea of a league to enforce peace. Fichte asserted "As this federation spreads further and gradually embraces the whole earth, perpetual peace begins, the only lawful relation among states. . . "

The National Education Association, the lobby for education, produced a programme for the 1976 Bicentennial entitled *"A Declaration of Interdependence: Education for a Global Community"*.

On page 6 of this document we find:

> "We are committed to the idea of Education for a Global Community. You are invited to help turn the commitment into action and mobilizing world education for development of a world community."

An objective almost parallel to Hegel is in *Self Knowledge and Social Action* by Obadiah Silas Harris, Associate Professor of Educational Management and Development, New Mexico State University, Las Cruces, New Mexico:

> "When community educators say that community education takes into consideration the total individual and his total environment, they mean precisely this: the field of community education includes the individual in his total psycho-physical structure and his entire ecological climate with all its ramifications—social, political, economical, cultural, spiritual, etc. It seeks to integrate the individual within himself (sic) and within his community until the individual becomes a cosmic soul and the community the world."

And on page 84 of the same book:

"The Cosmic soul. . . the whole human race is going to evolve an effective soul of its own—the cosmic soul of the race. That is the future of human evolution. As a result of the emergence of the universal soul, there will be a great unification of the entire human race, ushering into existence a new era, a new dawn of unique world power."

This last quote sounds even more like Adolph Hitler than Assemblyman John Vasconcellos. It has the same blend of the occult, the ethnic and absolutism.

In conclusion we need ony quote the Constitution, the basic body of law under which the United States is governed.

The generally held understanding of the Constitution on the relationship between the individual and the State is that the individual is supreme, the State exists **only** to serve individuals and the State has no power except by express permission of the people.

This is guaranteed by Amendments IX and X of the Constitution.

Amendment IX reads,

> "The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the People."

Note, the "retained". And,

Amendment X reads,

> "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people"

In brief, the proposals of John Dewey and his followers are unconstitutional. They would never have seen the light of day in American schoolrooms unless they had been promoted by The Order with its enormous power.



MIND BLANK—THE ORDER's OBJECTIVE FOR EDUCATION

Memorandum Number Eight: Summary

Up to this point we have established the following:

(1) By the 1870s the Order had Yale University under its control. Every President of Yale since Timothy Dwight has either been a member of The Order or has family connections to The Order.

It also appears that some Yale graduates who are not members of The Order will act towards objectives desired by The Order. Some of these, for example Dean Acheson, we can identify as members of Scroll & Key, or with relatives in The Order. Others yet to be brought into our discussion are members of Wolf's Head (for example, Reeve Schley, who worked for the Rockefellers). Still others, for example Robert Maynard Hutchins (Fund for the Republic), are Yale graduates but not yet identified as members of any Yale senior society. It appears at this point that Ron Rosenbaum's assertion (in *Esquire, 1977*) that members of the Eastern Establishment who are not members of Skull & Bones will be members of either Scroll & Key or Wolf's Head is holding up.

(2) So far as education is concerned, look-say reading originated with Thomas Gallaudet and was designed for deaf mutes. The elder Gallaudet was not a member of The Order, but his two sons (Edson and Herbert Gallaudet) were initiated in 1893 and 1898. Horace Mann, a significant influence in modern educational theory and the first promoter of "look-say," was not a member. However, Mann

was President of Antioch College, and the Tafts (The Order) were the most powerful trustees of Antioch.

(3) We traced John Dewey's philsophy, that education is to prepare a person to fit into society rather than develop individuals talents, to Herbart who was influenced by the Swiss Pestalozzi. Personal development cannot be achieved by developing individual talents, it must take the form of preparation to serve society, according to Herbart, Dewey and Pestalozzi. Pestalozzi was a member of the Illuminati, with the code name "Alfred".

This raises new perspectives for future research, specifically whether The Order can be traced to the Illuminati.

(4) The scene shifts in the late 19th century from Yale to Johns Hopkins University. Member Daniel Coit Gilman is the first President of Johns Hopkins and he has handpicked either members of The Order (Welch) or Hegelians for the new departments. G. Stanley Hall, the first of Wilhelm Wundt's American students, began the process of Americanization of Wundt, established the first experimental psychology laboratory for education in the United States with funds from Gilman, and later started the *Journal of Psychology*.

John Dewey was one of the first doctorates from Johns Hopkins (under Hall and Morris), followed by Woodrow Wilson, who was President of Princeton University before he became President of the United States.

We noted that at key turning points of G. Stanley Hall's career the guiding hand of The Order can be traced. Hall also links to another member of The Order, Alphonso Taft. We noted that Wilhelm Wundt's family had Illuminati connections.

(5) The Order was able to acquire all the Morrill Act land grant entitlements for New York and Connecticut for Cornell and Yale respectively. However, member Gilman ran into trouble as President of University of California on the question of the California land grants and corruption among the University

regents. The first organized opposition to The Order came from the San Francisco *Times,* but editor Henry George was not fully aware of the nature of his target.

(6) The core of the Order's impact on education can be seen as a troika: Gilman at Johns Hopkins, White at Cornell (and U.S. Minister to Germany) and Dwight, followed by member Hadley, at Yale. Andrew White was first President of the American Historical Association. Richard T. Ely (not a member but aided by The Order) became a founder and first secretary of the American Economic Association. Members can also be traced into such diverse areas as the U.S. Naval Observatory and the Union Theological Seminary.

(7) John Dewey, the originator of modern educational theory, took his doctorate at Johns Hopkins under Hegelians. Dewey's work is pure Hegel in theory and practice, and is totally inconsistent with the Constitution of the U.S. and rights of the individual. A comparison of German Hegelians, John Dewey and modern educational theorists demonstrates the parallelism. Children do not go to school to develop individual talents but to be prepared as units in an organic society.

Experimental schools at University of Chicago and Columbia University fanned the "new education" throughout the United States.

In brief, The Order initiated and controlled education in this century by controlling its CONTENT. The content is at variance with the traditional view of education, which sees each child as unique and the school as a means of developing this uniqueness.

Criticism of the educational system today bypasses the fundamental philosophic aspect and focuses on omissions, i.e., that the kids can't read, write, spell or undertaken simple mathematical exercises. If we look at the educational system through the eyes of The Order and its objectives, then the problems shift.

If teachers are not teaching basics, then what are they doing?

They appear to be preparing children for a **political** objective which also happens to be the objective of The Order. The emphasis is on global living, preparing for a global society. It is apparently of no concern to the educational establishment that children can't read, can't write, and can't do elementary mathematics. . . but they **are** going to be ready for the Brave New World.

SUMMARY OF THE ORDER'S INFLUENCE IN EDUCATION

Institution/Field	DIRECT (Major impact only)	INDIRECT (via a member of The Order
Yale University	Gilman/Dwight/Hadley/White	—
Cornell University	White	—
Johns Hopkins University	Gilman/Welch/White	Hall/Ely/Dewey/Wilson/Morris
University of Chicago	—	Hall/Dewey + foundation financial aid (Volum III)
Columbia Teachers College	—	Hall/Dewey + foundation financial aid (Volume III)
Look-say reading	Gallaudet (Edson and Herbert)	Mann/Gallaudet (Thomas)
Influence of:		
Horace Mann	Taft	—
Herbart	Illuminati (Pestalozzi i.e. "Alfred")	—
Wundt	Gilman/Taft/White	—
American Historical Assoc	White	—
American Economic Assoc	—	Ely

Refer to membership at end of Memoranda No 1 and No 6 for lesser influences.

Memorandum Number Nine: Conclusions And Recommendations

A general conclusion is that The Order has been able to convert the educational system from one aimed at developing the individual child to one aimed at conditioning the child to be a unit in an organic, i.e., Hegelian, society.

When we look at philanthropic foundations in the next volume we shall see the way this has been implemented by private foundation funds.

There is not sufficient evidence to argue whether the decline in educational standards is an accidental by-product of this "new education" or a deliberate subsidiary policy. In any event, the Reagan Administration policy of merit pay will compound, not solve, the problem.

Recommendations for reform have been forthcoming at intervals since the late 1950s when educational problems first surfaced. At the time of Sputnik there was a hue and cry about the backward nature of U.S. training in mathematics and science, which at the University level are not at all backward. Anyway the educational establishment recognized an opportunity and cried, "more, more money." They got it, and there was a massive expansion in the '60s. But the funds have been poured into social conditioning. Mathematics and sciences have taken back seat in the last 30 years.

Then in 1981, James S. Coleman of the University of Chicago

produced a study of public schools for the U.S. Department of Education. In this study Coleman used the National Opinion Research Centre to contact 58,728 sophomores and seniors in 1,016 public, parochial, and private schools across the United States. His findings were:

- private and parochial schools provide an education closer to the common school ideal than do public schools,
- private school students learned more than public school counterparts,
- Coleman wrote it was paradoxical that "catholic schools function much closer to the American ideal of the common school. . . than do public schools."
- private schools provide "a safer, more disciplined and more ordered environment" than public schools,
- blacks and Hispanics perform better at private schools."

The reason? Private schools are less under the influence of the Dewey educational philosophy. They still have to use accredited teachers, but these teachers—quite bluntly—have been able to survive the teacher training conditioning.

Yet the educational establishment does not see the writing on the wall.

In fall (autumn) 1983 a report by John Goodlad, Dean of the School of Education at University of Southern California, will be published. John I. Goodlad wrote the Foreword to *Schooling for a Global Age* (McGraw Hill, 1979) which includes these comments:

> "Enlightened social engineering is required to face situations that demand global action now" (page xiii).
>
> "Parents and the general public must be reached. . . otherwise children and youth enrolled in globally oriented programmes may find themselves in conflict with values assumed in the home."

And more. Another 345 pages of globalony follows.

Nothing about the child as an individual. Nothing about the child as a repository of talents that need to be encouraged. Nothing about basic education: the 3 R's.

Yet this Goodlad report is being pushed in *The New York Times* (July 19, 1983) as the most "comprehensive report" ever made on American schools. These are some Goodlad proposals:

- education should start at 4 years old
- schools should be smaller
- head teachers with doctorates should have more pay.

And this does nothing, of course, to stop what a former Commissioner of Education called "a rising tide of mediocrity."

If the United States is to survive in the coming technologically intensive age, then certain recommendations follow. These are:

- the function of the school is to develop individual talent. Social engineering as an objective has to be discarded.
- A thorough grounding in the 3 R's is essential for a good education. In other words, "content" is all important.
- It follows that Schools of Education should be abolished (this is under serious discussion at Duke University and has been proposed at University of Michigan and even Cal Berkeley).
- Teacher credentials should be based on subject matter entirely, not educational theory.
- All restrictions on private schools should be abolished.
- Public schools should be returned to local control.

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Introduction to the Order
How the Order Creates War & Revolution

CATALOGUE

OCTOBER 1983

VOL. I
LIVING MEMBERS

The following abbreviations are used in this Catalogue:

Admin.	Administration
Agt.	Agent
Am.	American
Assn.	Association
Assoc.	Associate
Asst.	Assistant
Attny.	Attorney
A.U.S.	United States Army
Bd.	Board
Ch.	Church
Chmn.	Chairman
Chmbr.	Chamber
Cmdr.	Commander
Co.	Company
Col.	Colonel
Coll.	College
Com.	Committee
Comm.	Commission, Commerce
Cong.	Congregational
Corp.	Corporation
Cprl.	Corporal
Cty.	County
d.	daughter, daughters
Del.	Delegate
Dir.	Director
Distr.	District
Div.	Division
Episc.	Episcopal
Exec.	Executive
F.A.	Field Artillery
Fed.	Federal
Fgn.	Foreign
Found.	Foundation
Gen.	General
Grtr.	Greater
Hosp.	Hospital
Inf.	Infantry
Ins.	Insurance
Instr.	Instructor
Lieut.	Lieutenant
m.	Married
Maj.	Major
Mbr.	Member
Med.	Medical
Mfg.	Manufacturing
Mgr.	Manager
Natl.	National
Pgh.	Pittsburgh
Pres.	President
Presb.	Presbyterian
Priv.	Private
Prof.	Professor
Ptnr.	Partner
Rep.	Representative
Repub.	Republican
res.	Residence
Res.	Reserve
s.	son, sons
sd.	step-daughter
Sec.	Secretary
Sgt.	Sergeant
Soc.	Society
Spkr.	Speaker
ss.	step-son
Treas.	Treasurer
Univ.	University
V.P.	Vice-President

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ARDREY, 1925, RUSHTON L.—(*Finance retired*)—Born May 16, 1904, Dallas, Texas; res. 4816 St. John's Dr., Dallas, Texas 75205; Formerly Sr. V.P. Republic National Bank, Dallas, Texas; V.P. & Treas. American Liberty Oil Co., Dallas; Asst. Treas., Guaranty Trust, NYC; Asst. V.P., Bank of the Manhattan; m. June 26, '31, Elizabeth Johnson Wolfe; s. R. Leigh Jr. ('59), James S.; d. Alice Guion (*Wirth*), Elizabeth A. (*Wilson*).

ARRAS, 1969, ROBERT E., JR.—(*Industrial*)—Born Feb. 22, 1947, Orange, N.J.; bus. General Mgr., Far East Molasses Corp.; P.O. Box 886, Manila, Philippines; U.S. res. 6807 31NE, Seattle, Wash. 98115; Dir., Asian Alcohol Corp.; m. Apr. 24, '71, Karen Ann Koehler; d. Anne Margaret, Ruth Christie.

ASHBURN, 1925, FRANK DAVIS, M.A., L.H.D.—(*Education retired*)—Born Feb. 2, 1903, Batavia, O.; res. 100 Pawtuxet Road, Plymouth, Mass. 02360; Headmaster Brooks School, North Andover, Mass., '27-'73; Trustee of Brooks School, Miss Porter's School, Brookwood School, Episcopal Theological School '45-'52; University Council, Chmn. Com. on Humanities, V.P. '48-'51, Pres. '52-'54; Corporation, A.Y.A. '73-'75, Bd. of Governors; Pres. New England Assoc. Schools & Colleges, '49; Pres. Headmasters Assoc. '55; Chmn. Natl. Council of Independent Schools '54; Chmn. Coll. Entrance Exam Bd. '60-'62; Executive Com. Educ. Testing Service; Chmn. North Andover Public School Com.; m. June 12, '26, Phyllis Batcheller (*dec.*); m. June 24, '65, Jean Lane; d. Phyllis (*Kissel*), Nancy (*Whitaker*) (*deceased*).

ASHE, 1967, VICTOR HENDERSON, J.D.—(*Government*)—Born Jan. 1,

1945, Knoxville, Tenn., bus. Atty, Ptnr., Morton, Lewis, King & Krieg, P.O. Box 1382, Knoxville, Tenn., 37901; res. 3709 Kingston Pike, Knoxville, Tenn., 37919; Pres. Yale Club, Knoxville, '69-'73; Chmn, East Tenn. Heart Fund, '69-'72; Mbr. Tenn. House of Representatives, '68-'74; Mbr. Tenn. State Senate, '75—; Cprl. USMAR, '67-'73; SEC of D-165; m. June 11, 1983, Joan Plumlee.

ASHENFELTER, 1975, ALAN THOMPSON, M.D.—(*Medicine*)—Born Mar. 26, 1953, Glen Ridge, N.J.; Physician, Bascom Palmer Eye Institute, Miami, Fla. 33101; res. 76 Los Angeles St., Newton, Mass. 02158; Residency, Boston City Hospital (*internal medicine*); m. Apr. 11, '81, Cynthia Trimble.

ASHLEY, 1945W, THOMAS WILLIAM LUDLOW, LL.B.—(*Government*)—Born Jan. 11, 1923, Toledo, O.; bus. Atty., 1735 New York Ave., N.W., Washington, D.C. 20006; res. 2815 Albemarle St., N.W., Washington, D.C. 20008; member U.S. House of Representatives, '55-'81; Cprl., Army, Pacific theater, '43-'46; m. Aug. 26, '67, Kathleen Marie Lucey; s. William Meredith Ludlow, Mark Michael.

AUSTIN, 1968, ROY LESLIE, M.A., Ph.D.—(*Education*)—Born Dec. 13, 1939, St. Vincent, West Indies; Asst. Prof. Sociology; The Pennsylvania State University, 216 Liberal Arts Tower, University Park, Penn. 16802; res. 1211 Smithfield Circle, State College, Penn. 16801; m. Dec. 16, '67, Glynis Sutherland; s. Roy Leslie II, Roger Neal.

AUSTIN, 1980, SAMUEL MONROE—(*Music*)—Born Dec. 9, 1957, Boulder, Colo.; bus. Musician/Composer, 139 W. 69th St., Apt. 6, New York, N.Y. 10023; res. same as bus.

AYEROFF, 1974, FREDERICK CHARLES, M.F.A.—(*Writing*)—Born Jan. 31, 1953, Los Angeles, Calif.; bus. 1553 S. Durango Ave., Los Angeles, Calif. 90035; m. Feb. 20, '83, Dr. Lillian Szydlo.

B

BABST, 1971, JAMES ANTHONY, J.D.—(*Law*)—Born March 31, 1949, New Orleans, La.; Attny., ptnr., Chaffee, McCall, Phillips, Toler & Sarpy, 1500 First National Bank of Commerce Bldg., New Orleans, La. 70112; res. 2013 Napoleon Ave., New Orleans, La. 70115; Sec., Yale Alumni Association of Louisiana, Inc., '80—; Alumni Schools

Committee; m. Nov. 17, '73, Cynthia Anne Wegmann.; d. Cynthia Morgan.

BACK, 1962, SAMUEL H., M. A., ED.D.—(*Education*)—Born Sept. 30, 1940, Cleveland, Ohio; bus. Assoc. Dir. of Development, Connecticut College, New London, Conn. 06320; res. 14 Park Ave., Westerly, R.I. 02891; Teacher, The Lawrenceville School '62-'68; Assoc. Dir. of Career Plans & Placement, Univ. of Virginia '70-'73; Dir. of Career Plans & Placement, State Univ. of N.Y. at Binghamton '73-'76; Regional Dir., the Campaign for Yale '77-'79; Assoc. Dir. of Development, Mystic Seaport Museum '79-'80; m. June 15, '68; Jane Scotland Maddock; d. Amanda G.; s. Thomas Hutchins.

BALDRIDGE, 1918, HOWARD MALCOLM, LL.B.—(*Law retired*)—Born June 23, 1896, Omaha, Nebr.; res. Washington, Conn. 06793; Mbr., U.S. Congress, from Omaha, Nebr.; Capt., F.A., WWI; Col., U.S.A.F., WW II; Bronze Star, Legion of Merit, Crown of Italy-Commondatore; m. Nov. 23, '21, Jean Connell; s. Malcolm ('44), Robert ('46W).

BALL, 1960, DAVID GEORGE, J.D.—(*Law*)—Born Nov. 16, 1936, Gloucester, England; Sec. & Senior V.P. Amax, Inc. Amax Center, Greenwich, Conn. 06836; res. 508 Round Hill Road, Greenwich, Conn. 06830; Advisory Bd., Dwight Hall; Mbr; American & N.Y. State Bar Assn., American Soc. of Corporate Secretaries, Mayor's Task Force on Tax Policy, N.Y. City, '66; Mbr., Vestry, St. Barnabas Church, Greenwich; Bd. Mbr. Natl. Audubon Soc. of Greenwich; former Pres., Treas, Sec., & Dir. of Deer Island Club Corp; m. July 28, '73, Carol Knight Gore; s. David G. Jr., Christopher, Jonathan, d. Deborah.

BANKS, 1956, HOWARD D., M.B.A.—(*Finance*)—Born June 20, 1934, Colombo, Ceylon; 1st V.P., Blyth Eastman Dillon & Co., 555 California St., San Francisco, Calif.; res. 233 S. Ridgewood Rd., Kentfield, Calif. 94904; served as Asst. Sec.-Treas., Sec.-Treas., & Pres., Northern Calif. Alumni Assn.; m. Dec. 4, '62, Sandra Snyder; s. Thomas Henry; d. Pamela Andersen.

BARAN, 1978, MARK R.—(*Finance*)—Born September 13, 1956, Passaic, New Jersey; Financial Planner, Executive Planning Associates, P.O. Box 31, Toms River, N.J. 08753; res. 773 Jamaica Blvd., Toms River, N.J. 08757.

BARASCH, 1973, ALAN SIDNEY, M.D.—(*Psychiatry*)—Born Nov. 27, 1951, New York, N.Y.; bus. Psychiatrist, res. 435 E. 70th St., New York, N.Y. 10021; intern, The New York Hospital '79-'80; resident,

Payne Whitney Clinic of The New York Hospital '80-'83; m. April 12, '81, Renee Welner.

BARGE, 1974, Richmond Mason—(*Law*)—Born March 3, 1949, Jacksonville, Fla.; bus. Atty., Fisher & Phillips, 3500 First Atlanta Tower, Atlanta, Ga. 30383; res. 2064 Dellwood Dr., N.W., Atlanta, Ga. 30309; Sgt. E-5, Army Intelligence, '67-'70, Joint Service Commendation Medal; m. 1968, Lynn Rosengarten (divorced).

BARIBAULT, 1949, Richard Pfeifer—(*Industry*)—Born Feb. 11, 1924, New Haven, Conn.; V.P.-Procurement, Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh, Pa. 15219; res. 33 Thorn St., Sewickley, Pa. 15143; Mgr., Permanent Mold Production, Aluminum Co. of America, Cleveland, Oh. '68-'70; Works Mgr., International Alloys Ltd., Great Britain '70-'74; Marketing Mgr., Consumer Durables, Al. Co. of America, Pittsburgh Office '74-'76; Operations Mgr., Al. Co. of America, Massena, N.Y. Operations '76-'79; Dir., Vocational Rehabilitation Center of Allegheny Co., Pa. '80-'82; Dir., Junior Achievement of Southwest Pa., Inc. '80—; Capt. U.S.A.F. '43-'46, ETO Medal, Air Medal; Presidential Unit Citation; m. Aug. 23, '48, Jule Marie Jones; s. Richard Jones, Harry John; d. Kathleen Jane, Amy Ruth.

BARR, 1936, Richard J., Jr—(*Art*)—Born June 16, 1913, Joliet, Ill.; res. 10516 Channel Drive, Dallas, Texas 75229.

BARRES, 1932, Herster, B.D., M.Div.—(*Ministry retired*)—Born Feb. 2, 1909, Bethlehem, Penn.; res. R.F.D. 1, Box 608, Mason Island, Mystic, Conn. 06355; Natl. Alumni Placement Service, '43-'48; Asst. Chaplain '47-'48; Freshman Football Coach, '33; Varsity End Coach, '44; Sec., RTA, '47-'48; Mbr. of the Royal & Ancient Golf Club of St. Andrews; m. Nov. 18, '32, Dorothy Marshall; s. Herster Jr., ('56), Peter, Jonathan; d. Carol, Linda, Dana.

BARTHOLEMY, 1942, Alan Edmund—(*Business*)—Born Jan. 26, 1920, Portland, Oregon; Self employed, Business Management Consultant; bus. & res. Pres., Bartholemy Associates, 7102 S.W. 152d Ave., Beaverton, Ore. 97007; Exec. Dir., 1960 Olympic Winter Games, Squaw Valley, Calif. '55-'59; Maj., U.S.M C., May '42-May '46; m. Aug. 29, '42, Helen T. Duley; s. Alan E. Jr.; d. Jan.

BARTHOLOMEW, 1928, Dana Treat—(*Finance retired*)—Born Sept. 27, 1906, Ansonia, Conn.; res. Box 451, Old Lyme, Conn. 06371; Chief Financial Officer, Alcan Aluminium, Ltd., Montreal, '49-'70, Dir. Exec. Comm., '38-'70; Dir., Scovil Manufacturing, United Air-

craft; Trust Board: Citibank; Governor: Montreal Stock Exchange; Asst. V.P. Tricontinental Corp., New York, N.Y., '29-'38; Vice Chmn. Alumni Bd. Council; Class Rep. Alumni Fund; Advisory Com. on Investor Responsibility; Campaign for Yale, S.E. Conn.; Dir: Alumni Fund, A.Y.A. '76-'77; A.Y.A Bd. of Governors '78-'80; Alumni Fund Bd. of Governors '81; Reunion Fund Raiser '48, '53, '73, '78, '83; Yale Medal '82; Dir. & Treas. N.Y. Public Library, '51-'59; Dir. & Treas. Montreal Museum of Fine Arts, '60-'70; Dir., Montreal Symphony; Pres. Public Library, Old Lyme, Conn., '74, '75; Chmn. Town Pension Com., Old Lyme, Conn. '75, '76; 2d Lieut., Canadian Grenadier Guards, Reserve Army, '42-'44; m. Nov. 21, '30, Adela S. Griswold; S. Dwight, ('54), Andrew, ('59); d. Adela S. (*Wilmerding*).

BASS, 1982, JAMES EDWARD—Born Jan. 3, 1959, Dallas, Texas; add. 6905 Vassar Drive, Dallas, Texas 75205.

BASSETT, 1949, BARTON BRADLEY, 2d—(*Business*)—Born July 31, 1924, Rockford, Ill.; Circulation Dept., Town & Country Buyers' Guide, 4607 North Second Street, Rockford, Ill. 61111; res. 1827 Oxford St., Rockford, Ill. 61103; Capital Equipment Engineer, Barber-Colman Co., Rockford, Ill. '56-'67; Dir. & Sec. Jaycees, '51-'57, Mbr. Cong. Ch. Choir, 6 years; P.F.C. A.U.S. Inf., June '43-Mar. '46, Bronze Star, Purple Heart, Pres. Unit Citation; m. Feb. 14, '53, Mary Sue Compton; s. David B., Edward S.; d. Elizabeth Ann.

BASSI, 1978, KEITH ALAN, J.D.—(*Law*)—Born May 23, 1956, North Charleroi, Pa.; bus. Atty., Bassi & Rega, P.C., P.O. Box 11, 111 Fallowfield Ave., Charleroi, Pa. 15022; res. 114 Rodgers St., Monongahela, Pa. 15063; Mbr.: American Bar Assn., Pennsylvania Bar Assn., Assn. of Trial Lawyers of America, Phi Alpha Delta Law Fraternity; Rotary Club of Charleroi '82—; m. June 9, '79, Paula J. Lucas.

BATES, 1932, EMMERT WARREN—(*Publishing retired*)—Born May 14, 1910, Detroit, Mich.; res. 8356 Davenport Rd., Woodland, Mich. 48897; winter res. 217 North Andrews, Delray Beach, Fla. 33444; formerly Sr. V.P. Litton Educational Publishing, Inc., New York; Alumni Bd., '34-'37; m. July 20, '35, Louise George; m. Dec. 12, '73; Ruth Ann Schweigert; s. Richard Emmert, ('61); d. Barbara (*Stevens*).

BEANE, 1960, FRANK EASTMAN, JR.—(*Finance*)—Born Aug. 3, 1938, Greenwich, Conn.; bus. Pres. & Owner, JCA Limited, 26 Sixth St., Stamford, Conn. 06905; res. 180 Ridgefield Rd., Wilton, Conn. 06897; Lieut. U.S.N., '60-'65; m. Dec. 16, '61, Andrea Rosemary

Baker; s. Jonathan Walker, Christopher Cameron; d. Alison Gorham.

BECKET, 1923, G. CAMPBELL, J.D.—(*Law*)—Born May 17, 1901, East Orange, N.J.; bus. Attny., Ptnr., Shipman & Goodwin, Porter St., Lakeville, Conn. 06039; res. Millerton Road, Lakeville, Conn. 06039; Justice of the Peace, '40-'71, '78-'83; and Alternate Trial Justice, '42-'60, Town of Salisbury, Conn.; American College of Probate Counsel to '83; Dir. Torrington Savings Bank to '83; m. Oct. 7, '32; Elise Granbery; s. James, Peter L., ('63); d. Elise Barr (*Smith*).

BECKET, 1963, PETER LOGAN, M.B.A.—(*Finance*)—Born July 18, 1940, New York, N.Y.; bus. Real Estate Sales; res. 7611 Wordham Drive, Austin, Texas 78749; Estate & Trust Officer, U.S. Trust Co. of N.Y., '72-'77, Asst. Sec. '74; Capt. U.S.M.C.R., Oct. '63-Dec. '66, Unit Commendation Ribbon; m. Aug. 28, '65, Linda H. Young (divorced '78); m. Sept. 16, '78, Ann G. LaCava; s. Robert Campbell, William Morgan, A. Logan, Alexander M.; d. Catharine Young.

BELIN, 1939, GASPARD D'ANDELOT, LL.B.—(*Law*)—Born May 30, 1918, Scranton, Penn.; Ptnr., Choate, Hall & Stewart, 60 State St., Boston, Mass. 02109; res. 4 Willard St., Cambridge, Mass. 02138; Pres., University Council, '72-'76; V.P., Development Board; Mbr. University Council Comm. on Medical Affairs; Yale Alumni Fund, Class of 1939 Bequest Chmn.; Chmn., Lawyers Com. for Civil Rights under Law of Boston Bar Assn.; V.P., Peter Bent Brigham Hosp.; Trustee: Affiliated Hospitals Center, Museum of Science, Boston Athenaeum, Trustees of Donations to Protestant Episc. Church; General Counsel, U.S. Treasury Dept., '62-'65; City Councillor, City of Cambridge, '62; Capt., A.U.S., '42-'45; Dir., RTA '76-'79; m. Oct. 11, '41, Harriet L. Bundy; s. Richard d'A. ('71); d. Lowell (*Winkelman*), Constance (*Gibb*), Margaretta L., Alletta d'A.

BELL, 1942, WILLIAM TOMPKINS—(*Business*)—Born May 12, 1919, Hackensack, N.J.; V.P., Natl. Geographic Soc., Washington, D.C. 20036; res. 5527 Devon Rd., Bethesda, Md. 20814; Alumni Fund; Lieut. Cmdr., U.S.N., '42-'46, Silver Star; m. Nov. 3, '43, Billie Byrd West; s. William T., Jr., ('71).

BELLIS, 1974, JON MICHAEL—(*Education*)—Born Aug. 9, 1952, Queens, N.Y.; 1984 M.S.W. candidate, Smith School for Social Work; res. 51 Green Hill Road, Orange, Conn. 06477; Mbr. of Faculty, Hopkins Grammar School '75-'78, Spec. Educ. Teacher, Yale Psychiatric Institute '79-'81; m. May 6, '78, Kathryn Barry.

BELLIS, 1973, TEDRIC LAWRENCE—(*Business*)—Born Jan. 25, 1951, Woodside, N.Y.; bus. Pres., Sea Hawk Transfer, Inc., Ptnr., Sierra

Associates, 412 Flanders Road, Riverhead, N.Y. 11901; res. 10 Bette Lane, Setauket, N.Y. 11733.

BENCH, 1925, EDWARD C. Ph.B.—(*Finance retired*)—Born Nov. 5, 1901, Galena, Ill.; Former Ptnr., Clark, Dodge & Co., 61 Wall St., New York, N.Y. 10005; res. Jericho Lane, Box 98, East Hampton, N.Y. 11937; Football Advisory Committee '30-'41; Yale Medal Committee; V.P., Bank of N.Y. '31-'47; Spec. Asst. to Asst. Secy. of Navy for Air '42-'45; Naval Air Reserve Advisory Council '47-'60; Gov., American Stock Exchange '49-'55; V.P., Treas. & Trustee, Presbyterian Hospital '42-'60; Trustee, YWCA, New York City '55-'60; Dir., National Recreation Assn. '49-'54; Capt., U.S.N.R. '42-'45; m. Nov. 23, '25, Mary E. Case; m. 1958, Marion R. Mulligan; d. Mary Elizabeth (*Soper*), Barbara C., Brenda.

BENDER, 1975, KENNETH ARTHUR—(*Banking*)—Born July 1, 1952, Hackensack, N.J.; bus. Banking, Trade Finance, Marketing Mgr., Mexico, Central America, Caribbean, RBC Trade Finance, Inc., 68 William St., 4th Floor, New York, N.Y. 10005; res. 217 Seventh St., Palisades Park, N.J. 07650; Regional Rep., Harnischfeger Int'l Corp. '76-'79; Self employed, Dir. Operations, Rio de Janeiro and Campinas, S.P. Brazil '79-'81; m. March 14, '80, Leticia Cruz Ruiz.

BENNINGHOFF, 1954, HARRY BRYNER—(*Business*)—Born May 22, 1932, Willow Grove, Penn.; Distr. Sales Mgr., Procter & Gamble, 1 N. Charles St., Baltimore, Md. 21201; res. 1804 A. Circle Rd., Ruxton, Md. 21204; Pres., Yale Alumni Assn. of Maryland, '77-'78; Chmn., Glee Club Concert, Maryland Assn. '76; Exec. Bd., Baltimore Council, Boy Scouts of America; 1st Lieut. (Pilot), U.S.A.F. '55-'58; m. Apr. 14, '56, Nancy M. Shields; s. Brian S., Gary S.; d. Sara S.

BENOIT, 1965, CHARLES EDWARD, JR., M.A.—Born May 25, 1943, Springfield, Mass.; Asst. Program Officer, Ford Foundation, 320 E. 42nd St., New York, N.Y. 10017; res. 60 Birch Hill Road, Agawam, Mass. 01001; Ford Foundation, Officer in Charge, Saigon, '73-'75; Rand Corp., Saigon, '68-'69; Agency for International Development, Saigon, '66-'68; d. Tammy Van.

BEST, 1964, GEOFFRY D. C., LL.B.—(*Law*)—Born Feb. 22, 1943, Dayton, Ohio; Ptnr. LeBoeuf, Lamb, Leiby & MacRae, 520 Madison Ave., New York, N.Y. 10017; res. 2 Charlton St., New York, N.Y. 10014; English Instr., American University, Beirut, Lebanon '64-'66; Spec. Asst. to Deputy Exec. Dir., Internat'l Energy Agency in Paris; m. Jan. 31, '70, Suzanne H. Micaud; s. Charles D., Alan B.P.

BIGLOW, 1945W, LUCIUS HORATIO, JR., LL.B.—(*Law*)—Born Feb. 9, 1925, South Orange, N.J.; Ptnr., Law Firm; res. 2425 Evergreen

Point Rd., Bellevue, Wash. 98004; Solicitor, Yale Alumni Fund; Mbr., Planning Comm., City of Medina, Wash., '56-'62, Chmn., '62; Technician, 4th Grade, A.U.S., '43-'46; m. Apr. 25, '53, Nancy Wheatland; *s. Lucius II*, ('78), John R., ('80), Timothy P.; d. Anne S.

BINGHAM, 1928, CHARLES TIFFANY, M.D.—(*Medicine retired*)—Born Aug. 31, 1906, New London, Conn.; res. 5 Church St., Farmington, Conn. 06032; Clinical Instr., Yale Medical School, '46-'50; Assoc. Attending Physician, Hartford Hosp., '50-'60; Chief of Staff, State Veterans' Home & Hosp., Rocky Hill, Conn., '46-'51; Attending Physician V.A. Hospital, Newington '46-'50; Mbr., Conn. State Commission on Alcoholism '46-'50; Physician-in-Charge, Blue Hills Clinic, Conn. Hosp. for Alcoholics, '52; Cmdr. U.S.N., (MC), '42-'46, '50-'51; m. June 10, '29, Kathleen W. Howell; s. Charles Tiffany, Jr., ('56); d. Kathleen Farr (*DeVault*) (deceased), Heidi Mitchell (*Fell*).

BINGHAM, 1936, JONATHAN BREWSTER, LL.B. (J.D.), L.H.D.—(*Law*)—Born April 24, 1914, New Haven, Conn.; Special Counsel, Pryor, Cashman, Sherman & Flynn, 410 Park Ave., New York, N.Y. 10022; res. 5000 Independence Ave., Bronx, N.Y. 10471; Yale Corp., '49-'51; Yale Law School Alumni Assn. Exec. Com., '43-'51; Alumni Committee for the Concilium in International Affairs, c. '79-; International Studies Development Committee, '82-; law practice, '39-'41, '46-'51, '53-'54, '59-'60, last as Ptnr., Goldwater & Flynn, New York City; Deputy & Acting Administrator, Technical Cooperation Administration (Point Four), '51-'53; Sec. to Gov., N.Y. State, '55-'58; Alternative Rep. to four General Assemblies, '61-'63; Minister, Rep. on U.N. Trusteeship Council, '61-'63, Pres., Council, '62; Ambassador, Rep. on U.N. Economic & Social Council, '63-'64; Congressman, '65-; Capt., A.U.S., '43-'45; War Dept. Staff Citation; m. Sept. 20, '39, June Rossbach; s. Timothy W., ('67, Yale Law School, '71); d. Sherrell (*Downes*), June Mitchell (*Esselstyn*), Claudia R. (*Gurunam Kaur Khalsa*).

BIRGE, 1968, ROBERT RICHARDS, Ph.D.—(*Education*)—Born Aug. 10, 1946, Washington, D.C.; Asst. Prof. Chemistry & Chemical Physics, Dept. of Chemistry, University of California, Riverside, Calif. 92521; res. 30165 Via de la Mesa, Temecula, Calif. 92390; National Institutes of Health Research Fellow, Harvard University, '74-'76; NATO Prof. of the Advanced Study Institute (July 3-27, '83); Weingart Visiting Assoc. Prof. of Chemical Physics, Calif. Institute of Technology, Pasadena, Calif. (Oct. '82-June '83) Chm., Committee on Research, Univ. of Calif. '81-'82; Biophysics and Biophysical Chemistry Study Section, Nat'l Institutes of Health, Bethesda, Md.

'81; Bice Comm. Mbr., Advisory Committee to U.S. Senate on Atmospheric Pollution '73-'74; Consultant in Atmospheric Spectroscopy, U.S.A.F. Air Pollution Research Div., Albuquerque, N.M. '74; 1st Lieut. U.S.A.F., '73-'74; m. June 15, '68, Joanne Schwiebert; s. Jonathan Richards, David Porter.

BISARO, 1974, LARRY R., M.B.A.—(*Accounting*)—Born Oct. 9, 1952, Trail, British Columbia, Canada; bus. Chartered Accountant, 1177 W. Hastings St., Suite 2500, Vancouver, B.C., Canada V6E 2L9, res. 3437 W. 4th Ave., Apt. 5, Vancouver, B.C. Canada V6R 1N7.

BISSELL, 1961, GEORGE THOMAS—(*Finance*)—Born Dec. 28, 1938, Buffalo, N.Y.; res. R.F.D. 2, Box 4133, Farmington, Me. 04938; Lt., U.S. Navy, Sept. '61-Dec. '64.

BISSELL, 1925, WILLIAM TRUESDALE—(*Writing retired*)—Born Dec. 27, 1902, Lake Forest, Ill.; res. 44 Old Canton Rd., Canton, Conn. 06019; formerly with N.Y. Herald Tribune, Harper & Bros., Newsweek, Hartford Fire Ins. Co., Hartford Natl. Bank & Trust; Canton, Conn. Bd. of Finance, School Building Com., & Zoning Comm., '68-'75; Office of Lend Lease Admin., Washington, Chief India-South East Asia Div. of Foreign Economic Admin., '43-'45; m. Aug. 21, '30, Elinor Latané; s. John L., ('52); d. Marie (*Prentice*).

BLAKE, 1937, DEXTER B., M.D.—(*Medicine retired*)—Born Sept. 20, 1914, Yonkers, N.Y.; res. Route 1, Box 52, Little Skyline Drive, Orange, Va. 22960; Attending Anesthesiologist '47-'81; Chmn. Dept. Anesthesiology, Morristown Memorial Hosp., '52-'62; Sec. Morris Cty. Medical Soc., '57-'61; Pres. Morris Cty. Medical Soc., '61-'62; Lieut. Cmdr. U.S.N., '42-'46; m. July 6, '40, Eleanor Rutledge; s. Dexter Barnes, Jr., Arthur Frederick; d. Elizabeth Dexter, Ann Rutledge, Carol Avery.

BLAKELY, 1977, MARVIN, J.D.—(*Law*)—Born May 18, 1955, Knoxville, Tenn.; bus.: Certified Law Clerk, Contra Costa County District Attorney's Office, 725 Court St., Suite 402, Martinez, Calif. 94553; res. 219 Foothill Blvd., Oakland, Calif. 94606; Yale Alumni Schools Committee '78-'81; At-large Rep., Bd. of Governors, Hastings College of Law '81-'82; Pres., Associated Students of Hastings (Student Body) '81-'82; Candidate for Bd. of Dirs., East Oakland Youth Development Center.

BLANCHARD, 1939, JERRED GURLEY, LL.B.—(*Law*)—Born April 3, 1918, Chillicothe, Mo.; Ptnr., Rickey, Shankman, Blanchard, Agee & Harpster, 3500 100 N. Main Bldg., Memphis, Tenn. 38103; res. 4345 Wyntuck Place, Memphis, Tenn. 38117; Alumni Schools Com., '47-; Alumni Bd., '72-'75; Bd. of Dir., Memphis & Shelby Cty. Bar Assn.,

'55-'58; Mbr., Shelby Cty. Election Comm., '60-'62; Chmn., Memphis Alcohol Licensing Comm., '63; Mbr., Memphis City Council, '68-'72, Chmn., '72; Col., A.U.S., U.S.A.F., '41-'46, '51-'53; m. June 19, '47, Eugenia Maude Armisted (dec.); m. March 6, '77, Helen Boschert; s. Jerred Gurley, Jr., ('72); d. Maude Cayce, ('73), Elizabeth Armisted (dec.).

BLATTNER, 1976, ROBERT WILLIAM—res. 3944 Rhoda Ave., Oakland, Calif. 94602.

BLUE, 1958, LINDEN S.—Born June 14, 1936, Meeker, Colo.; bus. Pres. & Chief Exec. Officer, Beech Aircraft Corp., P.O. Box 85, Wichita, Kans. 67201; res. same as above; Exec. V.P. & Secy., Colorado & Western Properties Corp. '64-'74; Asst. to the Pres., Gates Learjet Corp. '75-'80; Managing Dir. and Chief Exec. Officer, Lear Fan Ltd., '80-'82; Pres., International Rep., American Council of Youth Political Leaders '73-'74, Exec. Com. '74-'76; Councilman-at-large, Denver City Council '71-'75; Chm., Youth Div., Denver Anti-Crime Council '73-'75; Vice Chm., Denver Planning Bd. '71-'75; various other civic and social activities; Chm., Denver Alumni Fund; Capt. U.S. Air Force '62-'64; m. Jan. 24, '70, Kathryn Whiteley; s. Austin James Neal; d. Virginia Neal.

BOASBERG, 1956, EMANUEL III, LL.B.—(*Law*)—Born Nov. 25, 1934, Buffalo, N.Y.; Attny., Ptnr., Boasberg, Klores, Feldesman & Tucker, 2101 L St., N.W., Washington, D.C. 20037; res. 3136 Newark St. N.W., Washington, D.C. 20008; Class Treas., '56-'66; Class Exec. Com., '56-; Seminar Leader '72-'73; AYA Delegate '78-'80; Class Secy. '81 to present; U.S.O.E.O., '64-'68; A.U.S., '59-'60; m. June 26, '60, Sarah Szold; s. Jeb ('85), Tom ('86); d. Margaret, Melissa.

BOCKRATH, 1961, RICHARD C., JR., M.S., Ph.D.—(*Education*)—Born May 7, 1938, St. Louis, Mo.; Research Scientist and Prof., Microbiology, Indiana Univ. School of Medicine, Indianapolis, Ind. 46223; res. 5114 Grandview Drive, Indianapolis, Ind. 46208; Prof., Microbiology and Immunology, and the Medical Biophysics Program; Visiting Scholar, Stanford Univ. '78-'79; Chm., Argonne National Lab. Biology Committee '79-'80; Visiting Research Fellow, Univ. of Sussex '65-'67; Bd. of Dirs., and Treas., Children's House '76-'78; m. June 20, '64, Tiina Kutti; s. Adam Richard; d. Alida.

BOCKSTOCE, 1966, JOHN R., B.Litt., D.Phil., Oxford—Born Aug. 10, 1944, Hartford, Conn.; bus. Curator of Ethnology, Old Dartmouth Historical Society, New Bedord Whaling Museum, 18 Johnny Cake Hill, New Bedford, Mass. 02740; res. 1 Hill St., South Dartmouth,

Mass. 02748; Visiting Tutor, Dept. of Ethnology and Prehistory, Univ. of Oxford, '73; Asst. to the Dir., Univ. Museum, Univ. of Penn, '68-'70; Special Asst. to the Sec., Smithsonian Institution, '66; m. Jan. 11, '73, Lady Romayne Grimston; s. John Grimston.

BODMAN, 1959, WILLIAM CAMP, M.B.A.—(*Business and Farming*)—Born Sept. 9, 1937, U.S.A.; Self employed, Farmer & Business Consultant, bus. & res. 3550 Via Los Colorados, Lafayette, Calif. 94549; m. July 31, '70, Louise Lyman (dec.); d. Serena Alison.

BOREN, 1963, DAVID LYLE, M.A., J.D., LL.D.—(*Government*)—Born Apr. 21, 1941, Washington, D.C.; Senator, U.S. Senate, Washington, D.C. 20510; res. 4 Harber Court, Seminole, Okla. 74868; U.S. Senator, '79 to present; Governor of Oklahoma, '75-'79; Mbr., Oklahoma State House of Representatives, '67-'75; private practice of law, '68-'74; Prof. of Political Science, Oklahoma Baptist Univ., '70-'74; Capt., Oklahoma National Guard, '67-'74; m. 1977, Molly W. Shi; s. David Daniel; d. Carrie Christine.

BOULOS, 1947, WILLIAM M.—(*Finance*)—Born Oct. 13, 1927, Seattle, Wash.; res. 5145 Kenilworth Pl., N.E., Seattle, Wash. 98105; Treas., Yale Assn. of Western Washington, '61-; Alumni Schools Com., '60-'68; Yale Alumni Fund, '71-; Co-Chmn., The Campaign for Yale; Cpl., U.S. Army, '50-'52; m. 1964, Barbara Davidson; m. 1973, Vivian Maxwell Dennistoun; ss. Alexander Dennistoun Knapp, Charles Evan Knapp; sd. Elyse Maxwell Knapp.

BOUSCAREN, 1969, MICHAEL FREDERIC—(*Business*)—Born Apr. 7, 1947, San Francisco, Calif.; Vice Pres., Manager, Putnam Management Co. (tax exempt income funds), One Post Office Square, Boston, Mass. 02109; res. 15 Saxon Road, Newton Highlands, Mass. 02161; Class Treas., '69-'74; Lieut. (j.g.), U.S.N.R., '69-'71; Dir., RTA, '74-'75; m. Sept. 9, '80, Edith Clark; d. Chloe Louise.

BOWLES, 1935, JOHN E.—(*Finance, retired*)—Born Jan. 11, 1911, Montclair, N.J.; res. 827 Maxwell Ave., Boulder, Colo. 80302; Consultant, Colorado Assn. University Press; retired from Chemical Bank, N.Y., Bowery Savings Bank, N.Y.; Lieut. Comdr., U.S.N.R., Apr. '42-May '46; m. Dec. 12, '45, Sheilah J. Donkin; s. John E., Jr., Bryan Donkin; d. Jenifer (*Martinez*), Sheilah Elizabeth (*Shaffer*).

BOWMAN, 1957, RALPH DAVID—No address available.

BRADFORD, 1934, AMORY HOWE, LL.B.—(*Gestalt Therapy*)—Born Oct. 1, 1912, Springfield, Mass.; res. P.O. Box 93, River Road, Arlington, Vt. 05250; Yale Univ. Council, '59-'64; Mbr. U.S. Environmental Protection Agency, '75, Dept. of Environmental Protection, State of Conn., '73-'74, President's Advisory Council on Execu-

tive Organization, '69-'70, Greater Jamaica Development Corp., Queens, N.Y., '68-'69, Economic Development Admin., U.S. Dept. of Commerce, '66, Regional Plan Assn., N.Y., '65, NATO Secretariat, London, '51-'52; Advisor on Grants, The Ford Found., '63-'65; Asst. to Publisher, *The New York Times*, '47-'54; *The New York Times* Co., Sec., '54-'57, Dir., '55-'63, V.P. & Business Mgr., '57-'60, V.P. & General Mgr., '60-'63; Attny., Davis, Polk, Wardwell, Gardiner & Reed, N.Y.C., '37-'47; Capt., A.U.S., Special Branch, Military Intelligence, '43-'45; m. Jan., '41, Carol Rothschild (divorced '65); m. Aug., '67, Virginia Fry (divorced Jan. '70); m. Feb., '70, Penelope Potter (divorced '76); s. Peter Amory, ('64, Yale Law School, '68), David; d. Carola, Alison, Deborah.

BRADFORD, 1966, TIMOTHY MCFALL, M.A.T.— (*Consulting*)—Born June 12, 1944, Muskogee, Okla.; Ptnr., Hewitt Associates (human resource consulting), 40 Highland Ave., Rowayton, Conn. 06853; res. 26-E Putnam Green, Greenwich, Conn. 06830; Yale Lacrosse Assn.: Dir., '70, Bd. of Gov., '71; English Teacher, Greenwich Country Day School, '67-'74, Chmn., English Dept., '72-'74; Educational Consultant, '74-'77; Consultant, Hewitt Associates, '77-, Ptnr., '81-.

BRANDT, 1962, JOHN HENRY, M.D.—(*Medicine*)—Born July 30, 1940, Cleveland, O.; Psychiatrist, M.I.T. Medical Dept., Cambridge, Mass. 02139; res. add. Box 530, Lincoln, Mass. 01773; Psychiatrist, McLean Hospital, '70-; Instr. in Psychiatry, Harvard Medical School, '73-;Mellon Fellow, Clare Coll. Cambridge, England, '62-'64; Applicant Interviewer, Alumni Schools Com., Yale Club of Boston, '75-; Asst. to Dir., Harvard Center for Community Health, '69-'70; Clinical Fellow in Psychiatry, Harvard Medical School, '70-'73; Asst. Psychiatrist, McLean Hosp., Belmont, Mass. '73-'74; Dir., Waverley House, Belmont, Mass., '73-'74; m. July 30, '63, Jonny Ellison; m. July 25, '80, Marilyn Ruth; d. Sylvia Ann, Laura Ann.

BREEN, 1950, J. GERARD—add. 4 Franklin St., Delhi, N.Y. 13753; m. Dec. 26, '58, Lillian Barbara Young.

BRESLAU, 1982, JONATHAN—(*Student*)—Born Jan. 31, 1960, Greenwich, Conn.; res. 2248 Harcourt Drive, Cleveland Heights, O. 44106.

BREWSTER, 1962, JAMES HENRY IV—(*Business*)—Born Mar. 12, 1939, Cambridge, Mass.; Self employed, Owner, The Formsman, a business forms dealership, 900A South Miami Ave., Miami, Fla. 33130; res. 250 W. McIntyre St., Key Biscayne, Fla. 33149; Yale Club Interview Com.; A.U.S., Aug. '57-Feb. '58, Specialist 4, Oct. '61-Aug. '62; m. Sept. 30, '68, Susan Mary Crowley; s. James Henry V; d. Jocelyn Hayes.

BREWSTER, 1921, Walter Rice, LL.B.—(*Law*)—Born Jan. 27, 1899, Brooklyn, N.Y.; Consulting Ptnr., Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 200 E. 66th St., New York, N.Y. 10021; AYA Delegate, '76-'79; Class Sec., '76-; Chmn., Era Committee (N.Y. 1920-24), Campaign for Yale '77-'80; Assoc. Fellow, Trumbull College, '76-; Dir. and Sec., Granthale Fdn., '46-'54; Pres., William Hale Harkness Fdn., '54-'62; Mbr. Bd. of Assts., Soc. of Mayflower Descendants of State of N.Y., '56-'59, Gov. '59-'65, Deputy Gov., '65-'69; Dir., Rogers Peet Co., '60-'62; Dir., Travelers Aid Soc. of N.Y., '66-'82; Mbr. Honorary Bd., Metropolitan Assistance Corp., '82-; Dir. and Mbr., Exec. Committee, Beekman Downtown Hospital, '74-'81; Assoc. Govt. Appeal Agt., U.S. Selective Service, '41-'42; 2d Lieut., F.A. Officers Reserve Corps, W.W. I '18-'23; Lieut. Cmdr., U.S.N.R., W.W. II '42-'45; m. Nov. 7, '44, Dorothy Gatins; s. Walter R., Jr. ('70); d. Ethel Dominick Stout (*Chapin*), Dorothy Hope Stout (*Connors*).

BRONSON, 1947, David Bennet, S.T.B., S.T.M., Th.D.— (*Education*)—Born Jan. 25, 1922, Waterbury, Conn.; Teacher, Lincoln-Sudbury Regional High School, Sudbury, Mass. 01776; res. 10 Kenway St., Cambridge, Mass. 02138; Clergyman, Episcopal Church, '50-'65; 1st Lieut., U.S.N.R., U.S.M.C.R., '42-'45; m. 1965, Martha Berger; d. Sarah, Eleanor Lindley.

BROOKE, 1937, Frederick H., Jr.—(*Industrial, retired*)—Born Dec. 25, 1914, Washington, D.C.; res. add.: P.O. Box P-87, South Dartmouth, Mass. 02748; formerly International Affairs, Raytheon Co., Lexington, Mass.; Alumni Fund (Davenport), '50-'54; Cmdr., U.S. Navy (Reserve), '41-'46; m. Aug. 31, '40, Carolyn Chaffee; s. Frederick H. III; d. Carolyn (*Close*), Gaelen (*Canning*).

BROOKS, 1983, Peter Moody—(*Student*)—Born Dec. 22, 1960, Houston, Texas; P.O. Box 4933 Yale Station, New Haven, Conn. 06520; home add.: P.O. Box 336, Route 5, Brenham, Texas 77833.

BROOKS, 1962, Tristam Anthony—(*Finance*)—Born Sept. 16, 1939, Summit, N.J.; Managing Dir., Salomon Brothers, Inc. (investment banking), 1 New York Plaza, New York, N.Y. 10004; res. Thistle Lane, Rye, N.Y. 10580; Ptnr., Loeb, Rhoades & Co., '73-'77; Investment Assn. of N.Y., V.P. '74, Pres. '75; V.P., The First Boston Corp., '64-'73; Bd. of Governors, Apawamis Club, '75-; Treas., Bond Club of N.Y., '76; Lieut, (j.g.), U.S.N., June '62-June '64; Deer Island Club Corp., '70-'72; m. Nov. 28, '64, Linda Browning Leith; s. Charles Welles II, Rhys Scott; d. Leith Christina.

BROWN, 1968, Christopher Walworth, M.A., J.D.—(*Law*)—Born

Jan. 15, 1947, New York, N.Y.; Admin. Assistant to Hon. Samuel J. Roberts, Chief Justice, Supreme Court of Pennsylvania, 464 City Hall, Philadelphia, Pa. 19107; res. 632 Pine St., Philadelphia, Pa. 19106; Publishing, Time Inc., '68-'69; Teacher, Taft School, Watertown, Conn., '71; English and Philosophy Teacher, Greens Farms Academy, Greens Farms, Conn. '71-'77; Law Clerk to Hon. S.J. Roberts, '80-'82; m. Aug. 14, '71, Amy Forbes Clark (divorced '79).

BROWN, 1966, George Clifford, M.D.—(*Medicine*)—Born Jan. 19, 1944, New Rochelle, N.Y.; Orthopaedic Surgeon, 311 North St., White Plains, N.Y. 10605; res. 76 Haviland Road, Harrison, N.Y. 10528; Maj., A.U.S., '72-'74; m. Sept. 18, '71, Kathrin Schwarzschild; s. George Clifford; d. Caitlin Emily, Elizabeth Elsa.

BROWN, 1979, Robert Nelson, M.F.A.—(*Theatre*)—Born Apr. 27, 1957, Levittown, Pa.; Actor, Monty Silver Agency, Ltd., 200 W. 57th St., Suite 1303, New York, N.Y. 10019; res. 254 W. 25th St., Apt. 6A, New York, N.Y. 10001.

BROWN, 1944, Samuel Taylor Glover—(*Finance*)—Born Feb. 20, 1922, St. Louis, Mo.; V.P., Smith, Barney, Harris, Upham & Co., Inc., Mining Exchange Bldg., Colorado Springs, Colo. 80903; res. 14 Crossland Rd., Broadmoor, Colorado Springs, Colo. 80906; Davenport Coll. Class Agt. Alumni Fund, '72-; Dean Witter & Co., '47-'60; Kidder, Peabody & Co., '60-'67; Smith, Barney, Harris, Upham & Co., '67-; Trustee, Fountain Valley School; Lieut., U.S.N., June '43-June '46; m. Sept. 29, '62, Nancy R. Patton; s. Nicholas, Samuel Taylor Glover, Jr.; d. Anne Randolph.

BROWN, 1945W, Walter Henderson—(*Finance*)—Born June 9, 1923, Philadelphia, Pa.; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 29 Crescent Rd., Madison, N.J. 07940; Vice Chmn., Exec. Com., Yale Alumni Bd.; Treas., Class '45W; Pres. Yale Club of Central N.J.; Past Pres., United Fund of Madison and Florham Park, N.J.; Past Dir. & Treas., International Social Service; Lieut. (j.g.), U.S.N., July 1, '43-June 30, '46; m. June 3, '50, Catherine G. Barnett; s. Walter Henderson, Jr., Harold G.; d. Catherine G., Rebecca K.

BROWN, 1970, William Scott, M.F.S., M.Phil.—(*Writing*)—Born Sept. 25, 1948, Pittsburgh, Pa.; Publications Editor, Univ. of Montana, Office of Univ. Relations, Missoula, Mont. 59812; res. 10025 O'Brien Creek Road, Missoula, Mont. 59801; Asst. Dir., Undergraduate Admissions, '71-'77; Pres., Yale Club of Montana, '78-; AYA Rep. Yale Club of Montana, '80-'83; Alumni Schools Committee Chmn., Missoula, '77-; Copy Editor, *New Haven Journal Courier*,

'71; Vice Pres., Bob Marshall Alliance, '81-; Advisor, Univ. of Montana Rodeo Team, '81-; Exec. Dir., RTA, '73-'74; Resident P-T, RTA, '77; m. June 23, '73, Lynda L. Lotz; s. Dawson Scott.

BRUBAKER, 1977, JAMES ROBERT—(*Finance*)—Born Sept. 19, 1955, Woodbridge, Conn.; Asst. Vice Pres. Citicorp (corporate banking and acquisition and finance), 200 S. Wacker, 32d Floor, Chicago, Ill. 60540; res. 820 W. Douglas, Naperville, Ill. 60540; Class Agent, Yale Alumni Fund, '77-; RTA Club Agent, '77-; m. Oct. 7, '78, Nancy Anderson; s. Eric Britton.

BRUBAKER, 1976, JOHN KIM—(*Business*)—Born Oct. 4, 1953, Hartford, Conn.; Organizational Field Mgr., Southern New England, Southwestern Co., P.O. Box 820, Nashville, Tenn. 37202; res. 18 Campsite Lane, Setauket, N.Y. 11785; m. June '77, Elizabeth B. Richter ('77).

BRYAN, 1971, JAMES TAYLOR, J.D.—(*Law*)—Born Jan. 6, 1948, Glen Cove, N.Y.; Attorney, Cooper, Williams & Bryan, P.A., 202 NML Bldg., 123 W. Franklin St., Chapel Hill, N.C. 27514; res. 301 Oak Ave., Carrboro, N.C. 27510; Pres., Friends of Old Carrboro; Mbr., Univ. Ministry Committee, Chapel of the Cross; m. May 24, '75, Carroll Amanda Kyser; s. William Taylor; d. Amanda Kyser.

BRYAN, 1955, L. THOMAS, JR., LL.B.—(*Finance*)—Born July 27, 1933, Palmerton, Pa.; First V.P., First National Bank of Boston, 100 Federal St., Boston, Mass. 02110; res. 180 W. Brookline St., Boston, Mass. 02118; 1955 Class Council, '75-; Assoc., Shearman & Sterling, '61-'66; Asst. V.P., First National Bank of Chicago, '66-'70; Advisory Bd. & Budget Committee, Mass. Bay Transportation Authority, '78-'80; 1st Lieut., A.U.S., '59-'61; m. Aug. 11, '56, Janet E. Haenlein; s. Andrew Thomas; d. Caroline Elizabeth, Amy Eleanor.

BUCK, 1969, CHARLES HENRY III, M.A., Ph.D.—(*Business*)—Born Mar. 7, 1946, Boston, Mass.; Business Dir., Research & Administration, 1990 N. California Blvd., Walnut Creek, Calif. 94596; res. 2909 Shasta Road, Berkeley, Calif. 94708; m. Dec. 21, '70, Cheryl Lynn Ezell; d. Jennifer Alison, Sarah Katherine.

BUCKLEY, 1975, CHRISTOPHER TAYLOR—(*Writing*)—Born Sept. 28, 1952, New York City; Author, Editor, Journalist, 608 23d St., N.W., Washington, D.C. 20037; res. same as above; Chief Speechwriter to the V.P. of the United States, '81-'83; Roving Editor, *Esquire* Magazine; Managing Editor, *Esquire* Magazine.

BUCKLEY, 1952, FERGUS REID—(*Writing*)—Born July 14, 1930, Paris, France; Novelist & Lecturer; bus. Silly Putty Fund, P.O. Box 874, Camden, S.C. 29020; res. Cottage #1, Kamschatka, Kirkwood Lane,

Camden, S.C. 29020; 1st Lieut., U.S.A.A., '52-'54; m. 1951 Elizabeth Howell; m. 1972, Rosario (Tasa) Leguina; s. William Huntting, (x'74), Fergus Reid, Jr., Claude Langford, John Alois; d. Elizabeth Hanna; ss. Francisco de Borja Leguina, Santiago Leguina, Francisco Javier Leguina, Francisco dePaula Leguina; sd. Patricia Leguina.

BUCKLEY, 1944, JAMES LANE, LL.B., LL.D.— (*Government*)—Born March 9, 1923, New York, N.Y.; Pres., Radio Free Europe/Radio Liberty, Inc., Oettingstrasse 67 am Englischen Garten, 8000 Munich 22, West Germany; Undersecretary of State for Security Assistance, Feb. '81-Sept. '82; U.S. Senator from New York, '71-'77; Assoc., Wiggin & Dana, New Haven, '49-'53; V.P., The Catawba Corp., New York City, '53-'70; Lieut. (j.g.), U.S.N.R., '43-'46; m. May 22, '53, Ann Frances Cooley; s. Peter P., James F. W., William F. II, David, L., Andrew T.; d. Priscilla L.

BUCKLEY, 1950, WILLIAM FRANK, L.H.D., LL.D., Litt.D., D.Sc.O.— (*Literary work*)—Born Nov. 24, 1925, New York, N.Y.; Pres., National Review, Inc., 150 E. 35th St., New York, N.Y. 10016; res. 73 E. 73rd St., New York, N.Y. 10021; Asst. Instr. Spanish, Yale, '47-'51; Assoc. Editor, *American Mercury*, '52; Editor-in-Chief, *National Review*, '55-; Syndicated Columnist, '63-; host TV show, "Firing Line", '66-; Chmn. of Bd., Starr Broadcasting Group, Inc.; author of several books; apptd. by Pres. Nixon to 5 member, USIA Advisory Com., '69; apptd. by the President Public Member of the U.S. delegation to 28th General Assembly of United Nations; Host of PBS' "Great Performances: Brideshead Revisited"; 2d Lieut., A.U.S. Inf., '44-'46; m. Jul. 6, '50, Patricia Taylor, s. Christopher Taylor, ('76).

BULLOCK, 1981, STANTON B.—(*Government Service*)—Born Oct. 2, 1957, New York, N.Y.; East Hampton Town Councilman, P.O. Box 1861, East Hampton, N.Y. 11937; elected in Nov. 1982.

BUNDY, 1921, FREDERICK MCGEORGE, M.B.A.—(*Finance retired*)— Born Jan. 4, 1900, Grand Rapids, Mich.; res. 102 Bridge St., Manchester, Mass. 01944; from Asst. Treas. to Chmn. of Bd., Gorton's of Gloucester, Mass., '23-'68; Pres. to Chmn. of Bd., Cape Ann Bank & Trust Co., Gloucester, Mass.; Pres. Yale Club of Boston, '44-'46; Alumni Bd., '56-'59; AYA 1982 Pres., Natl. Fisheries Institute, '53-'54; Gloucester Chmbr. of Comm., '40-'44; Addison Gilbert Hosp., '50-'52; Manchester, Mass., Housing Bd., '64-'75; 2d Lieut., A.U.S.F.A., '18; m. Sept. 2, 1981, Elisabeth Jackson Shrigley; s. Frederick McGeorge, Jr. ('52), Samuel Swift, ('56), David Hollister, ('69); d. Patty Hollister (*Wray*).

BUNDY, 1940, McGeorge, L.H.D., LL.D. Litt.D.— (*Finance*)—Born Mar. 30, 1919, Boston, Mass.; Prof. of History, New York Univ., Dept. of History, 19 University Place, New York, N.Y. 10003; res. 133 E. 80th St., New York, N.Y. 10021; Lecturer, '49, Assoc. Prof., '51, Prof. of Government, '54, Dean of Faculty of Arts & Sciences, '53-'61, Harvard Univ.; Special Asst. for Natl. Security Affairs to Presidents Kennedy & Johnson, '61-'66; Pres., Ford Foundation, '66-'79; Capt. A.U.S., '42-'46; m. June 10, '50, Mary B. Lothrop; s. Stephen M., Andrew L., ('76), William L., James A.

BUNDY, 1939, William Putnam, M.A. Hon., LL.B.— (*Journalism*)—Born Sept. 24, 1917, Washington, D.C.; Editor, *Foreign Affairs* (quarterly), 58 E. 68th St., New York, N.Y. 10021; res. 1087 Great Rd., Princeton, N.J. 08540; Yale Corp., '61-; Assoc., Covington & Burling, law firm, Washington, '47-'51; Visiting Prof. & Research Assoc., M.I.T., '69-'71; Columnist, *Newsweek*, '70-'72; Staff Dir. & Mbr. Bd. of Natl. Estimates, CIA, '51-'59; Staff Dir., President's Comm. on Natl. Goals, '60; Deputy Asst. Sec. of Defense, Internatl Security Affairs, '61-'63, Asst. Sec., '63-'64; Asst. Sec. of State for East Asian & Pacific Affairs, '64-'69; Maj., Army Signal Corps, Aug. '41-Feb. '46; Legion of Merit, British MBE; m. Jan. 30, '43, Mary Acheson; s. Michael, Christopher; d. Carol, ('80).

BUNNELL, 1927, Phil W.—(*Finance*)—Born Sept. 15, 1903, Scranton, Penn.; bus. Harris Upham & Co., 120 Broadway, New York, N.Y.; res. 274 East Middle Patent Rd., R.D. 1, Greenwich, Conn. 06830; m. Dec. 29, '45, Margaret E. Nichols; s. Edward H., Phil Walls.

BURKE, 1937, Charles Clinton, Jr.—(*Finance, retired*)—Born Oct. 26, 1915, Plainfield, N.J.; res. 3275 Rum Row, Naples, Fla. 33940; formerly Sr. V.P. and Consultant, Fiduciary Trust Co., New York, N.Y.; 1937 Class Sec., '47-'52; Past Pres., Yale Club of Plainfield, N.J.; Past Pres., Yale Club of Madison, Conn. '68-'70; 2d Lieut., A.U.S., Mar. '43-June '46 (volunteer officer candidate); m. Apr. 28, '39, Emily Jo Schweizer; m. Nov. '72, Elise Kullman Coty; m. Nov. '79, Jeane LaViene Lozier; m. Dec. '80, Estelle Robinson Githler; s. Charles Clinton IV; d. Mary Ellen (*Strawbridge*), Nancy Earle (*Brown*), Sara Weller (*Gilmore*).

BURKE, 1975, James Eugene III, J.D.—(*Law*)—Born Jan. 24, 1953, Cincinnati, Ohio; Atty., Keating, Muething & Klekamp, 1800 Provident Tower, One E. Fourth St., Cincinnati, Ohio 45202; res. 3322 Lookout Drive, Cincinnati, Ohio 45208; Yale Alumni Schools Com-

mittee '82; Alumni Recruiter, Yale Football, '77-'82; Atty., Taft, Stettinius & Hollister, '78-'81; American Bar Assn., Ohio State Bar Assn., Cincinnati Art Museum, St. Xavier High School Alumni Coordinator, Cincinnati Fine Arts Fund, Univ. of Cincinnati Centers of Excellence Campaign; m. Sept. 3, '77, Judith L. Rouse; s. James E. IV.

BURKUS, 1982, GREGORY JAMES—Born Dec. 12, 1959, Pompton Plains, N.J.; res. 46 Spring Valley Road, Woodbridge, Conn. 06525.

BURR, 1962, CHARLES B. II, LL.B.—(*Law*)—Born Mar. 21, 1940, Pittsburgh, Penn.; Sr. Ptnr., Griffith & Burr, P.C., 800 Chestnut St., Philadelphia, Pa. 19107; res. 425 Huston Rd., Radnor, Penn. 19087; Philadelphia Region Div. Chmn., Alumni Fund, '66-'69; Mbr. Admissions Com. Yale Club of Philadelphia, '67-'70; Asst. U.S. Attny., Eastern Distr. of Penn., '69-'71; Mbr., Bd. of Dir., Citizens Crime Comm. of Philadelphia, '76-; Solicitor, Radnor Township Zoning Hearing Bd., '75-; m. Aug. 28, '65, Mary Ray Peck; d. Julia Stuyvesant, Elizabeth Crawford.

BURTT, 1915, EDWIN ARTHUR, Ph.D., L.H.D.—(*Education retired*)—Born Oct. 11, 1892, Groton, Mass; no address available; Philosophy Staff, Columbia, '21-'23, Univ. of Chicago, '23-'32, Cornell, '32-'60, Sage Prof. of Philosophy at retirement in 1960; m. Sept. 20, '16, Mildred Caroline Camp; m. June 16, '51, Marjorie Frances Murray; d. Edith J., Dorothy N., Virginia H., Winifred (*Brinster*).

BUSH, 1967, DEREK G.—Born Oct. 15, 1943, Buenos Aires, Argentina, S.A.; no address available; m. June 15, '68, Emily Blair Chewning.

BUSH, 1948, GEORGE HERBERT WALKER, LL.D.—(*Government*)—Born June 12, 1924, Milton, Mass.; Vice Pres. of the United States, The White House, Washington, D.C. 20501; res. The Vice President's Residence, Washington, D.C. 20501; Pres. & Chmn., Zapata Off-Shore Co., '58-'66; Mbr., U.S. Congress, '67-'70; U.S. Permanent Rep. to United Nations (Ambassador) '71-'72; Chmn., Repub. Natl. Com., '73-'74; Chief U.S. Liaison Officer, Peking Peoples Republic of China, '74-'75; Dir. Central Intelligence, '76; Vice Pres., '81-; Lieut. (j.g.), U.S.N., '42-'45; D.F.C., 3 Air Medals; m. Jan. 6, '45, Barbara Pierce; s. George W., ('68), John E., Neil M., Marvin P.; d. Dorothy W.

BUSH, 1968, GEORGE WALKER, M.B.A.—(*Industry*)—Born July 6, 1946, New Haven, Conn.; Pres. & Chief Exec. Officer, Bush Exploration Co., P.O. Drawer 10626, Midland, Texas 79702; res. 1405 W. Golf Course, Midland, Texas 79702; Chmn., Midland Cancer Society;

Chmn., Midland United Way Fund Drive; 1st Lieut., Texas Air National Guard, '68-'74; m. 1977, Laura Welch; d. Barbara Pierce, Jenna Welch.

BUSH, 1953, JONATHAN J., M.B.A.—(*Investments*)—Born May 6, 1931, Greenwich, Conn.; Chmn. of the Bd., J. Bush & Co., Inc., 641 Lexington Ave., New York, N.Y. 10022; res. 530 E. 86th St., New York, N.Y. 10028; Co-Chmn., 20th Reunion Special Gifts, Bd. of Dir. Y.A.F.; Dir., Russel Reynolds Associates; Trustee, Boys Club of New York; 1st Lieut, A.U.S., '53-'55; m. Dec. 2, '67, Josephine Bradley; s. Jonathan J., Jr., William Hall.

C

CALDWELL, 1933, SAMUEL SMITH, J.D.—(*Industrial*)—Born June 20, 1910, Omaha, Nebraska; Chmn. and Chief Exec. Officer, W. R., Willett Lumber Co., Inc., 849 Starks Bldg., Louisville, Ky. 40202; res. 1510 Hobbs Park Rd., Anchorage, Ky., 40223; Louisville Enrollment Scholarship Com., '46-'76; 1933 Regional Class Agt.; Ky. Chmn., Campaign for Yale, '76; School Bd. Anchorage, Ky. Public Schools, 14 years; Mbr. of Bd. & Past Pres., Children's Agency of Louisville; Sgt., A.U.S. Inf., Sept. '43-Oct. '45; Bronze Star; m. Apr. 26, '41, Frances Cushing Bixby; s. Harold McMillan Bixby, Samuel Smith, III, ('66), Edgar Morsman, Henry Adams.

CAMPBELL, 1982, GAVIN ELLIOTT—(*Government*)—Born Feb. 29, 1960, Elsah, Ill.; Analyst (international grain, livestock, and farm machinery export for State of Ill.), International Trade Section, Div. of Marketing and Agricultural Services, Illinois Dept. of Agriculture, State Fairgrounds, Springfield, Ill. 62706; res. 600 E. Jackson, Apt. 1-S, Springfield, Ill. 62701.

CAMPBELL, 1981, KIMBERLY C.—Born Sept. 15, 1958, Chicago, Ill.; add. 609 Columbus Ave., Apt. 18B, New York, N.Y. 10024.

CANGELOSI, 1972, RUSSELL JOSEPH—Born June 9, 1950, Chicago, Ill.; res. Route 9, Beaver Dam, Berwick, Me. 03901.

CAPOZZALO, 1976, DOUGLAS DANIEL—(*Theatre*)—Born Dec. 6, 1953, Wiltshire, England; add.: c/o Tardaeweth, Box 87, Star Route N., Newport, Ore. 97365; The New Stage, Summer, '76.

CAPRON, 1960, PAUL—(*Business*)—Born Jan. 5, 1938, Cincinnati, Ohio; no address available.

CAREY, 1945W, JOHN, LL.B., LL.M.—(*Law*)—Born June 11, 1924, Philadelphia, Penn.; Ptnr., Coudert Brothers, 200 Park Ave., New York, N.Y. 10017; res. 860 Forest Ave., Rye, N.Y. 10580; Adjunct Asst. Prof., N.Y.U. Law School, '68-'71; Asst. Distr. Attny., Philadelphia, '52-'54; City Councilman, Rye, '63-'67, '71-'73; Mayor, Rye, '73-; Lieut. (j.g.), U.S.N., '42-'46; m. Feb. 24, '51, Patricia F. Frank; s. Henry F., ('75), John Jr., ('78), Douglas; d. Jennifer P.

CARLSEN, 1957, RAY ALLEN, M.D.—(*Medicine*)—Born Jan. 25, 1935, Denver, Colo.; Physician (Dermatologist), 1551 116th N.E., Bellevue, Wash. 98004; res. 14327 N.E. 16th Place, Bellevue, Wash. 98007; Assoc. Clinical Prof., Univ. of Washington School of Med. '75; Little League Coach; Capt., U.S.A.F., July '63-June '65; Airman's Medal; m. July 2, '63, Judith L. Claspy; s. Scott B., Jody E.

CARLSSON, 1981, MATS ERIK—(*Business*)—Born Mar. 13, 1957, Jarna, Sweden; res. Skarpskyttevagen 15, 15300 Jarna, Sweden; bus. Travel Guide, Italy; Cpl., Army, '81-'82.

CASE, 1970, PHILIP BENHAM, JR.—(*Industrial*)—born Jan. 10, 1948, Montgomery, West Va.; Independent Oil & Gas Producer, P.O. Box 574, Marietta Ohio 45750; res. 314 Sixth St., Marietta, O. 45750; Pres., Southeast Ohio Oil & Gas Assn.; Pres., Marietta City Bd. of Education; Washington Co. Joint Vocational School Bd. of Education; Sec., Marietta Area Health Fdn.; m. Aug. 7, '76, Barbara McNair; s. Eric; d. Natalie.

CASSCELLS, 1976, CHRISTOPHER DYSON, M.D.— (*Medicine*)—Born Mar. 18, 1953, Wilmington, Del.; Resident Physician, Yale-New Haven Hospital, Dept. of Orthopedics, 789 Howard Ave., New Haven, Conn. 06504; res. 165 Roydon Road, New Haven, Conn. 06511; AYA, Class of 1975; m. May 25, '81, Susan Marshall Warren.

CASSEL, 1958, JOHN A.—(*Business*)—Pres., Selfin Corp., Vineyard Haven, Mass.; res. (Oct.-May) R.F.D. #1, East Fairfield, Vt. 05448 (June-Sept.) Vineyard Haven, Mass.

CAULKINS, 1943, GEORGE PECK, JR.—(*Business*)—Born Mar. 25, 1921, Grosse Pointe, Mich.; Pres., Caulkins Oil Co., 2100 Colorado State Bank Bldg., 1600 Broadway, Denver, Colo. 80202; res. 435 Westwood Dr., Denver, Colo. 80206; Regional Chmn., Campaign for Yale; AYA Rep. '80-'83; Lieut. U.S.N.R., '42-'45; m. Mar. 2, '62, Eleanor Newman; s. George Peck, III, John Newman, David Ingersoll, Maxwell Oliver Bruce; d. Mary Ingersoll.

CAULKINS, 1948, JOHN ERWIN—(*Finance*)—Born Aug. 5, 1923,

Grosse Pointe, Mich.; Treas., H. J. Caulkins & Co., 505 Capitol Park Bldg., 1145 Griswold St., Detroit, Mich.; res. 33 Willow Lane, Grosse Pointe Farms, Mich. 48236; m. Dec. 28, '46, Patricia Margaret Wells; s. John W.

CERVERIS, 1983, MICHAEL ERNEST—(*Student*)—Born Nov. 6, 1960, Bethesda, Md.; res. 345 E. 93d St., Apt. 19E, New York, N.Y. 10028.

CHAFEE, 1947, JOHN HUBBARD, LL.B., LL.D.—(*Law*)—Born Oct. 22, 1922, Providence, R.I.; U.S. Senator, Dirksen Bldg., Washington, D.C. 20510; res. 7110 Thrasher Road, McLean, Va. 22101; perm. res. Ives Road, East Greenwich, R.I. 02818; Corporation, '72; R.I. House of Representatives, '57-'63; Governor of R.I., '63-'69; Secretary of the Navy, '69-'72; U.S. Senator, R.I. '77-; Capt. USMC, '42-'45, '51-'52; m. Nov. 4, '50, Virginia B. Coates; s. Zechariah, Lincoln D., John H., Jr., Quentin G.; d. Trissie (dec.), Georgia deF.

CHENEY, 1958, RONALD LAWTON, LL.B.—(*Law*)—Born Apr. 27, 1936, Clinton, Mass.; bus. Attorney; res. 949 Centre St., Newton, Mass. 02159; Alumni Schools Com., Boston, '67-'69; Priv. Practice, '66-'69; Exec. Dir. Cambridge & Somerville, Mass., Legal Services, '69-'72; Securities & Exchange Comm., '72-'75; Congressional Fellow, Am. Political Science Assn., '75-'76; 1st Lieut., A.U.S. Jan. 1, '62-Mar. 16, '65; Good Conduct Medal; m. Mar. 1, '69, Beverly Sargent; s. Nicholas; d. Felicia, Rebecca.

CHIBUNDU, 1980, MAXWELL O.—Born May 14, 1957, Nigeria; add. 11 Badaru St., Suru-Lere, Lagos, Nigeria.

CHILDS, 1962, HENRY C.—(*Writing*)—Born June 10, 1941, New York, N.Y.; Writer, bus. & res. Painter Ridge Rd., Washington, Conn. 06793; m. Oct. 18, '69, Charlotte Mary Pavek.

CHILDS, 1976, STARLING WINSTON, B.Sc.—(*Forestry*)—Born Oct. 30, 1953, Winsted, Conn.; Consulting Forester (self-employed), 164 Litchfield Road, Norfolk, Conn. 06058; res. same as above; Bd. of Dirs., RTA, '79-'82; AYA Forestry School Rep.; Bd. of Dirs., Jane Coffin Childs Fund for Medical Research, Charles Albert Coffin Fund for the Medical Library; Research Asst., New Zealand Forest Service, '76-'77; Asst. Prof. of Biology, Univ. of Hartford, '81-'82; Bd. of Dirs., Connwood, Inc., '81-; S.W. Childs Management Corp., '79-; Conn. Forest and Parks Assn., '81-; Bd. of Trustees, Berkshire-Litchfield Environmental Conservancy Council, '82-; Dir., RTA, '79-'82; m. Jan. 3, '81, Michelle Lynne Stevens.

CHIMENTI, 1962, NORMAN VICTOR, LL.B.—(*Law*)—Born Sept. 16, 1940, Chicago, Ill.; bus. Atty. (self-employed), 1211 W. 22d St., Suite

500, Oak Brook, Ill. 60521; Of Counsel, McBride, Baker & Schlosser, Oak Brook, Ill.; res. 439 N. Bruner St., Hinsdale, Ill. 60521; Chicago Bar Assn.; Labor Law Com., Illinois Manufacturers' Assn.; Freshman Counselor/Carnegie Teaching Fellowship, '62-'63; Sgt., U.S.M.C.R., Sept. '63-Sept. '68; American Spirit Honor Medal; m. Aug. 21, '65, Barbara Jean Morgan; s. Chad Morgan, Derek Dante.

CHITTENDEN, 1939, George Hastings—(*Finance*)—Born June 12, 1917, Pelham Manor, N.Y.; Bank Consultant, Arthur D. Little, Inc., 405 Lexington Ave., New York, N.Y. 10174; res. 322 Highland Rd., Rye, N.Y. 10580; Sec. of Class of '39, '48-'53; Mbr. Class Exec. Com.; Chmn., 10th & 25th Reunion Alumni Fund Campaigns; Morgan Bank & Morgan Guaranty Trust Co. of New York, '39-'76, (Senior V.P., '65-'76); Pres., Bankers Assn. for Foreign Trade, '62-'63; Dir.: Morgan Guaranty Internatl. Finance Corp., J. P. Morgan of Canada, Ltd., Toronto; past Pres., Forex Club of America; Trustee: United Hosp., Portchester, N.Y., '75-'81; Vassar Coll. '65-'73, '80-'84; Rye Country Day School, '56-'65; Chmn., Rye United Fund, '58-'59; Capt., U.S.A.F., '42-'46; Dir., RTA; Treas., RTA, D.T.; m. March 20, '43, Laura J. Carey; s. George H. ('66), Paul W.; d. Carey (*Curtis*), Laura (*Lyons*).

CHOA, 1981, Christopher James—(*Architecture*)—Born July 10, 1959, New York N.Y.; Architect, David Paul Helpern, Associates, 9 E. 41st St., New York, N.Y. 10028; res. 1235 Park Ave., New York, N.Y. 10028; present firm, Nov. '82 to present; Designer, Leigh & Orange Architects, Hong Kong, Nov. '81-July '82; Designer/Contractor, Russell Restoration Corp., July '82-Nov. '82; Bd. of Trustees, Fleming School, N.Y., '78-'83.

CIRIE, 1964, John A., M.B.A.—(*Marine Corps*)—Born May 2, 1942, New Haven, Conn.; Lieut. Colonel, Dir. of Advertising, Marine Corps Recruiting, HQMC U.S. Marine Corps, (Code MRM), Washington, D.C. 20380; res. 317 9th St., S.E., Washington, D.C. 20003; Spec. Asst. for Manpower to Asst. Secretary of the Navy, '79-'82; Lieut. Col., U.S.M.C., '64-; Silver Star, Bronze Star, Navy Commendation, Army Commendation medals; m. Oct. 17, '64, Ann Gawlak; m. Dec. 26, '82, Anne Bartley; d. Cybele Ann, Andrea Mary, Amanda Brooke.

CLARK, 1972, Douglas Wells, Ph.D.—(*Science*)—Born Oct. 26, 1950, Richland, Wash.; Consulting Engineer, Digital Equipment Corp., 295 Foster St., Littleton, Mass. 01460; res. 38 Saltonstall Road, Medford, Mass. 02155; Mbr. of Research Staff, Xerox Palo Alto

Research Center, '76-'80; Principal Engineer, Digital Equipment Corp., '80-'82; m. Aug. 27, '77, Marie-Thérèse Flaherty; s. Dennis B.F.

CLARK, 1965, GERALD HOLLAND—(*Theatre*)—Born Oct. 11, 1943, Dallas, Texas; bus.: Actor; res. 817 Westbourne, Apt. 19, Los Angeles, Calif. 90069.

CLARK, 1978, J. BRUCE—Born Feb. 26, 1956, St. Louis, Mo.; add. 91 Powell Place, Hempstead, N.Y. 11550.

CLARK, 1957, R. INSLEE, JR., M.S.S., M.A.—(*Education*)—Born June 8, 1935, Brooklyn, N.Y.; Pres., Horace Mann-Barnard Schools, Inc., 231 W. 246th St., Riverdale, Bronx, N.Y. 10471; res. 258 W. 246th St., Riverdale, Bronx, N.Y. 10471; Yale: Asst. Dir. of Admissions, Asst. Master, Trumbull College, Dean of Trumbull College, Lecturer in Sociology, Dean of Admissions, Financial Aid & Student Appointment; Trustee: N.Y. State Assn. of Independent Schools, Saddle River School, Darrow School, British-American Education Fdn.; Pres., N.Y. State Athletic Assn.; Consultant: Columbia Univ., Yeshiva Univ., Ford Fdn., Dreyfus Fdn.; Mbr., Advisory Bd., Bronx Redevelopment Agency; Capt., U.S.A.F., '59-'61.

CLARK, 1965, STEPHEN EDWARD, J.D.—(*Law*)—Born June 17, 1943, Oakland, Calif.; Attny. Athearn, Chandler & Hoffman, 111 Sutter St., 19th Floor, San Francisco, Calif. 94104; res. 29 Upper Martling Road, San Anselmo, Calif. 94960; Dir., San Francisco Yale Club, '70-, Pres., '78-'80; Alumni Schools Committee, '70-; AYA Rep. '80-'82, at-Large, '82-; Bd. of Trustees, San Anselmo School Dist., '81-; 2nd Lieut. U.S. Army Signal Corps, '69-'71; m. Aug. 15, '65, Etta Inge Mueller; d. Nina Curtis, Nicki Marie Louise, Kim.

CLARK, 1961, THOMAS W.—(*Industrial*)—Born Feb. 7, 1939, Buffalo, N.Y.; bus. Clark Paper Converting, Inc., 3733 Park East Drive, Cleveland, Ohio 44122; res. 174 S. Main St., Chagrin Falls, Ohio 44022; m. March 25, '61, Anne Buffington Fager; s. Thomas W., Jr.; d. Mary M.

CLARK, 1945W, WILLIAM JUDKINS—(*Business*)—Born July 20, 1924, Savannah, Ga.; add. P.O. Box 1500, Pawley's Island, S.C. 29585; Alumni Bd., '68-'72; Dir., Alumni Fund, '73-'78; Chmn., Hale & Yale Associates, '74-'76; Chmn, Class Council, Yale Class of 1945W, '75-; V.P., Owens-Corning Fiberglas Corp., '59-'63; Pres., Ciba Products Co., '66-'71; 1st Lieut., Pilot, U.S.A.F., '43-'46; Air Medal, Pacific Theater; Dir. Deer Island Club Corp., '57-'63; m. Sept. 4, '50, Mary

DeMoville Thompson; s. William Judkins, Jr.; d. Catherine Judkins, Mary Hamilton.

CLAUDE, 1952, ABRAM, JR.—(*Finance*)—Born Dec. 14, 1927, Washington, D.C.; Exec. V.P., Security Pacific Financial Services, 100 Park Ave., New York, N.Y. 10017; res. Guard Hill Road, Bedford, N.Y. 10506; Yale Development Bd., '67-'72; Treas., Yale Club of New York, '64-'72; Committee for Nomination of Alumni Fellows, '69-'72, Chmn. '72; Sr. V.P., Dillon, Read & Co., Inc., '72-'80; V.P., Bessemer Securities Corp., '69-'72; V.P., Morgan Guaranty Trust, '55-'69; Port of N.Y. Authority, '52-'55; Trustee, Westminster School, '59-, Chmn., '69-'74; Pres. and Dir., National Industries for the Blind, '62-; Trustee, Phipps Houses, '70-; TIP Neighborhood House, '70-; Pres., Bedford Assn.; Vestryman and Treas., St. Matthews Church, '79-; Trustee, Lenox Hill Hospital, '65-'80; Treas. and Dir., U.S. Committee for Refugees, '60-'70; Sgt., A.U.S., Sept. '46-Mar. '48; m. Dec. 29, '51, Mary Hanton Dee; m. Sept. 30, '72, Elizabeth James Thorson; s. Abram, Andrews; d. Lisa; ss. Robert Thorson; sd. Carolyn ('84), Virginia, Martha Thorson.

CLAY, 1964, ALEXANDER STEPHENS, J.D.—(*Law*)—Born Oct. 23, 1942, Atlanta, Ga.; Attny., Ptnr., Kilpatrick & Cody, 3100 Equitable Bldg., Atlanta, Ga. 30043; res. 3578 Ranier Drive, Atlanta, Ga. 30327; AYA, '72-'82; Spec. Rep. of the Pres. for Indian Land Claims Negotiations, '77-'79; Dir., U.S.-Rep. of China Joint Economic Council; Dir., Atlanta Economic Development Corp.; Mbr., Atlanta International Task Force; m. Sept. 5, '64, Helen Harrison Straus; s. Alexander Stephens V, Harrison Straus; d. Andrea Wolstenholme.

CLAY, 1963, JESSE LORING—(*Writing*)—Born May 3, 1941, Honolulu, Hawaii; res. 1205 Ridgecrest Drive S.E., Albuquerque, New Mexico 87108; Self-employed, writing and management of family properties (commercial and residential); writing: fiction.

CLAY, 1965, TIMOTHY J., J.D.—(*Law*)—Born Apr. 19, 1943, Los Angeles, Calif.; Attny., Ptnr., Phillips & Giraud, 9 rue Alfred de Vigny, 75008 Paris, France; res. 11 rue Borghese, 92200 Neuilly-sur-Seine, France.

CLUCAS, 1939, LOWELL MELCHER—(*Finance*)—Born July 14, 1917, Bridgeport, Conn.; Principal, Harlan & Clucas, Inc., Investor Relations Consultants, 155 Montgomery St., San Francisco, Calif. 94104; res. 1794 Oakdell Drive, Menlo Park, Calif. 94025; Dir. of Corporate Communications, Crown Zellerbach Corp., San Francisco, '58-'72; Dir.: Calif. Life Corp., Los Angeles, '72-, KQED, Inc., Bay Area

Public TV Station, '60-'72, San Francisco Planning & Urban Renewal Assn., '60-'72; Mbr. & Officer, San Francisco Chapter, Natl. Investor Relations Institute; Trustee, World Affairs Council of Northern Calif., '58-'72; Mbr., U.S. Delegation Staff, UN General Assembly, New York, '50-'51, & Paris, '51-'52; U.S. Public Affairs Officer for Bavaria, '52-'54; Office of War Information, '42-'45; m. March 29, '41, Margaret Hunter; s. Lowell M. III; d. Aileen.

COFFIN, 1949, WILLIAM SLOANE, JR., B.D., D.D.— (*Ministry*)—Born June 1, 1924, New York, N.Y.; The Riverside Church, 490 Riverside Drive, New York, N.Y. 10027; Chaplain, Yale University '58-'75; m. Dec. 13, '56, Eva Anna Rubinstein; m. Aug. 23, '69, Harriet H. Gibney; s. Alexander, David; d. Amy; ss. Phillip Alexander Gibney; sd. Margot Gibney.

COGGINS, 1984, DANIEL SETON—add. 48 Islington Road, Auburndale, Mass. 02166.

COGSWELL, 1961, JOHN M., L.L.B.—(*Law*)—Born Aug. 17, 1939, DelNorte, Colo.; Attny., Ptnr., Cogswell & Wehrle, 2510 Lincoln Center Bldg., 1660 Lincoln St., Denver, Colo. 80264; res. 12 Random Rd., Englewood, Colo. 80110; John H. Tippit, Esq., '67-'70; Colo. Republican activities; Capt., U.S.M.C., '64-'67; m. Nov. 23, '62, Brooke Hurley; s. John Hurley, Sydney; d. Jennifer Brooke, Abby.

COHEN, 1968, KENNETH SAUL, D.D.S.—(*Dentistry*)—Born July 5, 1946, Trenton, N.J.; Dentist, private practice, 1447 Peachtree St. N.E., Atlanta, Ga. 30309; res. 5585 Glen Errol Road, Atlanta, Ga. 30327; Part-time Faculty, Emory Univ. School of Dentistry; Telecommunications Consultant; V.P., U.S. Dial Corp., P.S.A., Inc.; Mbr. Bd. of Dirs., Alliance Theatre Co., '78-; Mbr. Bd. of Dirs., Atlanta Contemporary Dance Co.; SP-4, A.U.S., '69-'74; m. Nov. 30, '68, Patricia Ann Albert; s. Jeffrey Howard; d. Brandy Lynne.

COHEN, 1974, ROBERT LEWIS—(*Films*)—Born Jan. 23, 1952, New York, N.Y.; Owner, Wingstar Film Productions, Inc., 114 E. 32d St., New York, N.Y. 10016; Writer, Dir., Producer of motion pictures for theatre, television and corporations; res. 30 W. 13th St., New York, N.Y. 10011; Writer, Producer, Designer, Tele-Tactics, Inc., Feb. '75-June '76.

CONNELLY, 1945, WILLIAM JAMES, JR.—(*Finance*)—Born Jan. 13, 1922, Pittsburgh, Pa.; Dir. of Advertising, Mellon Bank, N.A., Mellon Square, Pittsburgh, Pa. 15222; res. 1600 Anderson Rd., Glenshaw, Pa. 15116; A.Y.A. '70-'76; Treas., Class of 1945, '76-; Pres., Yale Club of Pittsburgh, '67-'69; Dir., Harvard-Yale-Princeton Club of Pittsburgh, '69-'72; Alumni Bd. Member-at-Large, '69-'74; Dir., Pitts-

burgh Advertising Club; Capt., Pilot, U.S.A.A.F., '42-'46; D.F.C., Air Medal with 5 Battle Stars; m. Apr. 18, '53, Jean Wykoff; s. William J. III; d. Kathleen Mary, Marcy Ann.

CONNICK, 1952, ANDREW JACKSON, LL.B.—(*Law*)—Born Oct. 1, 1930, New York, N.Y.; Ptnr., Milbank, Tweed, Hadley & McCloy, I Chase Manhattan Plaza, New York, N.Y. 10005; res. 1060 Fifth Ave., New York, N.Y. 10028; 1st Lieut., U.S.A.F., '52-'54; m. Apr., 15, '55, Alice Lamm; s. Peter Lamm, David McGuire.

CONNICK, 1945, LOUIS, M.A., M.A.T.—(*Consulting*)—Born Mar. 30, 1923, New York, N.Y.; Consultant to U.S. and Foreign Governments on Third World Rural Development Projects; res. and bus. P.O. Box 855, Old Lyme, Conn. 06371; Asst. to Dir. of Admissions, '54-'56; Alumni Fund Class Agent, '80-; Teacher, Hotchkiss School, '47-'49, '51-'54; William Penn Charter School, '56-'60; Fulbright Teacher (Burma), '60-'61; Univ. of Ill., '61-'62; Overseas Dir., Asia Fdn., '62-'71; USAID, '71-'75; International Human Assistance Programs, '75-'79; International Institute of Conn., '79-'80; Conn. Senate Refugee Resettlements Coordinator, '80-'81; 1st Lieut., U.S.M.C.R., '42-'46, Presidential Unit Citation, Purple Heart; m. Nov. 11, '63, Catharine Murphree.

CONNORS, 1974, DAVID MICHAEL, J.D.—(*Law*)—Born Mar. 30, 1952, South Bend, Ind.; Attny., LeBoeuf, Lamb, Leiby & MacRae, Kearns Bldg., Salt Lake City, Utah 84101; res. 730 W. Kensingston St., Farmington, Utah 84025; Law Clerk to Hon. Ellsworth A. Van Graafeiland, U.S. Court of Appeals, Second Circuit, '79-'80; Missionary for Church of Latter Day Saints, stationed in Italy, June '74-June '76; m. June 25, '77, Corinne Hansen; s. John Michael; d. Sarah.

CONNORS, 1959, JAMES JOSEPH, M.B.A.,—(*Business*)—Born Dec. 15, 1937, Hartford, Conn.; Pres., Lowrey Organ Co., Norlin Corp., 707 Lake Coor Road, Deerfield, Ill. also Consultant, McKinsey and Co., Inc.; Purchasing Mgr., Winchester, Div. of Olin; res. 484 Orchard Lane, Winnetka, Ill. 60093; Coll. Agt., Yale Alumni Fund, '59-'70; Class Council, 1959, '75-; Lieut. (j.g.), U.S.N., '59-'62; m. Aug. 1, '59, Joy Heaton; s. James J. IV; d. Gayle E.

CONWAY, 1981, JOSEPH LEO, JR.—(*Finance*)—Born Feb. 3, 1958, Augusta, Ga.; bus. Securities Option Arbitrageur, Mabon Nugent & Co., 115 Broadway, New York, N.Y. 10006.

COOKE, 1933, FRANCIS JUDD, Mus.B., (Edinburgh) Mus.D.—(*Education retired Music*)—Born Dec. 28, 1910, Honolulu, Hawaii; Lecturer in Music; res. 2 Stratham Rd., Lexington, Mass. 02173;

Assoc. Prof., Yale Music School, '59-'60; Teacher of Music, New England Conservatory, '39-'70; Lecturer in Music, Wellesley Coll. '73-'77; m. Sept. 3, '38, Maymay Ludwig; s. Lindsay, Donald Francis, ('63), Brian Ludwig, Duncan Charles; d. Charlotte, Nym.

COOKE, 1959, JOHN PATRICK, M.S. (Spring '77) M.B.A.—(*Transportation*)—Born Apr. 9, 1927, Derby, Conn.; Dir., Facilities of Materials Handling Systems, Emery Air Freight Corp., Executive Offices, Old Danbury Road, P.O. Box 322, Wilton, Conn. 06897; V.P., Bradley Facilities, Inc.; res. 290 Old Branchville Road, Ridgefield, Conn. 06877; Chmn., Graduate Rowing Advisory Committee, '71-'81; Pres., Yale Crew Assn., '76-'80, Secy., '80-; Area Dir., Campaign for Yale, '77-'80; Chmn., Arrangements Committee, 25th Reunion; Dir., International Construction, Inc., '71-; Chmn., Sr. High School Building Com., Ridgefield, '67-'74; Mbr., Ridgefield Town Charter Comm., '73-'74; Capt., U.S.M.C., Dec. '59-Dec. '64; m. May 11, '63, H. Torrey Matheson; s. J. Patrick, Jr.; d. Emily Pratt, Rachel Forsythe.

COOKE, 1936, ROBERT BARBOUR—(*Journalism retired*)—Born Feb. 24, 1914, Paterson, N.J.; res. Shore Road, Remsenburg, N.Y. 11960; Sports Editor, *N.Y. Herald Tribune*, '47-'59; Editor, *Golf Magazine*, '60; Dir. Public Relations, Schaefer Brewing Co., '60-'67; 1st Lieut., U.S.A.F., '42-'45; Air medal, 6 clusters; m. Dec. 26, '65, Elizabeth Rappleye; s. Stuart, Michael Eliot.

COOMBS, 1965, ORDE MUSGRAVE, M.A.—(*Literary work & Television*)—Born St. Vincent, West Indies; Co-host, WPIX TV "Conversations," Contributing Editor, *New York Magazine*, 755 2nd Ave., New York, N.Y. 10017; res. 311 E. 23rd St., New York, N.Y. 10010.

COOPER, 1977, CARNELL, M.D.—(*Medicine*)—Born May 16, 1955, Dillon, S.C.; Intern in Surgery, Univ. of Minnesota Hospitals, Box 227, Minneapolis, Minn. 55455; res. 916 S. 9th Ave., Dillon, S.C. 29536; and 1139 15th Ave., S.E., Minneapolis, Minn. 55415; Dir., East End Health Center.

COOPER,1917, HENRY SAGE FENIMORE, M.D., LL.D.—(*Medicine retired*)—Born Mar. 9, 1895, Albany, N.Y.; res. 850 Park Ave., Apt. 11A, New York 10021; 2d Surgical Service, Bellevue Hosp., '26-'36; Attending Surgeon, Presby. Hosp., N.Y.C., '37-'60; Assoc. Clin. Prof. Surgery, Coll. of Physicians & Surgeons, '37-'60; Capt., F.A., '17-'19; Dir. RTA; m. Oct. 6, '17, Katherine Lemoine Guy; s. James Fenimore, ('51), Henry Spotswood Fenimore, ('56); d. Susan Sage Fenimore (*Weil*), Katherine Lemoine Fenimore (*Cary*).

COOPER, 1923, JOHN SHERMAN, LL.D.—(*Government, Law*)—Born Aug. 23, 1901, Somerset, Ky.; Of Counsel, Covington & Burling, Attorneys-at-Law, 1201 Pennsylvania Ave., N.W., Washington, D.C. 20044; res. 2900 N St. N.W., Washington, D.C. 20007, or Somerset, Ky.; Yale University Council; Mbr., Gardner, Morrison & Rogers, Washington, '49-'52; of Counsel, Covington & Burling, Washington, '73-'74; Mbr., U.S. Delegation to General Assembly, United Nations, '49, '50, '51, '68; Special Advisor to Sec. of State Acheson in NATO meetings, Europe, '50 & '51; House of Representatives, Ky. Gen. Assembly, '28-'30; Cty. Judge, Pulaski Cty., Ky., '30-'37, Circuit Judge, '45; Mbr., U.S. Senate, '47-'49, '53-'55, '57-'73; Ambassador to India & Nepal, '55-'56; First Ambassador German Democratic Republic, Oct. '74-Sept. '76; Capt., A.U.S., Corps of Military Police, '42-'45 (assigned to Military Government, '44-'45), Bronze Star; m. Lorraine Rowan.

COREY, 1965, ALAN LYLE III—(*Finance*)—Born Mar. 30, 1942, New York, N.Y.; Assoc. Broker, New York Stock Exchange, Wertheim & Co., 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 6 Libby Drive, Glen Cove, N.Y. 11542; m. Oct. 2, '65, Christine Louise Benson; s. Alan Lyle IV, Robert William; d. Christine Margaret, Cynthia Elise.

COSGROVE, 1969, THOMAS FRANCIS—(*Business*)—Born Dec. 8, 1946, Malden, Mass.; Exec. Search Consultant, The Cosgrove Co., 18 Asylum St., Suite 505, Hartford, Conn. 06103; res. 47 Mattatuck Road, Bristol, Conn. 06010; Asst. Secy., Yale Club of Boston, '70-'72; Urban Planner, Boston, Mass., '69-'73; City Concillor, Malden, '71-'73; Aetna Life & Casualty, '73-'78: Exec. Recruiter, Asst. to the Chairman, Pension and Medical Plan Consultant; Hartford National Bank, '78-'80, Asst. V.P. for Staffing; Hartford Insurance Group, Field Staffing Mgr., '80-'82; m. May 30, '70, Wendellyn Hinton; s. Andrew Thomas; d. Victoria Eileen.

COSTIKYAN, 1929, GRANGER—(*Finance*)—Born Mar. 29, 1907, Montclair, N.J.; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 30 E. 62d St., New York, N.Y. 10021; Alumni Bd., '52-'62; Chmn., Alumni Fund, '54-'56; University Council, '54-'56; Com. Nomination of Alumni Fellows to Yale Corp., '57-'60, Chmn., '60; Assn. of Yale Alumni, '72-'75; Bd. of Governors, '72-'74; N.Y. Trust Co., '29-'59, V.P.; Chemical Bank '59-'62, Sr. V.P.; First Bank System, Minneapolis, '62-'69, Pres. and Chmn.; Mbr. North Salem, N.Y. Bd. of Education, '56-'61, Pres. '58-'59; Trustee, Macalester Coll., '66-'72; Dir., Bush Found., St. Paul, '69-'73; Council,

Graduate School of Business, University of Chicago, '73-'75; m. Feb. 17, '40, Margaret Lawrence Taylor; d. Gail Lawrence, Joan Ransom (*Jarvis*), Nancy Hammond (*Johnson*), Wendy Warren.

COWDRY, 1968, REX WILLIAM, M.D., M.P.H.—(*Medicine*)—Born Feb. 12, 1947, Des Moines, Iowa; Assoc. Clinical Dir., Intramural Research Program, National Institute of Mental Health, The Clinical Center 10/4C414, Bethesda, Md. 20205; res. 3101 34th St., N.W., Washington, D.C. 20008; Assoc. Clinical Prof., Georgetown Univ. Medical School; Falk Fellow, American Psychiatric Assn., '74-'76; U.S. Public Health Service, June '76-; m. Donna E. Patterson.

COWLES, 1913, ALFRED—(*Finance*)—Born Sept. 15, 1891, Chicago, Ill.; Investment Counselor, 2215 Tribune Tower, 435 N. Michigan Ave., Chicago, Ill. 60611; res. 225 E. Onwentsia Rd., Lake Forest, Ill. 60045; m. 1925, Elizabeth I. Strong; m. Oct. 24, '49, Louise Lamb; s. Richard Livingston; d. Anne (*Walsh*).

COWLES, 1921, WILLIAM SHEFFIELD—(*Finance retired*)—Born Oct. 18, 1898, New York, N.Y.; res. P.O. Box 304, Farmington, Conn. 06032; University Council, '48-'56; Ptnr., Wood, Walker & Co., Investment Bankers, '30-'69; Mbr. Conn. State Legislature, '49-'55, Spkr. of the House, '53-'55; Mayor, Farmington, Conn., '56-'60; 1st Lieut., U.S.M.C., '18-'20 (A.E.F.); Capt., U.S.N., '41-'46; U.S. Expeditionary Force, WWI; Member Adm. Halsey's Staff, South Pacific, WWII. m. July 9, '21, Margaret Krech (deceased Mar. 16, '82); s. William S., Jr. ('45).

CRAWLEY, 1984, BRIAN SCOTT—add. 1267 Herschel Ave., Cincinnati, Ohio 45208.

CRILE, 1929, GEORGE, JR., M.D.—(*Medicine*)—Born Nov. 3, 1907, Cleveland, Ohio; no address available; m. Jane Halle, m. Helga Sandburg; s. George, III; d. Ann, Joan, Susan.

CROSS, 1966, ALAN W., M.D.—(*Medicine*)—Born July 11, 1944, New York, N.Y.; Pediatrician; Asst. Prof. of Social and Administrative Medicine and Pediatrics, Univ. of North Carolina School of Medicine, Chapel Hill, N.C. 27514; res. 238 Knollwood Drive, Chapel Hill, N.C. 27514; Lecturer, Dept. of Pediatrics, Univ. of Nairobi, Kenya, '75-'77; Capt., A.U.S., July '71-June '73; V.P., Deer Island Club Corp., '68-'73, Treas. '74; m. Aug. 31, '68, Marion Johnson; d. Julia Marion, Katherine Lee, Susanna, Caroline.

CROSS, 1937, RICHARD JAMES, M.D., Med. Sc.D.— (*Medicine, Education*)—Born March 31, 1915, New York, N.Y.; Prof. & Chmn., Dept. of Community Medicine, CMDNJ—Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854; res. 210 Elm Rd., Princeton,

N.J. 08540; Asst. Prof. of Medicine & Asst. Dean, Columbia Coll. of Physicians & Surgeons, '57-'59; Asst. Prof. of Medicine & Assoc. Dean, Univ. of Pittsburgh, '59-63; Dean of Faculty of Medicine, Univ. of Ghana, '63; Asst. to Dir., Assn. of Am. Medical Colleges, '64-'65; Prof. of Medicine & Assoc. Dean, Rutgers Medical School, '65-'70; Mbr., Bd. of Education, Fair Lawn, N.J., '51-'54; Capt., M.C., AUS, Oct. '42-Jan. '46; Purple Heart, Bronze Star; Bd. of Dirs., Deer Island Club, '54-'58; m. June 28, '39, Margaret W. Lee; s. R. James, Jr., ('62), Alan W., ('64); d. M. Lee, Anne R., Jane R. ('82 M.D.).

CROSS, 1941, WILLIAM R.—(*Finance*)—Born Apr. 26, 1917, New York, N.Y.; Pres., Langeloth Foundation, 1 E. 42d St., New York, N.Y. 10017; res. R.D. #2, South Bedford Rd., Mt. Kisco, N.Y. 10549; Alumni Bd., '69-'71; A.Y.A. Yale Medal Com., '70-'71; Yale Alumni Fund, '41, Class Agt., '76-; V.P., New York Trust Co., '46-'59; Exec. V.P., Morgan Guaranty Trust Co.; Dir., National Sugar Refining Co., '67-'69; AMAX, Inc., '74-; Crompton Co., Inc., '70-; *New York Times* Co., '73-; Trustee & V.P., Children's Aid Soc., '62-'75; Trustee & Vice Chmn., Citizens' Budget Comm., '68-; Dir., Caramoor, Inc., '75-; Mbr., N.Y. Chmbr. of Commerce, '68-; Lieut., U.S.N., '43-'46; m. June 14, '58, Sally Smith; s. William R. III ('81), Frederic N.; d. Pauline C.

CRUIKSHANK, 1952, PAUL FESSENDEN, JR.—(*Railroad Mgmt.*)—Born April 24, 1930, Washington, Conn.; V.P. Operations & Maintenance, The Milwaukee Road, 516 W. Jackson Blvd., Chicago, Ill. 60606; res. 710 Lincoln Ave., Winnetka, Ill., 60093; Alumni Fund Solicitor, Calhoun College, '52-'76; Operating Dept., Great Northern Railway, '52-'67; Asst. V.P. Market Planning, Burlington Northern, '67-'71; Pres., Fort Worth & Denver Ry. Co., '71-'74; V.P. Strategic Planning, USRA, '74-'76; Lieut. (j.g.), U.S.N., '52-'56; m. June 26, '54, Alice Wayland; s. Robert, Donald; d. Carol, Lynn ('82).

CSAR, 1972, MICHAEL F., M.A., J.D.—(*Law*)—Born May 26, 1950, Chicago, Ill.; Attny., Wilson & McIlvaine, 135 S. LaSalle St., Suite 2300, Chicago, Ill. 60603; res. 928 Judson Ave., Evanston, Ill. 60202; m. Mar. 24, '79, Anne E. Taylor.

CUNNINGHAM, 1934, HUGH TERRY, B.Litt., Ph.D., M.A. (Oxford)—(*Government retired*)—Born Apr. 2, 1913, Wagoner, Okla.; res. 305 Kentucky Ave., Alexandria, Va. 22305; Central Intelligence Agency, '47-'73; Exec. Positions, Mbr. of Bd. of Natl. Estimates, '62-'69; Dir. of Training, '69-'73; Central Intelligence Group, '45-'47; Unit (War Dept.), Instr. & Tutor, Harvard & Radcliffe, '39-'42; Maj. (Intelligence Officer), A.U.S. '42-'46; Intelligence Medal of Merit, Distin-

guished Intelligence Medal (from C.I.A.); m. Feb. 14, '48, Mary Jane Hawley; d. Susanna, Cynthia Ruth.

CURTIN, 1935, FRANCIS CLARE, M.A.—(*Education retired*)—Born Oct. 15, 1911, North Abington, Mass.; Formerly, Teacher, Needham High School; res. 331 Brookline St., Needham, Mass. 02192; Lieut. U.S.N.R., '43-'46; m. June 20, '38, Marion H. Beaulac; s. Robert E.

CUSHMAN, 1957, CHARLES W., M.A.—(*Education*)—Born June 21, 1934, New Rochelle, N.Y.; res. 1-31-26 Daizawa, Setagaya-ku, Tokyo, Japan.

CUSHMAN, 1958, ROBERT EDGAR—(*Finance*)—Born Sept. 22, 1935, New Rochelle, N.Y.; Banker, V.P., Citibank N.A., 153 E. 53d St., New York, N.Y. 10043; res. 3 Wild Rose Lane; Darien, Conn. 06820; Managing Dir., Asia Pacific Capital Corp., Ltd., Hong Kong; E-2, A.U.S., Oct. '58-Apr. '59; m. Dec. 15, '62, Lee Sumner; s. Robert S., Bradford W.; d. Jessica Ranney.

CUTLER, 1926, BENJAMIN CRAWFORD—(*Music*)—Born July 19, 1904, Winchester, Mass.; Musician & Singer; Owner Ben Cutler Orchestras, bus. & res. 107 Wallace St., Tuckahoe, N.Y. 10707; Pres.: Orchestra Leaders' of N.Y.C., Natl. Assn. Orchestra Leaders, '63-'68; m. '40, Flora Campbell; m. June 17, '66, Eustacia Purvis; s. Thomas McKeen, ('62); d. Creel Campbell.

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DALBY, 1966, MICHAEL THOMAS, M.A., Ph.D.—(*Education*)—Born Oct. 11, 1945, St. Louis, Missouri; Asst. Prof., Chinese History, Dept. of Far Eastern Languages & Civilizations, University of Chicago, 5736 Woodlawn Ave., Chicago, Ill. 60637; res. 5412 East View Park, Chicago, Ill. 60615; Junior Fellow, Soc. of Fellows, Harvard Univ., '72-'75; m. Dec. 20, '78, Liza Crihfield; d. Marie Camille.

DALE, 1945, EDWIN LYON, JR.—(*Journalism*)—Born Sept. 7, 1923, Philadelphia, Pa.; Asst. Dir. for Public Affairs, Office of Management and Budget, Room 253, Old Executive Office Bldg., Washington, D.C. 20503; res. 4526 Lowell St., N.W., Washington, D.C. 20016; Reporter, *Worcester Evening Gazette*, '47-'51; *N. Y. Herald Tribune*, '51-'55; *N.Y. Times*, '55-'76; Lieut. (j.g.), U.S.N., '44-'46 Commendation Ribbon; m. Mar. 11, '50, Mary Todd Hastings.

DANIELS, 1943, JOHN H., A.M.P.—(*Business retired*)—Born Oct. 28, 1921, St. Paul, Minn.; res. 2472 Parkview Drive, Hamel, Minn. 55340;

Former Chmn. and Chief Exec. Officer, Archer-Daniels-Midland Co.; Former Chmn., National City Bankcorporation, Minneapolis; Trustee, Com. for Economic Development, '63-'76; Mbr., The Business Council, '62-'76; Civilian Aide to Sec. of the Army, '66-'69; Capt., AUSFA, '43-'46, Bronze Star, Outstanding Civilian Service Medal; m. Dec. 23, '42, Martha Hill Williams; s. John H., Jr., Christopher W.; d. Martha (*Jones*), Jane (*Moffett*).

D'AVANZO, 1956, LOUIS A., M.D.—(*Medicine*)—Ophthalmologist, Kailua Professional Center, Suite 301, 30 Aulike St., Kailua, Hawaii 96734; res. 584 Uluhala St., Kailua, Hawaii 96734; m. June 22, '58, Carol Frances Rehman; s. Louis Frank; d. Carol Diana.

DAVENPORT, 1938, BRADFUTE WARWICK, LL.B.—(*Law, retired*)—Born Aug. 18, 1916, Richmond, Va.; res. 6118 St. Andrews Lane, Richmond, Va. 23226; retired Ptnr., Hunton, Williams, Gay, Powell & Gibson, Richmond, Va.; A.Y.A. Rep.; Lieut. Col., U.S. Army, Legion of Merit; m. July 11, '42, Martha Orr; s. Bradfute Warwick, Jr. ('69); d. Martha Orr (*Reed*).

DAVENPORT, 1980, GEORGE LEOVY—(*Geology*)—Born Sept. 16, 1956, White Plains, N.Y.; Petroleum Geologist, Bolyard Oil & Gas, Ltd., 1800 Prudential Plaza, 1050 17th St., Denver, Colo. 80265; res. 2125 E. 21st Ave., Denver, Colo. 80205; Fund-raising, Sierra Madre Fdn. (Yale's Geological Field Camp in Wyo.); Consultant, Environmental Policy Institute, Washington, D.C., Jan.-Sept. '81.

DAVENPORT, 1926, JOHN A.—(*Journalism*)—Born Sept. 11, 1904, Philadelphia, Pa.; Journalist, bus. & res. Box 158, Red Hill Road, Middletown, N.J. 07748; Staff, *Fortune* Magazine, '37-'49; Editor, *Barron's* Magazine, '49-'54; Bd. of Editors & Asst. Managing Editor, *Fortune* Magazine, '54-'69; Harriman Comm. for Marshall Plan, '48; Hoover Comm., '49; m. 1940, Marie Van Vechten Hayes; s. John; d. Ann, Gloriana, Susan, Amy, Sharon, Caroline.

DAVENPORT, 1915, STEPHEN RINTOUL—(*Industrial retired*)—Born Apr. 7, 1892, Staten Island, N.Y.; res. 92 Falmouth Court, Bedford, Mass. 01730; Formerly V.P., Yardley of London, Inc.; Rep. Town Meeting, Greenwich, Conn., one term; Capt. CAC, A.E.F., May '17-Feb., '19; m. Oct. 13, '28, Mariana Bonnell; s. Henry B. ('51), Stephen R., Jr., Samuel C., John L.

DAVIES, 1976, PHILIP TURNER, J.D.—(*Law*)—Born Feb. 11, 1954, Cincinnati, Ohio; Lawyer, Assoc., Rosenman Colin, 575 Madison Ave., New York, N.Y. 10022; res. 315 E. 89th St., Apt. 5W, New York, N.Y. 10028; Burke & Burke, '81-'83.

DAVIS, 1933, RICHARD MARDEN, M.A. (Cambridge)—(*Law*)—Born

May 26, 1912 Somerville, Mass.; Of Counsel, Former Ptnr., Davis, Graham & Stubbs, P.O. Box 185, Denver, Colo. 80201; res. 2552 E. Alameda Ave., Apt. 89, Denver, Colo. 80209; Mbr: Am. Judicature Soc., Am. Bar Assn.; Past V.P., Colorado Bar Assn.; Past Pres., Denver Bar Assn.; Trustee: Denver Museum of Natural History, '47-, Univ. of Northern Colo., '73-; Dir. and Past Pres., Colo. Public Expenditure Council, '52-; Counsel, Colo. Assn. of Commerce & Industry, '60-; Past Pres., Denver Rotary Club; Denver Country Day School; Civilian Aide to Sec. of the Army, '50-'52; Mbr., Administrative Conf. of the U.S., '60-'62; Lieut. Col., U.S.A.F., Sept. '42-Oct. '45; Bronze Star; m. July 10, '35, Nancy Newton; s. Richard Marden, Jr.; d. Pamela (*Beardsley*).

DAVISON, 1949, Daniel Pomeroy, J.D.—(*Finance*)—Born Jan. 30, 1925, New York, N.Y.; Chmn. and Pres., U.S. Trust Corp., 45 Wall St., New York, N.Y. 10005; res. P.O. Box 348, Locust Valley, N.Y. 11560; Formerly Sr. V.P., Morgan Guaranty Trust Co., New York; Alumni fund; Campaign for Yale; Dir., Scovill Mfg. Co.; Burlington No., Inc.; Todd Shipyards; Atlantic Companies; Discount Corp.; Northwestern States Portland Cement Co.; Trustee & V.P., Metropolitan Museum of Art; Trustee: Church Pension Fund, Groton School; 2d Lieut. U.S.A.F. '43-'45; m. June 27, '53, Catherine Cheremeteff; s. Daniel P., Jr., George P. ('79), Henry P. ('84).

DAVISON, 1945, Endicott Peabody, J.D., M.A.—(*Law*)—Born June 15, 1923, New York, N.Y.; Of Counsel, Winthrop, Stimson, Putnam & Roberts, 460 Summer St., Stamford, Conn. 06901; res. Lord Hill, Route 156, Lyme, Conn. 06371; Corporation Officer, July '71-June '76; Vice Chmn., Leadership Gifts, Campaign for Yale, '76-'78; Ptnr., Winthrop, Stimson, Putnam & Roberts, '59-'71, '76-'80; 1st Lieut., U.S.A.F., Feb. '43-Aug. '46; Dir. RTA '60's; m. July 3, '48, Jane Ingalls; s. F. Trubee II (dec.), Endicott P., Jr. ('74), David I. ('78), Malcolm P.; d. Jane.

DAVISON, 1984, Henry Pomeroy—add. P.O. Box 348, Locust Valley, N.Y. 11560.

DEANS, 1918, Robert Barr—(*Finance retired*)—Born July 14, 1896, Pheonixville, Pa.; res. 4000 Masssachusetts Ave., N.W., Apt. 330, Washington, D.C. 20016; Formerly Ptnr., C.S. Halsey & Co., and Dillon Read & Co.; Col., A.U.S. and Air Force, '17-'18, '41-'51, '51-'61; French Foreign Legion, British Order of Empire, U.S. Commendation Medal; m. 1951, Dorothy Babbage; s. Robert B., Jr. ('47); d. Lucy P. (*Hanes*) (deceased '76).

DeFOREST, 1955, Stephen Elliott, J.D.—(*Law*)—Born Sept., 16,

1933, Seattle, Wash.; Ptnr., Riddell, Williams, Bullitt & Wolkinshaw, 4400 Seattle-First National Bank Bldg., Seattle, Wash. 98154; res. 11323 8th Ave. N.W., Seattle, Wash. 98177; Pres. Yale Assn. of Western Washington, '67-'68; Program Chmn., Yale Natl. Meeting, Seattle, '70; Yale Alumni Fund, Local Com., '68-; Bd. of Dir. & Exec. Comm., Seattle-King Cty. United Way, '75-; Chmn., Planning & Allocations, '78-'80; Bd. of Trustees, The Public Defender, Seattle, '75-; Legal Specialization Bd., Washington State Bar Assn., '75-; Pres., Seattle-King County Bar Assn., '81-'82; Lieut. (j.g.) U.S.N., June '55-June '57; m. June 14, '58, Sylvia Lynn Agathon; s. Christopher Elliott ('82), John Andrew ('86); d. Katherine Elizabeth.

DEMAREE, 1969, FRANK EDWARD, 2D—Born Feb. 4, 1947, Chicago, Ill.; res. 920 Forest Hill Rd., Lake Forest, Ill. 60045.

DEMPSEY, 1956, ANDREW SQUIRE, LL.B.—(*Law*)—Born Mar. 24, 1934, Cleveland, Ohio; Ptnr. Squire, Sanders & Dempsey, 1800 Union Commerce Bldg., Cleveland, Ohio 44115; res. 12819 Lake Shore Blvd., Cleveland, Ohio 44108; A.Y.A., '81-'84; 1st Lieut., U.S.A.F., '56-'59; m. Aug. 22, '61, Hope Gibson; s. John Bourne III, Philip Johnson, David Gibson.

DEMPSEY, 1938, JAMES HOWARD, JR., LL.B.—(*Law*)—Born Oct. 18, 1916, Cleveland, Ohio; Ptnr. Squire, Sanders & Dempsey, 1800 Union Commerce Bldg., Cleveland, Ohio 44115; res. River Road, Chagrin Falls, Ohio. 44022; Mayor, Village of Hunting Valley, Ohio, '52-'58; Yale Alumni Bd., '57; Pres., Cleveland Yale Alumni Assn., '56, Yale Development Bd., '64; Trustee, Cleveland Mus. of Art, Home for Aged Women, Amasa Stone House, Inc. Lake View Cemetery Assn., University Hospitals; Lieut. Cmdr., USN, '41-'45; m. Aug. 2, '42, Julia C. Bolton; d. Julia B. (*Cox*), Melissa H. (*Gerrity*), ('71).

DeNEUFVILLE, 1961, JOHN PHILLIP, M.A., Ph.D.—(*Science*)—Born May 1, 1940, New York, N.Y.; V.P. Energy Conversion Devices, R & D Management, 197 Meister Ave., P.O. Box 5357, North Branch, N.J. 08876; res. Thomas Rd., Mendham, N.J. 07945; Research Assoc., Exxon Corporate Research Lab., Linden, N.J.; Class Council, '61-; Yale Alumni Fund, Pierson Coll. Agt., '70-; 15th Reunion gift Chmn., '75-'76; m. Aug. 27, '66, Suzanne Bayon; s. Peter Bayon, Thomas Pike, John Howard.

DESJARDINS, 1965, PETER EARL, M.S.—(*Business*)—Born Apr. 19, 1940, Miami Beach, Fla.; Management Consulting, Managing Dir., Gulf Consulting Group, Al-Ghurair Centre, No. 1032, P.O. Box 1032, Dubai, United Arab Emirates, res. same as above; Managing Dir., FMC International SA, Vienna, Austria; Management Consultant,

McKinsey & Co., N.Y., '69-'71; Asst. to the Pres., & Dir., Corporate Development, Howmet Corp., Greenwich, Conn., '71-'72; Certificat d'Etudes Politiques, Universite de Paris, '62; 1st Lieut. A.U.S., '59-'61; GCM (Airborne, Ranger); m. Dec. 23, '79, Heidi Lynn Bardach; s. Peter Emile; d. Tara Emily.

DEVLIN, 1982, MICHAEL WILLIAM—(*Education*)—Born Feb. 27, 1960, New York; English Lecturer, Chinese Univ., 327 Pi Chin Blding/English Dept., Hong Kong; res. G-B Friendship Lodge, New Asia College, Shatin, Hong Kong.

DEVOR, 1941, DONALD S., JR., M.A.—(*Marketing*)—Born July 10, 1920, East Orange, N.J.; Marketing, Citicorp Industrial Credit, Inc., 450 Mamaroneck Ave., Harrison, N.Y. 10528; res. Tribrook Drive, South Salem, N.Y. 10590; Lieut. (j.g.), U.S.N., '43-'46; m. Mar. 26, '55, Nancy Robinson; s. John H. ('68), James R.

DEVORE, 1980, MARK SAMEUL—(*Student*)—Born Dec. 6, 1957, Columbus, Ohio; Medical Student (M.D. '84), Univ. of Cincinnati College of Medicine; res. 3419 Brookline, Cincinnati, Ohio 45220.

DIAMOND, 1974, PETER C.—(*Television*)—Born May 27, 1950, New York, N.Y.; Dir., Olympic Planning, ABC Sports, 1330 Ave. of the Americas, New York, N.Y. 10019; res. 115 E. 89th St., New York, N.Y. 10028; Assoc. Producer, Olympics Research, NBC Sports, '77-'80; Olympics Researcher, ABC Sports, '74-'76.

DILWORTH, 1980, GEORGE TOBY—(*Government*)—Born Mar. 26, 1956, Camp LeJeune, N.C.; Spec. Asst., c/o U.S. Senator Paul Tsongas, 2003 John F. Kennedy Bldg., Boston, Mass. 02203; res. 274 Chestnut Hill Road, Newton, Mass. 02167.

DILWORTH, 1938, JOSEPH RICHARDSON, LL.B., M.A. (Hon.)—(*Finance*)—Born June 9, 1916, Hewlett, N.Y.; Senior Financial Advisor, Rockefeller Family & Associates, '58-, Room 838, 50 Rockefeller Plaza, New York, N.Y. 10020; res. 141 Hodge Rd., Princeton, N.J. 08540; Alumni Fund Board, '54-'58; Yale Univ. Council, '58-'59; Alumni Fellow, '59-'62; Fellow, Yale Corp., '59-; Successor Trustee, Yale Corp., '62-; Buying Dept., Kuhn, Loeb & Co., '46-'51; Ptnr., Kuhn, Loeb & Co., '51-'58; Dir. & Chmn., Rockefeller Center, Inc., '58-; Dir., R.H. Macy & Co., Inc. '61-; Chase Manhattan Bank, '58-; Diamond Shamrock Corp., '69-'73; Chrysler Corp., '62-; Selected Risk Investments, '62-; International Basic Economy Corp., '59-; Omega Fund., Inc., '67-; Pickands Mather & Co., '66-'69; Rockwell Mfg. Co., '50-'66; Rockwell Standard Co., '56-'59; Rockwell Spring & Axle Co., '56-'59; Lieut. Cmdr., USN, '42-'45; m. June 15, '40,

Elizabeth Cushing; s. Joseph R., Jr., ('64), Charles Dewees, ('78); d. Melissa McKay (*Gold*), Alexandra Cushing.

DOMINICK, 1960, DAVID DEWITT, J.D.—(*Law*)—Born Jan. 24, 1937, Philadelphia, Pa.; Lawyer, Founding Ptnr., Dominick Law Offices, 837 Sherman St., Denver, Colo. 80203; res. 300 Humboldt St., Denver, Colo. 80218; Class Council, '65-; Legislative Asst. to Senator C.P. Hansen, U.S. Senate, '66-'68; Commissioner, Federal Water Pollution Control Admin., U.S. Dept. of Interior, '69-'71; Asst. Administrator, U.S. Environmental Protection Agency, '71-Oct. '73; Mbr., Colo. Land Use Commission, '83-; Bd. of Dirs.: Denver Audubon Society, '81-, Rocky Mountain Planned Parenthood, '76-; V.P., Chmn., Admissions Committee, The University Club, '82-; Capt., USMC, '60-'63; m. Sept. 8, '66, Mary Helen Stein; s. Christopher B., Andrew B., DeWitt S.

DONALDSON, 1953, WILLIAM HENRY, M.A. (Hon.), M.B.A.—(*Finance*)—Born June 2, 1931, Buffalo, N.Y.; Chmn. and Chief Exec., Donaldson Enterprises, Inc.; res. 895 Park Ave., New York, N.Y. 10021; Fellow, Yale Corp., '71-'75; Dean and William S. Beinecke Prof. of Management Studies, Yale School of Org. & Mgt., '75-'80; Yale Development Bd.; former Chmn., Yale Finance Committee, '74, Yale Investment Committee, '75-; Chmn. and Chief Exec. Officer, Donaldson, Lufkin & Jenrette, Inc., '59-'73; Spec. Advisor to Vice Pres. of the U.S., '75; Trustee and Chmn. of Finance Committee, The Ford Fdn., '70-; U.S. Under Secretary of State, '73-'74; 1st Lieut., U.S.M.C., '53-'55; m. Sept. 17, '60, Evan Burger; s. Matthew Evans; d. Kimberly Eames.

DONNELLEY, 1931, GAYLORD, LL.D.—(*Industrial*)—Born May 19, 1910, Chicago, Ill.; Chmn. of Exec. Com., R. R. Donnelley & Sons Company, 2223 Martin Luther King Drive, Chicago, Ill. 60616; res. Route 1, Box 197, Libertyville, Ill. 60048; Yale Univ. Council, '54-'59; Yale Univ. Press Bd. of Governors, to June '62; Yale Development Bd., '64-'71; Yale Univ. Campaign Advisory Com., from '74; Trustee, Yale Library Associates; Chmn. of Bd. of Trustees, Univ. of Chicago; Pres., Ducks Unlimited, Inc.; Trustee, Ducks Unlimited (Canada); Ducks Unlimited de Mexico, A.C.; Natl. Recreation Parks Assn.; Life Trustee, Newberry Library; Mbr., Chicago Community Trust Exec. Com.; Chicago Merit Employment Com.; Advisory Bd., YMCA of Metropolitan Chicago; Business Advisory Council of Chicago Urban League; Bd. of Advisors, Council for Financial Aid to Education, Inc.; Dir., American Friends of Cam-

bridge Univ., Research Found.; Pres., Community Fund of Chicago, '69-'71; Mbr., Ill. Nature Preserves Comm., '68-'74; Trustee, United Presb. Found., '63-'75; Trustee, Sarah Lawrence Coll., '65-'73; Honorary Trustee, '73-; Honorary Mbr., Mercy Hosp. Bd. of Consultors; Bd. of Dir., Dunn & Bradstreet; First Natl. Bank of Chicago; First Chicago Corp.; Borg-Warner Corp.; Trustee, Savings & Profit Sharing Funds, Sears Employees, '76-; Lieut. Cmdr., USNR '42-'45; Presidential Unit Citation with 1 Star; Purple Heart; m. May 4, '35, Dorothy Williams Ranney; s. Elliott Ranney, Strachan ('64); d. Laura (*Wheeler*).

DOOLITTLE, 1943, DUNCAN HUNTER—(*Industrial*)—Born Dec. 12, 1920, Providence, R.I.; Pres., Rhode Island Energy Corp., 275 Harborside Blvd., Providence, R.I. 02905; res. 164 Post Rd., Wakefield, R.I. 02879; Trustee: Butler Hosp., '69-'75, Old Stone Bank, '61-'63; Councilman, South Kingston Town Council, '75-'81; Capt. A.U.S., F.A. Reserve, '43-'45; m. Oct. 21, '48, Ann Watson Lewis (divorced); m. Dec. 21, '67, Clare Southerland; s. William Shearman, Elisha Watson; d. Harriet Sprague, Abby Lippitt, Nichole Grahame.

DOWLING, 1969, BRIAN J.—(*Sports*)—Born Apr. 1, 1947, Cleveland, Ohio; res. 8 Washington Square, Marblehead, Mass. 01945; m. Dec. 4, '72, Betsy Lampert.

DOWNING, 1970, EARL S. III—Born Aug. 19, 1948, Palo Alto, Calif.; bus. and res. Pres., Downing Associates Solar Heating, 803 Pine St., Santa Cruz, Calif. 95062.

DOYLE, 1974, THOMAS JAMES, JR., M.P.A.—(*Finance*)—Born May 30, 1951, Albany, N.Y.; Asst. V.P., International Bond Ratings, Standard & Poor's Corp., 25 Broadway, New York, N.Y. 10004; res. 785 West End Ave., Apt. 11D, New York, N.Y. 10025; m. May 22, '82, Béatrice Françoise Fassell.

DRAIN, 1943, RICHARD DALE, LL.B., LL.M.—(*Finance retired*)—Born Aug. 16, 1920, Washington, D.C.; res. 5120 Baltan Rd., Washington, D.C. 20816; Assoc., Drain & Weaver, '48-'51; C.I.A., '51-'73; Foundation Admin., Washington Cathedral, '73-'76; Protestant Episc. Foundation, '73-; Staff, Special Asst. to U.S. Pres., '55; Special Asst. to Sec. of State, '57; Col., USAR, '43-'70; Silver & Bronze Stars; m. June 30, '48, Margenne Noland; s. William Whitley, Robert Dale ('79).

DRAPER, 1937, ARTHUR JOY, M.D.—(*Medicine, retired*)—Born Sept. 3, 1914, Charlotte, N.C.; res. 126 Knoll Drive, Hamden, Conn. 06518; Teaching Fellow, Western Reserve, '44-'45; Research Fellow, Johns Hopkins Hosp., '49-'50; Head of Cardiology, U.S. Naval Hosp., San

Diego, '57-'61; Chief of Med., U.S. Naval Hosp., Oakland, Calif., '61-'65; Chief of Med., U.S. Naval Hosp., San Diego, '66-'68, Exec. Officer, '68-'69; Commanding Officer, U.S. Naval Hosp. in "U.S.S. Repose," Vietnam, '69-'70; Commanding Officer, U.S. Naval Hosp., Newport, R.I., '70-'72; Chief, Emergency Services, Naval Regional Med. Center, San Diego, '72-'76; Capt., A.U.S. Med. Corps, Apr. '42-Sept. '42; Capt., U.S.N.R. Med. Corps, '48-'56; U.S.N. Med. Corps, '57-'76; Bronze Star (without Combat "V"); Meritorious Service Medal; Secy. and Asst. Treas., RTA, '80-; m. Aug. 3, '40; remarried Mar. 14, '81, Denise Gair; s. Arthur J. III, S. Russell, William F. IV ('74, M.B.A. '83); d. Denise (*Croft*), Judy (*Cottrell*).

DRAPER, 1950, WILLIAM H. III—(*Business*)—Born Jan. 1, 1928, White Plains, N.Y.; Pres. and Chmn., Export-Import Bank of the U.S., 811 Vermont Ave., N.W., Washington, D.C. 20571; res. 3122 P St., N.W., Washington, D.C. 20007; A.Y.A.; Chmn., Enrollment & Scholarship Committee, '62-'63; V.P., Yale Alumni Assn. for Northern Calif., '62-'63; Dir., San Francisco Peninsula Yale Club, '74-'76; Chmn., Campaign for Yale, Western Region, '75-'79; Sales Rep., Inland Steel Co., '54-'59; Assoc., Draper, Gaither & Anderson, '59-'62; Pres. & Founder, Draper & Johnson Investment Co., '62-'65; Pres., Sutter Hill Capital Co., '65-'70; Ptnr., Sutter Hill Ventures, '70-'81; Pres., Western Assn. Venture Capitalists, '67-'68; Mbr., Western Electronics Manufacturers Assn., '76-; Dir., Measurex Corp., '68-; Plantronics Inc., '73-; Lexitron Corp., '71-; Bd. of Trustees, United Way, Santa Clara Cty., '68-'76; Pres., United Fund, Palo Alto/Stanford, '67-'76; Trustee, Crystal Springs School for Girls, '67-'73; Dir., Population Crisis Com., Washington, D.C., '76-; Mbr., Harold Brunn Soc. for Medical Research, '76-; 1st Lieut., Inf., '47-'52; Combat Infantryman Badge, Meritorious Service Ribbon with Medal Pendant, Airborne Infantryman Badge; m. June 13, '53, Phyllis Culbertson; s. Timothy; d. Rebecca, Polly ('77, M.F.A. '80).

DUNN, 1957, GEORGE J., J.D.—(*Law*)—Born Apr. 29, 1935, Cleveland, Ohio; V.P. & General Counsel, Standard Oil Co., Ohio; 1725 Midland Bldg., Cleveland, Ohio 44115; res. 2374 Roxboro Rd., Cleveland Heights, Ohio 44106; Assoc., McAfee, Hanning, Newcomer & Hazlett, '60-'67; Assoc., Squire, Sanders & Dempsey, '67-'68; m. May 27, '61, Becky Fisher; s. John F., Gordon B. II.

DURFEE, 1956, C. GIBSON, JR.—(*Industrial*)—Born Mar. 11, 1934, Jersey City, N.J.; Dir., International Projects, Westinghouse Electric Corp., Westinghouse Bldg., Gateway Center, Pittsburgh, Pa. 15222; res. 220 Sunridge Rd., Pittsburgh, Pa. 15238; Pres., Westinghouse

Nuclear Europe, '78-'80; Pres. Yale Club of Pittsburgh, '71-'73; Governor, Yale Club of Pittsburgh, '73-; Class Exec. Com., '56-; Alumni Fund Agt., '56-'66; Vestryman, Calvary Church, '75-; Lieut. (j.g.), USN, '56-'60; m. Nov. 24, '56, Camilla Vilas; s. Charles Gibson III ('84), Timothy Craig, Donald Ralph; d. Susan (*Thulin*), Dorothy Vilas.

DURHAM, 1953, EDWIN A. II—(*Mineral exploration*)—Born June 5, 1931, Sistersville, West Va.; Managing General Ptnr., Everest Exploration Co. (uranium and minerals); Pres., Everest Minerals Corp. (oil, gas and mineral exploration), P.O. Box 1339, Corpus Christi, Texas 78403; res. 43 Hewit, Corpus Christi, Texas 78404; Chmn., Yale 25th Reunion Class Gift Fund; Yale Alumni Schools Com., South Texas Area, '60-'74; Asst. to Gen. Manager, Frankfort Oil Co., '55-'59; Manager, Gulf Coast Exploration, Southern Petroleum Exploration, Inc., '59-'69; Past Dir., Thor Jet Inc.; Wiser Oil Co., Petroleum Exploration & Southern Petroleum Exploration, Inc. '55-'69; Dir., Independent Petroleum Assn. of America; Corpus Christi Natl. Bank, '75-; Mbr. AM. Assn. of Petroleum Landmen; Corpus Christi Geological Soc.; South Tex. Geological Soc.; Corpus Christi Park Bd., '62-'66; St. James Episc. School Bd., '61-'74; Vestry, Church of the Good Shepherd, '70-'72; Creative Arts Center, '75-; Chmn., United Fund, Independent Oil & Gas Operators, '68; Dir., Corpus Christi Museum, '60-'65; YMCA, '73-'76; Trustee, St. Mary's Hall, '73-'76; Mbr., Bd. of Visitors, Univ. Cancer Fdn., Univ. of Texas, M.D. Anderson Hosp. and Tumor Institute, '82-; Advisory Trustee, Driscoll Fdn., '77-; Mbr., Texas Radiation Advisory Bd., '81-; 1st Lieut., USMC, '53-'55; m. June 19, '54, Kaye Tarrant; d. Edith (*Sapp*), Mary (*Clark*), Eleanor Kaye.

DYESS, 1939, ARTHUR DELMA, LL.B.(*Law, retired*)—Born Sept. 17, 1916, Temple, Texas; Of Counsel, Foreman and Dyess, Attorneys-at-Law, 4300 InterFirst Plaza, Houston, Texas 77002; res. 9015 Sandringham Drive, Houston, Texas 77024; retired Assoc. Justice, Court of Appeals, First Supreme Judicial Dist. of Texas-Houston; Yale Alumni Schools Committee, Chmn., Committee on Enrollment and Scholarship, '50-'70; Yale Alumni Bd., '60-'62; Mbr. since '46 of: State Bar of Texas, Harris County Bar Assn., American Bar Assn.; Mbr. of Texas Assn. of Defense Counsel and various other legal societies and/or organizations; Ethics Committee & Grievance Committee, Harris County Bar Assn.; Visiting Instructor in Law, Dept. of Architecture & Engineering, Rice Univ., '51-'71; Ptnr., Foreman, Dyess, Prewett & Henderson, '62-'71; Ptnr, Foreman, Dyess, Prewett, Ro-

senberg & Henderson, '71-'78; Chmn., Bd. of Trustees, First Congregational Church of Houston, '66-'68; Chapter Chmn., Harris County Chapter of Red Cross, '66-'68, presently ex-officio Mbr. Bd. of Dirs., served as Disaster Chmn.; Mbr., Appeal Bd. Selective Service System, Southern Federal Judicial Dist., '72-'75, Chmn. '74-'75; Dir., Houston Pro Bono Legal Services Program, Dec. '81-; Lieut., U.S.N.R., Gunnery Dept., U.S.S. San Francisco-Pacific Theatre of Operations, June '42-Nov. '45; m. Aug. 26, '44, Elizabeth Booth; s. Arthur Booth ('68); d. Eugenia Calvert, Elizabeth Van Cleef.

E

EARLY, 1945, HOBART EVANS, J.D.—(*Law*)—Born June 27, 1922, Brooklyn, N.Y.; Attny., Federal Reserve Bank of Atlanta, 104 Marietta St., Atlanta, Ga. 30303; res. 1194 Warrenhall Lane N.E., Atlanta, Ga. 30319; m. Sept. 7, '46, Patricia Hadley Pulfer; m. March 29, '69, Winifred Head Schreiner; s. Hobart Evans, Jr., Harold Steven; d. Suzanne Hadley.

ECKLUND, 1938, JOHN E., LL.B., M.A. (Hon.)—(*Business*)—Born Apr. 3, 1916, Jamestown, N.Y.; Research, Legal History, Yale Law School, 127 Wall St., New Haven, Conn. 06520; res. 27 Cedar Rd., Woodbridge, Conn. 06525; Treas., Yale Univ., '66-'78; Alumni Bd., '55-'57; Pres., Yale Club of New Haven, '55-'57; Fellow, Davenport Coll., '50-; Treas., Yale Alumni Fund, '66; Mbr., Bd. of Governors, Yale Univ. Press., '66-'78; Assoc. Wiggin & Dana, New Haven, '46-'51; Ptnr., '51-'66; Chmn., Woodbridge Town Planning & Zoning Comm., '60-'64; Mbr., Bd. of Dir., Yale New Haven Hosp., '66-'78; Lieut., USNR, '41-'46; Commendation Ribbon, U.S. Atlantic Fleet; RTA: Sec., '46-'56; Dir., c. '59-'62; Pres., '76-'81; m. Oct. 29, '42 Mary T. Sizer; m. Mar. 22, '75, Constance L. Cryer; s. Peter J., ('67), John E. Jr.; d. Hilda (*Ollmann*) , Elizabeth (*Berger*).

EDEN, 1951, JOHN W.—(*Business*)—Born July 30, 1927, Cleveland, Ohio; V.P., Russell Reynolds Associates (executive recruiting firm), 1850 K St., N.W., Suite 575, Washington, D.C. 20006; res. 968 Saigon Road, McLean, Va. 22102; Bd. of Alumni Placement Com., '59-'61; Pres., Yale Alumni Assn. of Central Pa., '70-'72; Pres., The Eden Corp., '51-'59; Div. Mgr., AMF Inc., '59-'67; Exec. V.P., Graham Engineering Corp., '68-'75; V.P., First Municipal Leasing Corp.,

'77-'78; Pres., TVI Corp., '78-'79; Russell Reynolds, '79-; Deputy Undersecretary, U.S. Dept. of Commerce, '75-'76; Asst. Secy. for Economic Development, '76-'77; Candidate for Republican nomination, U.S. House of Representatives, 19th Dist. of Pa., 1972 and 1974; Lieut. U.S.N.R., '45-'47, '53-'55; m. Aug. 22, '53, Caroline B. Ballou; s. John Jefferson, Timothy Starr, Carter Remington; d. Emily Starr.

EDOZIEN, 1979, ANTHONY O.—Born June 27, 1957, Nigeria—add. 612 Surry Road, Chapel Hill, N.C. 27514.

EISENBERG, 1974, BRUCE ALAN, J.D.—(*Law*)—Born Dec. 3,1952, Baltimore, Md.; Attny., Cohen, Snyder, McClellan, Eisenberg & Katzenberg, P.A., 111 N. Charles St., Baltimore, Md. 21201; res. 7420 Sweet Clover, Columbia, Md. 21045; m. Aug. 30, '77, Doreen Elise Caplan; s. Brett Harlan.

EISLER, 1952, COLIN TOBIAS, M.A., Ph.D.—(*Education*)—Born Mar. 17, 1931, Hamburg, Germany; Robert Lehman Prof. of Fine Art, NYU Institute of Fine Arts, 1 E. 78th St., New York, N.Y. 10021; res. 229 E. 79th St., New York, N.Y. 10021; Instructor, Yale Art Dept., Curator of Prints and Drawings; Metropolitan Museum of Art, European Paintings Dept.; on Bd. of: Architectural History Fdn., The Drawing Center, The Smith College Art Museum, The American Friends of the Israel Museum, Friends of Pratt Institute, Friends of the Cooper Hewitt Print and Drawing Dept., Pres., College Art Assn., '55-'59; m. June 23, '60, Benita Jane Blitzer; d. Rachel Charlotte ('86).

EKFELT, 1971, RICHARD HENRY, J.D.—(*Law*)—Born May 15, 1949, Omaha, Neb.; Attny., Investment Advisor (oil and gas), Investment Search, Inc., 223 Duke of Gloucester St., Annapolis, Md. 21401; res. 9314 Cherry Hill Road, Apt. 924, College Park, Md. 20740; Law Clerk, W. Va. Supreme Court of Appeals, '74-'76; Attny. (private practice), Washington, D.C., '76-'82.

ELEBASH, 1944, SHEAREN DANIEL—(*Theatre, Business*)—Born July 23, 1921, Selma, Ala.; bus. P.O. Box 2443, Montgomery, Ala. 36102; res. 805 Cloverdale Rd., Montgomery, Ala. 36106.

ELLIS, 1944, ALEXANDER, JR., LL.B.—(*Insurance*)—Born Apr. 9, 1922, Cambridge, Mass.; Pres. and Chmn., Fairfield & Ellis, Inc., 225 Franklin St., Boston, Mass. 02110; res. Sandy Pond Road, Lincoln, Mass. 01773; Capt., A.U.S., Feb. '43-Jan. '46; Purple Heart; m. Oct. 26, '46, Nancy Walker Bush; s. Alexander III ('79), Jonathan Prescott ('77), Josiah Wear; d. Nancy Walker.

ELLIS, 1941, F. HENRY, JR., M.D., Ph.D.—(*Medicine*)—Born Sept. 20,

1920, Washington, D.C.; Thoracic Surgeon, Chief, Thoracic and Cardiovascular Surgery; Lahey Clinic Medical Center, 41 Mall Road, Box 541, Burlington, Mass. 01805; New England Deaconess Hospital; res. 21 Fairmount St., Brookline, Mass. 02146; Yale Development Bd., '70-'72; Univ. of Minnesota; Instr. in Surgery, '52-'56, Asst. Prof., '56-'60, Assoc. Prof., '60-'64, Prof., '64-'70; Harvard Medical School: Lecturer on Surgery, '70-'74, Assoc. Clinical Prof. of Surgery, '74-'80; Clinical Prof. of Surgery, '80-; Consultant in Surgery, Mayo Clinic, '53-'70, Lahey Clinic, '70-; Chief, Thoracic Surgery, Mayo Clinic, '66-'70; Chief Cardiovascular Surgery, Lahey Clinic, '70-'75; Mbr., Am. Coll. of Surgeons, International Cardiovascular Society, Societé International de Chirurgie; Bd. of Governors, Am. Coll. of Surgeons, '57-'60, '69-'72; Am. Bd. of Thoracic Surgery, '70-'77; Pres., Soc. for Vascular Surgery, '71; Graduate Education Com., Am. Coll. of Surgeons, '71-'76; Editorial Bd., Annals of Thoracic Surgery, '72-; Council, Soc. of Thoracic Surgeons, '74-'78; V.P., Soc. of Thoracic Surgeons, '76; Lieut. (j.g.), USNR, '46-'48; m. Nov. 17, '45, Elizabeth Dunston Watson; m. Dec. 2, '78, Mary Jane Walsh; s. F. Henry III, Hederick Watson Michael Garrison Walsh-Ellis; d. Katherine de Saulles, Elizabeth Dunston, Margot McClintock (*Starkey*), Laura Lawson, Marie-Armide Longer.

ELLIS, 1951, G. Corson, Jr., M.B.A.—(*Industrial*)—Born Mar. 13, 1929, Chicago, Ill.; Chmn. and Chief Exec. Officer, Kessler-Ellis Products Co., 120 First Ave., Atlantic Highlands, N.J. 07716; Pres., H. Kuhnke, Inc.; res. Cooper Rd., Atlantic Highlands, N.J. 07716; m. Oct. 7, '51, Joan Ferguson; s. G. Corson III, Kevin Kinney; d. Laura Ferguson.

ELLIS, 1951, Garrison McClintock Noel—(*Business*)—Born Dec. 25, 1929, Washington, D.C.; Editor and Publisher, The Country Publishers, Inc., 4 W. Federal St., Middleburg, Va. 22117; res. "Three Pounds," Millwood, Va. 22646; Pres., Wilson, VanDoren-Ellis Co., '70-'73; Asst. Dir., Greater Baltimore Regional Planning Council, '68-'70; Special Asst. for Congressional & Community Relations, U.S. Office of Economic Opportunity, '65-'68; Exec., Com., Clarke-Frederick-Winchester, Va., Branch, NAACP, '74-; Pres., Bd. of Dirs., The Country Day School, Jefferson County, W. Va.; Bd. of Dirs., Grafton School, Berryville, Va.; Exec. Com., Princeton, N.J., Democratic Club, '62-'64; Pres., Princeton, N.J. Community Players, '61-'63; Vestryman, Cunningham Chapel Parish (Episc.), Millwood, Va. '69-'72; Lieut. (j.g.) USNR, '51-'55; m. Feb. 17, '68, Phoebe Giles Williams.

EMBERSITS, 1958, JOHN FRANK, M.B.A.—(*Business*)—Born Jan. 18, 1937, Pittsburgh, Pa.; Pres., Chief Exec. Officer: Energy Resource Management Co., Operations Resource Management Co., Technical Resource Management Co., Thermtran Ltd., Meigswood Park, Box 1515, Madison, Conn. 06443; formerly Exec. V.P. and Chief Operating Eng., Welsbach Corp.; res. 34 Middle Beach Road, Madison, Conn. 06443 and 140 Cabrini Blvd., Apt. 131, New York, N.Y. 10033; Yale Corp., '70-'75; Dir., Univ. Operations, '65-'75; Energy Advisor to Yale Corp., '75-'77; Univ. Council; AYA Athletic Com.; Treas., Football "Y" Assn., '67-'82; Yale Club of Madison, Fellow, Jonathan Edwards Coll.; Pres., Yale PeeWee Hockey; Dir., St. Thomas More House; Co-Chmn., Class of '58 Reunion, '73; Vice Chmn., Class of '58, 25th Gift; Dir.: Greater New Haven Chmbr. of Comm. '68-'80, New Haven Water Co., '74-'79, Mercy Center, Madison, '73-, Natl. Assn. of Coll. & Univ. Business Officers '68-'75; Trust Bd., Union Trust Co., '69-; Mbr., Manufacturers Assn. of New Haven, '72-; Exec. Com., Eastern Assn. of Coll. & Univ. Business Officers, '68-'73; Distinguished Service Award, Madison Jaycees, '70; Outstanding Young Man, Conn. Jaycees, '70; Outstanding Young Man in New England, New England Jaycees, '70; Chmn., Mayor's Management Task Force, New Haven, '76; New England Construction Users Council; Governor's Comm. on Environmental Policy, State of Conn.; United Way of New Haven: Chm., Special Gifts, '69, Campaign Policy Com., '71-'73; Campaign Steering Com.: St. Raphael's Hosp., '73, Yale-New Haven Hosp., '72; Chmn. New Haven Booster's Club, '72; RTA: Asst. Treas., '66-'75, Dir.'70-'77; m. Dec. 28, '57, Harriet McGrath; m. June 29, '79, Lucinda Thomas; s. Jeffrey John, Steven James; d. Leslie Lynn. ('84).

EMERSON, 1953, CHRISTY PAYNE, M.C.P.—(*Business*)—Born Feb. 19, 1931, New York, N.Y.; Proprietor, The Bret Harte, Retirement Residence, No. 26, 3535 Coolidge Ave., Oakland, Calif. 94602; res. 2910 Elmwood Court, Berkeley, Calif. 94705; Class Sec. '53-'63; City Planner, Kendree & Shepherd Consultants, '58-'62; City Planner, Philadelphia Community Renewal Program, '62-'65; Dir. of Development, Philadelphia Housing Authority, '65-'68; Lieut. (j.g.) USNR, Submarine Service, '53-'56; m. Aug. 4, '56, Alice Frey; m. May 3, '69, Joan Yasui; s. Peter G., Christy P., Jr. d. Rebecca F.

ENGLISH, 1975, WILLIAM DESHAY, JR.—(*Industrial*)—Born July 24, 1950, Fairbanks, Alaska; res. 2265 Westwood Blvd., Apt. 176, Los Angeles, Calif. 90064; 1st Lieut., AUS Intelligence, Sept. 25, '69-May 17, '72; Republic of Vietnam Service.

ERCKLENTZ, 1959, ALEXANDER TONIO—(*Finance*)—Born July 13, 1936, New York, N.Y.; Ptnr., International Investments, Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. Hekma Rd., Greenwich, Conn. 06830; Alumni Fund, Class Agt., Saybrook, '72-'74; Dir., Wilmar Corp., '73-; Dir., Massassoit Management Corp., '73-'75; Treas. & Dir., Travellers Aid —International Social Service, '71-'75; Repub. Candidate for N.Y. State Assembly, '64; Mbr., Exec. Com., Repub. Party, New York Cty., '65-'68; Treas., RTA, '77-; m. June 13, '64, Katharine Bertles Ley; s. Alexander T., Jr., Nicholas Ley; d. Christina Titaua.

ERICKSON, 1940, THOMAS FRANKLIN—(*Industrial*)—Born Mar. 27, 1918, Oak Park, Ill.; Ptnr. & V.P., Walters & Erickson, Inc., Manufacturers Agents, 300 West Wieuca Rd., Atlanta, Ga. 30342; res. 840 Loridans Circle, Atlanta, Ga. 30342; Treas., Yale Club of Chicago, '50; Pres., Yale Club of Georgia, '61-'63; Alumni Rep., '67-'70; Chmn., Bd. of Advisors, Atlanta Merchandise Mart, '64-'66; Bd. Mbr., Natl. Assn. of Bedding Manufacturers, '65-'68; Lieut., Pilot, USN, Apr. '42-Dec. '45; Air Medal; m. Apr. 17, '48, Charlotte Walters; s. Thomas F., Jr., ('71), Stephen W.; d. Margaret R., Kristin E.

ERNST, 1960, FREDERICK VINCENT, M.B.A.—(*Industrial*)—Born Feb. 8, 1938, Capetown, South Africa; V.P., Marketing and International Operations, Great Southern Paper Co., P.O. Box 44, Cedar Springs, Ga.; res. 3000 Briarcliff Rd., Dothan, Ala. 36301; Class Council, '70; Pres., Georgia Pulp & Paper Assoc., '80-'82; Mbr., American Paper Institute, International Business Comm., '76-, Fourdrineer Kraft Board Group, '77-; Trustee, Houston Academy, Dothan, Ala., '79-'82; m. Jan. 9, '60, Else G. Nye; s. Michael, Jonathan, Charles; d. Anne.

ESSELSTYN, 1956, CALDWELL BLAKEMAN, JR., M.D.—(*Medicine*)—Born Dec. 12, 1933, New York, N.Y.; General Surgeon, Cleveland Clinic, Cleveland, Ohio 44109; res. 2 Pepper Ridge Rd., Cleveland, Ohio 44124; Capt., A.U.S., '66-'68; Bronze Star; m. June 18, '61, Ann Crile; s. Richard Van, Theodore ('86), Caldwell B. III, d. Jane Halle.

ESSELSTYN, 1959, ERIK CANFIELD, M.A.T., Ed.D.—(*Education*)—Born Apr. 7, 1937, New York, N.Y.; Gesell Institute for Human Development, 310 Prospect St., New Haven, Conn. 06511; Teacher, Hawken School, '63-'64; Brookline High School, '67-'69; Administrator, Central Piedmont Community Coll., '71-'76; V.P., Student Services, Central Piedmont Community Coll.; Co-Dir., Art of Living Workshops, Blue Hill, Me.; Sgt. E-5, A.U.S., June '60-June '63;

Parachutist Badge; m. Aug. 19, '67, June Mitchell Bingham; s. Blakeman Bingham; d. June Eriksson.

ETRA, 1968, DONALD, J.D., M.B.A.—(*Law*)—Born July 23, 1947, New York, N.Y.; Attny., Sidley & Austin, 2049 Century Park East, Los Angeles, Calif. 90067; res. 20656 Pacific Coast Hwy., Malibu, Calif. 90265; Assoc., Ralph Nader, '71-'73; Trial Attny., U.S. Dept. of Justice, '73-'77; Asst. U.S. Attny., C.D. Calif., '78-'81; Assoc., Sidley & Austin, '81-; RTA Dir., '69-'72, Treas. Deer Island, '70-'72, Pres. Deer Island, '72-'75.

EVANS, 1972, PETER SEELYE—(*Drama*)—Born May 27, 1950, Englewood, N.J.; Actor; res. 278 W. 19th St., Apt. 4, New York, N.Y. 10011.

EVANS, 1954, TILGHMAN BOYD, LL.B., LL.M.—(*Finance*)—Born Feb. 19, 1932, Bryn Mawr, Pa.; no address available; m. July 30, '60, Lorraine Goodrich; s. Lloyd Tilghman; d. Shelley.

EYRE, 1970, LAWRENCE L., M.A.—(*Education*)—Born Oct. 26, 1948, Davenport, Iowa; Univ. of Virginia, Dept. of Religious Studies, Charlottesville, Va. 22903; res. 1964 Lewis Mountain Road, Charlottesville, Va. 22903; Treas., Yale Class of 1970, '70-'75; Dean of Faculty, Maharishi International Univ. School, Fairfield, Iowa; Teacher, Transcendental Meditation Program and the Science of Creative Intelligence, '76-; Editor, 1971 RTA Catalogue; m. May 24, '75, Victoria Vaughn; m. Mar. 27, '82, Laurie Reid.

F

FEHR, 1955, GERALD F.—(*Insurance*)—Born May 12, 1933, Seattle, Wash.; Sr. V.P. Finance and Dir., Family Life Insurance Co. (wholly-owned subsidiary of Merrill Lynch & Co.), Park Place, Seattle, Wash. 98101; res. 4235 N.E. 89th St., Seattle, Wash. 98115; Alumni Fund, '60-'63; Mbr., Financial Executives Institute, former Dir., Seattle Chapter; Mbr., Citizens Committee for Academic Excellence, Seattle Public Schools; Lieut, USN, '55-'57; m. Dec. 27, '58, Sally Snider; s. Randall, Richard; d. Heidi.

FEINERMAN, 1971, JAMES VINCENT, M.A., J.D., Ph.D.—(*Law, Education*)—Born Oct. 30, 1950, Chicago, Ill.; Fulbright Lecturer in Law, Peking Univ., Law Dept., Beijing, People's Republic of China, '82-'83; Assoc., Davis Polk & Wardwell, One Chase Manhattan Plaza, New York, N.Y. 10005; res. 403 Pacific St., Brooklyn, N.Y.

11217; Yale-in-China Bachelor, Hong Kong, '71-'73, Undergraduate Admissions Office, '73-'75; Bd. of Governors, '74-'75; Graduate School Advisory Com., '74-'75; A.Y.A. Rep., Grad. School, '76-'78; Tutor, Dept. of English, Chinese Univ. of Hong Kong, July '71-May '73; Trustee, Yale-in-China Assn., '74.

FERGUSON, 1926, ALFRED L., JR., LL.B.—(*Finance retired*)—Born Apr. 27, 1904, New York, N.Y.; Investment Banker; res. R.F.D. 180A, Cooper Road, Atlantic Highlands, N.J. 07716; Lieut. Col., Army Air Force, '42-'46; m. June 30, '28, Janet Kinney; s. Alfred L. III, ('58, Yale Law School, '63); d. Joan (*Ellis*).

FERGUSON, 1944 (1947) JOHN LORD, LL.B.—(*Law*)—Born Aug. 8, 1922, Loveland, Colo.; Attny, Ptnr., Gorsuch, Kirgis, Campbell, Walker & Grover, Alamo Plaza, 1301 17th St., Denver, Colo. 80202; res. 3 Vista Road, Englewood, Colo. 80110; A.Y.A., '70-'71; 1st Lieut., A.U.S., '43-'46; m. Sept. 6, '47, Alice Willgoos; d. Suzanne (*Fuller*), Sandra E. ('73).

FETNER, 1965, PHILIP JAY, LL.B. (Cambridge), J.D.—(*Law*)—Born Nov. 13, 1942, St. Louis, Mo.; Attny, Investment Banker, Sr. Ptnr., P. Jay Fetner Associates, Managing Principal of African Development Group, 1218 16th St., N.W., Washington, D.C. 20036; res. 2504 I St., N.W., Washington, D.C. 20037; Yale Alumni Fund, '65-'75; Mbr.: New York Bar, Pennsylvania Bar, Washington, D.C. Bar.

FIELD, 1937, JOHN WARNER—(*Consulting*)—Born Sept. 15, 1914, Bridgeport, Conn.; Consultant, Pres., Mine Hill Consultants, 1895 Post Road, Fairfield, Conn. 06430; res. 370 Mine Hill Road, Fairfield, Conn. 06430; Class Sec.; Alumni Bd.; A.Y.A.; Campaign for Yale; Pres., Yale Club of Eastern Fairfield Cty.; Dir., Insilco, Inc.; Conn. National Bank; former Pres. & Chmn., Warnaco, Inc.; War Correspondent for Time, Inc.; m. Apr. 15, 1939, Priscilla H. Brown; s. John W., Jr., David W.; d. Margaret F. (*Paterson*).

FINLEY, 1947, JOHN GEORGE GILPIN—(*Industrial*)—Born June 21, 1925, Naples, Italy; General Mgr., CIA Minera Disputada, Casilla 25-D, Santiago, Chile; res. Hernando de Aguirre 1549, Santiago, Chile; C.I.A., '51-'55; Sgt., A.U.S., '42-'45; 2nd Lieut., '49-'55; m. Oct. 15,'49, Anne Simmons; s. James C. W., Peter S.

FINNEY, 1973, C. ROGER, M.Arch.—(*Architecture*)—Born Feb. 11, 1952, Port Pirie, Australia; res. 515 W. 46th St., Apt. 3W, New York, N.Y. 10036.

FINNEY, 1952, GRAHAM STANLEY, M.P.A.—(*City Government*)—Born Sept. 6, 1930, Greenwich, Conn.; Sr. Ptnr., The Conservation Co., 1701 Arch St., Philadelphia, Pa. 19103; res. 615 W. Hortter St.,

Philadelphia, Pa. 19119; Class Sec., '67-'72; Visiting Lecturer; Planning Dir., Portland, Maine, '57-'60; Asst. Exec. Dir., City Planning Comm., Philadelphia, '61-'65; Exec. Dir., Philadelphia Council for Community Advancement, '65-'66; Deputy Superintendent of Schools, Philadelphia, '66-'69; Commissioner, Addiction Services Agency, N.Y. City, '70-'72; Managing Ptnr., Greater Philadelphia Partnership, '73-'76; Pres., Corp. for Public/Private Ventures, '77-'80; Spec. 3, AUS, '54-'56; m. June 22, '57, Katharine Pillsbury Becker; s. Samuel Warner ('84), Garrett Stevens ('86); d. Sarah B. (*Johnston*) ('80), Martha Becker ('81).

FINNEY, 1945W, JOHN WARREN—(*Journalism*)—Born Dec. 5, 1923, Springfield, Mass.; News Editor, Washington Bureau, *New York Times,* 1000 Connecticut Ave., N.W., Washington, D.C. 20036; res. 5275 Watson St., N.W., Washington, D.C. 20016; former Reporter, *New York Times;* Ensign, USN, '43-'46; m. Jan. 13, '73, Theresa McMasters; d. Alison (*Stebbins*), Jessica H. (M.A. '81 and Ph.D. Candidate).

FISHER, 1972, SCOTT B., M.A.—(*Business*)—Born March 6, 1950, Los Angeles, Calif.; General Mgr., Employee Relations, Petroleum Information Corp., P.O. Box 2612, Denver, Colo. 80201; res. 9521 W. Hialeah Place, Littleton, Colo. 80123; m. June 9, '72, Susan Smith ('72); d. Sarah.

FITCH, 1932, GEORGE HOPPER—(*Advertising retired*)—Born Nov. 29, 1909, New York, N.Y.; formerly Advertising Exec.; res. 1960 Broadway, San Francisco, Calif. 94109; Governing Bd., Yale Univ. Art Gallery, '73-, Exec. Com.; Author, "So You're Going to Heaven"; presently Dir., Distillers Co., Ltd.; Trustee, American Federation of Arts, '52-'73, 1st V.P., '59-'68; Trustee, Fine Arts Museums of San Francisco, '75-, V.P., '80, '81, Chmn., Acquisition Committee, '76-; Trustee, Royal Oak Found., '75-; Commissioner, Asian Art Museum, San Francisco, '75-; Pres., Municipal Art Soc. of New York, '62-'63; Commissioner & V.P., New York City Art Comm., '64-'68; V.P., English Speaking Union of the U.S., '82-; Pres., San Francisco Branch, '80-'82; Council of Fellows, Morgan Library, '65-'68; Chmn., San Francisco Sister City Program, '75-'77; Maj., Army Air Force, Chief, Special Services, '42-'46; Commendation Ribbon; m. '34, Dorothy Quincy Lawrence; m. '53, Muriel Johnson; ss. Edward deCoppet; sd. Jacqueline deCoppet (*Berthet*) (deceased).

FLEMING, 1980, ANDREW T.—Born April 16, 1958, Meriden, Conn.—add. 127 Victory Drive, Lincolnton, N.C. 28092.

FLETCHER, 1933, ALEXANDER CHARLES—(*Business retired*)—Born

May 25, 1910, Boston, Mass.; res. 165 Middlesex Rd., Darien, Conn. 06820; formerly V.P. & Natl. Sales Mgr., Four Roses Distillers Corp.; Lieut., USN, Oct. '42-Dec. '45; m. June 10, '39, Ethel Dixon; s. Dixon M., Alexander, Jr., Alan, Arthur W., Anthony W.; d. Trudy, Lucia L., Ethel F.

FORD, 1942, WILLIAM, LL.B.—(*Law retired*)—Born July 6, 1919, Albany, N.Y.; Formerly Ptnr., Becket, Ford, Dooley & Bearns; res. 24 West St., Proctor, Vt. 05765; Pres., Litchfield Cty. Bar Assn., '68-'70; Bd. of Gov., Conn. Bar Assn., '67-'70; Judge of Probate Distr. of Salisbury, '54-'71; Bd. of Finance, Town of Salisbury, '52-; m. Oct. 3, '42, Pauline C. Woodman; s. Edward W.; d. Christina (*LeFevre*), Katharine S. (*Sheriff*).

FORE, 1979, JOHN ARTHUR, J.D.—(*Law*)—Born Oct. 3, 1956, New York, N.Y.; Attny.; res. 121 N. Van Dien Ave., Ridgewood, N.J. 07450; Dir., Yale Co-op Corp., '77-'79.

FORT, 1976, DONALD KENNETH—(*Student*)—Born June 23, 1949; res. 1009 N. Third, Memphis, Tenn. 38107.

FORTGANG, 1971, JEFFREY, Ph.D.—(*Psychology*)—Born June 3, 1949, Brooklyn, N.Y.; Clinical Psychologist, Bay Colony Health Services, 200 W. Cummings Park, Woburn, Mass. 01801; res. 15 Bates Road, Watertown, Mass. 02172; private clinical practice; part-time Clinical Research Consultant, Mass. General Hosp., Alcohol Clinic; Fellow in Clinical Psychology, Mt. Auburn Hosp., '78-'79; Clinical Fellow, Mass. General Hosp., Alcohol Clinic, '79-'82; m. Sept. 6, '81, Roberta S. Cole.

FORTUNATO, 1954, S. JOSEPH, LL.B.—(*Law*)—Born July 23, 1932, Montclair, N.J.; Ptnr., Pitney Hardin Kipp & Szuch, 163 Madison Ave., P.O. Box 2008 R, Morristown, N.J. 07960; Class Council, '76-; s. Michael C., Stephen J. ('78); d. Susan P.

FOSTER, 1967, DAVID JOHN, M.B.A.—(*Finance*)—Born June 25, 1945, Lansing, Mich.; Mgr., V.P., Results Management, Accuray Corp., 650 Ackerman Road, Columbus, Ohio 43202; res. 4263 Gavin Lane, Upper Arlington, Ohio 43220; Class Agt., Alumni Fund, '72-'76; General Mgr., Leasing Div., Accuray Leasing Inc., Div. Mgr., '77-'79, V.P., Market Development, '79-'82; Lieut., USNR, Navy Supply Corps, '69-'72; Navy Achievement Medal; m. Aug. 19, '67, Joanne Louise Junor; d. Erica Lynn, Amy Juliette, Jane Rebecca.

FOSTER, 1923, MAXWELL E., LL.B.—(*Law retired*)—Born Aug. 27, 1901, Magnolia, Mass.; res. 146 Argilla Rd., Ipswich, Mass. 01938; m. June 9, '26, Elizabeth Vincent; s. Maxwell E., Jr., Vincent.

FOX, 1938, JOSEPH CARRÈRE, M.B.A.—(*Finance*)—Born Feb. 27,1916,

New York, N.Y.; V.P. and Ptnr., Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005; res. 5475 Palisade Ave., Bronx, N.Y. 10471; Class Secy., '65-'70; Alumni Bd., '65-'70; Chmn., Yale Grad. Track Committee, '65-; Dir., Movie Star, Inc., '65-; Mbr., Council on Foreign Relations, '55-; Trustee, Univ. of the Valley of Guatemala, '83-; Riverdale Country School, '68-'71, Riverdale Presbyterian Church, '71-'75; Alumni Bd., Phillips Academy, Andover, '60-'64; Lieut. Cmdr., USN, '41-'45; Mbr., RTA Investment Committee, '82-; m. 1952, Louise Freeman Lee (dec. 1978); m. 1980, Alison Barbour McLean; s. Henry Stebbins, d. Dell Carrère, Lee Freeman.

FRANCIS, 1964, SAMUEL HOPKINS, M.A., Ph.D.—(*Science*)—Born Jan. 27, 1943, Lancaster, Pa.; Research Physicist, Technical Supervisor, Bell Laboratories, Whippany Road, Whippany, N.J., 07981; res. 57 Dunbar St., Chatham, N.J. 07928; Lieut. (jg), USN, '64-'66; m. June 5, '65, Roberta Louise Williams; s. Christopher Samuel; d. Erika Lynne.

FRANK, 1963, CHARLES AUGUSTUS III, M.B.A.—(*Finance*)—Born July 30, 1940, Glen Cove, Long Island, N.Y.; Sr. V.P., The United States Trust Co. of New York, 45 Wall St., New York, N.Y. 10005; res. 218 Kane St., Brooklyn, N.Y. 11231; Investment Association of N.Y. Bd., '71-'72; Trustee and Chmn. Annual Fund, The Hill School, '82; Trustee, Episcopal Diocese of L.I., Nehemiah Plan, '82; P.F.C., AUS, '63-'69; RTA Dir., '75-'78; m. Oct. 10, '64, Elizabeth J. Taylor; s. Garrett Taylor, Reade Augustus.

FRANK, 1938, CLINTON E.—(*Advertising*)—Born Sept. 13, 1915, St. Louis, Missouri; Chmn., Bridlewood Corp., One First National Plaza, Suite 2530, Chicago, Ill. 60603; res. 28 Bridlewood Rd., Northbrook, Ill. 60062; Assn. of Yale Alumni Bd.; Pres., Yale Club of Chicago; Bd. of Dir., Stanray Corp.; Pres., Chicago Advertising Club, '76-; Chicago Assn. of Comm. & Industry; Commercial Club of Chicago; Pres., Brain Research Found. '76-; Bd. of Dir. & Consultants, Little City Found.; Bd. of Financial Advisors, The Lambs, Inc.; Bd. of Dir., Northwestern Memorial Hosp.; Natl. Football Found. & Hall of Fame; Trustee, Orchestral Assn.; Lieut. Col., USAF, '41-'45; m. July 26, '41, Frances C. Price; m. May 24, '67, Margaret A. Rathje Mullins; s. Clinton E., Jr., Arthur A., III; d. Marcia C., Laurie (*Dorsey*), Cynthia C. (*McCarthy*); ss. Thomas Clinton Mullins III; sd. Ann Mullins (*Johnson*), Kathryn Mullins, Susan Mullins.

FRANK, 1950, VICTOR H., JR., LL.B.—(*Finance*)—Born Apr. 4, 1927,

Philadelphia, Pa.; V.P., Information Resources, CPC International, International Plaza, Englewood Cliffs, N.J. 07632; res. 267 E. Linden Ave., Englewood, N.J. 07631; Scholarship & Enrollment Com.; 25th Reunion Chmn.; formerly Spec. Asst. to Chief Exec. Officer and Tax Counsel; Lawyer, Webster Sheffield, N.Y. City, '60-'66; U.S. Treasury Dept., '54-'60; Mbr., National Committee on International Education Programs, '82-; Englewood Hosp., Chmn. of Investigational Drug Committee, '75-; Trustee, Englewood Community Chest, '70-, former Chmn.; Mbr., Bergen County Republican Committee; former Mbr., Englewood City Council, '82; Trustee, Dwight Englewood School, '70-'75; Bd., Deer Island Club; USN, '45-'46; m. Mar. 16, '58, Elizabeth Barker; s. Halsey B., Victor H., III, Jonathan L. ('86).

FRANKLIN, 1983, Richard David—(*Finance*)—Born Sept. 8, 1960, New Castle, Ind.; res. R.R. 3, Box 57, New Castle, Ind. 47362.

FREDERICKS, 1977, Joel Richard—Born May 11, 1955, Bethesda, Md.; 5-42 47th Ave., Long Island City, N.Y. 11101.

FRIEDLAND, 1970, Jonathan David, J.D.—(*Law*)—Born Feb. 17, 1948, New York, N.Y.; Attny., S. Friedman & Co., Advocates, 31 Haatzmauth Road, Haifa, Israel 33033; res. 42 Hantke St., Apt. 8, Haifa, Israel 34608; Alumni Schools Committee, '72-'75, '81-'83; Mbr., Bd. of Dirs., Association of Americans and Canadians in Israel, "Erez" Educational Center for the Western Galilee; Cpl., Combat Engineers, Israel Defense Forces, '72-; m. June 21, '70, Paula Ruth Feinstein; s. Joshua L.; d. Talia Ruth.

FRITZSCHE, 1957, Peter B., M.B.A.—(*Business*)—Born Feb. 12, 1935, Cleveland, Ohio; Chmn. and Pres., EAC Industries, Inc., 135 S. LaSalle St., Room 1400, Chicago, Ill. 60603; res. 153 Sheridan Road, Winnetka, Ill. 60093; 1957 Class Secy., '71-'76; Alumni Fund Agent, '60-; A.Y.A., '81-, Dir., Yale Club of Chicago, '72-; Chmn. Special Gifts Reunion Campaign, '76-'77, '81-'82; Pres., Yale Club of Indiana, '62-'68; Bd. of Dirs., Hauske Harlen Furniture Co., '63-'68; Wells Aluminum Co., '64-'67; Accurate Products, '64-'68; The Elyria Co., '65-'76; Pres. Sacred Heart PTO and Education Board, '72-'78; Chmn., Henry Horner Chicago Boys Club, '74-'77, Dir., '70-; m. Feb. 12, '66, Ruth Black; s. Peter Bartley, David Newell, Alex Neracher, Paul Griffin, Patrick Brendan; d. Kathleen Connolly.

FULLER, 1969, Henry W.—(*Business*)—Born Sept. 14, 1946, York, Me.; Owner, Operator, Cape Breton Boatyard Ltd., Box 247, Baddeck, Nova Scotia, Canada B0E 1B0; res. R.R. 2, Baddeck, Nova

Scotia, Canada B0E 1B0; m. Sept. 12, '70, Judith Rivinus; s. Michael R.; d. Susanna D.

FULLER, 1935, Stanley Evert—(*Government retired*)—Born July 21, 1909, Erie, Pa.; res. 108 Patrician Oaks, 851 Maple Court, Dunedin, Fla. 33528; Pres., Akron, Ohio, Yale Alumni Assn., '37; County Juvenile Court Administrator, (retired Jan. 1, '75); Mbr., Bd. of Managers County Juvenile Detention; Major United Fund, '45-'47; m. June 22, '36, Jean Chamberlain; s. Stanley Edward; d. Martha Ann (*Procop*).

FULTON, 1932, Robert Brank, Ph.D., M.Div.—(*Education*)—Born July 6, 1911, Clinton, Ill.; Interim Pastor, Presb. Church, Brighton, Iowa; res. 309 E. Burlington Ave., Fairfield, Iowa 52556; Yale-in-China Assn., China based work, '33-'45, '43-'51, Honorary Trustee, '51-; Grad. Sec., Dwight Hall, '32-'33; Lecturer, Yenching Univ., Peking, '39-'41; Chaplain & Prof. Religion, Union Coll., Schenectady, N.Y., '51-'53, and Lake Forest (Ill.) Coll. '53-'56; Prof. & Chmn., Dept. of Philosophy & Religion, Inter-American Univ., Puerto Rico, '56-'62; Visiting Prof., Miles Coll., Birmingham, Ala. '62-'63; Teaching & Research, Western Coll., Oxford, Ohio, '63-'67; Prof., Philosophy & Religion, Parsons Coll., Fairfield, Iowa, '67-'73; m. July 20, '46, Anne Louise Edwards; s. William Holmes; d. Mary Anne, Cathay Brank, Elizabeth Dwight, Sarah Edwards.

G

GAGE, 1925, Charles Stafford, M.A.—(*Education retired*)—Born July 24, 1903, Tyngsboro, Mass.; res. 75 Edgehill Terr., New Haven, Conn. 06511; Treas., Yale Univ., '54-'65; Athletic Bd. of Control, '50-'65; Alumni Bd., '52-; Gov., Bd. of Athletics, '65-'72; Alumni Fund Co-Agt., '66-; Pres., Yale Club of N.Y., '52-'54; E. R. Squibb & Son, Mathiesson Chem. Co., '25-'54; U.S. Lend Lease Admin., '41-'44; Trustee, Phillips Academy, Andover, '50-'76; Dir., United Illuminating Co., '61-'74; Union-New Haven Trust Co., '61-'69; m. May 7, '49, Margaret Siegfried.

GAINES, 1975, Edwin Frank—(*Entertainment*)—Born Oct. 22, 1952, Bridgeport, Conn.; Lyricist/Playwright, 206 E. 25th St., Room 4B, New York, N.Y. 10010; res. 64 Eastwood Rd., Bridgeport, Conn. 06606; Yale Club of New York City; Asst. Musical Dir., 1600 Penn Ave. Co., '75-'76.

GAINES, 1956, MILTON J., M.B.A.—(*Business*)—Born Oct. 13, 1934, Olympia, Wash.; Pres., Co-Owner, P.O. Box 7711, San Francisco, Calif. 94120; res. 37 Orchard Road, Orinda, Calif. 94563; Alumni Fund Class Agent; Alumni Schools Committee; Guest Lecturer, Univ. of Calif., Berkeley; Boy Scouts: Explorer Post Advisor, '75-'78, Troop Advisor, '74-; Lieut., USN, '56-'60; m. Dec. 28, '58, Phyllis Reinker; s. Preston, Andrew; d. Melissa.

GALBRAITH, 1950, EVAN GRIFFITH, LL.B.—(*Government*)—Born July 2, 1928, Toledo, Ohio; U.S. Ambassador to France, c/o American Embassy Paris, APO New York, N.Y. 09777; res. 41 rue Faubourg St. Honore, 75008 Paris, France; Mbr. of Bar: State of New York, District of Columbia; Managing Dir., Dillon Read, '75-'81; Chmn., Bankers Trust International, '69-'75; Morgan Guaranty Trust Co. of N.Y., '61-'69; Shearman & Sterling, '56-'60; Special Asst. to Secretary of Commerce, '60-'61; Lieut. USN, '53-'56; m. 1963, Marie Helen Rockwell; s. Evan G., Jr., John; d. Alexandra, Christine, Julie (Dec. '72).

GALE, 1983, FREDERICK SCOTT—add. 1327 Hillside Drive, Fort Collins, Colo. 80524.

GALLICO, 1968, G. GREGORY III, L.Ug. (Oxford), M.D.,—(*Medicine*)—Born May 25, 1946, New York, N.Y.; Surgeon, Dept. of Surgery, Fruit St., Mass. General Hosp., Boston, Mass. 02114; res. 100 Willard Road, Brookline, Mass. 02146; Surgical Resident, Mass. General Hosp., '73-'75; Visiting Research Fellow, Dunn School of Pathology, Oxford Univ., '75-'77; Asst. Prof., Harvard Medical School, '80; m. July 6, '74, Ellen Biggs Polly Levine; s. Max Gregory; d. Rachel.

GALVIN, 1971, MICHAEL GERARD—(*Advertising*)—Born Mar. 25, 1949, Dallas, Texas; Agency Head, Galvin Advertising, P.O. Box 3552, Lihue, Hawaii 96766; res. R.R. 1, Box 491, Koloa, Hawaii 96756; Pres., Kauai Assn. of Retarded Citizens, '83-'84; m. Sept. 6, '74, Carol Adams.

GARNSEY, 1967, WALTER W., JR., J.D.—(*Law*)—Born Apr. 1, 1945, Denver, Colo; Attny., Kelly, Haglund, Garnsey & Kahn, 300 Blake Street Bldg., 1441 18th St., Denver, Colo. 80202; res. 2339 Bellaire St., Denver, Colo. 80207; m. Aug. 31, '68, Georgia Penny McCracken; d. Hilary Jill, Megan McCracken.

GARNSEY, 1960, WILLIAM HERRICK—(*Business*)—Born Dec. 10, 1937, Denver, Colo.; Ford Dealer; Pres., Garnsey & Wheeler Co., 1100 8th Ave., Greeley, Colo. 80631; res. 2314 W. 20th Street Rd., Greeley, Colo. 80631; Alumni Schools Com., '64-; V.P., Colo. Yale Assn., '76-;

Pres., Greeley New Car & Truck Dealers' Assn., '69; United Way of Weld Cty., '72; Chmn. of Bd., Dayspring Christian Schools, '80-'81, Dir. '78-; Bd. Mbr., IntraWest Bank of Greeley, Chmn., Marketing Committee; General Chmn., Bill Glass Evangelistic Crusade for Greeley, '83; Lieut. (j.g.), USN, Oct. '60-Feb. '64; m. June 5, '62, Diane P. Mehaffey; d. Jennifer Diane, Wendy Wood, Elizabeth Herrick.

GARNSEY, 1933, William Smith—(*Business, retired*)—Born Nov. 5, 1911, Billings, Mont.; res. 1926 23d Ave., Greeley, Colo. 80631; Pres., Colorado Yale Assn.; formerly Ford Dealer; Ford Part Remanufacturer; Ford Tractor & Implement Dealer; Mortgage Loans & Capital Life Insurance Co.; Pres. and Dir., Colorado Auto Dealers Assn., Colorado State Chamber of Commerce; Dir., Colorado Assn. of Commerce & Industry; Pres., Greeley Chamber of Commerce; Colorado State Senator, '67-'75; School Bd., Greeley, '49-'55; Trustee and Pres., Weld County Library Assn., '61-'65; Lieut. Cmdr., USNR, June '42-Dec. '45; m. June 27, '36, Louisa Boulton Herrick; m. Jan. 16, '80, Roseanne Sudholt Ball; s. William Herrick ('60), Anson Herrick; d. Louisa Boulton (*Lambert*).

GATES, 1976, Edward Raymond—(*Student*)—Born June 25, 1954, Needham, Mass.; res. 35 Burroughs St., Jamaica Plain, Mass. 02130.

GIBSON, 1976, Richard Channing, Jr.—(*Literary work*)—Born Nov. 25, 1953, Des Moines, Iowa; Screenwriter; bus. and res. 1021 17th St., Apt. A, Santa Monica, Calif. 90403.

GIEGENGACK, 1960, Robert F., Jr., M.S., Ph.D.—(*Education*)—Born Nov. 27, 1938, Brooklyn, N.Y.; Asst. Prof. Geology, Dept. of Geology, University of Pennsylvania, Philadelphia, Pa. 19104; res. West Rose Valley Rd., Wallingford, Pa. 19086; m. May 14, '67, Francesca Rich Marshall; s. Jonathan, Matthew.

GIESEN, 1954, Arthur R., Jr., M.B.A.—(*Industrial*)—Born Aug. 8, 1932, Radford, Va.; Pres. & Treas., Augusta Steel Corp., Box 980, Verona, Va. 24482; res. 2048 Chase Ave., Waynesboro, Va. 22980; Yale Alumni Schools Committee; V.P., Giesen Caldwell Agency, Inc.; Dir., Advisory Bd., Bank of Va.-Central Valley, '74-; Exec. Council, Lutheran Church in America, '78-'82, Office of Admin. and Finance Managing Committee, '76-'78, Va. Senate Exec. Bd., '69-'76; Mbr., House of Delegates, Commonwealth of Va., '64-'74, '76-; m. Aug. 14, '54 (divorced); m. Apr. 16, '83, Patricia W. Elliott; s. Arthur Roosa III, Jonathan Hopkins, Robert Kramer; d. Ann Caldwell, Elizabeth Miller, Mary Emily.

GIFFORD, 1954, Richard C.—(*Business*)—Born June 14, 1931, New

York, N.Y.; Sales Exec., P.O. Box 1088, Madison, Conn. 06443; res. 155 Middle Beach Road, Madison, Conn. 06443; formerly Assoc. Dir., Business Gifts, Campaign for Yale; Mbr., AYA; Class Agent, Yale Alumni Fund; Mbr., Class Council of '54; Exec. Committee, NCPDM, '75; Bd. Mbr., Madison ABC, '78 and '79; Madison Preservation Trust; TRF and Winnetka Environmental Council, '74-'76; Precinct Capt., New Trier Repub. Organization, '69-'74; m. June 25, '55, Wendy E. Thorsen; s. Richard Cammann, Jr., Tucker Aling; d. Linda Shields (*Herrick*), Mimi Conyngham, Jennifer Cammann (*Satterfield*).

GILE, 1978, LAWRENCE MACALESTER—(*Student*)—Born Sept., 1, 1955, Pittsburgh, Pa.; Student, Columbia Univ. Graduate School of Business, 129 Grandview Ave., Rye, N.Y. 10580; formerly insurance broker, Alexander & Alexander, Inc., New York, N.Y.; Dir., Skillman Associates of Yale Univ. (Squash Alumni group); Dir. at Large, U.S. Squash Racquets Assn., '82-; Dir., RTA, '81-'84.

GILL, 1936, BRENDAN—(*Literary work*)—Born Oct. 4, 1914, Hartford, Conn.; Mbr., of Staff, New Yorker Magazine, 25 W. 43rd St., New York, N.Y.; res. 1 Howe Place, Bronxville, N.Y. 10708; m. June 1936, Anne Barnard; s. Michael; d. Brenda, Holly Madelaine, Rosemary.

GILL, 1963, MICHAEL GATES—(*Advertising*)—Born Apr. 17, 1940, Hartford, Conn.; Sr. V.P., Creative Dir., Lansdowne Advertising (a Div. of J. Walter Thompson), 420 Lexington Ave., New York, N.Y. 10017; res. 161 E. 75th St., New York, N.Y. 10021; Dir., The October Fund (conservation); m. Oct. 11, '80, Elisabeth Coffin Childs; d. Elizabeth Eaton, Anne Elisabeth.

GILLESPIE, 1932, S. HAZARD, LL.B.—(*Law*)—Born July 12, 1910, Morristown, N.J.; Of Counsel, Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 833 Route 9W, Nyack, N.Y. 10960; Dir., Allis-Chalmers Corp.; Hosp. for Special Surgery; Mbr., New York State Bar Assn., Pres., '58-'59; Union Settlement Assn.; Baccarat; Fellow, American College of Trial Lawyers; American Bar Foundation; U.S. Attny., Southern Dist. of N.Y., '59-'61; Chmn., Moreland Act Comm. to Investigate Public Welfare, '61-'63; Trustee & Receiver, Fifth Ave. Coach Co., '68-'72; Civilian, USAAF, Operational Research Section, 8th A/F E.T.O., June '44-July '45; m. Dec. 19, '77, Frances Lillian Posner; s. Samuel Hazard III; d. Jane Trowbridge (*Brown*).

GILLETTE, 1964, HOWARD FRANK, JR., Ph.D.—(*Education*)—Born June 8, 1942, Chicago, Ill.; Assoc. Prof. of American Civilization, Dir. of American Studies Program, George Washington Univ.,

Washington, D.C. 20052; res. 2049 Park Rd. N.W., Washington, D.C. 20010; Yale Class Agent, Calhoun, '68-; 1964 Class Council, '74-; George Washington Univ., '70-; Univ. of Penn., '69-'70; Urban Affairs Advisor, Anderson for Pres., '80; Exec. Dir., Conn. Rockefeller for President Campaign; Natl. Pres., The Ripon Soc., '70-'72; Trustee, Larry Finkelstein Memorial Fellowship Fund, '74-; m. Aug. 24, '68, Jane Brown; s. Ellery Hale, Felix Parker.

GLOVER, 1940, CHARLES CARROLL III, LL.B.—(*Law*)—Born Apr., 9, 1918, Washington, D.C.; Ptnr., Wilmer, Cutler & Pickering, 1666 K St. N.W., Washington, D.C. 20006; res. Route 2, Box 95B, Trappe, Md. 21637; Mbr., Yale Development Bd., '64-'73; Military Intell. Service, Ofc. of Chief of Staff, War Dept., '43-'46; m. July 29, '44, Viginia Dougherty; s. Charles C. IV, ('69) (deceased), Everett; d. Judith.

GOEDECKE, 1944, WILLIAM SKINNER—(*Finance*)—Born Aug. 28, 1922, Brooklyn, N.Y.; 1st V.P., Smith Barney, Harris Upham & Co., 1345 Avenue of the Americas, New York, N.Y. 10105; res. 21 Green Ave., Rye, N.Y. 10580; Class Agent, '78-; Sgt., AUS, '42-'45; m. Jan. 21, '51, Janet Chatman; d. Susan Skinner (*Zellweger*).

GOLDBERG, 1977, RICHARD JULIUS, M.S.I.A.—(*Consultant*)—Born Nov. 11, 1955, Pittsburgh, Pa.; Sales Consultant, Elcomp Systems, 1101 Forbes Ave., Pittsburgh, Pa. 15219; res. 1502 Fairmont St., Pittsburgh, Pa. 15221; Bd. of Gov., Yale Club of Pittsburgh.

GONZALEZ, 1974, TIMOTEO F., LL.B.—(*Law*)—Born Nov. 7, 1950, Corpus Christi, Texas; Attny., 308 S. Akard, Room 2010, P.O. Box 225521, Dallas, Texas 75265; res. 3206 Luallen, Carrollton, Texas 75007; Pres., Dallas Mexican American Bar Assn.; Secy., Section on the Concerns of Spanish-Speaking in Texas; Chairperson, Minority Participation Committee of Dallas Bar Assn.; Vice Chairperson, Dallas Human Relations Commission; Trustee, Dallas Alliance; m. Mar. 8, '80, Zaida.

GOODENOUGH, 1944, JOHN BANNISTER, M.S., Ph.D., Docteur Honoris Causa, Univ. of Bordeaux—(*Science*)—Born July 25, 1922, Jena, Germany; Prof., Inorganic Chemistry, Inorganic Chemistry Laboratory, Oxford University, South Parks Rd., Oxford OX1 3QR, England; res. 31 Linton Road, Oxford OX2 6UL, England; Research Eng., Westinghouse Research Lab., Pittsburgh, '51-'52; Section & Group Leader, M.I.T. Lincoln Laboratory Staff, '52-'76; UNESCO Committee for Science, '77-; Fulbright Committee, '83-; Science Research Council (GB), '77-'83; National Science Fdn. Materials Science Committee, '74-'76; Editor, Monographs in Chemistry (Ox-

ford Univ. Press), '78-; Exec. Editorial Bd., Journal of Applied Electro Chemistry, '82-; Assoc. Editor, Materials Research Bulletin, '65-; Journal Solid State Chemistry, '80-; Solid State Ionics, '80-; Fellow and Bd. of Neurosciences Research Fdn., '65-'76; officer in various professional societies; Capt., USAAF, Sept. '42-Nov. '48; m. June 16, '51, Irene Johnston Wiseman.

GOODYEAR, 1949, ROBERT M.—(*Cattle Business*)—Born Apr. 5, 1925, Buffalo, N.Y.; Self employed selling registered Aberdeen Angus cattle; res. Box 632, Aiken, S.C. 29801; m. Dec. 20, '47, Patricia Smith.

GORDON, 1934, GEORGE ARTHUR—(*Literary work retired*)—Born July 27, 1912, Savannah, Ga.; res. Route 3, Box 287, Savannah, Ga. 31406; Managing Editor, *Good Housekeeping Magazine*, '36-'41; Editorial Dir., *Air Force Magazine*, '44-'45; Editor-in-Chief, *Cosmopolitan*, '46-'48; Staff Writer, *Reader's Digest*, '65-'74; Editorial Dir., *Guideposts Magazine*, '74-'81; Lieut. Col.; USAAF, Aug. '42-Sept. '45; Air Medal, Legion of Merit; m. 1935, Jane Y. Ryan; m. 1946, Pamela McGuire; s. Sheridan, Leigh, Kinzie, Dana, McGuire; d. Patricia, Paige, Gray.

GOW, 1955, ROBERT HAIGH—(*Industry*)—Born Apr. 26, 1933, Paris, France; Pres., Chief Exec. Officer, Enterprise Oil & Gas Corp., 8580 Katy Freeway, Suite 200, P.O. Box 55629, Houston, Texas 77055; res. 11911 McLeod's Lane, Houston, Texas 77024; 1955 5th Reunion Fund Drive, past Pres., Yale Club of Houston; Bd. of Dir., Digicon, Inc.; Terrain King; Dir., Planned Parenthood; 1st Lieut., USAF, Feb. '56-Dec. '58; m. July 16, '57, Patricia Lawson; m. Jan. 21, '74, Barbara Lord; s. David Frederick; d. Laura Lawson, Heather Haigh.

GRANDINE, 1981, THOMAS ALLAN, M.S.—(*Student*)—Born Dec. 18, 1958, Madison, Wis.; Univ. of Wisconsin, c/o Dept. of Computer Science, 1210 W. Dayton St., Madison, Wis. 53706; res. 128 N. Orchard St., Apt. 4, Madison, Wis. 53715.

GRAVES, 1984, EARL GILBERT, JR.—add. 8 Heathcote Road, Scarsdale, N.Y. 10583.

GRAYSON, 1942, CARY TRAVERS, JR, M.A., Ph.D.—(*Publishing*)—Born Mar. 21, 1919, Washington, D.C.; Pres., Potomac Books, Inc., P.O. Box 40604, Palisades Sta., Washington, D.C. 20016; res. Blue Ridge Farm, Upperville, Va. 22176; U.S. Dept. of State, '58-'61; U.S. Peace Corps, '61-'64; Capt., USMC, '42-'46; m. Sept. 7, '56, Priscilla Alden Roessle; d. Leslie H., Carininthia A., Alicia G., Theodosia H.

GRAYSON, 1940, JAMES GORDON—(*Finance*)—Born Jan. 7, 1918, Washington, D.C.; Sr. Investment Officer, International Finance

Corp., 1818 H St. N.W., Washington, D.C. 20433; res. Upperville, Va. 22176; Lieut. Cmdr., USNR, '41-'46.

GRAYSON, 1977, WILLIAM CABELL, JR.—(*Finance*)—Born Nov. 4, 1953, Washington, D.C.; Sales Mgr., Asst. V.P., c/o Coldwell Banker (commercial real estate brokerage), 8300 Greensboro Drive, Suite 1050, McLean, Va. 22102; res. 1304 N. Meade St., Condo #8, Arlington, Va. 22209; Coldwell Banker Commercial Real Estate Services, Salesman, July '78-Oct. '82, Sales Mgr., Oct. '82-; Special Asst. to Russell E. Train, The Conservation Fdn., June '77-July '78; m. May 22, '82, Susan L. Garey.

GREEN, 1973, BENJAMIN P.—(*Medicine*)—Born Aug. 21, 1950, Winter Park, Fla.; Child Psychiatrist; res. 1085 Locust, Denver, Colo. 80220; m. Sept. 3, '77, Lynn Schmidt; d. Katharine.

GREEN, 1975, RUDOLPH—add. 4507 Elwood Road, Austin, Texas 78722.

GREENBERG, 1970, STEPHEN DAVID, LL.B.—(*Law*)—Born Sept. 8, 1948, New York, N.Y.; Attny., Manatt, Phelps, Rothenberg & Tunney, 1888 Century Park East, 21st Floor, Los Angeles, Calif. 90067; res. 1017 Napoli Drive, Pacific Palisades, Calif. 90272; Asst. Soccer Coach, '71-'72; Teacher, Hotchkiss School, '70-'71; Professional Baseball, Texas Rangers, '70-'74; m. May 31, '70, Myrna Katz; d. Jennifer Norton, Melanie.

GREENE, 1930, WALDO WITTENMYER, Ph.B.—(*Farming retired*)—Born July 18, 1906, Huntingdon, Pa.; Citrus owner; res. South Wattson Rd., P.O. Box 309, Mission, Texas 78572; Lieut. Comdr., USNR, '42-'45; m. July 21, '51, Shirley Brooks.

GRIMES, 1945, DAVID C., M.A. (Hon.)—(*Finance*)—Born Apr. 15, 1925, Omaha, Nebr.; res. 202 South Rockingham Ave., Los Angeles, Calif. 90049; Alumni Fellow, Yale Corp., '74-'80; Chmn., Founding Bd. of Gov., Assn. of Yale Alumni, '71; Alumni Bd., '66-'68; Dir., Yale Club of Southern Calif.; formerly Chmn. and Chief Exec. Officer, Brentwood Savings & Loan Assn., Los Angeles; Public Affairs, Jim Walter Corp.; Dir., Natl. Savings & Loan League, '76; Ensign (Pilot), USNR, '43-'46; m. Dec. 30, '49, Suzanne Olander; s. David E., George F. ('79); d. Susan H.

GROVE, 1929, MANASSES JACOB—(*Finance retired*)—Born Feb. 16, 1906, Frederick County, Md.; res. 405 Giddings Lane, Brenham, Texas 77833; Alumni Interviewer, '50-'60; Mercantile Safe Deposit & Trust Co., Baltimore, '40-'55; V.P. '47-'55; Investment Analyst, Univ. of Texas, Austin, '57-'70; Tech. Sgt., AUS, '41-'42; Cmdr., USNR, '42-'45; m. Apr. 26, '45, Noreen Mae Grote.

GUIDOTTI, 1955, HUGH G., M.Ed.—(*Education*)—Born June 12, 1933, Somerville, Mass.; Teacher, 69 Brigham St., Hudson, Mass. 01749; Real Estate Broker, 5 Pope St., Hudson, Mass. 01749; res. 11 Lilac Lane, Hudson, Mass. 01749; Alumni Fund, '55-'75; Yale Baseball, '55-'75; Pres., Hudson Teacher's Assn., '60-'62, Hudson Youth Boosters, '58-'60; Science Chmn., '56-'78; Baseball Coach, '56-'78; Dir., Pope's Hill Realty Trust; Pres., Hudson Municipal Employees Credit Union, '65-; Treas., Jefferson Investment Club, '60-'62; Pres., Central Mass. Youth Baseball, '74-'78; Parish Council, '68-'70; m. Feb. 4, '56, Sarah Theresa Crossman; s. Michael Anthony; d. Mary Ann, Ann Marie, Paula Mary, Sarah Jane.

GUINZBURG, 1950, THOMAS HENRY—(*Publishing*)—Born March 30, 1926, New York, N.Y.; Book Publisher, Doubleday & Co., 245 Park Ave., New York, N.Y. 10167; res. 32 E. 64th St., New York, N.Y. 10021; Bd. of Gov., Yale Univ. Press, '69-; Cprl., USMCR, May '44-May '46; Purple Heart; m. March 26, '56, Rita Gam; m. June 21, '67, Rustine Unger; s. Michael; d. Kate, Amanda.

GUTHRIE, 1968, ROBERT K.—add. 5440 Bradford Court, Apt. 242, Alexandria, Va.; m. Aug. 5, '70, Marion Adelheid Melliwigt.

GWIN, 1963, SAMUEL LAWRENCE, JR., J.D.—(*Law*)—Born Feb. 4, 1941, Boston, Mass.; Attny., bus. and res. 236 Ocean Ave., Marblehead, Mass. 01945; Writer, '82-; Asst. Secy., Mass. Financial Services Co., May '76-Jan. '82; Assoc., Gaston Snow & Ely Bartlett, Aug. '71-May '76; Finance Commission, Town of Westwood, '79; Capt., AUS, June '63-Sept. '68, 2 Bronze Stars, Purple Heart, Air Medal, Presidential Unit Citation; m. Dec. 24, '69, Susan Nivison (divorced June 11, '82); s. Samuel L. III, Robert N.

H

HAAS, 1935, FREDERICK PETER, LL.B.—(*Law retired*)—Born Oct. 16, 1911, Yonkers, N.Y.; res. 16 Strathmore Lane, Madison, Conn. 06443; A.Y.A.; Alumni Fund Agt., Jonathan Edwards College '35-'74; Class Sec., '65-'70; Assoc., Webster & Sheffield, New York, '38-'46; Ptnr., '46-'65; V.P., General Counsel, Dir., Liggett Group, Inc., '65-'77; Secy., Assn. of the Bar of the City of New York, '49-'51; Fellow, American College of Trial Lawyers; Pres., Durham Arts Council, '76-'77; Pres., Tobacco History Corp., '77-; Chmn., Durham Bicentennial Festival Committee, '75-'76; Lieut. Cmdr., USNR, Feb. '43-

Dec. '45; m. Feb. 8, '41, Mary Helen Parke (deceased Aug. 26, '82); d. Suzanne Phyfe (Harned), Margaret McDevitt (Vayda), Harriet Parke (Levesque).

HAIGHT, 1952, CHARLES S., JR., LL.B.—(*Law*)—Born Sept. 23, 1930, New York, N.Y.; U.S. Distr. Judge, Southern Distr. of N.Y., United States Court House, Foley Square, New York, N.Y. 10007; res. 1105 Park Ave., New York, N.Y. 10028; 20th & 25th Reunion Committees; U.S. Dept. of Justice (Trial Attny., Admiralty & Shipping Section) '55-'57; Haight, Gardner, Poor & Havens, Assoc., '57-'68, Pntr., '68-'76; appointed to Court, May '76; m. June 30, '53, Mary Jane Peightal; d. Nina E. (*Frost*) ('79), Susan P.

HAIGHT, 1928, GEORGE WINTHROP, LL.B.—(*Law*)—Born Dec. 31, 1905, Washington, D.C.; Lawyer, Decker, Hubbard & Welden, 30 Rockefeller Plaza, Suite 4340, New York, N.Y. 10112; res. 155 E. 82nd St., New York, N.Y. 10028; m. Sept. 2, '33, Mary Lillian Uppercu; d. Laura Uppercu (*Pretor-Pinney*), Linda Folsom (*Demay*), Marcia Winthrop (*Erickson*).

HAINES, 1924, THOMAS FREDERICK DAVIES, J.D.—(*Law retired*)—Born Mar. 13, 1902, Detroit, Mich. res. 139 E. 63rd St., New York, N.Y. 10021; formerly Pres., CIBA Corp.; m. Feb. 2, '33, Marian Forsyth Wickes (deceased); s. Thomas D. ('59), Alexander F.; d. Marian (*Minton*).

HALL, 1941, EDWARD TUCK, M.A., (Hon), Litt.D.—(*Education*)—Born Aug. 1, 1918, Manchester, Mass.; Headmaster and Owner, The Deck House, P.O. Box 328, North Edgecomb, Me. 04556; res. same as above; Mbr., Com. on Yale Coll., '63-'68; Asst. Instr. English, '46; Asst. to Chmn. Bd. of Admissions, '46-'47; Chmn., American Friends of Maru a Pula, Inc., (Fund Raising Found.), Box 150, Wiscasset, Maine 04578; Asst. Headmaster, St. Mark's School, '47-'52; Headmaster, The Hill School, '52-'68; Headmaster, St. Marks School, '68-'74; Instr. in English and Latin, Maru a Pula School, Gaborone, Botswana, '75-'78; Headmaster, The Deck House, '79-; Chmn., Edgecomb Repub. Committee, '80; Chmn., International Schoolboy Fellowships, '63-'65; Pres., Headmasters Assn., '70; Pres., New England Assn. of Teachers of English, '51; 1st Lieut., Inf. & Intelligence, Aug. '42-Jan. '46; Legion of Merit.

HALL, 1936, JESSE ANGELL—(*Business retired*)—Born Jan. 9, 1913, New York, N.Y.; res. 164 North St., Chagrin Falls, Ohio 44022; formerly with The Lezius Hiles Co., Cleveland, Ohio; Cub Scout Leader, '52-'54; Chagrin Valley Theatre, '53; Church Deacon, '52-'56; Chmn., Church Fund Raising Campaign, '56; assisted in developing

& maintaining ice skating pond for children, Chagrin Falls, '55-'76; Chmn., Library Fund Raising Campaign, Chagrin Falls, '65; Chagrin Falls Village Council, '80-'81; Maj., USFA, Jan. '42-Mar. '46; m. June 19, '37, Louise Barnes; s. Jesse A. Jr. (dec.), d. Gretchen (*Green*), Louise (*Dill*), Deborah Anne.

HALL, 1930, ROBERT A., LL.B.—(*Law, Theatre*)—Born Sept. 9, 1906, Omaha, Nebr.; Attny., retired; res. 5 Westland Rd., Hamden, Conn. 06517; Chmn.: Yale Bd. of Athletic Control, '50-'52, Y Assn., '75-; Mbr., Yale Bd. of Athletic Control, '47-'49; Pres., Yale Football Y Assn., '75; Founder & Dir., Walter Camp Found.; Bd. of Gov., Mory's, '50-'53; Fellow, Branford College, '50-'53; Pres., Musical Theatre Assn., '71-; V.P. & Dir., Natl. Football Found. & Hall of Fame, '52-; Exec. Office of Pres. of U.S., Lend-Lease Admin., Australia, Special Deputy, U.S. State Dept., '42-'45; m. Nov. 8, '33, Ann McDonald Shipley; s. Robert A., Jr., Charles S.

HALLETT, 1934, JOHN FOLSOM—(*Business retired*)—Born Aug. 2, 1912, Wellesley Hills, Mass.; bus. Ward Whidden House, High St., Portsmouth, N.H. 03801; res. P.O. Box 62, Chauncey Creek Rd., Kittery Point, Maine 03905; V.P., Yale Club of St. Louis, '59-'60; Mbr. Exec. Com., Yale Class of 1934, '66-'74; Pres. & Dir., Kittery Historical & Naval Museum; Ptnr., Sandpiper Associates, Portsmouth, N.H.; Pres., Bio-Controls, Inc., San Francisco, Calif. (inactive); 10th Distr. Rep., Greenwich, Conn., Town Meeting, '37-'41; Trustee, Metropolitan St. Louis Sewer Distr., '58-'62; Mbr., Kittery Planning Bd., '73-'83; Cmdr., USN (ret.), '42-'45; Co. Vol. Aviation Unit 9-10, St. Louis, '50-'58; Bronze Star & Air Medal with Battle Stars; Treas. Deer Island Club Corp. '46-'48; m. Mar. 4, '35, Katherine E. Koerber; s. Samuel Goodwin.

HALPIN, 1971, THOMAS M.—Born Sept. 9, 1949, Oakland, Calif.; res. 6822 Chambers Drive, Oakland, Calif. 94611.

HALSEY, 1942, RALPH WETMORE, JR.—(*Finance*)—Born Dec. 3, 1919, South Orange, N.J.; Ptnr., Halsey Associates, Investment Counsel, 234 Church St., New Haven, Conn. 06510; res. P.O. Box 206, Noank, CT. 06340; Treas., Yale Class '42, '52-'57; Secy., '77-'83; Class Fund Agent; Reunion Chmn., '67, '77; Dir., Mory's, '58-'74; Security Ins., '62-'72; Kaneb Services, '55-'65; Tropical Gas Co., '76-; Conn Savings Bank, '76-; Middlesex Ins., '76-; IXL Mfg., '76-; Essex Engineering, '76-; Hotchkiss School, '52-'74; Yale New Haven Hosp., Inv. Comm., '76-; Childrens Center, Inv. Comm., '76; Lieut. USNR, June '42-Dec. '45; Dir. & Treas., RTA '52-'65; m. June 2, '45, Betsey Copp; s. Ralph W. ('71), Thomas S., Andrew M.; d. Betsey Avery (*Dickinson*).

HAMBLETON, 1934, THOMAS EDWARD—(*Theatre*)—Born Feb. 12, 1911, Towson, Md.; Managing Dir., Phoenix Theatre, 245 E. 72d St., New York, N.Y. 10021; res. Box 25, Timonium, Md. 21093; Yale University Council, '55-'60; Chmn., Development for Yale Drama School Committee; V.P., Theatre Inc.; Gov. League of N.Y. Theatres and Producers; Pres., First Am. Congress of Theatre; Dir., French & Polyclinic Hosp.; Trustee, emeritus, Peale Museum, Baltimore; Lieut. Cmdr., USN '42-'46; m. Mar. '37, Caroline Lucinda Hoysradt (dec.); m. Feb. 19, '49, Merrell M. Hopkins; s. Thomas E., Jr., Mark Hopkins; d. Anne Brooks Crawford (dec.), Caroline Lucinda (*Watts*), Susan Sherwood, Mary Merrell.

HAMILTON, 1962, WILLIAM—(*Cartoonist*)—Born June 2, 1939, Palo Alto, Calif.; Writer, 400 W. 43d St., Apt. 45N, New York, N.Y. 10036; PFC., AUS, Jan. '63-Jan. '65; Good Conduct Medal; m. May 9, '69, Candida Darci Vargas (divorced); d. Alexandra Manuela Vargas.

HAMLIN, 1961, CHARLES, B.M.S., M.D.—(*Medicine*)—Born Mar. 7, 1939, New Haven, Conn.; Surgeon, 950 E. Harvard St., Suite 690, Denver, Colo. 80210; res. 100 Dexter St., Denver, Colo. 80220; Assoc. Clinical Prof. of Surgery, Univ. of Colo. School of Health Sciences; Lieut. Col., USAF, Feb. '74-May '76; Diplomat, Soc. of Military Orthopaedic Surgeons; m. Sept. '72, Linda Livingston Ewing.

HANSEN, 1955, ROGER ALLEN—(*Finance*)—Born Jan. 11, 1933, Newark, N.J.; Exec. V.P., The Chicago Corp., 208 S. LaSalle St., Chicago, Ill. 60604; res. 1525 Greenwood Ave., Wilmette, Ill. 60091; Alumni Schools Committee; Gov., Midwest Stock Exchange; Lieut., USN, June '55-June '57; Pres., Treas., Deer Island Club; m. Oct. 18, '59, Wendy Blake (deceased); m. Dec. 30, '72, Mimi Webster (divorced); s. Roger Blake, Mark Christian; d. Victoria.

HARMAN, 1945, ARCHER, JR., Ed.M.—(*Education*)—Born May 25, 1923, Orange, N.J.; Dir. of Guidance, Wellesley High School, Wellesley, Mass. 02181; res. 307 Hillcrest Rd., Needham, Mass. 02192; Alumni Schools Com., '74-'76; Teacher, Westminster School, Simsbury, Conn., '46-'48; St. Paul's School, Concord, N.H., '48-'54; Headmaster, Peck School, Morristown, N.J. '54-'61; St. George's School, Newport, R.I., '61-'72; Trustee, St. Mark's School, Southborough, Mass.; The Walker School, Needham, Mass., A Better Chance, Wellesley, Mass.; Lieut. (j.g.), USN, '43-'46; m. Feb. 26, '44, Mari Brainerd; s. Archer III, David B., John W.; d. Jane (*Brewer*).

HARRIMAN, 1913, WILLIAM AVERELL, LL.D., L.H.D.—(*Government*)—Born Nov. 15, 1891, New York, N.Y.; res. 3038 N St.,

N.W., Washington, D.C. 20007; Union Pacific R.R. '15-'17; Merchant Shipbldg. Corp., '17-'25; W. A. Harriman & Co., Inc., '20-'31, then Ptnr., Brown Brothers Harriman & Co. (merger), '31-'46, Limited Ptnr., '46-; Illinois Central R.R. Co., Chmn., exec. Com., '31-'42, Dir., '15-'46; N.R.A., '34; Spec. Rep. of Pres. in Great Britain, Mar. '41; Ambassador, USSR, Aug. '41; Apptd. Rep. in London of Combined Shipping Adjustment Bd., Feb. '42; U.S. Ambassador to Russia, '43-'46, Great Britain, Apr.-Oct. '56; Sec. of Commerce, Oct. '46-Apr. '48; U.S. Rep. in Europe under Econ. Coop. Act of '48 May '48-June '50; Spec. Asst. to Pres., July '50-Jan. '52; Amer. Rep. on NATO Com. to study Western def. plans, Sept. '51-Feb. '52; Dir., Mutual Security Agency, Oct. '51-Jan. '53; Governor, N.Y. State, Jan. '55-Jan. '59; Ambassador-at-Large, Feb.-Dec. '61; Asst. Sec. of State for Far Eastern Affairs, Dec. '61-Apr. '65; U.S. Dept. Rep. to Internatl. Conf. on Settlement of Laotian Question, '61-'62; Spec. Rep. of Pres. for negotiation of nuclear Test Ban Treaty, July '63; Under Sec. State for Political Affairs, Apr. '63-Mar. '65; Ambassador-at-Large, Mar. '65-Jan. '69; U.S. Rep. Vietnam Peace Talks, Paris, '68-'69; Author, *Peace With Russia?* and *America and Russia in a Changing World;* m. Sept. 21, '15, Kitty Lanier Lawrence; m. Feb. 21, '30, Marie Norton Whitney (dec.); m. Sept. 27, '71, Pamela Digby Churchill; d. Mary (*Fisk*), Kathleen (*Mortimer*).

HARRISON, 1942, Fred Harold, M.A.—(*Education retired*)—Born Aug. 24, 1918, Lawrence, Mass.; formerly Athletic Dir. and History Instr., Phillips Academy, Andover, Mass.; res. 210 South Main St., Andover, Mass. 01810; Alumn Com. on Admissions & Scholarship, '58-'70; 1942 Exec. Com., '68-'71, '82-'85; 35th Reunion Com., Class of 1942; Coll. Exam. Bd. Reader, '52-'66; Regional Mbr., Natl. Football Hall of Fame Com., '72-'76; Adv. Gifts Com., Joint Lawrence Hosp. Drive, '69-'70; President's Council on Youth Fitness, '60-'63; Mass. Bd. of USO, '59-'61; Dir., Andover YMCA, '60; Lawrence YMCA, '68; Pres., Andover YMCA, '66-'73; Teen Adult Collaboration Com., '70; Chmn. Bd., New England Museum of Sports, '80-; Mass. Hockey Coaches Hall of Fame, '80; Hon. Mbr., Amer. Hockey Coaches Assn., '80-; Consultant Conn. Coll. Capital Fund Drive, '82-; Author of 2 books; Lieut. Col., AUS, '42-'46, Reserve '46-'70; Bronze Star, Army Commendation Medal; m. Mar. 11, '44, Marjorie Joan Alexander; d. Marjorie C. (*Fleming*), Nancy J. (*Bliss*), Elizabeth A. ('77).

HART, 1976, Dennis Charles, J.D.—(*Law*)—Born May 28, 1953, Framingham, Mass.; Lawyer, Testa, Hurwitz & Thibeault, 60 State

St., Boston, Mass. 02109; res. 24 Concord Ave., Apt. 303, Cambridge, Mass. 02138; Mbr., Mass. Bar. '81-; admitted to Federal Bar, Dist. of Mass., '81-; American Bar Assn., '81-; High School History Teacher, Cross-Country Coach, E.O. Smith School, Storrs, Conn., '76-'77.

HARTLEY, 1912, CAVOUR—(*Business retired*)—Born Jan. 26, 1890, Duluth, Minn.; bus. 740 E. Superior St., Duluth 55802; res. 3800 E. Superior St., Duluth 55804; 2d Lieut., F.A., AEF, W.W. I; Lieut, USNR, W.W. II; m. June 24, '14, Carolyn W. Munger; s. John ('37), David, ('38), Alfred, ('41), Edward.

HATEM, 1980, JOHN J.—Born Dec. 1, 1957, Columbus, Ohio—No address available.

HEALY, 1943, HAROLD HARRIS, JR., J.D.—(*Law*)—Born Aug. 27, 1921, Denver, Colo.; Ptnr., Debevoise & Plimpton, 875 Third Ave., New York, N.Y. 10022; res. 1170 Fifth Ave., New York, N.Y. 10029; Mbr., Exec. Com., Yale Law School Assn., '74-'82, V.P., '80-'82; Assoc., Debevoise, Plimpton, Lyons & Gates, '49-'56, Ptnr., '59-; Exec. Asst. to U.S. Atty. General, '57 & '58; Legal Aid Soc., New York, Mbr. Bd. of Dir., '68-, Chmn., '75-'79; Pres., Union Internationale des Avocats, '79-'81; Mbr. Bd. of Dirs., Metropolitan Opera Guild, '75-; Mbr. Bd. of Trustees, Vassar Coll., '77-; Capt., F.A., AUS, Jan. '43-July '46; Bronze Star, Army Commendation Medal; m. May 24, '52, Elizabeth Anne Debevoise; s. H. Harris III.

HEINZ, 1931, HENRY JOHN II—(*Business*)—Born July 10, 1908, Sewickley, Pa.; Chmn. of Bd., H. J. Heinz Co., P.O. Box 57, Pittsburgh, Pa. 15230; res. "Goodwood," State Rd., Sewickley, Pa. 15143; Chmn. Gov. Bd., Yale Art Gallery, Co-Chmn., Advisory Com., Yale Univ. Economic Growth Center; Pres. H. J. Heinz Co. '41-'59; Chmn. Bd. '59-; Head, Special Foreign Operations Administration Mission to Pakistan, '54; Pub. Adv. Mem. U.S. delegation to 12th session, Gen. Agreement Tariffs & Trade, Geneva, '57; Chmn. U.S. delegation Economic Comm. for Europe, '58-'60; Bd. of Dir., Bus. Com. for Arts; Pittsburgh Regional Planning Assn.; Pittsburgh Symphony Soc.; Pres., Nutrition Found.; Agribusiness Council; m. '35, Joan Diehl; m. '53, Drue E. Maher; s. Henry J. III ('60).

HEMPHILL, 1959, JAMES TIERNEY, LL.B.—(*Law*)—Born May 25, 1937, Johnstown, Pa.; Lawyer, Corcoran, Hardesty, Whyte, Hemphill & Ligon P.C., 1575 I St., N.W., Suite 510, Washington, D.C. 20005; res. 2901 Olive St., N.W., Washington, D.C. 20007; Pres., Yale Club of Pittsburgh, '73-'75; AYA Rep., '76-'78; Pres., Harvard-Yale-Princeton Club of Pittsburgh, '76-'78; formerly General Counsel, Consolidated Coal Co., Pittsburgh; Chmn., Coal Committee, Ameri-

can Bar Assn., '72-'74; m. Nov. 1, '64, Cynthia Cobb; m. June 13, '80, Molly Laufman; d. Sarah Tierney, Jennifer Alice.

HENNINGSEN, 1950, VICTOR WILLIAM, JR.—(*Business*)—Born May 19, 1924, New York, N.Y.; Pres., & Chief Exec. Officer, Henningsen Foods, Inc., 2 Corporate Park Drive, White Plains, N.Y. 10604; res. 1045 Esplanade, Pelham Manor, N.Y. 10803; Sec., Yale Class of 1950, '53-'60; Class Officers Assn., '58-'60; Pres., Yale Club of N.Y., '66-'68; Exec. Com., Yale Alumni Bd., '68-'73; Mbr., Assn. Yale Alumni, '73-'75; Dir., Yale Alumni Fund, '68-'71; Yale Development Bd., '68-; Chmn., Major-Special Gifts, N.Y., Campaign for Yale; Mbr., Yale Corp. Committee on Investor Responsibility, '79-'81; Alumni Schools Comm., '68-; Trustee, St. Thomas More Chapel, Yale, '55-'62; Pres., St. Thomas More Corp., '79-; Overseer & Dir., Sweet Briar Coll., Va., '74-; Chmn. of Bd., '79-; Gov., New Rochelle Hosp. Medical Center; Trustee, Nutrition Found., '68-; Eastchester Savings Bank, '75-; Pres., United Way of Pelham, '60-'62; Trustee, Village of Pelham Manor, '64-'69; Mayor, Village of Pelham Manor, '69-'71; Lieut. (j.g.), USNR, '43-'45; Dir., Deer Island Corp., '55-'60; m. Aug. 27, '49, Mary Florence Bemis Ludington; s. Victor W., III, ('74), Christopher K., Timothy F.; d. Mary F.

HENSTON, 1984, DOUGLAS ROBERT—add. 18 S. Beechcroft Road, Short Hills, N.J. 07078.

HERNANDEZ, 1971, CARLOS ARTURO, M.D.—(*Medicine*)—Born June 12, 1947, Bogotá, Colombia; Physician, Instituto Nacional de Salud, Grupo de Sanidad del Ambiente, Ave. Eldorado con Carrera 50, Apt. 80080, Bogotá-6, Colombia, S.A., res. Carrera 55 No. 45-58, Bogotá-9, Colombia, S.A.; mailing add.: Apt. 60126, Bogotá-2, Colombia, S.A.; Editorial Committee Asst., Acta Médica Colombiana Magazine; Andover Teaching Fellowship, Spanish Dept., Phillips Academy, Andover, Mass., '71-'72; Spanish Teacher, Spanish Dept., Phillips Academy, '72-'73; Medical Student Fellowship, Instituto Nacional de Salud, Laboratorio de Microscopia Electrónica, '76-'78.

HERSEY, 1936, JOHN, M.A. (Hon.), LL.D., L.H.D., Litt.D.—(*Literary work*)—Born June 17, 1914, Tientsin, China; res. 420 Humphrey St., New Haven, Conn. 06511; Yale Univ. Council Com. on the Humanities, '51-'56; Univ. Council Com. on Yale Coll., '59-'69, Chmn., '64-'69; Fellow, Berkeley Coll., '50-'65; Master, Pierson Coll., '65-'70, Fellow, Pierson Coll., '65-; Lecturer, English, '71-'76; Visiting Prof., English, '76-'77; Adjunct Prof., '77-; Pres., Authors League of America, '75-; Mbr., Council, Authors League, '46-'70, '76-; Mbr., Council,

Authors Guild, '46-; Chmn., Book Contract Com., '63-; Sec. Am. Academy of Arts & Letters, '61-; Delegate to PEN Congress, Tokyo, '58; Lecturer, Salzburg Seminar in Am. Studies, '75; Visiting Prof., M.I.T., '75; Chmn., Conn. Com. for the Gifted, '54-'57; Visiting Com., Harvard Graduate School of Educ., '60-'65; Natl. Citizens' Comm. for Public Schools, '54-'56; Trustee, Putney School, '53-'56; Trustee, Natl. Citizens' Council for Public Schools, '56-'58; Delegate, White House Conference on Education; Commissioner, Natl. Comm. on New Technological Uses of Copyrighted Works, '75-; War Correspondent, '42-'46; Cited by Sec. of Navy for removal of wounded from field of action, Guadalcanal; m. Apr. 27, '40, Frances Ann Cannon; m. June 2, '58, Barbara Day; s. Martin, John ('65), Baird, Brook; d. Ann.

HERSKOVITS, 1984, David Nathaniel—add. 109 Central St., Andover, Mass. 01810.

HESSBERG, 1938, Albert II, LL.B., LL.D.—(*Law*)—Born June 14, 1916, Albany, N.Y.; Ptnr., Poskanzer, Hessberg, Blumberg, Dolin, Barba, Greisler & Trombly, Suite 755, 60 State St., Albany, N.Y. 12207; res. 1635 New Scotland Rd., Slingerlands, N.Y. 12159; Exec. Com., Alumni Bd., '66-'71; Pres., Albany Cty. Bar Assn., '68; Pres. Estate Planning Council of Eastern N.Y., '70-'71; Exec. Com., Trusts & Estates Law Section, N.Y. State Bar Assn., '68-'74; Fellow, N.Y. Bar Fdn., '81-; Amer. Coll. of Probate Counsel, '78-; Bd. of Trustees, Albany Medical Center Hosp., '70-; St. Rose Coll., '71-; Dudley Conservatory, '68-; Lieut. Cmdr., USNR, '41-'45; m. May 9, '48, Elizabeth F.S. Goold; s. Albert III, Philip G. ('81); d. Caroline E. (*Smedvig*).

HEWITT, 1963, Henry H., J.D.—(*Law*)—Born Aug. 13, 1941, Portland, Ore.; Attny., Stoel, Rives, Boley, Fraser & Wyse, 23d Floor, 900 S.W. 5th Ave., Portland, Ore. 97204; res. 6242 S.W. Burlingame Ave., Portland, Ore. 97201; A.Y.A. Delegate, '74-'75; Pres., Yale Alumni Assn. of Oregon, '79-'81; Chmn., Securities Law Section of Oregon State Bar, '78-'79; Adjunct Prof. of Law, Lewis & Clark Law School; Chmn., Tri County Chapter of March of Dimes; Chmn., Oregon Governor's Council on Legal Aid; Capt., A.U.S., '63-'65; m. May 12, '79, Sharon Carr; s. Adam Kyle.

HIERS, 1954, Richard Hyde, B.D., M.A., Ph.D.—(*Education*)—Born Apr., 8, 1932, Philadelphia, Pa.; Prof. of Religion, University of Florida, Dept. of Religion, 135 ASB, Gainesville, Fla. 32611; res. 506 SW 40th Terr., Gainesville, Fla. 32607; Sec.-Treas., Yale Club of Gainesville, '65-'67; Local Coordinator, Campaign for Yale, '76-'81;

Pres., Southeastern Region, Am. Academy of Religion, '69-'70; Am. Assn. of University Professors, Univ. of Fla. Chapter, '72-'74; Univ. of Fla. Chapter, Phi Beta Kappa, '75-'76; Pres., Society of Biblical Literature, Southeastern Region, '82-'83; Pres., Gainesville Council on Human Relations, '71-'72; Citizens' Housing Assn. of Gainesville, '64-'66; Chmn., Citizens' Advisory Com., for a Workable Program for Gainesville, '69-'71; Sec., RTA, '56-'61; m. Jan. 30, '54, Jane Leslie Gale; s. Peter L.; d. Rebecca H.

HIGHFILL, 1973, PHILIP HENRY III, M.M.—(*Music*)—Born Aug. 21, 1951, Rochester, N.Y.; Free Lance Pianist, no address available; Santa Fe Opera, '74; Fullbright-Hays Scholar, Austria, '75-'76.

HINCKS, 1952, JOHN WINSLOW, LL.B.—(*Law*)—Born April 17, 1931, New Haven, Conn.; Ptnr., Robinson, Robinson & Cole, 799 Main St., Hartford, Conn. 06103; res. 26 Sycamore Rd., West Hartford, Conn. 06117; Yale Law School Exec. Com., '70; Yale Crew Advisory Com.; Ethics Com., Conn. Bar Assn.; Fellow, American Coll. Probate Counsel; Trustee: Newington Childrens Hosp., Dir.: Hartford Stage Co., Middlesex Mutual Assurance Co.; Lieut., USN, '52-'55; Dir., RTA, '58-'61, '72-'75; '80-, Pres., '80-; m. June 14, '58, Marcia Lockwood; s. John, Benjamin; d. Rebecca ('81), Jennifer.

HOAGLAND, 1943, DONALD WRIGHT, LL.B.—(*Law*)—Born Aug. 16, 1921, New York, N.Y.; Ptnr., Davis, Graham & Stubbs, Colorado National Bank Bldg., 950 17th St., Denver, Colo. 80202; res. 2250 So. Columbine St., Denver, Colo. 80210; Scholarship & Capital Fundraising Committees, Denver area; Lecturer, Univ. of Denver Law School, '71-; Mbr., Bd. of Gov., Colorado Bar Assn., '60-'61, Co-Chmn., Committee on Availability of Legal Services; Pres., Legal Aid Soc. of Metropolitan Denver, '75-'79; Trustee, Denver Art Museum, '59-'63; '72-; Dir. Urban League of Colo., '58-'63, '68-'72, Pres., '71-'72; Trustee, Social Science Found., '75-; Dir. & V. Chmn., Denver Red Cross, '58-'63; Mbr., Colo. Legal Services Advisory Council, '76-; Mbr., or Chmn., Denver Planning Bd., '56-'63, '67-'70; Asst. Administrator, U.S. Agency for International Development, '64-'66; Lieut. (j.g.) USN Air Corps, '42-'45; 2 Air Medals, Presidential Unit Citation; m. May 14, '49, Mary Tiedeman; s. Peter M.; d. Mary C. ('79), Sara H., Ann W.

HODES, 1970, DOUGLAS MICHAEL, F.S.A.—(*Insurance*)—Born Dec. 11, 1946, New York, N.Y.; Actuary, V.P., Corporate Planning, Metropolitan Life Insurance Co., One Madison Ave., New York, N.Y. 10010; res. 10 Ridge Drive, Port Washington, N.Y. 11050; m. May 27, '77, Susan A. Loveland; s. Nathaniel, Caleb; d. Margaret.

HODGES, 1932, WILLIAM VANDERVEER, JR., LL.B.—(*Law retired*)—Born Sept. 19, 1911, Denver, Colo.; Lawyer, Of Counsel, Davis, Graham & Stubbs, P.O. Box 185, Denver, Colo. 80201; res. 235 Vine St., Denver, Colo. 80206; Chmn., Colo. Yale Scholarship Com., '54-'56; Lieut. Cmdr., USNR, '42-'45; m. Dec. 19, '40, June Cantwell; s. William V. III; d. Marilyn (*Wilmerding*).

HOLBROOK, 1960, DAVID DOUBLEDAY—(*Insurance*)—Born Sept. 1, 1938, New York, N.Y.; Exec. V.P., Marsh & McLennan, Inc., 1221 Ave. of the Americas, New York, N.Y. 10020; res. Katonah's Wood Rd., Katonah, N.Y. 10536; V.P., Natl. Assn. of Insurance Brokers, Inc., '75-, Pres., '79-'80; Gov., New York Insurance Exhange, '79-; Trustee, Found. for the Joffrey Ballet, '77-, Millbrook School, '77-, Theater Development Fund, '82-; Pres., G. D. Miller Corp., '75-; m. June 25, '60, Holly M. Gales; s. Christopher C.; d. Helene M., Lee S.

HOLBROOK, 1959, JOHN, JR., M.Arch.—(*Architecture*)—Born June 23, 1937, New York, N.Y.; Architect, bus. & res. Narrow Brook Farm, Grafton, Vt. 05146; Capt., USMC, Sept. '59-Aug. '62, Asst. Sec. RTA, Sept. '65-June '68; Dir., RTA, Nov. '75-; m. Feb. 4, '61, Edythe W. Murphy; d. Sara, Anna.

HOLDEN, 1944, JOHN MORGAN, M.A.—(*Education, Theatre*)—Born June 21, 1922, Cincinnati, Ohio; Asst. Prof. & Dir. of Theatre, Porterville Coll., 900 South Main St., Porterville, Calif. 93257; res. 42640 Sierra Drive, Three Rivers, Calif. 93271; Class Treas, '46-'49; Teacher, Athens Coll., Athens, Greece, '63-'64; Teacher, Porterville Coll., '66-'76; Dir., Three Rivers Playhouse & Barn Community Theatre, '72-'83; Pres., Bd. of Dir., Barn Community Theatre, '76-'78; Bd. of Dir., Tulare County Symphony, '80-'83; 1st Lieut., AUS, '43-'46; Bronze Star.

HOLDEN, 1940, REBUEN A., M.A., Ph.D., L.H.D.—(*Education*)—Born Sept. 2, 1918, Louisville, Ky.; Pres. Warren Wilson College, Swannanoa, N.C. 28778; res. as above; University Council, '72-'77; Yale: Asst. to Dean, '46-'47; Asst. to Pres., '47-'51; Assoc. Sec. of University, '51-'53; Sec. of University, '53-'71; Lieut. Col., AUS, '41-'46; Bronze Star, Special Breast of Yun Hwei (China); Dir., RTA; m. June 23, '51, Elizabeth Walker; s. Reuben A., V, ('76), George H. W., ('77); d. Grace M., Mary C.

HOLLAND, 1962, HENRY THOMPSON, M.B.A.—(*Business*)—Born Feb. 13, 1940, Detroit, Mich.; Operations Mgr., Axles Europe, Eaton, Ltd., Staines Road, Hounslow, U.K.; res. White Plains, Marsham Lane, Gerrards Cross Bucks, U.K.; m. May 13, '67, Quanah Winchell; s. Nathan Andrew; d. Jennifer Rebecca.

HOLLISTER, 1949, JOHN B.—(*Business*)—Born July 25, 1925, Cincinnati, Ohio; V.P. Sales, Cleveland Cliffs Iron Co., 14th Floor, Union Commerce Bldg., Cleveland, Ohio 44115; res. 36000 Cedar Rd., Gates Mills, Ohio 44040; Pres., Cleveland Yale Alumni Assn., '67; Bd. of Trustees, Hiram House Camp, Health Hill Hosp.; Councilman, Hunting Valley Village; Sgt., AUS inf., '43-'45; Purple Heart, Bronze Star; m. Apr. 29, '50, Elizabeth Ruth Boyle; s. John, Thomas, David; d. Ellen.

HOLMBEE, 1979, JEFFREY ARTHUR—(*Student*)—Born Jan. 22, 1957, Portland, Ore.; Student, Univ. of Maryland School of Medicine; res. 808 DeFranceaux Way, Pasadena, Md. 21122.

HOLMES, 1945W, GEORGE BURGWIN—(*Government retired*)—Born Jan. 16, 1924, Pittsburgh, Pa.; res. 3845 Macomb St., N.W., Washington, D.C. 20016; retired Foreign Service Reserve Officer; 1945W Class Council, '80-; Yale Club of Washington, D.C., Dir. '81-, Secy., '82-'83; U.S. Embassy, Brussels, '50-'52; Stockholm, '54-'57; Yaounde, '61-'63; London, '68-'71; Valletta, '72-'80; Lieut. (j.g.), USNR, '43-'46; m. Sept. 23, '50, Nancy Trowbridge; s. H. Brock, ('75); d. Katharine T., Sarah B. ('81).

HOLMES, 1934, JOHN GRIER—(*Education retired*)—Born July 15, 1912, Pittsburgh, Pa.; res. 185 North St., Hingham, Mass. 02043; Free Lance Writer-Editor, former Pres., John G. Holmes Associates Inc.; Alumni Music Com., '52-'56, Chmn., '55-'56; Admissions Rep., '52-'57; Asst. to Pres., Sarah Lawrence Coll., '48-'52; Sec., Vassar Coll., '52-'57; Lieut. Cmdr., USN, '42-'45; Bronze Star; m. Sept. '36, Anne Nicodemus; m. March '45, Jane McDonald; s. John G., Jr.; d. Jennifer (*Mirling*), Mary Burgwin (*Boone*), Antonia (*Tuck*).

HOLMES, 1978, PETER SAMUEL—(*Student*)—Born Mar. 21, 1956, Richmond, Va.; Law Student, Univ. of Va. School of Law, Charlottesville, Va. 22901 (candidate for J.D. '84); res. c/o Star Route, Box 288, Buckingham, Va. 23921; Resource Specialist, Natural Resources Defense Council, Inc., Washington, D.C., '78-'80; m. Aug. 8, '81, Ann Mary Quattrochi.

HOOK, 1978, NOBLE—add. 234 W. 14th St., Apt. 1C, New York, N.Y. 10011.

HOOPES, 1944, TOWNSEND WALTER—(*Publishing*)—Born Apr. 28, 1922, Duluth, Minn.; Pres., Assoc. of American Publishers, Inc., 2005 Mass. Ave., N.W., Washington, D.C. 20036; res. 5039 Lowell St., N.W., Washington, D.C. 20016; University Council, '48-'50; Class Agt. for Alumni Fund, '50-'65; Asst. to Secy. of Defense, '48-'52; Under Sec. of the U.S. Air Force, '67-'69; Dep. Asst. Sec. of Defense,

'65-'67; V.P. and Dir., Cresap, McCormick and Paget, Inc., '58-'64, '69-'71; Author of 2 books; recipient of Bancroft History Prize, '73; 1st Lieut., USMC, '43-'46; m. Oct. 20, '43, Marion C. Schmidt; m. Oct. 17, '64, Ann Merrifield; s. Townsend W. III, Peter; d. Andrea W.; ss. Briggs S. Cunningham ('79), Thomas B.C. Cunningham; sd. Marsha Cunningham, Cecily Cunningham.

HOWARD, 1966, JAMES ERNEST, LL.B.—(*Law*)—Born July 3, 1944, Milwaukee, Wis.; Lawyer, Ptnr., Kirkpatrick, Lockhart, Johnson & Hutchison, 1500 Oliver Bldg., Pittsburgh, Pa. 15222; res. 219 Richland Lane, Pittsburgh, Pa. 15208; Mbr., Council of Yale Club of Philadelphia, '70-'76; Mbr., Philadelphia Area Com., Alumni Schools Com., '70-'81; Consultant Mbr., A.Y.A. Com. on Athletics, '74-'76; Assoc., Montgomery, McCracken, Walker & Rhoads, Philadelphia, '69-'71; Trustees of Penn Central Transportation Co., Staff Lawyer, Assoc., General Counsel, '71-'78; Assoc. General Counsel, '78-'80; Priv. Practice '80-'81; present firm since '81; Sgt., Penn. Army Natl. Guard, '69-'75; m. June 17, '67, Marianne L. Bauer; s. Edward David, Michael James.

HOWE, 1958, GARY WOODSON—(*Journalism*)—Born Feb. 15, 1936, Sioux City, Iowa; V.P. & Exec. Editor, *Omaha World-Herald*, World-Herald Square, Omaha, Neb. 68102; res. 2315 S. 103d St., Omaha, Neb. 68124; Alumni Schools Committee, Omaha, '63-; Alumni Fund Class Agent, '74-; Nebraska-Iowa Chairman, Campaign for Yale, '76-'78; *Omaha World-Herald:* V.P., '74-, Bd. of Dir., '75-, Exec. Asst. to the Pres., '71-'79, City Editor, '67-'71; Advisory Bd., American Press Institute, '79-; Chmn., United Way of the Midlands Campaign, '78; Mbr., Bd. of Trustees, Joslyn Art Museum, '80-; Mbr., Health Planning Council of the Midlands, '76-'79; Lieut. (j.g.), USN, '58-'61; m. Aug. 18, '68, Anda Grinbergs; s. Evan Stuart; d. Marisa Murray.

HOWE, 1940, HAROLD III, M.A. (Hon.), LL.D.—(*Education*)—Born Aug. 17, 1918, Hartford, Conn.; Sr. Lecturer, Harvard Grad. School of Education, Cambridge, Mass. 02138; Pres., Center for Effective Philanthropy, Cambridge; res. R.D. 2, Pawcatuck, Conn. 06379; Yale Corp., Alumni Trustee, Successor Trustee, '60-'70; History Teacher, Darrow School, '40-'41; History Teacher, Andover, '47-'50; Principal, Andover High School and Jr. High School, '50-'53; Principal, Walnut Hills High School, Cincinnati, '53-'57; Principal, Newton High School, Newton, Mass., '57-'60; Supt. of Schools, Scarsdale, N.Y., '60-'64; Dir. of Learning Institute of No. Carolina, '64-'65; U.S. Commissioner of Ed., '65-'68; Ford Found. Officer in New Delhi,

India, '69-'71; V.P., Ford Found. for Education & Public Policy, '71-'81; Trustee, Vassar Coll., '58-'66; John Hay Whitney Found., '72-'83, Coll. Bd., '62-'66; Dir., Kennedy Center for Performing Arts, '66-'68; Chmn., National Council of Ed. Research, '78-'82; Lieut., USNR, '42-'46; m. Sept. 4, '40, Priscilla Foster Lamb; s. Gordon A.; d. Catherine Armstrong (*Short*), Merrill Howe (*Leavitt*).

HOXTON, 1939, ARCHIBALD ROBINSON, JR., M.A., L.H.D.—(*Education retired*)—Born Apr. 20, 1916, Fairfax County, Va.; Fruit Hill, Route 1, Box 52, Shepherdstown, W.Va. 25443; Alumni Fund; Teacher: Hotchkiss School, '39-'41, Episcopal High School, '45-'50; Headmaster: Fairfield Country Day School, '50-'53, Green Vale School, '53-'67, Episcopal High School, '67-'81; Lieut. Cmdr., USNR, '41-'45; m. Aug. 16, '41, Ruth deWindt; s. A.R., III; d. Ann (*Taylor*).

HOYSRADT, 1926, JOHN MCA., M.A.—(*Theatre*)—Born Oct. 5, 1904, Bronxville, N.Y.; Actor, (under 5-year contract to NBC, starring role in TV series "Gimme A Break"), bus. and res. 520 Walnut Ave., Santa Cruz, Calif. 95060; Bd. Mbr., Recording for the Blind, '69-; Sec., Friends of Santa Monica Mountain Parks, '70-; Head of Lay Readers and part-time Preacher, Calvary Ch., Santa Cruz, Calif.; m. Apr. 25, '35, Marion Virginia Burns; m. Sept. 4, '61, Dorothy Oltman Haveman; s. David B.; ss. Kurt Haveman.

HUDSON, 1955, FRANKLIN DONALD M.B.A.—(*Business*)—Born July 21, 1933, Asheville, N.C.; Exec. V.P. and Founder, Integrated Genetics, Inc. (genetic engineering firm), 51 New York Ave., Framingham, Mass. 01701; res. 89 Pinckney St., Boston, Mass. 02114; Seminar Instr., '75; Alumni Bd., '66-'68; Class Council '68-; Reunion Committees, '70, '75, '80; Mbr., American Academy of Sciences; Mbr., Conn. Republican Finance Committee, '68-'72; Pres., Yale Club of Puerto Rico, '66-'68; Capt., USAF, Jan. '56-Dec. '57; m. Dec. 1, '56, Rosemary Wheatley; s. Lawrence Jamison; d. Lauren Jean ('82).

HUEY, 1973, MARK CHRISTOPHER, Diploma in Anglo-Irish Literature, Trinity Coll., Dublin, M.A.—(*Education*)— Born Jan. 31, 1950, Flint, Mich.; Instructor in English, Monroe Community College, Rochester, N.Y.; res. c/o Charles C. Huey, 2942 Eastview Road, Bethel Park, Pa. 15102; Alumni Fund, '73-'80.

HURLBUT, 1945W, GORDON BUCKLAND—(*Farming*)—Born Dec. 10, 1923, Waterbury, Conn.; Farmer, bus. & res. Canaan Farm, Tonganoxie, Kansas 66086; Commissioner, Leavenworth County, Kansas, '68-'72; Ensign, USNR, '42-'45; m. Oct. 4, '47, Mary Louise Miller; s. Gordon B., III; d. Corinne, Hether, Anne G. ('73).

I

INGALLS, 1920, David Sinton, LL.B.— (*Law retired*)—Born Jan. 28. 1899, Cleveland, Ohio; bus. The O.E. Co., 301 Tower East, 20600 Chagrin Blvd., Shaker Heights, Ohio 44122; res. Stonybrook Farm, 3050 Chagrin River Rd., Chagrin Falls, Ohio 44022; Yale Medal recipient, '83; Mbr., Yale Corp.; Attny, V.P., Pan Am. Airways, in charge of Overseas Operations '45-'49; Pres. & Publisher, Cincinnati Publishing Co., '54-'58; Vice Chmn., Dir. of Taft Broadcasting Co.; Vice Pres., and Dir., Virginia Hot Springs, Inc.; Ohio State Roll Call Committee, American Red Cross; Ohio House of Representatives '26-'28, '28-'29; Asst. Sec. of Navy for Aeronautics under Pres. Hoover, '29-'32; Health & Welfare Dir., Cleveland, '33-'35; U.S. Naval Aviation, '17-'19, '42-'45; Capt.; Rear Admiral, USNR, ret.; W.W. I. British Distinguished Flying Cross, U.S. Distinguished Service Medal, French Legion of Honor; W.W. II, Legion of Merit, Bronze Star; m. June 27, '22, Louise Harkness; m. Feb. 16, '79, Frances W. Wragg; s. David S., Jr. ('56); d. Louise (*Brown*), Edith (*Vignos*), Anne (*Lawrence*), Jane (*Davison*).

INGALLS, 1956, David Sinton Jr., M.A., M.B.A.—(*Business*)—Born Aug. 27, 1934, Cleveland, Ohio; Pres., O.E. Company, 301 Tower East, 20600 Chagrin Blvd., Shaker Heights, Ohio 44122; res. Oak Hill Farm, Chagrin Falls, Ohio 44022; past Pres., and current Trustee, Cleveland Yale Alumni Assn.; Ohio Republican Finance Chmn., '76-'79; Mayor of Local Village, '80-; Lieut., USN, '56-'60; m. May 26, '73, Katherine Stewart; s. David S. III, Redmond S.; d. Rebekah W. ('83), Louise H. ('84), Cynthia L., Fay, Nina S.

INMAN, 1971, Robert D., M.D.—(*Medicine*)—Born March 6, 1949, Toronto, Canada; Physician; res. 118 Hillsdale Ave. W., Toronto, Ont., Canada M5P 1G6; Asst. Prof. of Medicine, Cornell Univ. Medical Coll.; m. Dec. 31, '71, Straughn Eastman ('71); s. David Stanley; d. Susan Davies, Kathryn Abbot.

IVES, 1928, Chauncey Bradley, LL.B., M.A., Ph.D.—(*Education retired*)—Born Mar. 16, 1907, New York, N.Y.; res. P.O. Box 457, Kingston, N.J. 08528; A.Y.A., Mar. '73-Oct. '74; Lawyer, '31-'41;

Teacher, Ransom School, '48-'53; Assoc. Prof., Guilford Coll., N.C., '57-'60; Asst. Prof., Douglass Coll., Rutgers Univ., '60-'70; Assoc. Prof., '70-'72; Maj., Amer. Field Service, '41-'45; Civilian, Office of Strategic Services, '45-'46; m. Aug. 3, '49, Jane Harrison Boyd.

J

JACKSON, 1970, TERRENCE JOHN, M.B.A.—(*Business*)—Born Oct. 8, 1948, New Kensington, Pa.; Coal Sales Mgr., Phillips Coal Co., 2929 N. Central Expressway, Richardson, Texas 75080; res. 2300 San Gabriel Drive, Plano, Texas 75074; Alumni Schools Committee, Mich., '76-'80, Chmn., '77-'80; Consolidation Coal Co., '75-'81; m. Sept. 10, '77, Melissa Ann Bottner; s. Russell Todd, Drew Harper.

JACKSON, 1941, WILLIAM E., LL.B.—(*Law*)—Born July 19, 1919, Jamestown, N.Y.; Ptnr., Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, 49th Floor, New York, N.Y. 10005; res. 530 E. 87th St., New York. N.Y. 10028; m. Sept. 24, '44, Nancy Dabney Roosevelt; d. Miranda Dabney, Melissa Carow, Melanie Eldred, Melinda Roosevelt, Marina Quentin.

JAMIESON, 1956, THOMAS CRAWFORD, JR., J.D.—(*Law*)—Born Jan. 30, 1935, Trenton, N.J.; Attny., Ptnr., Jamieson, McCardell, Moore, Peskin & Spicer, 194 Nassau St., Princeton, N.J. 08540; res. 4582 Province Line Road, Princeton, N.J. 08540; Class of 1952 Exec. Committee, '56-, Reunion Chmn., '61; Bd. of Dir., First National Bank of Princeton, '70-; Advisory Bd., N.J. Realty Title Insurance Co., '75-; Bar Assns.: American, State & County, '60-; Bd. of Trustees, Rider Coll., '72-, Chmn., '78-'81; Bd. of Trustees, Stuart School of Sacred Heart, '79-; Bd. of Trustees, R.P. Foundation, N.J., '73-; Sp. 4, AUS, '59-'60; m. June 25, '60, Mary Lee O'Connell; s. Crawford III, Jeffrey W., Paul W.; d. Lee R.

JENKINS, 1945W, RICHARD E.—(*Business*)—Born May 27, 1924, Lakewood, Ohio; V.P., Mid-Continent Sales, Fluor Engineers, Inc., 4620 N. Braeswood Blvd., Houston, Texas 77096; res. 806 Briar Hill, Houston, Texas 77042; Class of 1945W, Vice-Chmn., '80-'84; Alumni Fund Worker '45W, Branford Coll., '82-; PFC, Inf., AUS, June '43-Nov. '45; Presidential Unit Citation, Purple Heart, 3 Battle Stars,

Combat Infantry Badge; m. June 11, '48, Margaret Jean Wilmore; d. Pamela, Leslie Anne, Susan Lindsay.

JESSUP, 1942, JOHN BAKER, LL.B.—(*Law*)—Born July 30, 1921, New York, N.Y.; Ptnr., Winthrop, Stimson, Putnam & Roberts, 40 Wall St., New York, N.Y. 10005; res. 484 Ridgeburg Rd., Ridgefield, Conn. 06877; Lieut., USN, '42-'46; m. Oct. 20, '73, Jane Atwell; s. John B., Jr. ('68); d. Diana (*Vagneur*), Lesley (*Marceau*).

JOHANSON, 1955, STANLEY MORRIS, LL.B., LL.M.—(*Law*)—Born July 12, 1933, Seattle, Wash.; Bryant Smith Chair in Law Prof., Univ. of Texas School of Law, 727 E. 26th St., Austin, Texas 78705; res. 1906 Hopi Trail, Austin, Texas 78703; Class Agent, Alumni Fund, '55-'78; Teaching Fellow, Harvard Law School, '61-'63; Prof., Univ. of Texas School of Law, '63-; American Law Institute; Academic Fellow, American College of Probate Council; American Coll. of Tax Counsel; Law School Admission Council; Bd. of Trustees, Tarrytown United Methodist Church (Austin); Capt., USAF, '58-'61, Commendation Medal; m. June 24, '55, Geraldine Rae Cunningham; s. David, John; d. Susan, Barbara, Carolyn.

JOHNSON, 1935, JOSEPH HALE—(*Business retired*)—Born Aug. 26, 1911, Hartford, Conn.; res. Juniper Rd., Box 3414, Darien, Conn. 06820; formerly Mgr., Stamford Div., Hartford Electric Light Co.; Sec.-Treas., Conn. Directors, New England Council, '60-'66; V.P. & Dir., Stamford YMCA '65-'78; 1st V.P. & Dir., & Pres., Easter Seal Rehabilitation Center of Southwestern Conn., '65-'76; Assoc. Dir., State National Bank of Conn., '58-'75; Trustee, Stamford Hosp., '68-'80; Dir., Drug Liberation Program, Stamford, '65-; Mayor's Task Force on Addiction, '65-'69; Trustee, Citizens Savings Bank, '68-; Dir., Barnes Engineering Co., '69-; Board of Alderman, Hartford, '36-'40; Lieut. Cmdr., USN, '42-'46; m. Sept. 3, '38, Anne Davis; s. Peter D., Robert H.K.; d. Susan (*Billard*).

JOHNSON, 1971, WILBUR JOHN, M.A.T.—(*Education*)—Born May 19, 1949, Brooklyn, N.Y.; Social Studies Coordinator/Teacher, Blind Brook High School, Port Chester, N.Y. 10573; res. 390 N. Ridge St., Port Chester, N.Y. 10573; 5th Reunion Chmn., '76; m. June 23, '73, Marcia Kathleen Burnsed.

JONES, 1923, EDWIN ALFRED—(*Industrial retired*)—Born Nov. 17, 1899, Jackson, Ohio; res. Beach Club Hotel, 851 Gulfshore Blvd. N., Naples, Fla. 33940; formerly Chmn. of Bd., Globe Iron Co.; Asst. Pres., Interlake Steel Corp; Delegate to 4 National Conventions;

Chmn., Red Cross, Jackson, Ohio; Pres., Rotary Club, Jackson, Ohio; Bd. of Dir., Rio Grande College, Rio Grande, Ohio; Sgt., F.A., '17-'18; m. Oct. 2, '29, Katharine McKee; s. David Brooks; d. Gloria (*Borden*).

JONES, 1963, T. STEPHEN, M.D., M.P.H.—(*Medicine*)—Born Oct. 24, 1941, Boston, Mass.; Medical Epidemiologist, International Health Program Office, Centers for Disease Control, Atlanta, Ga. 30333; res. 450 Emory Circle, Atlanta, Ga. 30333; Medical Intern & Resident, Stanford Univ. Hosp., '67-'69; U.S. Public Health Service, Alaska Health Dept., '69-'71; Chichicastenango, Guatemala, '72-'73; Medical Epidemiologist, World Health Organization Smallpox Eradication Program, India, June '74-Feb. '75, Bangladesh, Feb. '75-Apr. '76, Somazia, July-Sept. '77; Public Health Service, July '69-Sept. '71; m. Feb. 26, '67, Mariann Wark (divorced); m. Jan. 19, '71, Jane Ann Netz.

JONES, 1933, THEODORE STEPHEN, M.A.—(*Business*)—Born Aug. 22, 1910, Chicago, Ill.; T.S. Jones & Co., Inc., P.O. Box 322, Sanibel, Fla. 33597; res. 1303 Maywood Ave., Ruxton, Md. 21204; formerly Pres. and Founder, Theodore S. Jones & Co., Inc., Milton, Mass. '59-'79; Alumni Interviewer, '49-'54; Teacher, Pomfret School, '35-'41; Dean, Hamilton Coll., '45-'47; Headmaster, Admiral Farragut Academy, St. Petersburg, '47-'48; Exec. Dir., Design in Industry, Boston Institute Contemporary Art. '48-'59; Editor-Publisher, "Your Opportunity; Lovejoy-Jones College Scholarship Guide"; Consultant, Agency for International Development, Israel, '54-'59, Colombia, '59, South Korea, '66; Consultant, The Pathfinder Fund (family planning), Latin America, '68; Mbr., Milton Town Meeting, '49-; Dir., Milton Red Cross, '58-'66; Cmdr., USNR, Air Combat Intelligence, '42-'45; Presidential Unit Citation, Anti-sub Bombing Sqdn. VP5; m. July 1, '38, Eleanor Tileston Eustis; m. Nov. 27, '82, Frances Lee Jackson; s. T. Stephen Jr., ('63); d. Eleanor Tileston (*Wendell*), Edith Hemenway; ss. Christopher N. Jackson ('58), David N. Jackson; sd. Frances Jackson.

JUNG, 1984, MICHAEL DAVID—add. 1281 Gaspar Ave., Bethlehem, Pa. 18017.

K

KAFOGLIS, 1983, CHRISTIAN NICHOLAS—add. 1008 Newman Drive, Bowling Green, Ky. 42101.

KAGAN, 1980, ROBERT WILLIAM, M.P.P.—(*Student*)—Born Sept. 26, 1958, Athens, Greece; Student, John F. Kennedy School of Government, Harvard; res. 37 Woodstock Road, Hamden, Conn. 06517; Chmn., Bd. of Dirs., *Yale Political Monthly;* Asst. Editor, *The Public Interest,* '80-'81.

KAHLE, 1984, JEFFREY LEWIS—add. 47 Hallam Road, Buffalo, N.Y. 14216.

KAMINSKY, 1964, ROBERT I., M.D.—(*Medicine*)—Born May 17, 1942, Houston, Texas; Physician (Urology), 2000 Crawford, Room 1022, Houston, Texas 77002; res. 2342 Underwood, Houston, Texas 77005; Maj., AUS, '69-'72; m. Dec. 31, '67, Marsha Janger (divorced); s. Loran Eli, Kirk Edward; d. Alicia.

KANEHL, 1975, PHILLIP EDWIN—(*Farming*)—Born Aug. 12, 1953, Springfield, Missouri; no address available.

KARAGEORGE, 1973, JAMES LOUIS, M.A.—(*Business*)—Born Apr. 15, 1951, Pittsburgh, Pa.; Owner, Freelance Commercial Photographer, bus. and res. 418 Precita St., San Francisco, Calif. 94110; Teaching Fellow in Film, Stanford Univ., '75-'77; m. Aug. 26, '76, Paula Suzan Karsh; s. Jason Paul.

KARP, 1978, BENJAMIN C.—Born April 24, 1956, Durham, N.C.; add. 880 Somerset Drive, N.W., Atlanta, Ga. 30327.

KAUSHAL, 1983, SHALESH—Born Oct. 23, 1961, Ambala City, India; res. 20 Loubier Drive, Essex Junction, Vt. 05452.

KEE, 1977, CHRISTOPHER ANDREW—add. 225 Spruce St., Philadelphia, Pa. 19106.

KELLEY, 1937, LAWRENCE M.—(*Education retired*)—Born May 30, 1915, Conneaut, Ohio; res. 5917 Strickland Place, Pensacola, Fla. 32506; m. March 30, '46, Anne Goodwin; m. 1975, Mary Ruth Becker.

KELLOGG, 1939, WILLIAM WELCH, M.A., Ph.D.—(*Science*)—Born

Feb. 14, 1917, New York Mills, N.Y.; Sr. Scientist, Meteorologist, National Center for Atmospheric Research, P.O. Box 3000, Boulder, Colo. 80307; res. 445 College Ave., Boulder, Colo. 80302; Sr. Scientist, N.C.A.R., '74-; Dir., Lab. for Atmospheric Science, N.C.A.R., '64-'73; Scientist and Dept. Head, RAND Corp., '47-'64; Asst. Prof., UCLA, '49-'52; Science Teacher, Brooks School, '39-'40; Advisor to Secy.-General, World Meteorological Organization, Geneva, '78-'79; Pres., American Meteorological Society, '72-'74; Pres., Meteorology Section, American Geophysical Union, '72-'73; Advisory Committees, Dept. of Commerce, U.S. Air Force, N.A.S.A., E.P.A., etc.; Capt., U.S. Army Air Corps, Pilot weather officer, '41-'46, Commendation Ribbon, Decoration for Distinguished Civilian Service (U.S.A.F. Scientific Advisory Bd.), '65; m. Feb. 14, '42, Elizabeth Jane Thorson; s. Karl Stuart, Joseph William, Thomas Walcott; d. Judith Lillian (*Liebert*), Jane Ellen (*Holien*).

KELLY, 1974, BRIAN CHRISTOPHER, J.D.—(*Law*)—Born Nov. 20, 1951, East Orange, N.J.; V.P. and Counsel, W.R. Berkley Corp., 99 River Road, Cos Cob, Conn. 06807; res. 196 E. 75th St., New York, N.Y. 10021; Assoc., Willkie, Farr & Gallagher, N.Y.C., Sept. '77-Feb. '83; Dir., RTA, '79-'81, Dir. and Treas., Deer Island Club Corp., '75-'80; m. Mar. 18, '78, Barbara Krasa ('75); d. Elizabeth Krasa.

KELLY, 1944, WILLIAM CODY, J.D.—(*Law*)—Born Mar. 1, 1922, Cincinnati, Ohio; Of Counsel, Brooks, Kelly & Barron, P.O. Box 135, Glenbrook, Nev. 89413; res. One Glenbrook Road, Glenbrook, Nev. 89413; Attny., Ptnr., Brooks, Kelly & Barron, '53-'82; National Research Council, Washington, D.C.; Class Agent, Pierson, Yale Alumni Fund, '44-'69; Chmn., Class Agents, Class of '44, Yale Alumni Fund, '69-'74; Mbr., Yale Development Bd., '74-; Chief Asst. to Chmn., Republican National Committee, '65; Trustee, Deaconess Hosp., Cincinnati, Boys' Clubs of Cincinnati, Cincinnati Union Bethel, '50-'62; Councilman-at-Large, Cincinnati, '53-'59; Vice Mayor, Cincinnati, '57-'59; Lieut., F.A. '43-'46; m. Dec. 21, '70, Karen Lucile Brown; s. Patrick L., William Michael, William Cody, Jr.; d. Shannon (*Carter*); ss. Marshall H. Garrison.

KEMP, 1942, FRANK ALEXANDER—(*Business*)—Born May 10, 1921, Denver, Colo.; Self-employed; Livestock Feeder, Farm & Ranch Sales, Land Appraisal & Consulting, c/o Hall & Hall, 1559 Logan St., Denver, Colo. 80203; res. 149 High St., Denver, Colo. 80218; Chm., Colo. Yale Assn. Com. on Scholarships, '52-'54; Pres., Colo. Yale Assn., '69-'70; Dir., Buckingham Square Natl. Bank, Aurora, Colo.;

Pres., Colo. Agricultural Council, '76; Trustee, Colo. State Historical Soc., '73-'79; Mbr., Advisory Council St. Joseph's Hosp., '66-'79; Colorado House of Representatives, '53-'54, '63-'66; Colorado State Senate, '67-'71; Capt., USMC, June '41-June '47; Silver Star, Soldiers Medal, 2 Bronze Stars with Combat V, 2 Purple Hearts; m. June 16, '51, Pauline Claire Wilson; s. Frank A., Jr., Hovey.

KEMP, 1950, PHILIP SPERRY, M.E.—(*Business*)—Born May 23, 1925, Denver, Colo.; Pres., Playtime Equipment Co., 808 Howard St., Omaha, Nebr. 68102; and Ed Myers Co.; res. 740 N. Happy Hollow Blvd., Omaha, Nebr. 68132; Alumni Bd., '67-'72; CM 2/c, USNR (Sea Bees), '43-'46; m. Feb. 27, '54, Emily Fitzgerald Goodwin; s. Philip S., Jr., Bruce K., Lawrence G., James A., Andrew B.; d. Sarah K., Emily F.

KERRY, 1966, JOHN FORBES—(*Government*)—Born Dec. 11, 1943, Denver, Colo.; Attny., Lieut. Governor, State House, Boston, Mass. 02133; res. 206 Chestnut Hill Road, Newton, Mass. 02167; Ptnr., Kerry & Sragow, '79-'83; First Asst. D.A., Middlesex County, '76-'79; Lieut., USNR, '66-'70, Silver Star, Bronze Star with Combat V, 3 Purple Hearts, Navy Unit Commendation, Presidential Unit Citation, various service and campaign medals; m. May 23, '70, Julia Thorne; d. Alexandra, Vanessa.

KETCHAM, 1914, HENRY HOLMAN—(*Industry, retired*)—Born June 17, 1891, Englewood, N.J.; res. 801 McGilvra Blvd. E., Seattle, Wash. 98112; formerly Pres., Henry H. Ketcham Lumber Co.; Dir., Seattle Trust & Savings Bank, '37-'74; Belgian Consul, State of Washington, '43-'72; decorated 3 times by Belgian Government; Mbr., Natl. Football Assn. & Hall of Fame, '68; Mbr. Bd. of Dir., U.G.N., Chmn. of drive, '40; Bd. Mbr., Lakeside Boys School, '50-'60, Sr. Warden, St. Marks Cathedral; Maj., F.A., 26th Div. Yankee, May '17-Apr. '19; m. Nov. 10, '21, Katharine Eugenia Peters; s. Henry H. Jr., ('44), William P., Samuel K. ('52).

KILBORNE, 1935, WILLIAM SKINNER, M.B.A.—(*Business*)—Born Sept. 1, 1912, Stockbridge, Mass.; Independent Business Consultant, bus. & res. 164 Moore St., Princeton, N.J. 08540; Davenport Co-agent, Yale Alumni Fund, '35-'69; Class Agt., Yale Alumni Fund, '69-'74; A.Y.A. Class Rep., '74-'77; A.Y.A. Yale Club of Princeton Rep., '80-'83; Pres., Yale Club of Princeton, '78-'83; Mbr., Yale Crew Assn., '35, Pres. '52; Mbr., Advisory Bd., Yale Collection of Musical Instruments, '81; Mbr., Council Friends of Music at Yale '77-; Class of 1935 Exec. Com., '70-; Dir., International Silk Assn. (USA), '48-'53,

V.P., '51-'53; William Skinner & Sons, '37-'53, V.P., '42-'53, Trustee, '47-'61; Chmn., Harkil Corp., '69-'75; Special Asst. to Sec. of Commerce, '53-'57; Mbr., N.Y. County Republican Committee, '40-'41; Mercer County Republican Committee, '78-'82; m. June 25, '35, Elizabeth Briggs; m. June 29, '74, Virginia Wylie Egbert; s. William S., Jr., ('58), Benjamin Briggs, ('66), Allerton Wright; d. Katharine (*Cornwell*).

KILCULLEN, 1934, JOHN M.—(*Transportation*)—Born July 9, 1908, New York, N.Y.; add. 133 Ave. de la Marne, Pyrenees Atlantiques, Biarritz 64200, France; m. March 8, '42, Natalie L. Atherton; m. Sept. 8, '52, Margarete Mendelssohn; s. Gordon V. M.

KILREA, 1954, WALTER C.—(*Industrial*)—add. 1717 Cambridge Road, Flossmoor, Ill. 60422; m. Apr. 4, '59, Carol Hyde Harkness; s. Scott Williamson, Jeffrey Smith, Gregory Jennings, Timothy B.

KIMBALL, 1934, WALTER S., M.D.—(*Medicine*)—Born June 29, 1911, Sisterville, West Va.; Orthopedic Surgeon, 1305 Seneca St., Seattle, Wash.; res. 3404 Evergreen Point Rd., Bellevue, Wash. 98004; m. Sept. 23, '44, Alicia Perea Munoz; s. Walter Nathaniel, d. Zee Alice.

KINGSBURY, 1926, HOWARD THAYER, M.A.—(*Education retired*)—Born Sept. 11, 1904, New York, N.Y.; res. 145 Chestnut Circle, Lincoln, Mass. 01773; formerly Dean, Brooks School, North Andover, Mass.; Lieut. Col., AUS, Apr. '41-Oct. '46; Army Commendation Medal; m. Dec. 17, '31, Ellen M. Wales; s. Nathaniel W., ('63); d. Ruth E. (*Sherman*).

KINGSLEY, 1959, CHARLES C., J.D.—(*Law*)—Born Aug. 27, 1937, New York, N.Y.; Attny., Ptnr., Wiggin & Dana, P.O. Box 1832, New Haven, Conn. 06508; res. 32 Prospect Hill Road, Stony Creek, Branford, Conn. 06405; Treas., Class of 1959, '69-'79; A.Y.A., '76-'78; Conn. Bar Assn.: Pres., Young Lawyers Section, '73-'74, Mbr. Bd. of Dir., '74-'75, Chmn., Estates & Probate Section, '72-'74; Pres., New Haven Colony Historical Soc., '74-; Mbr., Conn. Mental Health Advisory Council, '73-; RTA Dir., '71-'74; m. July 2, '60, Gretchen Hill; s. David; d. Virginia ('84), Deborah.

KIPHUTH, 1941, DELANEY, M.A.—(*Education*)—Born March 6, 1918, New Haven, Conn.; Instr. in History, Asst. in Athletics and in Admissions, Hopkins Grammar Day Prospect Hill School, 986 Forest Road, New Haven, Conn. 06515; res. 4 Carleton St., Hamden, Conn. 06517; Alumni Fund Agt., Timothy Dwight, '41-; Yale Univ. Asst. Coach, Freshman Football, '46 & '47, Freshman Swimming Coach, '47 & '48, Dir., Dept. of Athletics, Recreation & Physical

Education, and Lecturer in History, '54-'76; Spec. Asst. to Pres., '76-'80; The Hotchkiss School: Instr. in History, Asst. in Athletics & Physical Education, '41-'42, Instr. in History, Coach, Football & Swimming, Dir., Athletics & Physical Education, '48-'54; Bd. of Trustees, Hopkins Grammar School, '56-'72; New Haven Boys Club Board, '56-'68; National Assoc. Boys' Clubs of America, '77-; Chmn., Bd. of Dir., U.S. Grant Found., '54-'69; Maj., Army Air Force, '42-'46; *Croix de Guerre*, Bronze Star; Dir. RTA, m. Sept. 18, '44, Janet E. Baillie; d. Margaret Allan, Louise DeLaney (dec.).

KIRCHWEY, 1942, George W.—(*Industrial*)—Born Feb. 24, 1920, Brooklyn, N.Y.; V.P., W.R. Grace & Co., Industrial Chemicals Group, Grace Plaza, 1114 Ave. of the Americas, New York, N.Y. 10036; res. 19 Marlborough Road, Norwalk, Conn. 06851; m. 1942, Barbara V. Wheeler; m. June 19, '54, Ellen-Douglas Allen Tompkins; s. Karl Wendell; d. Catherine W.; ss. B.A. Tompkins, ('64), V.D. Tompkins.

KITTREDGE, 1952, Frank Dutton—(*Business*)—Born Jan. 21, 1931, Pittsfield, Mass.; V.P., Asia Pacific Div., General Electric Co., 570 Lexington Ave., New York, N.Y. 10022; res. 2 Tokeneke Beach Drive, Darien, Conn. 06820; Dir., Philippine Appliance Corp., Toshiba Electronic Systems, Inc., Elpro Electric Co., Poona, India, Philippine Electric Co.; Lieut., USN, Aug. '54-May '58; m. Oct. 4, '52, Barbara Kellogg Bradshaw; m. Oct. 15, '69, Joan Gray Knauss; s. Frank D., Jr., John B.; d. Laura H.; ss. Eric Knauss, Curtis Knauss; Karen (*Schoem*), Page Knauss.

KLOTS, 1943, Allen Trafford—(*Publishing*)—Born March 31, 1921, New York, N.Y.; Exec. Editor & Sec., Dodd, Mead & Co., Inc., 79 Madison Ave., New York, N.Y. 10016; res. 333 E. 68th St., New York, N.Y. 10021; Bd. of Dir.: City Center of Music & Drama, New York City, '60-'75, Contemporary Music Soc., '70-'80; Friends of French Opera, '75-'81; Chmn., Young Friends of City Center, '68-'72; Co-Chmn., 30th Anniversary City Center of Music & Drama, '73-'74; Lieut., USNR, '43-'46.

KNAPP, 1936, John Merrill, M.A., Mus.D.—(*Education*)—Born May 9, 1914, New York, N.Y.; Prof. Emeritus, B16-J3, Firestone Library, Princeton, N.J. 08544; res. 108 Rosedale Lane, Princeton, N.J. 08540; Dir., Princeton Glee Club, '46-'51; Princeton Univ.: Asst. Prof., '47-'53, Assoc. Prof., '53-'61, Prof., '61-'82; Asst. Dean, '55-'58, Dean of Coll., '61-'66; various Bds. of Trustees, Lieut. Cmdr., USN, '42-'46; m. Feb. 21, '44, Elizabeth-Ann Campbell; d. Joan, Phoebe.

KOLAR, 1968, Britton Ward, M.D.—(*Medicine*)—Born Feb. 27,

1946, Oak Park, Ill.; Family Physician, 717 Geneva St., Lake Geneva, Wis. 53147; res. 315 Cook St., Lake Geneva, Wis. 53147; Alumni Fund Class Agt., '68-'73; Lieut., USN, July '68-Jan. '72; National Defense Medal, Navy Achievement Medal, Meritorious Unit Citation, NAVFAC Nicosia, Cyprus; m. June 21, '69, Margaret Louisa McMahan; s. Jordon Knight; d. Laura Richardson.

KOSTURKO, 1971, WILLIAM THEODORE, J.D.—(*Law*)—Born Feb. 25, 1949, Bridgeport, Conn.; Sr. V.P. and Counsel, Society for Savings, 31 Pratt St., Hartford, Conn. 06101; res. 58 Beverly Road, West Hartford, Conn. 06119; Assoc., Day, Berry & Howard, '74-'79; V.P. of Bd. of Dir., Hartford Legal Aid Society; Chmn., Conn. State Elections Commission, '77-'79; m. June 26, '71, Linda Daley; s. George William; d. Elizabeth Ann.

L

LADD, 1930, LOUIS WILLIAMS, JR, M.D.—(*Medicine retired*)—Born Jan. 25, 1908, Cleveland, Ohio; Physician, internal medicine; res. Beaver Meadow Road, Sharon, Vt. 05065; Asst. Clinical Prof. of Medicine, Western Reserve Univ., '55-'70; Adjunct Clinical Asst. Prof. of Medicine, Dartmouth Medical School, '73-; Mbr., Vermont Arthritis Found. Bd., '75-'81; Bd. of Trustees, Woodstock Visiting Nurse Assn., '73-'82; Capt., Medical Corps, AUS, '42-'46; m. Sept. 7, '39, Barbara Schutz (dec.); m. June 1, '60, Edith Gardiner Brown; s. Louis W. III, William D., James C. ('74); ss. Harvey H. Brown, G. Gardiner Brown.

LAGERCRANTZ, 1965, BENGT M.—(*Business*)—Born Apr. 2, 1942, Habana, Cuba; no address available; m. Oct. 7, '71, Helene S. Hockerfelt; s. Carl Magnus; d. Anna H.

LAIDLEY, 1966, FORREST DAVID, J.D.—(*Law*)—Born May 14, 1944, Lake Forest, Ill.; Attny., General Counsel, Ptnr., Wm. Blair & Co., 135 S. LaSalle St., Chicago, Ill. 60603; res. 552 Stevenson Drive, Libertyville, Ill. 60048; Yale Scholarship Trust of Ill., '68-'81; Alumni Schools Committee, '70-'76; m. July 25, '71, Diane Graham; s. Michael, Luke; d. Mary Irene, Jeanne, Anne.

LALLEY, 1977, PATRICK WILLIAM—(*Student*)—Born June 4, 1955, San Antonio, Texas; res. 819 W. Hildebrand, San Antonio, Texas 78212.

LAMBERT, 1950, PAUL CHRISTOPHER, J.D.—(*Law*)—Born Mar. 14, 1928, New York, N.Y.; Lawyer, Ptnr. and Head of Trusts & Estates Dept., Breed, Abbott & Morgan, 153 E. 53d St., New York, N.Y.

10022; res. 1088 Park Ave., New York, N.Y. 10028; Bd. of Dirs., Yale Alumni Fund, '75-'79; A.Y.A. 1950 Class Rep., '76-'79; Chmn. Committee on Residential Colleges, '76-'80, Bd. of Governors, '78-, Vice Chmn., '80-'82, Chmn., '82-; Vice Chmn. 25th Reunion Gift Committee; University Council (ex officio), '82-; Yale Development Bd. (ex officio), '82-; Milbank, Tweed, Hadley & McCloy, July '55-Dec. 31, '65; Breed, Abbott & Morgan, Jan. '66-; Trustee, The Hotchkiss School, '73-'81; Dir. and Secy., National Society to Prevent Blindness, '74-; Trustee and V.P., The Brearley School, '76-; Cpl., AUS (G-2), Staff of Strategic Intell. School, July '53-June '55; Pres., Deer Island Club Corp., '75-'77; Secy., G.D. Miller Corp., '75-'77, Pres., '78-; m. June 9, '56, Mary Lee; s. Paul Christopher, Jr. (dec.), John Carroll; d. Jennifer, Mary Wilson.

LAMPERT, 1984, EDWARD SCOTT—add. 85 Finch Drive, Roslyn, N.Y. 11576.

LAPHAM, 1931, LEWIS ABBOT—(*Finance retired*)—Born Mar. 7, 1909, Brooklyn, N.Y.; bus. add. 150 E. 42d St., Room 3541, New York, N.Y. 10017; res. John St., Greenwich, Conn. 06830; formerly Pres., Bankers Trust New York Corp., '68-'74; Pres., American-Hawaiian Steamship Co., '47-'53; Pres., Grace Line, Inc., '53-'59; Chmn., Exec. Comm., Bankers Trust Co., '59-'66, Vice Chmn., '66-'74; Dir., Pres., Bankers Trust New York Corp., '68-'74; Pres., New York State Bankers Assn., '70-'71; Dir.: Medusa Corp., Tri-Continental Corp., H.J. Heinz Co., Macmillan, Inc.; Mbr., Supervisory Bd. of N.V. Philips, Eindhoven, The Netherlands; Mbr., National Assn. Bd., Smithsonian Institution; Directorships: Celanese Corp. of America, Mobil Oil Corp., Chubb Corp., Crane Co., Barber Oil Co., North American Philips Corp., Newport News Shipbuilding and Drydock Co.; WW II, Exec. Asst. (Civilian) to Commanding General, San Francisco Port of Embarkation; m. Oct. 14, '32, Jane A. Foster; s. Lewis H. ('56), Anthony A. ('58).

LAUNDON, 1932, MORTIMER HAMLIN—(*Business retired*)—Born Sept. 1, 1908, Cleveland, Ohio; res. Landgrove, R.F.D. 1, Box 221, Londonderry, Vt. 05148; formerly Pres., Bryant Equipment Corp., West Haven, Conn.; Class Sec. & Mbr. Alumni Bd., '67-'72; Pres., Mountain Valley Health Council, Londonderry, Vt., '76-; m. March 28, '36, Jean Kinney; s. Averill, ('60, Law '66), John Cushing, Arthur Samuel II; d. Jan.

LAVELLI, 1949, ANTHONY, JR.—(*Theatre*)—Born July 11, 1926, Somerville, Mass.; no address available.

LAWLER, 1977, QUENTIN JOHN—(*Finance*)—Born Aug. 20, 1955, Mis-

lawaka, Ind.; Account Exec., Paine Webber Mitchell & Hutchins, 195 Church St., New Haven, Conn. 06511; res. 6 Linden Point Road, Stony Creek, Branford, Conn. 06405; Class Agent, '77-'83.

LAWRENCE, 1980, GARY MARTIN—Born July 2, 1957, Toronto, Ont., Canada; res. 17 Ridgehill Drive, Brampton, Ontario, Canada L6Y 2C3.

LEAVENWORTH, 1945W, DONALD LOYAL, M.L.—(*Education*)—Born March 16, 1925, Cleveland, Ohio; Headmaster, Chadwick School, 26800 South Academy Drive, Palos Verdes Peninsula, Calif. 90274; res. 1 Academy Rd., Palos Verdes Peninsula, Calif. 90274; Asst. Headmaster/Teacher, Crane Country Day School, Santa Barbara, '54-'57; Headmaster, La Jolla Country Day School, La Jolla, Calif., '57-'72, Chadwick School, '72-; Bd. Mbr., Civic Organizations, San Diego, Calif., '60-'72; 1st Lieut., Army Air Force, '43-'45; D.F.C., Air Medal; m. May 8, '48, Cynthia MacKenzie; d. Cynthia (*Duncan*), Laurie (*Frye*), Julie (*Dunn*).

LEFEVRE, 1962, ROBERT EATON, M.D.—(*Medicine*)—Born March 13, 1940, Cleveland, Ohio; Physician (urologist), Gould Medical Group, 600 Coffee Rd., Modesto, Calif. 95355; res. 3008 Scenic Drive, Modesto, Calif. 95355; Lieut. Cmdr., USN, '68-'70; m. Aug. '66, Christina Ford; m. Jan. '71, Robin O'Neill; s. William Eaton, David Edward; ss. Darin Christopher Morris, Drew Morris.

LEIPER, 1949, JOSEPH MCCARRELL—(*Business*)—Born Aug. 27, 1923, Blauvelt, N.Y.; Deputy Asst. Commissioner, New York City Dept. of Transportation, 51 Chambers St., Room 1407, New York, N.Y. 10007; res. 36 Leber Rd., Blauvelt, N.Y. 10913; m. Oct. 13, '51, Janet Cooke Howell; s. Joseph McCarrell, Jr.

LEONE, 1982, FREDERICK ANTHONY—Born June 12, 1960; add. 17 Wendy Lane, East Northport, N.Y. 11731.

LEVERETT, 1976, MILES WATSON—(*Fine Arts*)—Born Oct. 16, 1954, Trenton, N.J.; Songwriter/Singer, On Company, 102 Second Ave., New York, N.Y. 10003; res. 163 Remsen St., Apt. 3R, Brooklyn, N.Y. 11201.

LEVERING, 1933, WALTER B.—(*Business retired*)—Born Aug. 25, 1909, Amagansett, L.I., N.Y.; res. 2 Beekman Place, New York, N.Y. 10022; Class Com., '33-; Ptnr., Carlisle DeCoppet & Co., '33-'75; Governor, Assn. of Stock Exchange Firms, '59-'61, '64-'66; Greenwich, Conn., R.T.M., '56-'58; Vice Chmn., Repub. Finance Com., '50-'58; Chmn. Recreation Com., Town of Greenwich, '50-'56; Merritt Parkway Commissioner, '52-'58; Cmdr., USNR, Feb. '42-Oct. '45; Legion of Merit, Bronze Star, Purple Heart; Dir., RTA; m. June

6, '32, Betty Gerard (dec.); m. June 25, '66, Elsie Hvistendahl; s. Walter B., Jr., ('59); d. Joan (*Jack*).

LEVIN, 1971, CHARLES HERBERT, M.F.A.—(*Theatre*)—Born March 12, 1949, Chicago, Ill.; Actor, bus. add. 1775 Broadway, New York, N.Y. 10019; res. 1550 N. Laurel Ave., Apt. 303, Los Angeles, Calif. 90046; Company Mbr., Yale Repertory Theatre, '74-'76; New York Shakespeare Festival, '76; m. Aug. 23, '74, Molly Hall; d. Kate Fleming.

LEWIS, 1974, GEORGE EMANUEL—(*Music*)—Born July 14, 1952, Chicago, Ill.; add. 484 W. 43d St., Apt. 10L, New York, N.Y. 10036; Mbr., Anthony Braxton Quartet; Count Basie Orchestra, March-May, '76.

LEWIS, 1972, MARK SANDERS—(*Education*)—Born Aug. 26, 1949, New Haven, Conn.; Ptnr., Island Technologies, 119 N. Butts St., State College, Pa. 16801; res. Box 856, State College, Pa. 16801; Yale Alumni Fund, '72-; Dir., Redington Pond School, '73-'74, Childspace, '75-'82.

LIGHTFOOT, 1959, RICHARD BISSETT, J.D.—(*Publishing*)—Born Feb. 12, 1937, New Haven, Conn.; Pres., Lightfoot Broadcasting Group; Chmn., Soundings Publications, Inc., Pratt St., Essex, Conn. 06426; res. 298 Joshuatown Road, Lyme, Conn. 06371; Bd. of Dirs., Yale Alumni Fund, '64-'69, Sr. Dir. of Development, '67-'68; Yale Communications Bd., '78-'82; Pres., Conn. Editorial Assn., '78-'80; Bd. of Dirs., New England Press Assn., '76-'80; Bd. of Dirs., New Haven Symphony Orchestra, '78-; American Symphony Orchestra League, '81-; Bd. of Education, Pelham, N.Y., '72-'75; m. Dec. 29, '59, Judith Fay; s. John; d. Alexandra, Elizabeth, Ann.

LIGON, 1962, THOMAS B.—(*Theatre, Television*)—Born Sept. 10, 1940, New Orleans, La.; Actor, Producer, Director, 227 Waverly Place, New York, N.Y. 10014; V.P., Openhand Corp.; m. Dec. 31, '76, Katharine Clarke.

LILES, 1973, COIT REDFEARN—(*Government retired*)—Born Jan. 25, 1950, Wadesboro, N.C.; res. 315 C St. N.E., Washington, D.C. 20002 and 214 S. Greene St., Wadesboro, N.C. 28170; Staff Aide to Hon. Sam J. Ervin, Jr., U.S. Senate, '73-'74; Legislative Asst. to Hon. W.G. Hefner, M.C., '75-'80; Bd. of Dir., Deer Island Club Corp.,'75-.

LILLEY, 1967, ROBERT MCGREGOR—(*Business*)—Born Sept. 2, 1945, Montclair, N.J.; Managing Dir., Ehrmanns Wine Shippers Ltd., 24-25 Scala St., London W1P 1LU, England; res. 166 Willesden Lane, London N.W. 6, England; m. 1973, Jill Laporte; m. 1981, Rebecca Nassauer; s. Joshua Nassauer.

LINDGREN, 1960, RICHARD HUGO, M.B.A., J.D.—(*Finance*)—Born Dec. 4, 1938, Jamestown, N.Y.; V.P., Private Capital, Inc., 45 Rockefeller Plaza, Suite 2845, New York, N.Y. 10111; res. 1148 Fifth Ave., New York, N.Y. 10028; formerly V.P., Corp. Finance, New Business, White Weld & Co., N.Y.C.; Lieut., U.S.N.R., June '62-Oct. '65; m. June 21, '62, Anne Howard MacPherson; s. Richard Hugo, Jr., Douglas Dobbins; d. Sarah Howard.

LINDSAY, 1961, DALE ALTON, JR., M.B.A.—(*Finance*)—Born June 4, 1939, Erie, Pa.; V.P., Investments, White, Weld, One Liberty Plaza, New York, N.Y. 10006; res. 1140 Fifth Ave., New York, N.Y. 10028; m. July, '74, Barbi Zinner; s. Reed Dale.

LIPPINCOTT, 1949, DAVID MCCORD—(*Literary work*)—Born June 17, 1924, New York, N.Y.; bus. and res. 655 Park Ave., New York, N.Y. 10021; '50-'52: Words and Music for material in *John Murray Anderson's Almanac, Pleasure Dome,* Broadway Reviews. Album, words and music, *The Body in the Seine;* Television scripts for *Studio One,* other CBS shows, *Advertising;* '52-'68: Vice Chmn. of Bd., Erwin Wasey, Inc. (now Sullivan Stauffer, etc.); Sr. V.P., McCann-Erickson, U.S.; Sr. V.P. Interpublic Group of Companies; Exec. Dir., McCann-Erickson, Ltd. (Europe); Managing Dir., Center of Advanced Practices, N.Y. Literary Work; '68 to present: Novels: *E Pluribus Bang!, Voice of Armageddon, Tremor Violet,* (motion picture, *Armageddon*), *The Blood of October, Savage Ransom, Salt Mine, Dark Prism, Unholy Morning, The Nursery, The Home* (1984); Intelligence work; m. Oct. 16, '59, Joan Stuart Bentley; s. Christopher Bentley.

LITT, 1984, DAVID GEOFFREY—add. 3115 S.E. 6th Ave., Portland, Ore. 97202.

LITTLE, 1944, STUART W.—(*Literary work*)—Born Dec. 19, 1921, Hartford, Conn.; Writer, Editor, bus. and res. 131 Prince St., New York, N.Y. 10012; University Council, '75-'80; *N.Y. Herald Tribune*: N.Y. Correspondent, European Edition, '47-'48, Reporter, '48-'51, Asst. Day City Editor, '51-'54, Theatre News Reporter, '58-'66; News Writer, NBC-TV, '54-'58; Editor, *Authors Guild Bulletin*, '67-'81; Sgt., USAAF,-O.S.S., '43-'45; m. Sept. 25, '45, Anastazia Raben-Levetzau; s. Christopher ('71); d. Caroline (*Larken*), Suzanne.

LIVINGSTON, 1969, RICHARD H.B., M.B.A.—(*Business*)—Born Aug. 19, 1947, Greenfield, Mass.; Shipping Exec., Treas., Admiral Shipping Services, Inc., 1001 N. America Way, Miami, Fla. 33132; res. 7513 S.W. 54th Court, Miami, Fla. 33143; Treas., Admiral Shipping Services, '79-; Treas., Lorentzen Shipping Agency, Miami, '77-'79;

Asst. Treas., Oivind Lorentzen, Inc., New York, '75-'77; m. Dec. 4, '76, Elizabeth Dubben; d. Elizabeth T., Catharine C.

LOESER, 1931, FREDERIC WILLIAM—(*Industrial retired*)—Born May 21, 1908, New York, N.Y.; res. 240 Pleasant Point Rd., Branford, Conn. 06405; Class Treas., '34-; Dir. & Treas., Yale Club of New Haven; Treas., Pres. & Exec. Com., Yale Football Y Assoc., '42-; Football Advisory Com., '50-'81; Chmn., Kiphuth Memorial Fund; Yale Assn. Class Officers, '50-'56; recipient Yale Medal 1979; former Pres.: Ecology, Inc., N.H. Buick Co., Fred L. Loeser & Son; Dir.: New Haven Boys' Club, '38-, Yale New Haven Hosp., '50-'66; Chmn., United Way Campaign, '51-'52, Pres., '53-'54; Booth Found., '67-'73; New Haven Found., '67-'73; Development Officer, '74-'75; Chmn., Yale-United Way Game Com., '69-'75; Trustee, Prospect Hill School, '54-'60; 1st Lieut., USMC, '42-'45; m. Feb. 5, '38, Marjorie Stearns; s. F. Gregg, ('63); d. Bonnie Louise (*Corcoran*).

LONGSTRETH, 1930, GEORGE B.—(*Finance retired*)—Born Oct. 18, 1907, Atlanta, Ga.; res. 890 Burr St., Fairfield, Conn. 06430; Class Agt., Yale Alumni Fund, '61-'72; formerly Exec. V.P., Trustee, People Savings Bank, Bridgeport, Conn.; Dir. & Treas., Bridgeport Hosp. '72-; Fairfield Country Day School, Trustee, '54-, Treas., '55-'72, Pres., '72-'74; Trustee, Golden Hill United Methodist Ch., Bridgeport; Dir. & Treas., Fairfield Public Library, '71-; Mbr., Bd. of Finance, Town of Fairfield, '56-'61, Chmn., '59-'61; m. June 7, '35, Alice Lakin Pullman; s. George B., ('61), John P.; d. Ann (*Hughes*).

LONSDORF, 1973, DAVID B.—add. Public Health Service Hospital, Bethel, Alaska 99559.

LORD, 1949, CHARLES EDWIN, M.A. (Hon.)—(*Finance*)—Born Apr. 26, 1928, New York, N.Y.; First V.P., Vice Chmn., Export-Import Bank of the U.S., 811 Vermont Ave., N.W., Washington, D.C. 20571; res. 2139 Wyoming Ave., N.W., Washington, D.C. 20008; Dir. of Institutional Relations & Alumni Programs (Corp. Officer), '76-'79; Exec. Committee, Campaign for Yale, '74-'79; Chmn., Hartford Area, Campaign for Yale, '74-'76; Mbr., Development Bd., and Exec. Committee, '68-'74; Alumni Bd., '64-'68; Pres., Yale Club of Hartford, '63-'64; Regional Chmn., Yale Alumni Fund, '56-'59; Chmn., Hartford National Corp., '75; Pres. and Chief Exec. Officer, Hartford National Bank & Trust Co., '72-'75, Pres., '67-'72, Senior V.P., '67, V.P., '64-'67, Asst. V.P., '57-'64; Senior Advisor to the Comptroller of the Currency, U.S. Treasury Dept., '79-'81, First Deputy Comptroller of the Currency, '81-'82; Acting Comptroller of the Currency, May '81-Dec. '81; Dir.: Insilco Corp., '69-'76, Kaman

Corp., '68-'76; Symphony Soc. of Greater Hartford: Pres. & Chmn., '66-'70, Dir., '65-'76; Hartford Stage Co.: V.P., '64-'67, Dir., '64-'71; Greater Hartford Arts Council, V.P., Exec. Com., Dir., '71-'76; Chmn. Natl. Alliance of Businessmen, Hartford Area, '72-'76; Public Mbr., Conn. Development Authority, '73-'76; Bd. of Finance, Simsbury, '61-'65; Dir., RTA, '75-'79; m. Apr. 22, '50, Margaret A. Plunkett; s. Charles E., Jr., William P.; d. Catharine (*Brown*), ('74), Sarah.

LORD, 1926, OSWALD B.—(*Industrial retired*)—Born March 15, 1903, Tarrytown, N.Y.; res. 2 Isle Ridge West, Hobe Sound, Fla. 33455; Exec. Com. 1926-1926S; Reunion Chmn., 50th Reunion; formerly Exec. V.P., Galey & Lord, (Div. of Burlington Industries); Pres., Judson Health Center, New York City, '41-'51; m. Dec. 7, '29, Mary Pillsbury; m. Apr. 7, '80, Comfort O'Connor; s. Charles Pillsbury ('56), Winston ('59).

LORD, 1922, WILLIAM GALEY—(*Industrial retired*)—Born July 1, 1901, Tarrytown, N.Y.; res. Box 363, Middle Lane, East Hampton, N.Y. 11937; University Council, '62-'67; Class Sec., '22-'50; formerly Textile Exec., V.P. and Dir., Burlington Industries; Dir., Southampton Hosp., '73-'79; Trustee, Guildhall, Easthampton, '70-'72; Vice Chmn., and Gov., Brooklyn Museum, '49-'66; Treas. and Dir., Sydenham Hosp., '44-'48; m. June 22, '25, Frances Norton; s. Sheridan N., ('50), Charles E., ('49).

LORD, 1959, WINSTON, M.A., LL.D.—(*Government*)—Born Aug. 14, 1937, New York, N.Y.; Pres., Council on Foreign Relations, 58 E. 68th St., New York, N.Y. 10021; res. 740 Park Ave., New York, N.Y. 10021; Advisory Committee on International Studies for Yale Consilium; Dir., Policy Planning Staff, Dept. of State, Oct. '73-Jan. '77; Mbr., Planning Staff of the National Security Council, '69-'73, and from '70 Spec. Asst. to Dr. Henry A. Kissinger, Asst. to the Pres. for National Security Affairs; Policy Planning Staff, International Security Affairs, Dept. of Defense, '67-'69; various positions, Dept. of State, '62-'67; Bd. of Dirs.: The Atlantic Council of the U.S., Center for Inter-American Relations, Council on Foreign Relations, International Rescue Committee, The Americas Society; Bd. of Gov., Atlantic Institute for International Affairs; Bd. of Advisors, Fletcher School of Law & Diplomacy, American Ditchley Found.; Pvt., Army National Guard, Trainee, Fort Dix, '61; m. May 4, '63, Bette Bao; s. Winston Bao; d. Elizabeth Pillsbury.

LORENSON, 1979, DAVID HAROLD—(*Business, Artist*)—Born Jan. 14, 1958, Medina, Ohio; Engr., (marine & generator) Cummins North Atlantic, Inc. (diesel engine development), 100 Allied Drive, Ded-

ham, Mass. 02026; freelance artist and cartoonist; res. 869 Beacon St., Apt. 8, Boston, Mass. 02215; permanent add. 15 Tanglewood Road, Bristol, Conn. 06010; Secy., Yale Club of Indiana, '81-'82; A.Y.A., '82; Marine Engine Development Engr., Cummins Engine Co., Inc., '79-'82.

LOUCKS, 1957, VERNON R., JR., M.B.A.—(*Business*)—Born Oct. 24, 1934, Evanston, Ill.; Pres. and Chief Exec. Officer, Baxter Travenol Laboratories, Inc., One Baxter Parkway, Deerfield, Ill. 60015; res. 1301 Loch Lane, Lake Forest, Ill. 60045; Alumni Fellow, Yale Corp.; Sr. Management Consultant, George Fry & Associates, Chicago, '63-'65; Baxter Travenol Laboratories, Inc.: Asst. to Pres. & Chief Exec. Officer, '66-'68, Administrative V.P., '68-'69, V.P. European Operations, '69-'71, Corporate V.P., Marketing, U.S. & Canada, '71-'72, Pres., Baxter/Travenol Div. & Corporate V.P., '72-'73, Corporate Sr. V.P., '73, Corporate Exec. V.P. '73-'76, Dir., '75, Pres., '76-, Chief Operating Officer, '76-; Vice Chmn., Suburban Campaigns, 1976 Crusade of Mercy; Chmn., Suburban Campaigns, 1977 Crusade of Mercy; Spec. Advisor to Dir., National Institute of Health, U.S.A.; Dir.: Economic Club of Chicago, John L. & Helen Kellogg Found., Protestant Found.; Assoc., Northwestern Univ.; Dir., JSK Charitable Found.; Trustee, Rush, Presbyterian St. Lukes Medical Center, Kemper Educational & Charitable Fund; Dir.: Continental Illinois Corp., Continental Illinois National Bank & Trust Co. of Chicago, Dun & Bradstreet Corp., Emerson Electric Co., Inc., Quaker Oats Co.; Mbr.: Chicago Club, Chicago Committee of the Chicago Council on Foreign Relations, Chicago Commonwealth Club, Commercial Club, Mid-America Club, Onwentsia Club; 1st Lieut., USMC, '57-'60; m. May, 1972, Linda Olson; s. Charles ('84), Gregory Srodon ('84), David, Eric; d. Suzy Srodon, Kristi.

LOUGHRAN, 1957, ANTHONY HOOKEY—(*Engineer*)—Born Nov. 4, 1929, Philadelphia, Pa.; Distr. Staff Mgr., Pacific Telephone, Room 612 H, 370 Third St., San Francisco, Calif. 94107; res. 324 Gethsemane St., Nevada City, Calif. 95959; Yale Club of San Francisco: Alumni Schools Com., '64-, Chmn., '65-'68, Pres., '70-'72, Bd. of Dir., '68-; A.Y.A., '72-'74; Piedmont City Council, '72 & '76; Mayor of Piedmont, '74-'76; Vice Mayor, '76-; Piedmont Council, Boy Scouts of America; Scoutmaster, '67-'70, Exec. Bd., '70-; Chmn., Natl. Defense Section, Commonwealth Club of Calif., '75-; Pres., Economic Round Table of San Francisco, '71-'72; Bd. of Dir., San Francisco Chapter Navy League; Marine Corps Reserve Officers Assn.; Pres. Alameda Chapter, '69-'70, National Dir., '72; Pres., Fleetwood

Chapter, Reserve Officers Assn., '72; Mbr., Harold Brown Soc. for Medical Research; Mbr., Bohemian Club; Col., USMCR, Active, '51-'55, Reserve '55-; m. Oct. 11, '52, Jean Stewart Krotzer; s. Edward Paul, III, Anthony Wiley; d. Jeanine, Suzanne.

LOVE, 1951, Ralph Frank—(*Business*)—Born Nov. 26, 1929, Boston, Mass.; Stock Trader, bus. and res. 180 Park Row, New York, N.Y. 10038; formerly Product Assessment Mgr., IBM; 1st Lieut., USAF, '51-'53; m. Dec. 19 '70, Magdalena Vitug; s. Joshua F.; d. Marissa V.

LOVEJOY, 1925, Winslow Meston, LL.B.—(*Law*)—Born Feb. 24, 1903, Montclair, N.J.; Lawyer, Ptnr. Lovejoy, Wasson, Lundgren & Ashton, Professional Corp., 101 Park Ave., New York, N.Y. 10178; res. Box 66, Oldwick, N.J. 08858; Exec. Com., Alumni Bd., '59-'61; Class Bequest Chmn., Alumni Fund; Class Agt., Yale Law School Fund; Pres., Yale Football "Y" Assn., '55-'58; Pres., Yale Club of New York City, '62-'64; Pres., Bd. of Managers, N.J. Reformatory at Annandale, '60-'66; V.P., Bd. of Managers, N.J. State Reformatory for Males, '66-'72; Township Com., Bedminster, N.J. '52-'57; Maj., AUS, Cavalry (Armored), Apr. '42-Jan. '46; Bronze Star; m. Dec. 18, '25, Betty Darlington Stoddard; m. Nov. 8, '33, Josephine Graham Post; s. Winslow M., Jr., ('50), William P., ('56), Robert B., ('59), Thomas A. ('66).

LOVETT, 1918, Robert Abercrombie, M.A., LL.D.—(*Finance*)—Born Sept. 14, 1895, Huntsville, Texas; Limited Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y.10005; res. Town Cocks Lane, Locust Valley, Long Island, N.Y. 11560; Chmn. Exec. Com., Union Pacific Railroad Co., '53-'66; Special Asst. to Sec. of War, '40-'41; Asst. Sec. of War for Air, '41-'45; Under Sec. of State, '47-'49; Dep. Sec. of Defense, '50-'51; Sec. of Defense, '51-'53; Trustee: Rockefeller Found. '49-'61, Carnegie Found. for the Advancement of Teaching, '37-'65, Carnegie Institution of Washington, '48-'71, Metropolitan Museum of Art, '31-'40; Life Mbr. Emeritus, Corp. of Mass. Institute of Technology, '61-; Mbr. Bd. of Managers, Presbyterian Hosp., N.Y., '26-'55; Lieut. Cmdr., Air Service, USN, '17-'18; Navy Cross, Distinguished Service Medal, Presidential Medal of Freedom, Grand Cross of the Order of Leopold II of Belgium; m. Apr. 19, '19, Adele Quartley Brown; s. Robert Scott, II ('49); d. Evelyn (*Brown*) (dec.).

LOVETT, 1950, Sidney, M.Div.—(*Ministry*)—Born May 1, 1928, Boston, Mass.; Senior Minister, First Church of Christ, Congregational, 12 S. Main St., West Hartford, Conn. 06107; res. 25 Pelham Road, West Hartford, Conn. 06107; Sr. Minister, First Church of Christ,

'76-; Conference Minister, Central Atlantic Conference, United Church of Christ, '73-'76; Sr. Minister, Union Church, Hinsdale, Ill., '66-'73; Pastor, Rock Spring Congregational Church, Arlington, Va., '57-'66; Pastor, First Congregational Church, Littleton, Mass., '53-'56; Dir., Alban Institute, Washington, D.C., '76-, Pres. '80-'83; m. June 22, '50, Joan Campbell; s. Sidney Charles Campbell ('82 M.Div.), Peter Augustus; d. Katherine (*Weymouth*), Margaret C., Elizabeth Parker.

LUFKIN, 1951, CHAUNCEY F.—(*Industrial*)—Born May 28, 1927, New York, N.Y.; Pres., Hytec, Inc., 711 Airdustrial Way, Olympia, Wash. 98501; res. 19 Country Club Drive, S.W., Tacoma, Wash. 98498; Campaign for Yale, Head Wash. State; m. July 11, '53, Elizabeth Heard; s. Chauncey F. III, Andrew; d. Wende (*Peniston*), Elizabeth.

LUFKIN, 1953, DAN WENDE, M.B.A., D.Sc.—(*Finance*)—Born Sept. 17, 1931, New York, N.Y.; Private venture capital, bus. 711 Fifth Ave., New York, N.Y. 10022; res. Wells Hill Rd., Lakeville, Conn. 06039; Rancher, Box 157, Prairie City, Ore. 97869; Governor, New York Stock Exchange; Commissioner of Environmental Protection, State of Conn., '71-'73; Author, "Many Sovereign States"; 1st Lieut., USMC, '53-'55; m. Jan. 14, '61, Elise Grace Blagden; d. Elise Grace Blagden ('85), Margaret Wende, Alison Wende, Abigail Flavilla.

LUFKIN, 1949, PETER WENDE, SR.—(*Industry*)—Born March 8, 1925, New York, N.Y.; Broker, Assoc., Business Opportunities, Inc., 2500 Hillsboro Road, Nashville, Tenn. 37212; res. 4310 Signal Hill Drive, Nashville, Tenn. 37205; Pres., Nashville Youth Hockey League, Inc. for 5 years; S/Sgt., Army Air Force, '43-'46; m. Feb. 2, '57, Blakeslee F. Cook; s. Peter W., Jr., H. Christopher, Timothy B.

LUMPKIN, 1957, RICHARD ANTHONY, M.B.A.—(*Business*)—Born Feb. 16, 1935, Chicago, Ill.; Pres., Illinois Consolidated Telephone Co., 121 South 17th St., Mattoon, Ill. 61938; res. 5 Lafayette Ave., Mattoon, Ill. 61938; Dir., First Natl. Bank, Mattoon; 1st Lieut., AUS, '57-'59; m. March 14, '64, Gail Gawthrop; s. Benjamin Iverson; d. Elizabeth Arabella.

LUSK, 1960, PETER A., M.B.A.—(*Finance*)—Born March 17, 1938, Port Chester, N.Y.; General Ptnr. and Dir. of Marketing, Forstmann-Leff Associates (investment management firm), 55 E. 52d St., New York, N.Y. 10055; res. 1115 Fifth Ave., Apt. 7-B, New York, N.Y. 10028; Lehman Brothers: Mgr., New Business '62-'66, Vice Pres., Lehman International, '66-'68, General Ptnr. and Mgr., Los Angeles, '68-'72; E.F. Hutton & Co., V.P., Mgr., West Coast Corporate Finance Dept., '72-'74; Co-Founder and Chmn. of the Bd., Federal Loan

Corp., '74-'76; m. Aug. 17, '79, Catherine Goldschmidt; s. Peter; d. Anne, Katherine.

LUTZ, 1972, KARL EVAN, J.D.—(*Law*)—Born Dec. 18, 1949, Dearborn, Mich.; Atty., Ptnr., Kirkland & Ellis, 200 East Randolph Drive, Suite 5700, Chicago, Ill. 60601; res. 703 Walden Road, Winnetka, Ill. 60093; American Bar Assn., '75-; Chicago Bar Assn., '75-; m. June 30, '73, Jeanne Daniel; s. Daniel Karl, Charles Littlefield.

LYDGATE, 1931, WILLIAM A.—(*Business*)—Born Nov. 18, 1909, Hawaii; Managing Dir., Earl Newsom & Co., Inc., 10 E. 53rd St., New York, N.Y. 10022; res. 425 Wynnewood Rd., Pelham Manor, N.Y. 10803; V.P., Bd. Mbr., Yale-in-China, '60-'70; Chmn., Volunteer Com., Westchester/Sound Area, The Campaign for Yale, '76-; Bd. Mbr., Foreign Policy Assn., Chmn., '66-'72; Trustee, St. Luke's-Roosevelt Hosp., United Hospital Fund, N.Y.; Dir., Mbr. Exec. Com., N.Y. Community Blood Council, '68-; m. 1931, Virginia E. Smith (divorced 1939); m. 1940, Constance Barry; s. John E., ('59), Barry, ('63), William A., Jr., ('68), Timothy E., ('73); d. Sarah Jean.

LYNCH, 1964, DENNIS PATRICK, M.B.A.—(*Finance*)—Born Sept. 13, 1941, Jersey City, N.J.; Investment Advisor, Lynch & Mayer, Inc., 650 Fifth Ave., 17th Floor, New York, N.Y. 10019; res. N. Rohallion Drive, Rumson, N.J. 07760; Co-owner, Lynch & Mayer, Inc., '76-; V.P. Sales, Smith, Barney & Co., '67-'75; QM 2-E5, USCG, '65-'66; m. Aug. 21, '65, Ann Marie Blades; s. Dennis P., Jr., William; d. Kathleen, Nora.

LYNCH, 1945, R. VINCENT—(*Business*)—Born Nov. 14, 1922, New York, N.Y.; Owner, Managing Ptnr., R.V. Lynch & Co., 1600 One Main Place, Dallas, Texas 75202; res. 9436 Meadowbrook, Dallas, Texas 75220; Chmn., Fund-raising for Southwest; Alumni Advisory Council; Chmn.: Riata Oil & Gas Co., Inc., Lynch Locke Corp., RVL Operating, Inc.; Chmn., Lane Wood, Inc., '62-'75; Dir., Lane Wood, Inc., '75; Dir., Richardson Savings & Loan, '71; Lieut., USN, (Naval aviator) '42-'45, Air Medal, 6 combat awards; m. Apr. 3, '48, Rose Peabody Parsons; m. Oct. 4, '58, Frances Nell Orand; s. R. Vincent, Jr., Alexander P., Charles Bruton, Peter Francis, Joseph Barrett Orand Lynch; d. Rose P.

M

MACDONALD, 1915, RANALD H.—(*Finance retired*)—Born Nov. 24, 1892, Brooklyn, N.Y.; no address available; m. June 2, '19; Anne Hunter Thompson; s. Ranald H., Jr., ('45); d. Anne (*Thomas*).

MACDONALD, 1972, RICHARD J.—no address available.

MACDONALD, 1973, STEPHEN JOSEPH, LL.B.—(*Law*)—Born Sept. 8, 1950, Toronto, Ontario, Canada; Lawyer, Assoc., Smith, Lyons, Torrance, Stevenson & Mayer, Barristers and Solicitors, P.O. Box 420, 2 First Canadian Place, Toronto, Ontario, Canada; res. 30 Church St., Apt. 703, Toronto, Ontario, Canada M5E 1S7; m. May 15, '77, Andrea Rosen.

MACKENZIE, 1975, KENNETH MALCOLM—(*Accounting*)—Born Jan. 20, 1952, Sault Ste. Marie, Ontario, Canada; Chartered Accountant, Price Waterhouse, 2200 One Lombard Place, Winnipeg, Manitoba, Canada R3B 0X7; res. 247 Elm St., Winnipeg, Manitoba, Canada R3M 3N5.

MACLEAN, 1961, KENNETH, JR., M.Arch.—(*Architecture*)—Born Apr. 22, 1939, Toronto, Canada; Ptnr., Amsler, Hagenah, MacLean Architects, Inc., 65 Long Wharf, Boston, Mass. 02110; res. 14 Bradford Rd., Hingham, Mass. 02043; S/Sgt E6, Army Natl. Guard, '64-'70; m. May 6, '67, Rebecca Barbour Cooke; s. Kenneth III; d. Rebecca Woolsey, Elizabeth Thomson, Mary Pickett.

MACLEISH, 1950, WILLIAM H.—(*Education*)—Born Aug. 7, 1928, Boston, Mass.; Editor, *Oceanus Magazine*, Woods Hole Oceanographic Institution, Woods Hole, Mass. 02543; res. 14 Cumloden Drive, Falmouth, Mass. 02540; Special Projects Editor, *Vision Magazine*, '58-'64; Dir., Cornell Latin American Year, '64-'66; Exec. Dir., Center for Inter-American Relations, '66-'68; Special Asst. to the Pres., Yale, '68-'70; 1st Lieut., AUS, '51-'54; m. Sept. 19, '53, Margaret Moll; d. Morellen, Meg.

MADDEN, 1969, B. PATRICK, M.B.A.—(*Finance*)—Born May 7, 1947, Steubenville, Ohio; Marketing Dir., V.P., First Bancorp., Inc., First Bank, One Church St., New Haven, Conn. 06510; res. 345 St. Ronan St., New Haven, Conn. 06511; Football Y Assn., Asst. Treas. '78-'80,

Treas., '80-; Teacher & Football Coach, Walpole, Mass., High School, '69-'70; Lending Officer, Woodbridge Bank & Trust Co., '71-'72; First New Haven Natl. Bank: New Business Development Rep., '73-'74, Mortgage Officer & Asst. V.P., '74-'75; Mbr., Yale Club of New Haven; New Haven Gridiron Club; United Way Volunteer; Albertus Magnus Coll., New Haven, 50th Anniversary Gift Com.; Dir., Amity-Woodbridge Historical Soc., '75-'76; Co-Chmn., Woodbridge Heart Assn. Fund Drive, '75; Pres., Bethany-Orange-Woodbridge Jaycees, '76-; Alternate, Woodbridge Repub. Town Com.; Conn. State Senate, '77-'79; Sgt., AUS, Conn. Army Natl. Guard, '70-'76; Bd. of Dir., Deer Island Corp., '74-'76; m. Aug. 16, '69, Deborah Russell Whitlock; d. Katherine Blee, Elizabeth Hale.

MADDEN, 1941, John Beckwith, M.A.(Hon.), M.B.A.—(*Finance*)—Born Jan. 22, 1919, Brooklyn, N.Y.; Managing Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 218 Columbia Heights, Brooklyn, N.Y. 11201; Successor Trustee, Yale, Nov. 8, '75-; Chmn., Investments Committee; Mbr., Budget Committee, Educational Policy Committee, Finance & Administration Committee; Brown Brothers Harriman & Co.: '46, Assistant Manager, '50, Manager, '51, Ptnr., '55, Managing Ptnr., '69-; Boys' Club of N.Y., '49-, Asst. Treas., '55-'65, Treas., '65-'69, V.P., '69-; Brooklyn Hospital, '59-'81, Finance Committee, Selection Committee, '66; James Found., Dir., '77-: Joslin Diabetes Found., '75-'79, Mbr. of Corp.; N.Y. Community Trust, '77-: Mbr., Distribution Committee, '77-, Finance Committee, '77-, Audit Committee, '77-; Packer Collegiate Institute, '59-'75: Trustee, '59-'73, Pres., '62-'73, Mbr. of Bd., until '75; VNA of Brooklyn, '66-'75, Chmn., Financial Advisory Committee; Capt., AUS, '41-'45 (active), '46-'52 (Reserves); Dir., Treas., RTA, '69-'76; m. June 18, '50, Mary Audrey Ritter; s. John B., Jr., ('76), Peter F.; d. Nancy F. (*Gioia*) ('73).

MALLON, 1919, John Howard—(*Industry retired*)—Born Jan. 10, 1896, Cincinnati, Ohio; res. 800 S. 4th St., Apt. 705, Louisville, Ky. 40203; formerly Senior V.P., Louisville Cement Co.; Chmn.: Louisville Fund for the Arts Campaign, '52, Louisville Community Chest, '60; Dir., Louisville Water Co., '59-'64, '70-'77; Social Services Advisory Com. to Kentucky Dept. of Economic Security, '64-'65; 1st. Lieut., 151st F.A., 42d Div., AEF, Apr. '17-May '19; m. June 16, '21, Eleanor Coward; s. John C. ('45); Thomas R. ('45W).

MALLORY, 1928, Barton Lee, Jr.—(*Business*)—Born Oct. 1, 1905,

Memphis, Tenn.; Chmn. of the Board, Memphis Compress & Storage Co., P.O. Box 9436, 2350 Florida St., Memphis, Tenn. 38109; res. 4255 Gwynne Rd., Memphis, Tenn. 38117; m. June 23, '33, Agnes A. Howell; m. June 5, '74, Gwenllian Jones; s. Barton Lee, III ('61), Irwin Howell, ('66).

MALLOY, 1956, TERRENCE R., M.D.—(*Medicine*)—Born May 27, 1934, Philadelphia, Pa.; Chief of Urology, Penn. Hospital, Prof. of Urology, Univ. of Penn., bus. add. 2136 W. Passyunk Ave., Philadelphia, Pa. 19145; res. 1283 Club House Road, Gladwyne, Pa. 19035; Pres., Yale Lacrosse Alumni Assn., '68-'80; Pres., Philadelphia Urologic Society, Professional Staff, Penn. Hospital; 1st Lieut., AUS, Nov. '56-Sept. '58; m. Feb. 28, '70, Michele Munley; d. Kelly, Tara, Courtney Moire.

MARINELLI, 1978, DAVID LEONARD, M.D.—(*Medicine*)—Born Dec. 26, 1955, Bristol, Conn.; Radiology Resident, St. Mary's Hospital, Waterbury, Conn. 06702; res. (as of June '83), 216 Sabine Ave., Narberth, Pa. 19072; m. Sept. 20, '80, Elizabeth Way.

MARSH, 1963, WILLIAM LEE, J.D.—(*Law*)—Born March 27, 1941, Baltimore, Md.; Lawyer, General Counsel, Health and Tennis Corp. of America, One Century Plaza, 2029 Century Park East, Suite 2810, Los Angeles, Calif. 90067; res. 13810 Northwest Passage, Apt. 208, Marina Del Rey, Calif. 90291; Administrator, Ill. Appellate Court First Dist., Chicago, Ill., '73-'81; Warrant Officer, Army Intelligence, '63-'66.

MATHEWS, 1951, CRAIG, LL.B., LL.M.—(*Law*)—Born Oct. 19, 1929, Columbus, Ohio; Ptnr., Leva, Hawes, Symington, Martin & Oppenheimer, 815 Connecticut Ave., N.W., Suite 1001, Washington, D.C. 20006; res. 9301 Harrington Drive, Potomac, Md. 20854; Assoc. Fellow, Berkeley College, '75-; A.Y.A. Assembly Delegate, '72-; A.Y.A. Bd. of Gov., '73-'75; Pres. Yale Club of Washington, D.C., '70-'71; Mbr.: Am. Bar Assn., Distr. of Columbia Bar, Am. Soc. of Internatl. Law; Pres., Environmental Law Institute, '72, Chmn., '78-; 1st Lieut., AUS (Infantry) '54-'57; m. March 5, '60, Harriett Elizabeth Chutter; s. Scott Chutter; d. Lynne Caie.

MATHIAS, 1955, PHILIP H.—(*Business*)—Born May 20, 1933, Middletown, Pa.; Distr. Mgr., Bell Telephone Co. of Pa., 1617 JFK Blvd., 4th Floor, Philadelphia, Pa. 19102; res. 40 Paxon Hollow Rd., Media, Pa. 19063; m. Aug. 10, '57, Shirley J. Fischer; s. Mark H.; d. Marcy Lynne, Sharon.

MATTLIN, 1973, FRED W.—(*Law*)—Born Jan. 26, 1951, Chicago, Ill.;

Ptnr., Ross & Hardies, 2000 W. Glades Road, Suite 400, Boca Raton, Fla. 33431; res. 6930 Palmetto Circle South, Apt. 208, Boca Raton, Fla. 33433; m. July 26, '81, Walls.

MAYER, 1951, CHARLES THEODORE—(*Industrial*)—Born Feb. 5, 1924, Vienna, Austria; bus. and res. 4975 Rockwood Pkwy., N.W., Washington, D.C. 20016; Chmn. and Pres., Foreign Policy Discussion Group, Washington, '68-; Chmn., Transat Energy, Inc., '77-; Chmn., Centre for a Free Society, Inc., '78-; U.S. Delegate, Société Générale de Belgique, '52-'77; Consultant and Spec. Asst. to Undersecretary of Defense for Policy, Pentagon, '82-; 1st Lieut., Army, '43-'46, '51-'53; m. May 23, '56, Countess Franziska Starhemberg; s. Peter Georg, Carl Christian, d. Elisabeth Marie, Beatrice Marie.

MAYOR, 1959, MICHAEL B., M.D.—(*Medicine*)—Born Oct. 29, 1937, Bryn Mawr, Pa.; Assoc. Prof., Clinical Surgery in Orthopaedics, Staff Orthopaedic Surgeon, Dartmouth Hitchcock Medical Center, 2 Maynard Road, Hanover, N.H. 03756; res. 24 Occom Ridge Road, Hanover, N.H. 03755; Special Project Committee, Class of 1959 25th Reunion; Consultant Orthopaedist, U.S. Veterans Hospital, White River Junction, '71-; Secy., New Hampshire Orthopaedic Assn., '73-'75, Pres. '75-'76; m. June 11, '61, Elizabeth Fenner Rowland; s. Rowland Brook ('84); d. Anna Hyatt, Harriett Sloane, Catherine Elizabeth.

McAFEE, 1982, WILLIAM ANDREW—(*Publishing*)—Born Sept. 28, 1959, Cleveland, Ohio; City Editor, *Black River Tribune*, Box 150, Ludlow, Vt. 05149; Features Editor, *North Country News;* res. 65 Andover St., Ludlow, Vt. 05149.

McBRIDE, 1964, JONATHAN EVANS—(*Finance*)—Born June 16, 1942, Washington, D.C.; Pres., Exec. Search Consultant, McBride Associates, Inc., 1511 K St., N.W., Washington, D.C. 20005; res. 3704 Blackthorn Court, Chevy Chase, Md. 20815; Alumni Fund Agt., '69-; 5th Reunion Special Gifts Com., '69; Chmn., 10th Reunion Special Gifts Com., '74; Mbr., Bd. of Dir. Yale Alumni Fund, '75-'80; Asst. Chmn., Yale Alumni Fund, '76-; 1964 Class Secy., '79-; Account Exec., Merrill Lynch, Pierce, Fenner & Smith, Washington, '68-'72; V.P., Lionel D. Edie & Co., Investment Counsel, New York, '72-'76; V.P. Simmons Associates, Inc., Washington, D.C., '76-'79; Pres., McBride Associates, Inc., '79-; Lieut., USNR, June '64-June '68; Navy Unit Commendation, Vietnam Service Medal, Republic of Vietnam Campaign Medal; m. Sept. 5, '70, Emilie E. Dean; s. Webster Dean; d. Morley Evans.

McCALLUM, 1924, REVELL, M.A.—(*Industrial retired*)—Born Dec.

28, 1901, Northampton, Mass.; res. 3927 E. Calle de Jardin, Tucson, Ariz. 85711; m. Dec. 28, '27, Esta Wilman; s. Douglas; d. Joanne.

McCALLUM, 1968, Robert Davis, Jr., J.D., B.A., M.A. (1st Class), Christ Church, Oxford—(*Law*)—Born Jan. 30, 1946, Memphis, Tenn.; Attny., Ptnr., Alston & Bird, 1200 C&S National Bank Bldg., 35 Broad St., Atlanta, Ga. 30335; res. 122 Brighton Road, N.E., Atlanta, Ga. 30309; Treas., Class of 1968, '68-'83; Ga. Alumni Schools Committee, '73-'83; Ga. Rep. to A.Y.A., '82; Secy., Yale Club of Georgia, '82-; Chmn., Yale Law School Assn. of Georgia, '79-'83; m. June 28, '69, Mary Rankin Weems; s. R. Davis III, John Bailey.

McCARTHY, 1960, Charles Edward, M.A.T.—(*Education*)—Born March 15, 1938, Hartford, Conn.; Educational Consultant, bus. & res. 168 Brace Road, West Hartford, Conn. 06107; Asst. Dir., Com. on Enrollment & Scholarships, July '60-July '62; Asst. Dir. of Admissions, July '60-July '67; Dean, Timothy Dwight Coll., Sept. '63-June '64; Dir., Cooperative Program for Educational Opportunity (Based at Yale & Univ. of Chicago), '62-'71; Founder & Dir., The Transitional Year Program (based at Yale), '66-'68; Consultant, U.S. Office of Education, Dept. of H.E.W., '66-'67; Sr. Counselor, Univ. of Chicago Laboratory Schools, '71-'72; Acting Dir. of Admissions, Trinity Coll., Hartford, June '72-Sept. '72; Sr. Counselor, The American School in London, England, '72-'74; Educational Consultant, '74-; m. Aug. 27, '60, Betsy Foster Peck (dec. July 23, '68); m. June 28, '73, Martha Reid Paradis; s. Timothy Charles, Michael Ryan.

McCRARY, 1932, John Reagan—(*Business*)—Born Oct. 13, 1910, Calvert, Texas; Chmn., Texcomm, Inc., 161 E. 61st St., New York, N.Y. 10021; res. Sunday Hill, 10 Shelter Rock Rd., Manhasset, N.Y. 11030; Commissioner, Bicentennial, N.Y.C., '76; Lieut. Col., USAF, '41-'45; Legion of Merit, Air Medal, Bronze Star; m. 1933, Sarah Brisbane; m. 1945, Jinx Falkenburg; s. Michael Brisbane, John Reagan, Jr., Kevin Jock.

McCULLOUGH, 1955, David G.—(*Literary work*)—Editor, American Heritage Publishing Co., Inc., 551 Fifth Ave., New York, N.Y. 10017; res. Box 148, Music St., West Tisbury, Martha's Vineyard, Mass. 02575; m. Dec. 18, '54, Rosalee Ingram Barnes; s. David Gaub, Jr., William Barnes, Geoffrey; d. Melissa Barnes, Doreen Kane.

McELROY, 1945, Benjamin Thomas, J.D.—(*Law*)—Born Nov. 22, 1922, Dallas, Texas; Attny., Managing Ptnr., McElroy & Boyd, 2505 Republic National Bank Tower, Dallas, Texas 75201; res. 4428 Lorraine Ave., Dallas, Texas 75205; Lecturer, SMU School of Law (Texas Procedure), '75-'76; Adjunct Prof., SMU School of Law;

Research Fellow, Southwestern Legal Found., '70-'76; Officer & Dir., Dallas Bar Assn., '66-'69; Mbr., Grievance Com., State Bar of Texas, '68; Committee Sections, A.B.A., '66-'76; Legislative Asst. to Texas Congressman, '50; Asst. Attny. Gen. of Texas, '51-'52; V.P., Repub. Men's Club of Dallas Cty., '76; Lieut. (j.g.), USNR, '44-'46; Overseas Citations & 4 Service Ribbons; m. July 12, '59, Linda Lee Harris; s. Benjamin Thomas, Jr., Andrew Harris; d. Elizabeth Lynn, Leslie Jane.

McGAUGHEY, 1945, GUY ENNIS, JR., J.D.—(*Business*)—Born Jan. 19, 1924, Olney, Ill.; Attny., Proprietor, McGaughey Bldg., Box 380, Lawrenceville, Ill. 62439; res. R.R. 1, Lawrenceville, Ill. 62439; Lieut. (j.g.), USNR, Underwater Demolition, '41-'46; Silver Star; m. Dec. 26, '46, Marilyn Pilkington; m. Jan. 21, '78, Shirley Tidswell; s. Guy E. III, Gordon Bruce.

McGAULEY, 1933, JOHN MICHAEL—(*Insurance*)—Born Sept. 16, 1908, New York, N.Y.; Consultant, Life Insurance & Pension Plans, L. M. Huppeler Co., Inc., 101 Park Ave., New York, N.Y. 10178; res. New York Athletic Club, 180 Central Park South, New York, N.Y. 10019; Major, Air Corps, June '42-June '46; m. June 7, '43, Ruth Adams (divorced).

McGREGOR, 1956, JACK E., LL.B.—(*Law*)—Born Sept. 22, 1934, Kittanning, Pa.; Pres., Hampton-Douglas Corp. (new venture investment and management), Village Green, Bedford, N.Y. 10506; res. East Middle Patent Rd., R.F.D. 2, Bedford, N.Y. 10506; Attny., Read Smith, Shaw & McClay (Pittsburgh), '62-'68, (Washington), '70-'71; Cofounder & Pres., Pittsburgh Penguins Hockey Club, '66-'70; Gov., Natl. Hockey League, '67-'68; Gen. Counsel, Potomac Electric Power Co., '72-'74, V.P. & Gen. Counsel, New England Petroleum Corp., '74-'75 (subsidiary of Carey Energy Corp.); General Counsel, Exec. V.P., Carey Energy Corp., '74-'79; Chmn., Hampton-Windsor Corp., '81-; Chmn., International Water Resources Ltd., '81-; Pres., Hampton-Douglas Corp., '79-; Penn. State Senator, '62-'70; U.S. Economic Stabilization Program; Asst. Legal Advisor for Economic Affairs, U.S. Dept. of State, '71, Gen. Counsel, Pay Board '72; Capt., USMC. '56-'59 (active), '59-'62 (reserve); m. Nov. 23, '55, Carol Dangerfield; s. Douglas Hampton; d. Nancy Dangerfield, Elisabeth Keeble, Heather Muir.

McKEE, 1919, ELMORE McNEILL, B.D., M.A. (Hon.), D.D.—(*Ministry retired*)—Born March 28, 1896, Ridgewood, N.J.; res. 32 Avery Heights, Hartford, Conn. 06106; Sec. Class of 1919, '74-'79; Assoc. Fellow, Calhoun College, '77-'79; Asst., St. John's Church, Water-

bury, '21-'22; Rector, St. Paul's, New Haven, '23-'27; Chaplain, Yale Univ., '27-'31; Rector, Trinity Church, Buffalo, '31-'36; St. George's, N.Y.C., '36-'46; Head of Mission, Am. Friends Service Co., U.S. Zone, Germany, '46-'47; Field Reporter & Originator, The People Act Project, 20th Century Fund, '50-'51; Dir., same project, Ford Found., '52-'55; Consultant-Lecturer, Peace Corps Training Center for Latin America, Univ. of New Mexico, '63-'64; School Community Co-ordinator for tutorials, Albuquerque Public Schools, '64-'67; Trustee, Taft School, '26-'30; Dir., Post-Graduate Hosp., N.Y.C., '39-'46; Exec. Com., Comm. on Just & Durable Peace, Federal Council of Churches, '40-'43; 1st Lieut., Sanitary Corps., '17-'19; m. 1918, Katharine A. Truslow (dec.); m. 1949, Sona K. Gilkinson (dec.); m. 1962, Jessie C. Beardshear; s. Elmore McNeill, Jr., ('44).

McLANE, 1953, James Price—(*Business retired*)—Born Sept. 13, 1930, Pittsburgh, Pa.; res. 2C Brackett Place, Marblehead, Mass. 01945; formerly Advertising Sales, Time, Inc.; General Mgr., General Mills, Inc.; U.S. Army Counter Intelligence, '53-'55; m. Jan. 13, '54, Barbara Chapin Hamby (divorced '73, now deceased); s. James P., Peter C., Matthew D.; d. Susan M.

McLAREN, 1972, Michael G., J.D.—(*Law*)—Born Jan. 29, 1950, Joliet, Ill.; Attny., Ptnr., Thomason, Hendrix & Harvey, P.O. Box 3544, Memphis, Tenn. 38173; res. 3044 Cuba Millington, Millington, Tenn. 38103; Alumni Fund Agent, '72-'76; Assoc., Rickey Shankman Blanchard, '76-'79; Ptnr., Thomason, Hendrix & Harvey, '80-; Bd. of Dirs., Memphis Circuit Playhouse; Lawyer, Referral Committee, Memphis Bar Assn.; Deer Island Club Corp., Treas., '77-'79, Pres., '79-'81, Secy., '81-'83; m. Dec. 20, '75, Karen Yandell; s. Michael Christopher; d. Annie.

McLEAN, 1950, Robert III, M.A.—(*Business*)—Born May 23, 1928, Baltimore, Md.; Pres., Cushman & Wakefield of Penn., Inc. (real estate), One Oxford Centre, Suite 3345, 301 Grant St., Pittsburgh, Pa. 15219; res. 601 West Drive, Sewickley, Pa. 15143; Bd. of Dirs., Berkeley Divinity School at Yale, '80-; Mbr., Yale Real Estate Investment Committee, '81-; Yale Fund Drive & Yale Enrollment Com., Philadelphia Region; Gen. Chmn., Greater Germantown Alliance, '73-'75; V.P. of Admin., Philadelphia 1976 Bicentennial Corp., '68-'70; S/Sgt, USMC, '53-'56; m. May 21, '60, Elizabeth Madison Lewis; s. Alexander, John; d. Elizabeth, Mary.

McNALLY, 1979, Edward E., J.D.—(*Law, Government*)—Born Feb. 14, 1956, Chicago, Ill.; Special Asst. to the Asst. Attny. General, U.S. Dept. of Justice, Office of Legal Policy, 10th & Constitution Ave.,

N.W., Washington, D.C. 20530; res. 5000 Belle Rive Terrace, Mount Vernon, Va. 22309; permanent add. 11 Bridlewood Road, Northbrook, Ill. 60062; Yale Alumni Fund Class Agent, '79-'83; Press Aide, Office of the Vice Pres. of the U.S., Summer '81; Dir., Governors' Project on Organized Crime & Narcotics Trafficking, '83.

McNAMARA, 1951, THOMAS PHILIP—(*Industrial*)—Born Dec. 16, 1929, New Haven, Conn.; Manufacturing Mgr., Container Machinery Dept., Metal Products Div., Koppers Co., Inc., Glen Arm Rd., Glen Arm, Md. 21057; res. 13611 Brookline Rd., Baldwin, Md. 21013; m. July 17, '54, Pearl Podlich; s. Thomas Philip, Jr., Robert William; d. Sandra Ann.

McPHEE, 1973, STEPHEN JOSEPH, M.D.—(*Medicine*)—Born Aug. 31, 1951, Boston, Mass.; Physician; Asst. Prof. of Medicine, Univ. of California, Division of General Internal Medicine A-405, Dept. of Medicine, San Francisco, Calif. 94143; res. 171 Juanita Way, San Francisco, Calif. 94127; Yale Alumni Schools Committee, Maryland, '75-'80, California, '81-; Asst. Chief of Service, Johns Hopkins Hospital, '80; Asst. Prof. of Med., Univ. of Calif., San Francisco, '80-; m. March 10, '79, Patricia E. Perry; s. Christopher Perry.

MEEK, 1960, JOHN BURGESS—(*Industrial*)—Born Aug. 1, 1938, Huntington, West Virginia; V.P., Virginia Chemicals, Inc., 3340 West Norfolk Rd., Portsmouth, Va. 23703; res. 7411 Cortlandt Place, Norfolk, Va. 23505; Chmn., Alumni Schools Com., '71-'75, '75-'82; Co-Chmn., Special Gifts, Va. Campaign for Yale, '76; Mbr., Am. Institute of Chemical Engineers, '65-; Pres., Norfolk Symphony Assn., '75-'76; Lieut., USN, '61-'65; m. June 17, '61, Sally Ann Cooke; s. John B. III; d. Elizabeth Ashby.

MEHTA, 1976, ARJAY SINGH, M.Phil.—(*Transportation*)—Born Feb. 22, 1954, Berne, Switzerland; Indian Railway Traffic Service; res. Jeewan Niwas, near Chetak Circle, Udaipur, 313001, Rajasthan, India; m. July 20, '79, Aditi Uhosh; d. Ananya.

MENTON, 1953, JOHN DENNIS—(*Business*)—Born Jan. 6, 1932, Baltimore, Md.; V.P., Internat'l Marketing and Technical Operations, Owens Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659; res. 28683 East River Rd., Perrysburg, Ohio 43551; Sec., Alumni Assn. of Maryland, '56; m. Nov. 3, '56, Eleanor Stinson; s. John Dennis, Jr.; d. Katharine Stinson.

MERRILL, 1929, HENRY RIDDLE—(*Industrial retired*)—Born Nov. 14, 1906, Glens Falls, N.Y.; res. 335 Beloit Ave., Winter Park, Fla. 32789; formerly V.P. & Dir., Norton Co., Troy, N.Y.; Treas., Yale Class of 1929, '29-'74; Alumni Bd., '63-'66; Chmn., Regional Alumni Fund

Com., Alumni Assn. of Northeastern N.Y., '58-'62, Assn. Pres., '64-'66; m. Apr. 27, '39, Lois Anne Myers; s. John, ('67); d. Susan (*Grimes*).

MEYER, 1954, RUSSELL WILLIAM, JR., J.D.—(*Business*)—Born July 19, 1932, Davenport, Iowa; Chmn., Pres., Cessna Aircraft Co., P.O. Box 1521, Wichita, Kansas 67201; res. 600 Tara Court, Wichita, Kansas 67206; Trustee, Cleveland Alumni Scholarship Com., '63-'74; 25th Reunion Gift Committee, '78-'79; 1954 Class Council, '78-; Attny, Arter & Hadden, '61-'66; Pres., Grumman American Aviation, '66-'74; Bd. of Dir., General Aviation Manufacturers Assn., '72-, (Chmn. of Bd., '73-'74); Dir., Fourth National Bank, '75-; Kansas Gas & Electric, '82-; Trustee, Wichita State Univ. Endowment Assn., '75-; Wesley Medical Center Endowment Assn., '77-; Bd. of Dir., United Way of Wichita & Sedgwick Cty., '76-; Capt., USAF, Jet Pilot, '55-'59, USMCR, '59-'65; m. Aug. 20, '60, Helen Scott Vaughn; s. Russell W., III, Jeffrey V., Christopher M.; d. Carolyn L., Elizabeth E.

MEYERS, 1982, BRYAN FITCH—(*Student*)—Born March 27, 1960, Chicago, Ill.; Medical Student, 5200 S. Blackstone, Chicago, Ill. 60615; res. 37 Strauss Lane, Olympia Fields, Ill. 60461; Ens., USN (commissioned Oct. '83).

MICHEL, 1926, ANTHONY LEE, LL.B.—(*Law retired*)—Born Oct. 24, 1905, Simla, India; res. 1420 Sheridan Road, Apt. 5-E, Wilmette, Ill. 60091; formerly, Ptnr., Gardner, Carton & Douglas; m. Nov. 29, '33, Sarah Prescott; s. Anthony Riker ('59); d. Eda (*Pallier*), Mary (*Kuppenheimer*).

MILES, 1937, RICHARD CURTIS—(*Business*)—Born Aug. 7, 1915, New Haven, Conn.; Management Consultant, McKinsey & Co., Inc., 55 E. 52d St., New York, N.Y. 10022; res. 380 Stanwich Road, Greenwich, Conn. 06830; Maj., USAF, '42-'46, Bronze Star; m. Dec. 29, '48, Joan Hayes (dec. July '73); m. Feb. 5, '83, Nina Miller; s. Richard C., Jr.

MILLER, 1939, ANDREW OTTERSON, LL.B.—(*Law retired*)—Born Oct. 28, 1917, New York, N.Y.; bus. White & Case, 14 Wall St., New York, N.Y. 10005; res. Ridge Rd., Laurel Hollow, Syosset, N.Y. 11791; also 110 via Vizcaya, Palm Beach, Fla. 33480; Ptnr., White & Case, '56-'74, Assoc., '46-'56; Alumni Fund Agt., '42-'48; Dir., Yale Club of Long Island, '48-'52; Class Sec., '70-'73; Dir.: Distillers Corp.-Seagrams Ltd., '50-'56, Nease Chemical Corp., '62-'72, Lanvin-Charles of the Ritz, Inc., '61-'72, Salant & Salant Inc., '64-'74, Argus Inc., '69-'70, Chicago Pneumatic Tool International, '60-'62; Trustee: St. Barnabas Hosp., N.Y.C., '54-'74, Non-Partisan Civic Assn., Long

Island, '54-'64, Police Relief Assn. of Long Island, '56-, Center for Study of Presidency, '64-; Maj., USAAF, June '42-Dec. '46; m. Nov. 7, '42, Jeanne Loring White; s. Jeffrey Clark, ('65), Dwight Ames, ('67), Bradford Putnam; d. Constance Loring, Deborah Brewster.

MILLER, 1939, CHARLES LEWIS, JR.—(*Finance retired*)—Born Aug. 26, 1916, Little Rock, Ark.; res. 56 West Hill Dr., West Hartford, Conn. 06119; formerly V.P., Conn. Bank & Trust Co., Hartford, Conn.; Alumni Board, '66-'70; 1st Lieut., USAAF, Oct. '42-Feb. '46; Treas., Deer Island Club Corp., '47-'48, Dir., '82-'83; m. April 4, '42, Virginia Little; s. Thomas C., ('70); d. Elizabeth L.

MILLER,1967, JAMES WHIPPLE, Ph.D.—(*Publishing*)—Born May 7, 1945, Evanston, Ill.; Publisher/Editor, *Digest of Financial Planning Ideas*, Consolidated Capital Communications Group, Inc., 1900 Powell St., Suite 1000, Emeryville, Calif. 94608; res. 162 Panoramic Way, Berkeley, Calif. 94704; formerly Asst. Prof., Oriental Language Dept., Univ. of Calif., Berkeley; Alumni Schools Committee, '81-; m. May 15, '66, Pamela Silin (divorced); d. Amanda Sherwood, Emily Snowell, Eliza Whipple.

MILLER, 1970, THOMAS CLAIBORNE, Ph.D.—(*Banking*)—Born Nov. 20, 1947, Hartford, Conn.; Exec. V.P., Bankers Finance Investment Management Corp., 1800 N. Kent St., Arlington, Va. 22209; res. 4001 Wakefield Dr., Annandale, Va. 22003; Lecturer in English, Univ. of Calif., Los Angeles, '75-'76; formerly Trust Dept., Riggs National Bank, Washington, D.C.; m. Dec. 17, '75, Greta Eisner; ss. Joseph E. Eisner.

MILLER, 1969, WENTWORTH EARL, J.D.—(*Law*)—Born Oct. 23, 1947, Oberlin, Ohio; Attny., Businessman (self-employed); res. 499 12th St., Brooklyn, N.Y. 11215; Asst. D.A., Kings Co., Brooklyn, '77-'80; Asst. U.S. Attny., E.D.N.Y., '80-'82; m. July 13, '71, Joy Marie Palm; s. Wentworth Earl III, Gillian Palm; d. Leigh Carolyn.

MILLS, 1934, EDWARD ENSIGN—(*Publishing retired*)—Born Nov. 25, 1911, Woodmere, N.Y.; res. Belgo Rd., Lakeville, Conn. 06039; formerly Exec. V.P., David McKay Co., Inc., Book Publishers; Governor, Yale Univ. Press, '59-'70; Alumni Fund Class Agent, '82; 1st Lieut., AUS, '43-'46; m. Apr., 19, '41, Julie Chapman; s. Edward Shorney II, ('65), Peter Westbrook, Jonathan Quimby, ('69); d. Julie Carey (*O'Brien*).

MILLS, 1932, JAMES PAUL—(*Finance retired*)—Born Nov. 7, 1908, Radnor, Pa.; bus. Hickory Tree Farm, Box 125, Middleburg, Va. 22117; res. Box 125, Middleburg, Va. 22117; Investment Banking, Smith, Barney & Co., '32-'41; Managing Dir., Slick Airways, N.Y.C.,

'46-'49; Dir.: Middleburg Natl. Bank, Allegheny Airlines, '41-'46; Arthritis Found., Dir. & V.P., '50-; Trustee & Chmn., Finance Com., Fauquier Hosp., '52-'70; Trustee, M.C. duPont Found.; Hon. Chmn., Va. Arthritis Found.; V.P.: Va. Thoroughbred Assn., Va. Hereford Breeders Assn.; Lieut. Col., USAF, May '41-July '48; Bronze Star; m. Nov. 27, '35, Alice duPont; s. James Paul, Jr.; d. Mary Chichester (*Smith*), Phyllis Overton (*Wyeth*).

MITCHELL, 1967, H. Coleman, Jr.—(*Television*)—Born Jan. 13, 1944, Melrose, Mass.; Television Producer, "Gimme A Break" (half hour situation comedy), NBC-TV; Secy., V.P., Uncle Toby Productions; bus. and res. 10303 Valley Spring Lane, Toluca Lake, Calif. 91602; Writer, Story Editor, Exec. Script Consultant, M.T.M. Enterprises, The Bob Newhart Show, Rhoda, etc., '74-'77; Independent Producer affiliated with Columbia Pictures Television, '77-'81; Producer, "Gimme A Break," '81-'83; m. Sept. 29, '73, Gloria A. Carbone; s. Rory Coleman.

MITCHELL, 1939, Harry H., LL.B.—(*Business*)—Born Jan. 23, 1917, Hartford, Conn.; Chmn. of Bd. & Chief Exec. Officer, California Life Insurance Co. & California Life Corp., 3255 Wilshire Blvd., Los Angeles, Calif. 90010; res. 1733 Bonita Vista Drive, La Canada, Calif. 91011; Capt., AUS, '43-'46; Cross of Knight, Order of Dannebrog-Denmark; m. Aug. 2, '47, June Elizabeth Merrill; s. Harry Douglas; d. Leslie Ann.

MITINGER, 1953, Joseph Berry, LL.B.—(*Law*)—Born Oct. 27, 1930, Greensburg, Pa.; Lawyer, Ptnr., Mitinger & Mitinger, 713 First National Bank Bldg., Greensburg, Pa. 15601; res. 655 Oak Hill Lane, Greensburg, Pa. 15601; Yale Club of Pittsburgh: Dir. '75-, Enrollment & Scholarship Com., '60-'65; City Solicitor, City of Greensburg, '65-'78; Pres.: Rotary Club of Greensburg, '66, YMCA of Greensburg, '67-'68, United Way of Central Westmoreland Cty., '74; Kiski School, '78-'80; Greensburg Found., '76-'83; 1st Lieut., AUS, F.A., June '54-June '56; m. July 25, '59, Suzanne D. Birmingham; d. Elizabeth B. ('83), Alice B. ('85), Louise P.

MONTESANO, 1983, Michael John III—Born Sept. 10, 1961, Buffalo, N.Y.; res. 73 Saranac Ave., Buffalo, N.Y. 14216.

MOORE, 1973, David Clement, Diplome I.E.P. (Paris), M.S.—(*Finance*)—Born Aug. 19, 1952, Paris, France; Mgr., Schlumberger Investment Services B.V., Dalsteindreef 59, 1112 XC Diemen, Netherlands; res. 77 Rue de Prony, Paris 75017, France; m. 1978, Marianne Julia; s. Philip.

MOORE, 1945, James I., LL.B.—(*Law, Real Estate*)—Born Feb. 2,

1923, Brooklyn, N.Y.; Attny. & Realtor, bus. & res. 219 E. 17th St., New York, N.Y. 10003; Class of1945 fund raising; Sgt., AUS, Feb. '43-Nov. '45; m. May 1, '54, Carvel Hidlay; s. James I., Jr., John H.

MOORE, 1936, RICHARD ANTHONY, LL.B., M.A.(Hon.)—(*Law*)—Born Jan. 23, 1914, Albany, N.Y.; Of Counsel, Wilner & Scheiner, 1200 New Hampshire Ave., N.W., Washington, D.C. 20036; res. 4917 Rockwood Parkway, N.W., Washington, D.C. 20016; Southern Calif. Chmn., Yale Program for the Arts and Sciences, '61-'63; University Council, '66-'72, Development Bd., '64-'72, President's Committee on Honorary Degrees, '65-'67; Mbr., Washington Bar Assn.; Founder and Ptnr., Television Station, Tulsa, Okla; Co-Producer, Weekly Public Affairs Television Series on NBC, Washington, D.C.; Breed, Abbott & Morgan, '39-'41; Cravath, Swaine & Moore, '42; Lawyer and Exec., American Broadcasting Co., '46-'51; Pres., Times Mirror Broadcasting Co., '51-'62; Pres., Southwestern Cable TV Co., '62-'69; Government Service, '70-'75; Of Counsel, Wilner & Scheiner, '75-; Dir., Los Angeles Chamber of Commerce, '57-'64; Mbr., Los Angeles Mayor's Committee on Human Rights, '57-'62; Panel Mbr., Pres. Eisenhower's Commission on National Goals, '57-'59; Dir., Hollywood Bowl, '54-'60; Dir., Educational TV Station KCET, Los Angeles, '63-'68; Spec. Asst. to Attny. General of U.S., '70; Spec. Counsel to Pres. of U.S., '71-'75; Capt., Army Air Corps, '42-'46, Legion of Merit; m. Mar. 27, '43, Jane Swift; s. Richard A., Jr. ('67), Matthew, Joseph, Samuel; d. Kate ('73).

MOORHEAD, 1945, WILLIAM S., J.D., LL.D.—(*Government*)—Born Apr. 8, 1923, Pittsburgh, Pa.; Attny., Ptnr., Coan, Couture, Lyons & Moorhead (law firm), 1625 I St., N.W., Suite 1015, Washington, D.C. 20006; res. 1312 31st St., N.W., Washington, D.C. 20007; formerly U.S. Rep., 14th Dist. of Pa., '58-'80; Ptnr., Moorhead & Knox, '52-'70; former Trustee: Pittsburgh Child Guidance Center, Pittsburgh Park & Playground Soc., Tuberculosis League of Pittsburgh, Shadyside Hosp., Negro Emergency Education Drive, Western Penn. Conservancy & Bd. of Visitors of Univ. of Pittsburgh Faculty of Arts & Sciences; Asst. City Solicitor, Pittsburgh, '54-'57; Allegheny Cty. Housing Authority, '56-'58; U.S. Rep., '59-; Lieut. (j.g.), USN, '43-'46; m. Dec. 23, '46, Lucy Galpin; s. William S. III, Perrin G., Stephen G., ('75), James B.

MOREY, 1958, ROBERT WILLIS, JR., M.B.A.—(*Finance*)—Born Aug. 23, 1936, Cleveland, Ohio; Pres., R.W. Morey, Inc. (reinsurance and financial counsel managing underwriters), Box I, Tiburon, Calif. 94920; res. 8 Felipa Court, Tiburon, Calif. 94920; Enrollment &

Scholarship Com. or Alumni Schools Com.: Central New Jersey, '62-'68, Chmn., San Francisco, '69-'73; Vice Chmn., Bd. of Dirs., Infra Red Circuits & Controls; Lieut. Cmdr., USNR, '58-'60, active duty, '60-'68, retired 1973; m. July, '60, Frances Ann Ritter (divorced); m. Dec. 14, '68, Maura Burke; s. Robert Willis III, Edward Burke; d. Suzanne Elizabeth, Jennifer Langan, Alison Hawkins.

MORGAN, 1971, JAMES W., M.S.—(*Education*)—Born Jan. 6, 1949, Washington, D.C.; Asst. Superintendent, Pocantico Hills Central School Dist., 599 Bedford Road, North Tarrytown, N.Y. 10591; res. 3 Ledgemere Drive, Danbury, Conn. 06810; Yale Basketball Coach, Freshman (Head)/Varsity Asst., '71-'75; Bd. of Dirs., V.P., Yale Basketball Assn.; Alumni Schools Committee, '79-'83; Teacher, Benhaven, New Haven, Conn. '71-'74; Teacher, Carmel Central School Dist., Carmel, N.Y., '74-'78; Asst. Principal, Junior/Senior High School, New Fairfield, Conn., '78-'82; Bd. of Dir., Conn. Special Olympics, '76-'78; Coach/Coordinator, Youth Athletic Programs, Danbury, Conn., '77-'82; Advisor, Western Conn. Assn. for Children with Learning Disabilities, '78-'80; m. July 25, '70, Mary Louise Frazee; s. Nate James, Robb Joseph.

MORGAN, 1970, ROBERT MACNAIR, M.B.A., J.D.—(*Law*)—Born Sept. 26, 1949, Washington, D.C.; Lawyer, Covington & Burling, P.O. Box 7566, 1201 Pennsylvania Ave., N.W., Washington, D.C. 20044; res. 1820 13th St., N.W., Washington, D.C. 20009; 1st Lieut., AUS, '70-'72, Bronze Star, U.S., Vietnamese and Cambodian Parachute Wings; m. Jan. 5, '80, Janice Elizabeth Erich.

MORGENSTERN, 1976, MARC JAIME—(*Journalism*)—Born Jan. 12, 1955, New Rochelle, N.Y.; TV Journalism, Exec. Producer, KNXT News, 6121 Sunset Blvd., Hollywood, Calif. 90028; res. 831 Gretna Green Way, Apt. 202, Los Angeles, Calif. 90049; Alumni Schools Committee Interviewer, '79-'82; 5th Reunion Committee, '80-'81; Newspaper Reporter, *The Trenton Times*, '76-'78; TV Producer, '78-'83; m. Oct. 14, '78, Louise Tutelian.

MORSE, 1934, JOHN BOIT—(*Art*)—Born Dec. 28, 1910, San Francisco, Calif.; Artist (Painter), res. 3386 Third Ave., Carmel, Calif. 93923; Visiting Critic, Yale Art School; Assoc. Fellow, Jonathan Edwards College; Trustee, San Francisco Art Institute; Delegate-at-Large, World Health Organization, Sub-Committee on Alcoholism; Cmdr., USNR, '40-'45; m. July 28, '57, Virginia Schwartz; s. Peter ('57), Richardson, Samuel F.B. III.

MORTON, 1954, THRUSTON BALLARD, JR.—(*Radio, TV*)—Born April 6, 1932, Louisville, Ky.; Vice Chmn., Cosmos Broadcasting Corp.,

P.O. Box 32970, Louisville, Ky. 40232; res. 441 Lightfoot Rd., Louisville, Ky. 40207; Pres., Yale Al. Assn. of Ky., '60-'61; Yale Dev. Bd., '67-; SP 3, AUS, '55-'57; m. Sept. 18, '54, Julie Baquié; s. T.B.M. III, Michael C. ('81), Morel B., David M. (deceased).

MOSELEY, 1943, SPENCER DUMARESQ, M.A. (Hon.)—(*Finance*)—Born Oct. 21, 1919, Evanston, Ill.; Investment Banking, Bacon Whipple & Co., 135 S. LaSalle St., Suite 4005, Chicago, Ill. 60603; res. 416-A, Old Barn Road, Barrington, Ill. 60010; Alumni Board, '58-; Class Agt., '43-; Yale Corp., '66-'72; Pres.: Gatx Corp., '62-'67, Mangood, '67-'69, REA Express, '69-'71; U.S. Olympic Com., '75-; Dir.: Chicago Boy Scouts, '66-'68, McGraw Wildlife Preserve, '66-; Barrington School Bd., '62-'68; Barrington Plan Comm., '75-; Capt., Pilot, USMC, '43-'45, '50-'52; 7 Air Medals, 2 D.F.C.; m. May 10, '47, Virginia Kleitz; s. Brewster Warren, William Lambert, ('74), Daniel Dumaresq.

MOSELEY, 1945W, THOMAS WILDER—(*Business*)—Born May 16, 1922, Geneva, Ill.; bus. General American Transportation Corp., 1310 Ohio Savings Plaza, Cleveland, Ohio 44114; res. 19700 Shelburne Rd., Shaker Heights, Ohio 44118; Chmn., 25th Reunion Class of 1945W; Class Council; Weyerhaeuser Sales Co., '48-'53; Regional Sales Mgr., Gatx, '53-'76; S/Sgt. AUS, Paratroops, 83d Airborne Div., Jan. '43-Sept. '45; Purple Heart; m. July 12, '46, Barbara F. Morley (deceased); m. Oct. 6, '73, Jean Bradley White; s. Thomas Wilder, Jr., George Wallace; d. Rebecca Spencer, Susan Gaylord.

MOSER, 1963, RICHARD EUGENE, M.B.A.—(*Business*)—Born Apr. 13, 1941, Sabetha, Kansas; Pres., and Chief Exec. Officer, Lefcourt Group, Inc., 3 Palo Alto Square, Palo Alto, Calif. 94304; Exec. V.P. and Chief Exec. Officer, Lefcourt, Golub, Baer, & Moneypenny, Inc.; Pres., Lefcourt Investments, Inc.; Pres., Remcourt Corp.; res. 25731 Deerfield Drive, Los Altos Hills, Calif. 94022; formerly Mgr., Business Development, Arcata National Corp., Menlo Park, Calif.; Alumni Schools Com., Palo Alto Yale Club, '72-'76; Capt., USMC, June '63-July '69; D.F.C., Air Medal (33 times), Vietnamese Cross of Gallantry, Combat Action Medal; m. June 15, '63, Donna Barton; m. Jan. 1, '76, Nancy Fowle; s. Michael Barton, Timothy Dwight, Andrew Glen (dec.); d. Leigh Maureen, Jacqueline Jo.

MOSES, 1979, JACK THOMAS—(*Student*)—Born Dec. 19, 1957, Elmhurst, Ill.; Student, Stanford Graduate School of Business (candidate for M.B.A. degree, June, '84); res. 246 Hilltop Drive, Lower Burrell, Pa. 15068; Bd. of Dir., Yale Wrestling Assn.; Assoc. Consultant, Data Resources, Inc., '80-'82.

MOYER, 1972, Douglas Richard—(*Business*)—Born June 12, 1949, Dayton, Ohio; Self-employed Builder/Woodworker, Equipment Operator, Ptnr., Mendocino Recording Co.; bus. and res. P.O. Box 313, Comptche, Calif. 95427; Mbr., Comptche Volunteer Fire Dept.; m. June 9, '79, Dani Marigo; s. Shane Robert.

MULHERN, 1980, Daniel Kevin—(*Social Work*)—Born Jan. 3, 1958, Detroit, Mich.; res. 19050 Wiltshire, Lathrup Village, Mich. 48076; Teacher, Jesuit High School of Tampa, '80-'81; Dir., The Center, New Orleans, June '81-Aug. '83; Bd. Mbr., New Orleans Bread for the World, '81-'83; Pres., Coalition on Human Dignity.

MURCHISON, 1974, Brian Cameron, J.D.—(*Law Education*)—Born May 25, 1952, Washington, D.C.; Asst. Prof. of Law, Washington and Lee Univ. School of Law, Lexington, Va. 24450; res. 619 Marshall St., Lexington, Va. 24450; Assoc., Hamel, Park, McCabe and Saunders, Washington, D.C., '79-'82; Asst. Prof. of Law, Washington and Lee Univ. School of Law, '82-; Peace Corps Volunteer, Benin, West Africa, '74-'76; m. Aug. 26, '78, Ann Weedman; s. Matthew Todd; d. Abigail Elizabeth.

MURCHISON, 1982, Robert W.—Born March 6, 1961, Sacramento, Calif.; res. 94-355 Puaahi Place, Mililani, Hawaii 96789.

MUSSER, 1930, John Miller, M.B.A.—(*Business retired*)—Born Feb. 7, 1908, Muscatine, Iowa; res. 260 Salem Church Rd., St. Paul, Minn. 55118; formerly V.P. and Dir., Weyerhaeuser Co.; Class Treas., '30-'60; University Council: V.P., '64-'65, Pres., '65-'71; Mbr., of Council Com. on Forestry School, '61-'72, Chmn., '72-'79; Chmn., Sub-Committee on Public Affairs/Relations, '79-'81; Mbr., Yale Development Bd., '57; Campaign for Yale for Twin City solicitations & Forestry School solicitations; Dir.: St. Paul Insurance Companies, Wylain, Inc., Aspen Institute for Humanistic Studies, American Universities Field Staff, First Natl. Bank of St. Paul, '62-'75, Community Development Corp., Metropolitan Improvement Com.; General Service Found.: Treas., Pres. & Dir.; United Way of St. Paul Area, Inc., Chmn., '65, Pres., '66; Carleton Coll.: Trustee, '46-, Chmn. of Bd., '58-'61; Pres., Indianhead Council, Boy Scouts of America, '62-'64; Comm. on Private Philanthropy & Public Needs; m. June 1, '35, Elizabeth Willett; s. Peter M., Robert W.; d. Susan (*Halby*), Elizabeth (*Dominick*).

N

NEIGHER, 1967, Geoffrey Mark, J.D.—(*Television*)—Born May 15, 1945, Springfield, Mass.; TV Writer/Producer, 103 Valley Spring Lane, Toluca Lake, Calif. 91602; res. 342 N. McCadden Place, Los Angeles, Calif. 90004; Attny., Proskauer Rose Goetz and Mendelson, '71-'74; Writer, MTM Enterprises, '74-'77; Producer, Columbia Pictures TV, '77-'81; Producer, "Gimme A Break," NBC TV, '81-; Army National Guard, '68-'73; m. Mar. 16, '77, Karen Ziff; s. Eric Matthew; d. Julie Rachel.

NEVILLE, 1921, James E., LL.B.—(*Law*)—Born Sept. 9, 1898, Omaha, Nebr.; Attny., 525 South Virgil Ave., Los Angeles, Calif. 90020; res. 162 South Arden Blvd., Los Angeles, Calif. 90004; Asst. U.S. Attny., Calvin Coolidge Admin., Bar Assn., Discipline Committee; Jr. Lieut., Field Artillery, '22-'24; m. Dec. 16, '22, Mary Johnston; s. James II, John T., Thomas M.

NEWMAN, 1977, Thomas Montgomery—(*Student*)—Add. 14148 Sunset Blvd., Pacific Palisades, Calif. 90272.

NEWTON, 1933, James Quigg, Jr., LL.B., M.A. (Hon.), LL.D., D.P.S., L.H.D.—(*Finance retired*)—Born Aug. 3, 1911, Denver, Colo.; c/o Davis, Graham & Stubbs, 2600 Colorado National Bldg., Denver, Colo. 80201; res. 2552 E. Alameda Ave., Apt. 85, Denver, Colo. 80209; Mbr., Yale Univ. Council, '49-'51, '75-(Chmn., Com. Medical Affairs); Corporation '51-'55; Chmn., 35th Reunion Fund Campaign, '66-'68; The Commonwealth Fund: Vice Chmn. of Bd., '75-'76, Pres., '63-'75; Pres., Univ. of Colorado, '56-'63; Dir. Public Affairs & V.P., Ford Found., '55-'56; Mbr.: Natl. Advisory Mental Health Council, '64-'68, Com. on Health Manpower, '66-'67; Trustee, Natl. Institute Public Affairs & Mbr. Exec. Com.; Univ. of Denver, Bd. of Trustees (Sec., '38-'42, Pres., '46-'47); Social Science Found., Bd. of Trustees, '75-; U.S. Dept. of Health Education & Welfare, Secretary's Comm. to Examine the Public Health Service Commissioned Corp., '71; Veterans Admin., Special Medical Advisory Group, '69-'74 (Chmn., '74); YMCA of Greater New York, Bd. of Dir. (Chmn., '76); Am. Arbitration Assn., Dir. & Mbr., Exec. Com.; Mayor, City and Cty. of Denver, '57-'65; Cmdr., USNR,

'42-'46; Commendation; m. June 6, '42, Virginia Shafroth; d. Nancy Ellen, Nelle (*Bassin*), Abby Staunton, Virginia M. (*Rice*).

NICHOLS, 1934, Edward, M.D.—(*Medicine*)—Born Feb. 6, 1911, New York, N.Y.; Physician, 85 Jefferson St., Hartford, Conn. 06106; res. Old Mountain Rd., Farmington, Conn. 06032; Maj., U.S. Medical Corps, Apr. '42-Oct. '45; m. Sept. 17, '38, Barbara St. John Webb; s. Webb, Dale Brooks; d. Barbara Leonard, Katherine Wallace.

NICHOLS, 1983, William Allen—Born June 29, 1961, Manhasset, L.I., N.Y.; res. 17 Glenby Lane, Glen Head, N.Y. 11545.

NOBLE, 1927, Lawrence Mason, LL.B., M.A., J.D. (Hon.)—(*Education retired*)—Born Dec. 11, 1903, Monroe, Mich.; res. 21 Main St., Stonington, Conn. 06378; A.Y.A.; Yale Varsity Hockey Coach, '28-'30; Yale Jr. Varsity Football Coach, '28-'30; Lawyer, '30-'32; Groton School: Teacher, Coach, Dir. of Admissions, '32-'66; Dir., Recruitment of U.S. Candidates for United World Colleges, especially Atlantic College, Wales; Pres., P.T.A., Groton, Mass. Public Schools, '35-'40; m. June 16, '28, Louise S. McLanahan; s. Lawrence M., Jr., ('53), David G., ('61); d. Louise S. (*Drury*), Alexandra D. (*Heller*).

NOBLE, 1953, Lawrence Mason, Jr.—(*Education*)—Born March 28, 1931, New Haven, Conn.; Educational Consultant, 246 Church St., New Haven, Conn. 06510; res. 35 Fennbrook Drive, Hamden, Conn. 06517; Yale: Asst. to Dir. of Admissions, '62; Asst. Dir. of Admissions, '63-'66; Assoc. Dir. of Admissions and Dir. of Freshman Scholarships, '66-'70; Dir. of Financial Aid, '70-'71; Assoc. Secy. of the Univ., '71-'81; Bd. Mbr., Yale Club of New Haven, '71-'77; Yale Club of N.Y.C. Admissions Committee, '74-'81; Yale Hockey Assn., Secy., Treas., Pres., Chmn., '61-; Exec. Secy., University Council, '72-'81; Hanover Bank, '53; Aluminum Co. of Canada, '56; Aluminum Ltd. Sales, Inc., '57-'62; Trustee, Westminster School, '78-; Trustee, Foote School, '79-, V.P., '81-; Secy./Treas., New England Assn. of Schools & Colleges, '74-'78; Inner-City Scholarships for Independent Schools, '77-, Vice Chmn., '78-'79, Pres., '79-'82; Bd. Mbr., Berkeley Divinity School, '74-'76; New Haven Bicentennial Advisory Committee, '72-'76; United Way Chmn. Yale Division, '73-'75; 1st Lieut., USMC, '53-'55; Deer Island Club Corp., Treas., '58-'59, Pres., '60-'61; m. Dec. 27, '58, Helen C. Rike; s. Lawrence R., Daniel S.; d. Helen C.

NOEL, 1983, Christopher—add. Star Route, East Calais, Vt. 05650.

NONDORF, 1979, Kurt D.—Born Feb. 19, 1957, Hammond, Ind.; res. 23 Waltham Ave., Hammond, Ind. 46320.

NORDHAUS, 1963, WILLIAM D., Ph.D.—(*Education*)—Born May 31, 1941, Albuquerque, N.Mex.; John Musser Professor of Economics, Cowles Foundation, P.O. Box 2125 Yale Station, New Haven, Conn. 06520; res. 445 Humphrey St., New Haven, Conn. 06511; Asst. Prof. of Economics, '67-'70; Assoc. Prof. of Economics, '70-'73; Prof. of Economics, '73-'79; Mbr., Council of Economic Advisers, U.S. Govt., '77-'79; m. June 13, '64, Barbara Feise; s. Jeffrey; d. Monica, Rebecca.

NORTHRUP, 1960, ROBERT SMITHER, M.D.—(*Medicine*)—Born Nov. 21, 1938, Buffalo, N.Y.; Physician, Chmn., Dept. of Community Medicine, Univ. of Alabama, Box 6291, CCHS, Tuscaloosa, Ala. 35486; res. 24 Caplewood, Tuscaloosa, Ala. 35401; Alumni Schools Committee, '81-; Staff Mbr. in Indonesia, Rockefeller Found., '74-'78; Dir., Postgrad. Med. Education, Okinawa, Japan, for Univ. of Hawaii, '73-'74; National Institutes of Health Investigator, '69-'73; Cholera Lab., East Pakistan, '66-'69; Pres., Alabama Rural Health Assn., '79-'81; Chmn., Regional Perinatal Advisory Committee, '81-'83; Mbr., Comm. of International Nutrition Programs, National Academy of Science, '79-'82; Cmdr., U.S. Public Health Service, '66-'73, Commendation Medal; m. Sept. 1, '62, Margaret Lockett; s. Robert Smither, Jr.; d. Anne Lockett.

NORTON, 1925, WILLIAM BUNNELL, Ph.D.—(*Education retired, Research*)—Born Feb. 14, 1905, Pittsfield, Mass.; res. 47 Cypress Rd., Wellesley Hills, Mass. 02181; Boston University: Instructor, Prof. of History, Prof. Emeritus, '27-'70; Research Assoc. in African Studies, Boston Univ. since retirement from teaching; Teacher: Harvard-Boston Univ. Extension Courses, '44-'45, Univ. of Arizona Summer Session, '47, Boston Univ. Overseas Program toward M.A. in Internatl. Relations, for personnel in NATO forces, '70-'71, West Berlin & Belgium; m. Sept. 10, '27, Mildred Elsie Smith; s. Richard Allen, ('51), Charles Perry, ('54), David William.

NOVKOV, 1953, DAVID A.—(*Industrial*)—Born Dec. 9, 1931, Akron, Ohio; Pres. and Chief Exec. Officer, Crossville Rubber Products, Inc., P.O. Box 729, Crossville, Tenn. 38555; res. P.O. Box 1521, Fairfield Glade, Tenn. 38555; Alumni Fund Agent, '80-'83; Pres., Schlegel Tennessee, Inc., Maryville, Tenn.; General Tire & Rubber Co.: Chief Engineer, '63-'69, Production Mgr., '69-'72, Plant Mgr., '72-'76; V.P.: Wabash, Ind., Bd. of Education, Wabash Parks & Recreation Bd.; Pres. & V.P., Cuyahoga Falls, Ohio, Jr. Chamber of Commerce; Maryville College Advisory Bd. Chmn., '78-'81; United

Way Dir. & V.P., '78-'81; School Board V.P., '73-'76, Area Vocational Bd. Mbr. and Chmn., '71-'74; SP 3, AUS, '54-'56; m. Sept. 13, '53, Joyce Ann Fegancher; s. Bruce A.; d. Lorie A. (*White*).

NOVOSEL, 1981, David Gerard—Born Dec. 23, 1958, Chicago, Ill.; res. 10944 Ave. L, Chicago, Ill. 60617; A.Y.A. Class Agent, '81-.

NOYES, 1971, Edward MacArthur, M.D.—(*Medicine*)—Born Feb. 3, 1948, New York, N.Y.; Emergency Physician, Sunrise Hospital, 3186 S. Maryland Parkway, Las Vegas, Nev. 89109; res. 2917 E. Chapala Drive, Las Vegas, Nev. 89120; m. June 5, '71, Patricia Grundy (divorced July '80); m. Aug. 8, '80, Cynthia Louise Novotny; s. Adam MacArthur; d. Whitney Novotny.

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O'BRIEN, 1979, Donald Patrick, LL.B.—(*Law*)—Born March 30, 1957, Tonawanda, N.Y.; Lawyer, Wood, Campbell, Moody and Gibbs, Two Post Oak Central, 1980 Post Oak Blvd., Suite 2200, Houston, Texas 77056.

O'BRIEN, 1944, Frank, Jr.—(*Education*)—Born April 16, 1919, Andover, Mass.; Educational Counseling, Ptnr., O'Brien Associates, 264 Beacon St., Boston, Mass. 02116; res. 380 Beacon St., Boston, Mass. 02116; Yale Baseball Graduate Advisory Committee; Groton School: Teacher, Varsity Coach Baseball and Hockey, Dir. of Development and Alumni Affairs, Admissions Officer, '48-'80; Overseer, Children's Hospital Medical Center; Trustee, Westminster School, '79-, Brookwood School, '76-'82, Dynamy, '83-; 1st Lieut., USAAF, '42-'46; m. June 18, '55, Marianna H. Mead; s. Frank III; d. Dorothy Dole, Elsie Talbott, Louise Walker.

O'BRIEN, 1945W, Philip, Jr., LL.B.—(*Law*)—Born Sept. 30, 1924, Holyoke, Mass.; Attny.; res. 65 Fairfield Ave., Holyoke, Mass. 01040; m. Dec. 28, '73, Mary Margaret McLaughlin.

O'CONNELL, 1963, Timothy James, J.D.—(*Law*)—Born June 28, 1941, Rockville Centre, N.Y.; Pension Actuary, 22 Sistsink Drive E., Port Washington, N.Y. 11050; res. Red Spring Lane, Glen Cove, N.Y. 11542; County Attorney's Office, Nassau Cty., N.Y. '64-'65; American Life of N.Y.; V.P., Oyster Bay Management Co. (real estate investment company); Sgt., USAF, Feb. '66-June '69; m. Oct. 19, '68, Nancy Freitas (divorced); s. Anthony; d. Vanessa.

O'KEEFE, 1981, Regis James—Born Aug. 4, 1959, Pittsburgh, Pa.; add. 49 Fayette St., Apt. 3, Cambridge, Mass. 02139.

O'LEARY, 1969, John Joseph, Jr., M.A. (Clare College, Cambridge), J.D.—(*Law*)—Born Jan. 16, 1947, Philadelphia, Pa.; Attny., Ptnr., Pierce, Atwood, Scribner, Allen, Smith & Lancaster, One Monument Square, Portland, Me. 04101; res. 125 Chadwick St., Portland, Me. 04101; Alumni Fund, '69-'74; A.Y.A. Maine Rep., '75-'77; Alumni Schools Committee, '74-'78; Mbr., Portland City Council, '75-'82; Mayor, City of Portland, '80-'81; Dir., RTA, '75-'76; m. Aug. 20, '77, Patricia Cepeda ('77); d. Alejandra Cepeda.

OBERLIN, 1957, John P.—(*Business*)—Born July 7, 1935, Greenfield, Mass.; Manufacturing Management, V.P. Operations, 22500 Alexander Road, Bedford, Ohio 44146; res. 204 Aurora St., Hudson, Ohio 44236; m. Sept. 21, '57, Page Blackmore; m. June 16, '79, Marianne Maskey; s. John; d. Karen, Lisa, Pamela; ss. Robert, William; sd. Kathryn.

OGDEN, 1932, Alfred, LL.B.—(*Law*)—Born Oct. 14, 1909, Brooklyn, N.Y.; Lawyer, Of Counsel, Reboul, MacMurray, Hewitt, Maynard & Krostol, 45 Rockefeller Plaza, New York, N.Y. 10111; res. 150 E. 73d St., New York, N.Y. 10021; Ptnr., Blair & Ogden, '46-'51; Pres. & Dir., C. Tennant Sons & Co., '52-'54; Ptnr., Alexander & Green, '55-'75; Of Counsel, Wickes, Riddell, Bloomer, Jacobi & McGuire, '76-'78; Of Counsel, Morgan, Lewis & Bockius, '79-'80; Trustee, Fay School, '50-'70; Trustee, Chmn. of Bd., Exec. Comm., Robert College of Istanbul, '55-'63; Dir. and V.P., English-Speaking Union of U.S.A., '50-; Bd. of Managers, Exec. Comm., Audit Comm., '59-; Trustee, Chmn. of Bd., Exec. Comm., '59-; Trustee, Finance Comm., Daniel & Florence Guggenheim Found., '72-; Trustee, Planned Parenthood of N.Y.C., '77-; Lieut. Col., AUS, General Staff Corps, Exec. Officer International Div., '42-'45, Legion of Merit; m. June 25, '38, Mary Fell Jordan; s. Alfred T. II ('62).

OHENE-FREMPONG, 1970, Kwaku, M.D.—(*Medicine*)—Born March 13, 1946, Kukurantimi, Ghana; Pediatric Hematologist, Dept. of Pediatrics, Section of Hematology, Tulane Univ. School of Medicine, 1430 Tulane Ave., New Orleans, La. 70112; res. 6843 Glengary Road, New Orleans, La. 70126; Asst. Prof. of Pediatrics, Pediatric Hematologist, Tulane Univ. School of Med.; m. June 13, '70, Janet Louise Williams; s. Kwame; d. Afia.

OLER, 1976, Clarke Kimberly, Jr.—(*Music*)—Born July 24, 1954, New York, N.Y.; Self-employed Musician/Composer, bus. and res. c/o Perry, 484 W. 43d St., Apt. 22-D, New York, N.Y. 10036.

ORR, 1956, ANDREW ALEXANDER—(*Business*)—Born July 1, 1934, Bryn Mawr, Pa.; Pres., Spray Products Corp., P.O. Box 737, Norristown, Pa. 19404; res. 700 Brooke Rd., Wayne, Pa. 19087; Bd. of Dir., The Haverford School, '79-'84; Bd. of Dir., Wayne, Inc., '81-'83; Citizens Advisory Committee on Home Rule Charter-Radnor TWP, '75-'76; Bd. of Commissioners of Radnor TWP, '80-83; S/Sgt., Penn. Natl. Guard, '57-'63; m. Dec. 6, '58, Ann Pedersen; s. Andrew A., Jr. ('84); John P.; d. Elizabeth W., Cynthia R.

ORRICK, 1940, ANDREW DOWNEY, LL.B.—(*Law retired*)—Born Oct. 18, 1917, San Francisco, Calif.; res. 850 Powell St., San Francisco, Calif. 94108; formerly Ptnr., Orrick, Herrington & Sutcliffe; San Francisco Regional Administrator, Securities & Exchange Com., '54-'55; Mbr., Securities & Exchange Comm., '55-'60; Capt., AUS, '42-'46; m. June 25, '52, Marjorie Soule; s. Andrew Downey, Jr., Winsor Soule, Murray Scott, Samuel Whittemore; d. Elizabeth Winsor.

ORRICK, 1937, WILLIAM H., JR., LL.B.—(*Law*)—Born Oct. 10, 1915, San Francisco, Calif.; U.S. District Judge for the Northern Distr. of Calif., 450 Golden Gate Ave., San Francisco, Calif. 94102; res. 6 Presidio Terrace, San Francisco, Calif. 94118; Assoc., Orrick, Dahlquist, Neff & Herrington, '41-'42; Assoc., Orrick, Dahlquist, Neff, Brown & Herrington, '46-'50; Orrick, Herrington, Rowley & Sutcliffe, Ptnr., '50-'61 and '65-Aug. '74; Co.-Chmn., San Francisco Committee on Crime, '68-'71; Asst. Attny. General of the U.S. in charge of the Civil Div., Dept. of Justice, Jan. '61-May '62; Deputy Under Secy. of State for Admin. U.S. Dept. of State, May '62-June '63; Asst. Attny. General of the U.S. in charge of the Antitrust Div., Dept. of Justice, June '63-Aug. '65; Capt., AUS, May '42-June '46; m. Dec. 5, '47, Marion Naffziger; s. William H. III ('76); d. Mary-Louise (*Peterson*), Marion (*Sproul*).

OWENS, 1978, SAMUEL L.—Born July 24, 1956, Cincinnati, Ohio; add. 260 Fort Washington Ave., Apt. 6D, New York, N.Y. 10032.

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PAINE, 1929, RALPH D., JR.—(*Literary work retired*)—Born March 31, 1906, Newark, N.J.; add. 7 West St., Room 232, Danbury, Conn. 06810; formerly V.P., Time Inc., New York, N.Y.; Dir., Itek Corp., Lexington, Mass.; m. March 7, '33, Elena D. von Hoershelman; m.

'47 Anne White Dauphinot; d. Katherine Delahaye; ss. Gillette Dauphinot.

PALMER, 1930, ARTHUR EDWARD, Ph.B., LL.B.—(*Law*)—Born Aug. 15, 1908, Lansing, Mich.; Environmental Lawyer, American Reading Council, 20 W. 40th St., New York, N.Y. 10018; res. Mount Desert, Me. 04660; Alumni Fund Agent, '35-'60; Chmn., Yale Alumni Fund, '52-'54; University Council, '52-'54; Pres., Yale Law School Assn. of N.Y., '55-'56; Exec. Committee, Yale Law School, '55-'60; Assoc., Winthrop, Stimson, Putnam and Roberts, '35-'47, Ptnr., '47-'60; Ptnr., White Weld & Co. (investment banking firm), '60-'65; Admin. of Transportation, City of New York, '65-'68; wrote and published a book *Toward Eden* (textbook for landscape architects and architects); Lieut. Col., Chief Civilian Supply Branch, Internat'l Div., H.Q. Services of Supply, Wash., D.C., '43-'46, Legion of Merit, Two Theater Battle Stars; Dir., RTA (one term); m. June 7, '40, Julia Reed; s. Lansing Reed ('66), Stewart Laundon ('69); d. Constance (*Hildesley*).

PALMER, 1957, L. GUY II—(*Finance*)—Born June 14, 1934, Hartford, Conn.; Sr. V.P., Ayco Corp. (investments and capital planning), 1234 Summer St., Stamford, Conn. 06905; res. 400 Monterey Ave., Pelham Manor, N.Y. 10803; V.P., Bank of New York, '58-'66; Pres., Davis, Palmer & Biggs, '66-'78; Sr. V.P., Fiduciary Trust Co., '78-'82; Dir.: Pelham Day Care Center, '70-'74, Pelham United Fund, '72-; Capt., AUS, '57-'64; m. Aug. 16, '58, June Lawrence; s. L. Guy, IV, Philip Bradford, ('85), Edward Dickinson; d. Deborah Ann, Dorothy Ellen.

PARKER, 1933, ROBERT BOYD—(*Business retired*)—Born Sept. 26, 1911, San Francisco, Calif.; res. Juniper Hill Farm, Francestown, N.H. 03043; formerly Asst. to Chmn., Abex Corp., New York, N.Y.; Univ. Council, '67-'71; A.Y.A., '81-'83; Class Secy., '58-'83; Football Advisory Com., '65-; Chmn., New Hampshire Major & Special Gifts TCFY; m. June 22, '35, Elizabeth Richmond; m. Dec. 19, '53, Brenda Sweet; s. Peter B.; d. Barbara P. (*Ross*), Pamela P. (*Fountain*), Heidi P. (*Roedan*); sd. Dianne L. Kilmer, Brenda J. Lorenzen.

PARSONS, 1933, HENRY MCILVAINE, M.A., Ph.D.—(*Science, Education*)—Born Aug. 31, 1911, Lenox, Mass.; Consultant, Humrro, 300 N. Washington St., Alexandria, Va. 22314; res. 1600 S. Eads St., Apt. 1223N, Arlington, Va. 22202; Sr. Human Factors Scientist, System Development Corp., '58-'64; V.P. Research, Riverside Research Inst., '69-'70; Exec. Dir., Institute for Behavioral Research & Pres., Experimental College of IBR, '74-'79; Mgr., Human Factors

Projects, Humrro, '80-'82; Soc. of Engineering Psychologists (Div. 21 of the Am. Psychological Assn.), '75-'76; Lieut. Cmdr., USN, '42-'45; m. 1938, Renee Oakman; m. 1949, Marina Svetlova; m. 1957, Marjorie Thorson; s. Robert.

PECK, 1962, ARTHUR JOHN JR., LL.B.—(*Law*)—Born March 2, 1940, Trenton, N.J.; Asst. Secy., Corning Glass Works, Corning, N.Y. 14831; res. 72 Catherine St., Corning, N.Y. 14830; Admissions Officer, Lawrenceville School, '62-'65; Assoc., Shearman & Sterling, '68-'72; m. July 18, '70, Susan Williams Lodge; s. David Andrew; d. Margaret Emily.

PELLY, 1923, BERNARD BERENGER—(*Business, retired*)—Born May 19, 1901, Seattle, Wash.; res. 1899 Beans Bight, N.E., Bainbridge Island, Wash. 19110; formerly Sr. V.P. and Dir., Balfour, Guthrie & Co., Ltd.; Pvt., SATC, Sept., Oct., Nov., '18; m. June 28, '30, Elizabeth Nute (dec.); m. Jan. 29, '75, Jane Hillman Stremic; s. Bernard B., Jr., Charles A.

PELTZ, 1931, WILLIAM LEARNED, M.D., M.A.—(*Medicine*)—Born Feb. 11, 1909, Albany, N.Y.; Psychiatrist, P.O. Box 706, Manchester, Vt. 05254; res. Longview Drive, Manchester, Vt. 05254; Fellow, Branford College, '40-'42; Clinical Instr., Medicine, Yale School of Medicine, '40-'42; Mbr., "Yale Hospital Unit" (39th General Hosp.) in South and Central Pacific, '42-'45; Emeritus Prof. of Clinical Psychiatry, Univ. of Penn. Medical School; semi-retired from private practice of psychiatry, Manchester and Rutland, Vt.; Dir., Institute of Medical Research, Bennington; Dir., Hospice of Bennington Area, Inc.; Deacon, First Congregational Church, Manchester, Vt.; Honorary Trustee, Ethan Allen Community College, Manchester; Capt.-Maj., Army Med. Corps. 39th Gen. Hosp. (Yale Unit), Pacific, '42-'45; m.Jan. 29, '38, Margaret Ruth Adams; s. Mason Tyler, William Hun, Thomas Adams.

PENDEXTER, 1958, JOHN FOWLER, M.B.A.—(*Business*)—Born July 5, 1936, Chicago, Ill.; Management Consultant-Acquisitions, Pres., Pendexter & Co., bus. & res. 21 Old Farm Rd., Darien, Conn. 06820; Pres., Yale Club of Darien-Norwalk, '69-'73; Dir. & Treas., Yale Club of Darien, '73-'76, Secy., '79-'82; R.T.M. Finance Com. of Darien, '72-'74; m. Aug. 30, '58, Karla M. Dougan; s. Leslie M., John F., Geoffrey M.

PERRY, 1977, DAVID BULKLEY—(*Education, Writing*)—Born April, 18, 1954, Norwalk, Conn.; Teacher, Coach and Writer (Sailboat Racing), bus. and res. 1100 Pequot Road, Southport, Conn. 06490; Secy., Yale Sailing Associates.

PETERS, 1970, DANIEL JAMES—(*Writing*)—Born July 24, 1948, Milwaukee, Wis.; Writer, bus. & res. 6108 85th Ave., New Carrollton, Md. 20784; Recording Sec., Vancouver, B.C., Shoes for Industry Drive, '72-'73; CO, Vietnam Resistance Brigade, '70-'72.

PETERS, 1979, ERIC BROOKS—(*Writing*)—Born April 22, 1957, Manhasset, N.Y.; res. 329 Ryder Road, Manhasset, N.Y. 11030.

PETERS, 1980, ELLIOT REMSEN—(*Student*)—Born April 17, 1958, New York, N.Y.; Law Student, New York Univ.; res. 868 West End Ave., Apt. 5B, New York, N.Y. 10025; Worker for New York State Democratic Party, U.S. Senate Campaign of Elizabeth Holtzman.

PETERS, 1981, KENNETH GRAHAM—Born April 27, 1955, Manhasset, N.Y.; add. 329 Ryder Road, Manhasset, N.Y. 11030.

PETERSON, 1981, PAUL CLIFFORD—(*Accounting*)—Born Dec. 1, 1957, Des Moines, Iowa; Accountant, Iowa Citizen, Labor Energy Coalition, 805 1/2 Locust St., Des Moines, Iowa 50309; res. 2823 Kingman Blvd., Des Moines, Iowa 50311.

PFAU, 1948, GEORGE HAROLD, JR.—(*Finance*)—Born May 7, 1924, Milwaukee, Wis.; Sr. V.P., Investment Banker & Stockbroker, Blyth Eastman Paine Webber, 555 California St., Suite 4300, San Francisco, Calif. 94104; res. 2298 Vallejo St., San Francisco, Calif. 94123; 1st V.P., White Weld & Co., Inc.; Kappa Beta Phi; San Francisco Bond Club; Vice Chmn., Dir., Lincoln Club of Northern Calif.; former Trustee: Thacher School, Town School; former Dir.: San Francisco Zoological Society, S.F. Conservatory of Music, The Guardsmen; presently Dir., Pathfinder Fund, Planned Parenthood of San Francisco/Alameda; Cprl., CE AUS, '42-'44; American Field Service, '44-'45; Italy Star; m. Jan. 7, '51, Elizabeth Spencer; m. Dec. 7, '74, Anne E. Mayhew; s. Peter Wright, George H. III; d. Mary Deming, Elizabeth Churchill.

PHELAN, 1958, HOWARD T., M.A. (*Hon.*)—(*Business*)—Born Oct. 19, 1936, Washington, D.C.; Pres. & Chief Exec. Officer, Welsbach Corp., 240 Sargent Drive, New Haven, Conn. 06511; res. 145 Lawn Ave., Stamford, Conn. 06902; graduate work in international economics and nuclear physics, University of Freiburg, West Germany, '58-'59; Yale Alumni Board, '64-'69; Yale Development Bd., '70-; Dir. Management Operations and University Development, principal business officer of the University and officer of the Yale Corporation, '65-'70; Yale Alumni Fund: Asst. Chrmn., Dir., Mbr. Exec. Com., Class Chrmn., '62-'70; Trustee, St. Thomas More Corp., '63-'69; Dir., RTA '66-'70; m. July 4, '64, Mary Elizabeth Voss; d. Elizabeth Andre, Victoria Taylor.

PICKETT, 1941, LAWRENCE KIMBALL, M.D.—(*Medicine*)—Born Nov. 10, 1919, Baltimore, Md.; Consultant, Medical Affairs, bus. and res. 2435 E. Lake Road, Skaneateles, N.Y. 13152; Prof. of Surgery and Pediatrics, '64-; Assoc. Dean, Medical School, '73-; William H. Carmalt Chair; 1941 Class Sec., '76-; Dir., Alumni Fund, '66-; Capt. AUS, M.C., '51-'53; RTA: Pres., '71-'74, Dir., '68-'74; m. Dec. 17, '43, Pauline Ferguson; s. Lawrence K., Jr., Paul F., Steven Buck; d. Nancy (*Thomas*).

PIEL, 1978, GEOFFREY D.—Add. 130 Sumner Road, Brookline, Mass. 02146.

PILLSBURY, 1935, JOHN SARGENT, LL.B.—(*Insurance, retired*)—Born Oct. 28, 1912, Minneapolis, Minn.; res. 315 Woodhill Road, Wayzata, Minn. 55391; Yale Alumni Bd., '56-'68, Exec. Comm. '61-'68; A.Y.A., '77-'82; Bd. of Governors, '79-'82; The Pillsbury Co., '35-'37; Faegre & Benson (law firm), '40-'56, Ptnr., '46; Northwestern National Life Insurance Co.: Pres. and CEO, '56, Chmn. and CEO, '69, Chmn. of the Bd., '77, retired '81; Minnesota Orchestral Assn.: Dir., '58, Chmn. of the Bd., '71-'74, Life Dir., '76-; Trustee, Dunwoody Industrial Institute, '51-; Bd. Mbr., United Way, '60-'73, Dir., '62-'63; Dir., Minneapolis Found., '61-; Trustee: St. Paul's School, '50-'54, Blake School, '46-'57; Founding Trustee, Twin Cities Public Television, '77-; Chmn. of the Bd., Public School Dist. of Orono, Minn., '54-'57; Lieut. Cmdr., USNR, Air Combat Intelligence Officer, '42-'45; m. June 11, '36, Katharine Harrison Clark; s. John S. III ('60), Donaldson Clark ('62, LL.B. '67), Lynde Harrison ('65); d. Katharine (*Jose*).

PINELA, 1983, CARLOS—add. 1815 S. Hobart Blvd., Los Angeles, Calif. 90006.

PINNEY, 1965, JOHN MERCER—(*Business*)—Born Nov. 11, 1943, Brooklyn, N.Y.; Consultant, 1919 Pennsylvania Ave., N.W., Washington, D.C. 20006; res. 709 North Carolina Ave., S.E., Washington, D.C. 20003; Pres., John M. Pinney Associates, Inc., '81-; Dir., Wash. Office, National Council on Alcoholism, '73-'78; Dir., Office on Smoking and Health, U.S. Dept. of Health and Human Services, '78-'81; Lieut., USN, '65-'71, Bronze Star.

PIONZIO, 1950, DINO JOHN—(*Finance*)—Born Aug. 9, 1923, New Haven, Conn.; Investment Banker, V.P., Dillon, Read & Co., Inc., 46 William St., New York, N.Y. 10004; res. 105 Hudson St., New York, N.Y. 10013; formerly with C.I.A.; Sgt., Army Air Force, '43-'46; Bronze Star; m. Jan. 9, '51, Rose M. DeLucia; s. Dino J. Jr., Evan W.; d. Patricia Ann.

POLICH, 1954, RICHARD FRANK, M.S.—(*Business*)—Born Sept. 25,

1932, Lyons, Ill.; Pres., Tallix Inc., Center Dock, Peekskill, N.Y. 10566; res. R.D. #3, South Mountain Pass, Peekskill, N.Y. 10566; Lieut. (j.g.), USN (Aviator), '56-'59; m. Aug. 10, '73, Lawrence Lowell Putnam; s. Philip, William, George, Felix; d. Susan, Jane, Catherine.

POND, 1965, JEFFREY CRAIG, LL.B.—(*Law*)—Born Aug. 28, 1943, Springfield, Mass.; bus. 3500 Amoco Bldg., 1670 Broadway, Denver, Colo. 80202; res. Soderberg Ranch, R.R. 1, Box 205, Franktown, Colo. 80116; m. Aug. 24, '63, Jan Winsborough (divorced '73); d. Dana Korey, Brette Lynsey.

POST, 1958, RUSSELL LEE, JR., LL.B.—(*Law*)—Born Jan. 7, 1937, New York, N.Y.; Attny., Ptnr., Cummings & Lockwood, 100 Constitution Plaza, Hartford, Conn. 06103; res. 45 Lawton Road, Canton, Conn. 06019; Ptnr., Shipman & Goodwin, Hartford, '65-'70; Ptnr., Post & Pratt, Avon, Conn.; Rep., 62nd Dist., Conn. State Legislature, '72-'78; Senator, Conn. State Senate, '79-'82 (Deputy Republican Leader); Deputy Commissioner of Personnel, State of Conn., '71-'72; m. June 4, '60, Linda Norton Ritchey; s. Russell Lee III, Lincoln Strong; d. Katherine Loring, Alison Ritchey.

PRESTON, 1967, JAMES MARSHALL, M.A. (Oxford Univ.)—(*Law*)—Born June 1, 1945, New York, N.Y.; Attny., Goodwin, Procter & Hoar, 28 State St., Boston, Mass. 02109; res. 114 Washington Ave., Cambridge, Mass. 02140; Assoc., Coudert Freres, Paris, France; m. Sept. 9, '78, Jenny Brown Childs; s. James Winfield; d. Zoe Childs.

PRESTON, 1958, JOHN LOUIS—(*Business*)—Born March 1, 1936, Gallipolis, Ohio; Pres., Chief Operations Officer, Action Industries, Inc., 460 Nixon Road, Cheswick, Pa. 15024; res. 76 Mystic Harbor, Bradfordwoods, Pa. 15015; formerly Pres., Stiffler Stores, Inc., Jackson, Ohio; m. Dec. 22, '56, Elizabeth Faye Morrison; s. John Louis-Gordon, Stephen Ashley.

PRICE, 1941, CHARLES BAIRD, JR.—(*Business, retired*)—Born Nov. 28, 1919, Louisville, Ky.; formerly Chmn. of Bd. & Chief Exec. Officer, Booker-Price Co., Louisville, Ky.; res. 500 Club Lane, Louisville, Ky. 40207; Pres. Yale Alumni Assn. of Ky., '54-'56; Alumni Bd. as Ky. State Rep. '56; Chmn. of Downtown YMCA, '52-'58; served on Bd., American Heart Assn., American Red Cross, American Cancer Society, Metro United Way, Ind. Subs. Div., Special Gifts, '51-'62; V.P., Louisville Area Chamber of Comm., '74-'78; Lieut. Col., F.A., Sept. '41-Feb. '46; Bronze Star; m. Oct. 7, '50, Charlotte Williams; s. Charles B. III (dec.); d. Ann H. (*Davis*), Elizabeth M.

PRICE, 1951, RAYMOND KISSAM, JR. —(*Writing*)—Born May 6, 1930,

New York, N.Y.; Writer, Consultant, William S. Paley & Co., 51 W. 52d St., Room 3490, New York, N.Y. 10019; res. 372 1/2 Pacific St., Brooklyn, N.Y. 11217; Asst. to Editor, *Colliers*, '55-'56; Reporter, *Life*, '57; *New York Herald Tribune*, '57-'66; Editor of Editorial Page, '64-'66; Asst. to Richard Nixon, '67-'68; Special Asst. to U.S. Pres., '69-'73; Special Consultant to U.S. Pres., '73-'74; Consultant to Former Pres. Nixon, '78-'83; Consultant to William S. Paley, '83-; Visiting Fellow, American Enterprise Inst., '77; Fellow, Institute of Politics (Harvard) '77; Visiting Nixon Prof., Whittier College (Calif.) '78; Lieut. (j.g.), USNR, '51-'55.

PRICE, 1954, Ross E.—Add. 14 Morrison Court, Syndal, Victoria, Australia.

PRIDEAUX, 1930, Tom—(*Writer*)—Add. 100 W. 57th St., New York, N.Y. 10019.

PRINDLE, 1964, Thomas Harrison, M.A., M.Phil.—(*Education*)—Born Feb. 14, 1942, Washington, D.C.; res. 1115 W. 11th, Austin, Texas 78703; Visiting Asst. Prof. of German, Ohio State Univ., '71-'72.

PULASKI, 1964, Charles Alexander, Jr., LL.B.—(*Education*)—Born Oct. 22, 1941, Flushing, N.Y.; Prof. of Law, Arizona State Univ., College of Law, Tempe, Ariz. 85287; res. 2107 S. Ventura, Tempe, Ariz. 85282; Prof. of Law, Univ. of Iowa; m. Aug. 14, '65, Linda Shannon Holden; d. Alison.

PYLE, 1961, Michael J.—(*Broadcasting*)—Born July 18, 1939, Keokuk, Iowa; Manufacturers Rep., Sporting Goods, Mike Pyle Interests, bus. and res. 1441 Pebble Creek Drive, Glenview, Ill. 60025; Independent Sports Broadcaster, WGN, Chicago; Assoc. Dir. for Corporate Relations, Development Office at Yale, Oct. '80-March '82; Bd. of Dir.: American Diabetes Assn., '70-'80, Better Boys Found., Chicago, '70-; Owner-Ptnr., St. Bernard Inn Restaurant, Breckenridge, Colo.; m. June 29, '68, Sharon Selby (divorced); s. Michael Cameron; d. Samantha.

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QUARLES, 1965, James Perrin III, J.D.—(*Law*)—Born May 22, 1943, Tampa, Fla.; add. P.O. Box 10, Free Union, Va. 22940; Legal Staff Office of Enforcement, Environmental Protection Agency, '72-'75;

Co.-Dir. Water Project, Natural Resources Defense Council, '76; 1st Lieut., AUS, Artillery, '65-'68, Bronze Star, Army Commendation Medal; m. June 11, '69, Margaret Anne Spies; d. Hillary Elizabeth.

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RACHLIN, 1982, David Isaiah—Born July 20, 1960, New York, N.Y.; add. 59 Juniper Lane, West Hartford, Conn. 06117.

RANKIN, 1936, B. Courtney, J.D.—(*Law*)—Born June 3, 1914, Boston, Mass.; Attny., Consulting Ptnr., Dickinson, Wright, Moon, VanDusen & Freeman, 800 1st National Bldg., Detroit, Mich. 48226; res. 735 Lake Shore Drive, Grosse Pointe Shores, Michigan 48236; Reorganized Yale Alumni Assn. of Mich. in late 1940s & held roster of offices; Mbr., Exec. Com. of Alumni Bd., 1950s; Interviewer for Schools & Scholarship Com. of Y.A.A. of Mich., 17 years; various offices, through Chmn., of State Bar Tax Comm.; Trustee or Mbr. of Bd. of Dir.: Detroit Area Council (BSA), Neighborhood Service Organization, Cottage Hosp., Friends of Grosse Pointe Public Library, Northeast Guidance Clinic; USN, J.A.G.'s Office (legal), '42-'43; m. June 27, '42, Ellen Jane McKean; m. Feb. 21, '74, Betty McCoy (*Glancy*); s. Richard C.; d. Judy M. (*Fearnside*).

RANNEY, 1934, George Alfred, LL.B.—(*Industrial retired*)—Born May 30, 1912, Chicago, Ill.; res. 17370 W. Casey Rd., Libertyville, Ill. 60048; Class Agt., Class of1934, Yale Alumni Fund, '64-'75; Univ. Council, '71-'76, Chmn. of Com. on Community Relations; Inland Steel Co.: Mbr., Bd. of Dir., '54-, V.P. & General Counsel, '62-'69, Sr. V.P., '69-'71; Vice Chmn.; Mbr., Bd. of Dir., Harris Trust & Savings Bank, '67-; Sidley, Austin, Burgess & Smith '38-'62 Ptnr. '51-'62; Trustee, Univ. of Chicago, '51-; Trustee & former V.P., Chicago Educational Television Assn. (WTTW); Bd. of Dir., Chicago Urban League; Bd. of Dir., Community Fund of Chicago, '59-'64, '66-'75, V.P., '67-'69; Pres., Welfare Council of Metropolitan Chicago, '59-'61; formerly Trustee, Chicago Child Care Soc.; formerly Chmn., presently Mbr., Citizens Com. on the Juvenile Court of Cook Cty.; 1st Lieut., F.A., AUS, '42-'45, ETO '44-'45; Bronze Star; m. June 18, '38, Nora Ryerson; s. George A., Jr., Edward R., ('64), David M., d. Nancy (*Levi*).

REID, 1951, Edward Snover, LL.B.—(*Law*)—Born March 3, 1930, Detroit, Mich.; Ptnr., Davis Polk & Wardwell, 1 Chase Manhattan

Plaza, New York, N.Y. 10005; res. 22 Garden Place, Brooklyn, N.Y. 11201; Yale Alumni Fund Class Agt., '51-; Assoc. with same or predecessor firm, '57-'64; Dir.: General Mills, Inc., Metropolitan Savings Bank, The Brooklyn Museum, Brooklyn Botanics Garden Corp.; Advisory Dir., Metropolitan Opera Assn., Inc.; Chmn., Bd. of Trustees, Brooklyn Institute of Arts & Sciences '74-'79; Mbr., New York City Bd. of Higher Education, '71-'73; Mbr.: Am. Bar Assn., N.Y. State Bar Assn. (Comm. on Coporation Law), Bar Assn., City of N.Y.; Capt. USMCR, '51-'59; m. Dec. 30, '53, Carroll Grylls; s. Richard Gerveys; d. Carroll Kercheval, Jane Franklin, Margaret Wetherill.

REID, 1982, Jasper—(*Business*)—Born Aug. 9, 1959, Madrid, Spain; V.P., Transeastern, Inc., V.P., Plenux International Corp., Consulting Editor, *Global Digest, Inc.*, 1141 Rockefeller Center Station, New York, N.Y. 10185.

REIGELUTH, 1975, Douglas Scott—(*Finance*)—Born March 17, 1952, New Haven, Conn.; Deputy Mgr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 63 Brown Ave., Rye, N.Y. 10580; Dir., RTA; m. Apr. 15, '78, Anne R. Legg; s. Christopher S.

RICHARDS, 1967, David Alan, B.A. & M.A., (Cambridge), J.D.—(*Law*)—Born Sept. 21, 1945, Dayton, Ohio; Attny., Ptnr., Sidley & Austin, Park Ave. Plaza, 55 E. 52d St., New York, N.Y. 10055; res. 18 Forest Lane, Scarsdale, N.Y. 10583; Mbr., Yale Comm. on Alumni Affairs, '69-'70; Special Asst. for Foreign Visitors, Yale Internatl. Office, '69-'72; Class Agent, '77-; Assoc., Paul, Weiss, Rifkind, Wharton & Garrison, '72-'77; Assoc., Ptnr., Coudert Brothers, '77-'82; Ptnr., Sidley & Austin, '83-; m. June 26, '71, Marianne Del Monaco; s. Christopher Mark; d. Courtney Ann.

RIMAR, 1977, Stephen III, M.D.—(*Medicine*)—Born March 28, 1955, Trenton, N.J.; Physician, Resident in Pediatrics, Yale-New Haven Hosp., Dept. of Pediatrics, 20 York St., New Haven, Conn. 06504; res. 210 Treadwell St., Apt. 211, Hamden ,Conn. 06517; m. June 14, '80, Joan Meighan.

RITCHIE, 1957, Wallace Parks, Jr., M.D., Ph.D.—(*Medicine*)—Born Nov. 4, 1935, St. Paul, Minn.; General Surgeon, Dept. of Surgery, University of Virginia School of Medicine, Charlottesville, Va. 22903; res. 2311 Glenn Court, Charlottesville, Va. 22901; Univ. of Va.: Asst. Prof. of Surgery, '73-'75, Assoc. Prof. of Surgery, '75, Prof. of Surgery, '76-; Lieut. Col., AUS, '70-'73; Army Commendation

Medal; m. Aug. 20, '60, Barbara Carey Jewell; s. David; d. Stephanie, Jessica.

RITTERBUSH, 1972, STEPHEN G., JR.—Add. Jacob Gates Road, R.D. 2, Box 302, Harvard, Mass. 01451.

RIZZO, 1978, ROBERT JOHN, M.D.—(*Medicine*)—Born Nov. 7, 1956, Newark, N.J.; Surgical Resident, Brigham & Women's Hosp., 75 Francis St., Boston, Mass. 02115; res. 10 Montgomery Road, Livingston, N.J. 07039; Dir., RTA, '78-'81.

ROBERTS, 1952, GEORGE BROOKE, JR., M.A.—(*Government*)—Born May 25, 1930, Philadelphia, Pa.; Foreign Service Officer, PSC Box 1952, APO Miami, Fla. 34003; Trainee, Foreign Service Institute, Washington, '57-'58; 3rd Sec., Am. Embassy, Bangkok, '58-'60; 2nd Sec., Am. Embassy, Vientiane, '60-'62; Internatl. Relations Officer, EA/VN, Dept. of State, '62-'66; 1st Sec., Am. Embassy, Dar es Salaam, '67-'69; Counselor of Embassy, Am. Embassy, Kingston, '70-'73; Special Asst. to Deputy Sec., Dept. of State, '73-'74; Dir., EA/TB, Dept. of State, '74-'76; Lieut. (j.g.), USNR, '53-'57; National Defense Ribbon, China Service Ribbon; m. June 20, '52, Zara Bentley; s. George B. III, Michael H.; d. Jocelyn.

ROBERTSON, 1928, ARTHUR CLENDENIN, M.A., Diplome d'Anthropologie, (Exeter College, Oxford), Doctorat de l'Université de Strasbourg—(*Education retired*)—Born May 13, 1905, Nashville, Tenn.; res. Route 1, Box 159, Dollar Road, St. Germain, Wis. 54558; European History Instr., Yale, '30-'32; Maj., AUS Inf., '42-'47; Bronze Star, 5 Campaign Ribbons, Citations from France & the Philippines; m. 1934, Helen Farr Smith; m. 1947, Gertrude Louise Ford; s. Peter Clendenin, John Overton.

ROBINSON, 1945, HOWARD COPLAND, JR.—(*Business retired*)—Born Oct. 16, 1921, Planfield, N.J.; res. 2122 N. Lake Shore Drive, Chapel Hill, N.C. 27514; formerly V.P., Marketing, Liggett & Myers Tobacco Co.; 2d Lieut., USAAF, '42-'45; m. Nov. 4, '43, Alice M. Ely; s. H. Copland, III; d. Ann (*Worthen*), Mildred (*Lyon*), Cathy Waring, Nancy Copland.

RODD, 1940, DAVID B.—Born Jan. 6, 1918, Pittsburgh, Penn.; res. c/o Thomas Rodd, Byram Lake Rd., Mt. Kisco, N.Y. 10549; m. June 28, '40, Rebecca L. Laughlin (divorced).

RODD, 1935, THOMAS—(*Finance retired*)—Born Sept. 12, 1913, Pittsburgh, Pa.; res. P.O. Box 623, Mt. Kisco, N.Y. 10549; former Vice Chmn. & Dir., J. P. Morgan & Co., Inc., New York, N.Y.; Maj., USMCR, '43-'46; m. Nov. 27, '37, Wendy Morgan; s. F. Morgan, Thomas Jr., ('65), Carey Rathbone.

ROOT, 1926, REGINALD DEAN, LL.B. In Causa Honoris, Universidad Nacional de Mexico—(*Education retired*)—Born June 28, 1903, Caledonia, N.Y.; res. 7060 52d Ave., N.E., Seattle, Wash. 98115; Dean of Men, Emeritus, Univ. of Washington, Seattle; Yale Coach, Football & Lacrosse '29-'48; Coach, Football, Univ. of Washington, '48-'52; Dir., Financial Aids, Dir., Personnel, Dean of Men, Univ. of Washington, '53-'72; m. June 30, '38, Mabel Fritzell; s. John Pierson, David Merritt.

ROOT, 1922, WELLS—(*Writing, Theatre, retired*)—Born March 21, 1900, Buffalo, N.Y.; res. and bus. 701 Hampden Place, Pacific Palisades, Calif. 90272; formerly writer and instructor in Theatre Arts, UCLA; author of 32 feature screenplays, 75 television shows, and a book *Writing the Script—A Professional Guide for Films and Television*; Maj., USAF, '43-'45; m. 1928, Lillian Segal; 1944, Mimi Doyle; s. Johathan S.

ROSE, 1963, JONATHAN CHAPMAN, LL.B.—(*Government*)—Born June 8, 1941, Cleveland, Ohio; Asst. Attny. General of the U.S. in charge of the Office of Legal Policy, U.S. Justice Dept., Room 4238, 10th and Constitution Ave., Washington, D.C. 20538; res. 501 Slaters Lane, Apt. 1001, Alexandria, Va. 22314; Special Gifts Committee, 10th Reunion; Ptnr., Jones, Day, Reavis and Pogue, Washington, D.C. D.C. and Cleveland, Ohio, '77-'81; Law Clerk to Justice R. Ammi Cutter, Mass. Supreme Judicial Court, '67-'68; Spec. Asst. to the Pres., White House, Washington, D.C., '71-'72; General Counsel, Council on Internat'l Economic Policy, White House, '73-'74; Assoc. Deputy Attny. General, U.S. Justice Dept., '74-'75; Deputy Asst. Attny. General, Antitrust Div. for Regulated Industries and Foreign Commerce, '75-'77; 1st Lieut., AUS, '69-'71; m. Jan. 26, '80, Susan Porter; s. Benjamin Chapman.

ROSS, 1928, LANCELOT PATRICK, LL.B.—(*Music*)—Born Jan. 19, 1906, Seattle, Wash.; Singer, Actor, Writer, bus. and res. 322 E. 57th St., New York, N.Y. 10022; Class Agent, '60-'83; Motion Pictures, Melody in Spring 1935, etc.; soloist Show Boat, '32-'37; Hit Parade, '39; Lanny Ross Show, '39-'43; soloist in concerts in U.S.A.; William Booth Award (Salvation Army), '81; Radio Hall of Fame, '81; Maj., AUS (Special Services), '43-'46, Legion of Merit; m. July 29, '35, Olive White.

ROSS, 1951, THOMAS BERNARD—(*Business*)—Born Sept. 2, 1929, New York, N.Y.; Sr. V.P., Corporate Affairs, RCA Corp., 30 Rockefeller Plaza, New York, N.Y. 10020; res. 1148 Fifth Ave., Apt. 9C, New York, N.Y. 10028; Internat'l News Service, '55-'58; United Press

Internat'l, '58; *Chicago Sun Times*, '58-'77, Washington Correspondent, '58-'68, Foreign Correspondent, '68-'70, Washington Bureau Chief, '70-'77; Asst. Secy. of Defense (Public Affairs), '77-'81; Lieut. (j.g.), USN, '51-'54; m. Nov. 2, '63, Gunilla Ekstrand; d. Maria ('86), Anne, Kristina.

ROWE, 1964, THOMAS D., JR., M.Phil. (Oxford), J.D.—(*Education*)—Born Feb. 26, 1942, Richmond, Va.; Assoc. Dean for Research, Prof. of Law, Duke Univ. School of Law, Durham, N.C. 27706; res. 712D Constitution Drive, Durham, N.C. 27705; 1964 Class Council; Fellow, U.S. Dept. of Justice, '80-'81; Visiting Prof., Georgetown Univ. Law Center, '79-'80; Duke Law School: Assoc. Prof., '75-'79, Prof., '79-, Assoc. Dean for Research, '81-'84; Assoc., Miller, Cassidy, Larroca & Lewin, Washington, '73-'75; Asst. Counsel, U.S. Senate Subcom. on Administrative Practice and Procedure, '71-'73; Law Clerk to Assoc. Justice Potter Stewart, Supreme Court of the U.S. '70-'71; m. May 19, '79, Elizabeth L. Anderson.

ROY, 1978, JOHN MARCUS—(*Theater*)—Born Feb. 28, 1956, West Germany; Admin. Dir., The International Chamber Artists Series, Inc., res. Los Caobos 12, San Patricio, Guaynabo, P.R. 00657.

RULON-MILLER, 1963, PATRICK—(*Finance*)—Born March 17, 1940, Cooperstown, N.Y.; Investment Advisor, V.P., Inverness Counsel Inc., 437 Madison Ave., New York, N.Y. 10022; res. 13 Academy St., Kingston, N.J. 08528; Investment Research: Empire Trust, '64-'66, Bank of New York, '66-'68; Pvt., AUS, '61; m. Sept. 16, '72, Judith Rollinson; d. Sarah; ss. Ian Davis.

RUMSEY, 1966, DAVID MCIVER, B.F.A., M.F.A.—(*Finance*)—Born Apr. 29, 1944, New York, N.Y.; Pres., General Atlantic Realty Group (real estate development), 351 California St., San Francisco, Calif. 94104; res. 504 Cole St., San Francisco, Calif. 94117; Ptnr., D.J.D. Properties (real estate investment partnership), '75-; Lecturer in Art, Yale School of Art & Architecture, '70-'72; Visiting Faculty in Art, Calif. Institute of the Arts, Los Angeles, '70-'73, Assoc. Dir., Am. Soc. for Eastern Arts, San Francisco, '72-'74; Exec. Asst. to the Pres., N.Y. State Urban Development Corp., '75-'76; m. July 6, '67, Patricia Binkerd; (divorced); d. Tessa A.S.

RUSSELL, 1981, RICHARD GEORGE—Born Feb. 6, 1961, New York, N.Y.; bus. and res. 522 Commercial St., Provincetown, Mass. 02657.

RUSSELL, 1951, RICHARD WARREN—(*Engineering*)—Born June 17, 1929, Boston, Mass.; Pres., James Russell Engineering Works, Inc., 9 Dewar St., Boston, Mass. 02125; res. 65 Whitman Rd., Needham,

Mass. 02192; Cprl., AUS, Oct. '52-Sept. '55; m. Sept. 24, '55, Katherine Rae Wehmann; s. Warren King, ('80), Richard Andrew; d. Elizabeth Suzanne, Margaret Warren ('85).

RYAN, 1954, ALLAN A. III—(*Finance*)—Born Aug. 6, 1931, New York, N.Y.; 1st V.P., Sr. V.P., Smith Barney Harris Upham & Co., Inc., 1345 6th Ave., New York, N.Y. 10105; res. 17 E. 89th St., New York, N.Y. 10028; RTA Dir.; m. Nov. 2, '57, Barbara Ann Redmond; s. Allan A. IV; d. Sally Newbold, Melissa Fortune.

RYAN, 1951, JOSEPH MATHER—(*Finance*)—Born Jan. 22, 1928, Toledo, Ohio; V.P. Investments, Dean Witter Reynolds, Inc., 333 W. Fort Bldg., Detroit, Mich. 48226; res. 995 Gordon Lane, Birmingham, Mich. 48009; Pres., Bond Club of Detroit; '63-'64; PFC, AUS, Sept. '46-Jan. '48; m. July, '55, Beverly Carmichael; m. Aug., '81, Nancy Ashcroft Matisse; s. Joseph M., Jr., Michael D., J. Douglas, Andrew S.; d. Ann Elizabeth, Sarah B.

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SAFFEN, 1975, DAVID—Add. 513 Sumner Ave., Aptos, Calif. 95003.

SALEH, 1968, MUHAMMAD AHMED, M.A.—(*Business*)—Born Oct. 1, 1945, Jerusalem; V.P., Timex Corp., Waterbury, Conn. 06720; res. 1 Nettleton Drive, Woodbridge, Conn. 06525; Timex Corp.: Mgr., Corporate Benefit Planning, July '73-Apr. '75, Mgr., Compensation & Benefits, Apr. '75-'Apr. '76; Consultant, Frank B. Hall & Co., '71-'73; Underwriter, Conn. General Life Insurance Co., '69-'71; Bd. of Dir., RTA, '72-'75, '76-; m. June 1, '68, Mary Soderstrom; s. Tarek Muhammad; d. Saraab Alison, Samira.

SALZMAN, 1982, MARK JOSEPH—(*Education*)—Born Dec. 3, 1959, Greenwich, Conn.; Teacher of English, Bachelor, Yale-China Assn., Hunan Medical College, Changsha, Hunan, Peoples Republic of China; res. 22 Todd's Road, Ridgefield, Conn. 06877; Recording Secy., RTA, '81-'82.

SANTIAGO, 1982, EDDIE—Born June 1, 1958, Chicago, Ill.; res. 6432 S. Washtenaw, Chicago, Ill. 60629; d. Juanita, Lysette.

SAUBER, 1972, RICHARD ALAN, M.Litt. (Oxford)—(*Law*)—Born March 7, 1950, Philadelphia, Pa.; Attny., Chief, Defense Procurement Fraud Unit, Dept. of Justice, Criminal Div., Washington, D.C. 20530; res. 3645 Van Ness St., Washington, D.C. 20008.

SAXON, 1967, JAMES M., J.D.—(*Finance*)—Born June 9, 1945, Mo-

nessen, Pa.; Pres., General Syndicators of America, Inc. (real estate tax shelters), 200 W. 57th St., New York, N.Y. 10019; res. 310 E. 46th St., New York, N.Y. 10017; formerly Bond Salesman, Salomon Brothers, New York City; Lawyer, Cadwalader, Wickersham & Taft, '70-'72.

SCATTERGOOD, 1970, THOMAS B.—(*Education*)—Born Nov. 9, 1948, Baltimore, Md.; School Teacher/Administrator, Germantown Friends School, 31 W. Coulter St., Philadelphia, Pa. 19144; res. 8240 Crittenden St., Philadelphia, Pa. 19118; Asst. Dir. of Admissions, Teacher/Counselor, Moses Brown School, Providence, R.I.; m. July 30, '80, Katherine J. Flynn; s. Joseph Henry.

SCHLESINGER, 1977, DANIEL ADAM, M.A. (Oxford)—(*Student*)—Born June 10, 1955, New York, N.Y.; Student, Harvard Law School; res. 5007 North Hills Drive, Raleigh, N.C. 27612.

SCHMIDT, 1968, THOMAS CARL, M.B.A.—(*Consulting*)—Born June 3, 1945, Cincinnati, Ohio; Marketing Consultant, Entrepreneur, Owner, Management of Montana, 1826 N. Main, Helena, Mont. 59601; res. 426 Monroe, Helena, Mont. 59601; Alumni Schools Com., '75-; Planner, Helena—Lewis and Clark County City-County Planning Dept. '73-'74; V.P., Unionville Territory Assn., '76-; Lewis and Clark County Park Bd., '82-; Sp5-E5, AUS, Oct. '68-July '70; m. July 1, '72, Deborah Caroline Beaumont; s. Carey Beaumont Christian.

SCHNAITTER, 1954, SPENCER JASON—(*Law*)—Lawyer, City Attny., K. of P. Bldg., S. Jefferson St., Madison, Ind. 47250; res. 449 Bellaire Drive, Madison, Ind. 47250; m. July 25, '54, Laura Mills; s. Dwight Paul, Spencer Mills; d. Laura Suzanne.

SCHOLLANDER, 1968, DONALD ARTHUR—(*Finance*)—Born Apr. 30, 1946, Charlotte, N.C.; Pres., North Shore Development Corp. (real estate), 15110 S.W. Boones Ferry Road, Lake Oswego, Ore. 97034; res. 1131 North Shore Road, Lake Oswego, Ore. 97034; Secy.-/Treas., Alumni Assn. of Oregon; Bd. of Dir.: Albertina Kerr Handicapped Children, Oregon Cystic Fibrosis Society; President's Council on Physical Fitness, '72-'75; Bd. of Dir., U.S. Olympic Com., '70-'72; Chmn., Oregon Handicapped Children Fund Drive, '75 & '76; m. Dec. 28, '68 Penny Susan Stark,; s. Jeb Ryan.

SCHWARZMAN, 1969, STEPHEN ALLEN, M.B.A.—(*Finance*)—Born Feb. 14, 1947, Philadelphia, Pa.; Managing Dir., Lehman Brothers Kuhn Loeb, Inc., 55 Water St., New York, N.Y. 10041; res. 655 Park Ave., Apt. 4-B, New York, N.Y. 10021; President's Council, Museum of the City of New York, '72-; Pvt., Army Reserve, '72-'77; m. Dec. 29, '71, Ellen Philips; s. Edward Frank; d. Elizabeth Philips.

SCOTT, 1960, Eugene Lytton, J.D.—(*Publishing*)—Born Dec. 28, 1937, New York, N.Y.; Author, Publisher, Lawyer, Pres., Sports Investors, Inc., 1107 Broadway, New York, N.Y. 10010; res. 60 Sutton Place South, New York, N.Y. 10022; Publisher and Founder of *Tennis Week*; Pres., Sports Investors, Inc., '68-; Author: *Tennis: Game of Motion*, published by Crown; *Bjorn Borg My Life and Game* published by Simon & Schuster; *The Tennis Experience* published by Rutledge; *The Cult* published by Doubleday; *Ivan Lendl's Power Tennis* published by Fireside; Bd. of Arbitration, New York Stock Exchange, '75-; V.P., Internat'l Tennis Hall of Fame, '80-; Pres., Internat'l Lawn Tennis Club of U.S.A., '65-; Pres., Eastern Tennis Assn., '72-'73.

SCOTT, 1977, Larry Glenn—(*Student*)—Bus. add. 70 Howe St., Apt. 608, New Haven, Conn. 06511; res. 734 East Phil-Ellena St., Philadelphia, Pa. 19119.

SCOTT, 1973, William Iain, LL.B.—(*Law*)—Born Aug. 2, 1951, Parry Sound, Ontario, Canada; Lawyer, Tilley Carson & Findlay, 44 King St. West, Suite 2100, Toronto, Ontario, Canada M5H 1G4; Treas., Deer Island Club Corp., '80-'82, Caretaker, '75 & '76; m. June 3, '72, Janis L. Ryder.

SEAMAN, 1945, Irving Jr.—(*Finance*)—Born July 14, 1923, Milwaukee, Wisc.; Senior Consultant, Burson-Marsteller, One E. Wacker Drive, Chicago, Ill. 60601; res. 946 North Elm Tree Rd., Lake Forest, Ill. 60045; Alumni Editor, *Yale Alumni Magazine*, '46-'47; Pres., Yale Club of Chicago, '59; Mbr.: Yale Development Bd., '67-, Leadership Gifts Com. Campaign for Yale, '75-; Pres. and Chief Operating Officer, Sears Bank & Trust, '76-'82; Sr. Consultant, Burson-Marsteller, Nov. '82-; Chmn. Exec. Com. & Chief Exec. Officer, National Boulevard Bank of Chicago, '61-'76; V.P., Continental Illinois Bank & Trust Co. of Chicago, '47-'61; Pres.: Lake Forest Hosp. '72-'73, Lake Forest Country Day School, '66-'69; Dir.: Episc. Church Found., '72-, Protestant Found. of Greater Chicago, '68-, Better Business Bureau of Metropolitan Chicago, '63- (Chmn., '70-'72); Dir. & 1st V.P., Community Fund of Chicago, Inc., '71-; Dir.: Abbott Laboratories, '68-, Am. Chain & Cable Co., Inc., '67-, Wm. Wrigley Jr. Co., '71-; formerly Dir., Pullman Co., and John Morrell & Co.; Pres., United Way of Chicago, '80-'81; Lieut, (j.g.), USN, '44-'46; m. June 24, '50, June Carry; s. Peter Stewart, Irving Osborne; d. Marion Carry, Anne Douglas.

SEARLES, 1955, Paul David, M.A.T., LL.D.—(*Business*)—Born Jan. 1, 1933, Bangor, Me.; Exec. V.P., International Group, PET, Inc., 400

S. Fourth St., St. Louis, Mo. 63102; res. 540 N. Spoede Road, Creve Coeur, Mo. 63141; Yale Alumni Fund, '55-; Head of Class Agents, '65-'70; Brand Mgr., Procter & Gamble, '58-'62; V.P., Glendinning Companies, '62-'69; V.P., Wm. Underwood Co., '80-'82; Philippines Country Dir., U.S. Peace Corps, '71-'74; Asian Regional Director, U.S. Peace Corps, '74-'75, Deputy Dir., U.S. Peace Corps, '75-'76; Deputy Chmn., Nat'l Endowment for the Arts, '76-'80; 1st Lieut., USMC, '55-'58; m. June 23, '56, Mary Lawson; s. Richard, John; d. Rachel.

SEELEY, 1961, GEORGE WHEELER, J.D.—(*Education*)—Born July 26, 1939, Bridgeport, Conn.; Chmn., Social Studies Dept., Belmont Hill School, 350 Prospect St., Belmont, Mass. 02178; res. 212 Concord Rd., Lincoln, Mass. 01773; Dir., Mowglis, School of the Open; m. June 15, '68, Susan Slaymaker; d. Shastin.

SELANDER, 1969, DUANE ARTHUR—(*Insurance*)—Born Dec. 2, 1942, Oakland, Calif.; res. 63 Buttonwood Drive, East Brunswick, N.J. 08816; bus. The Continental Insurance Companies, 2 Corporate Place S., Piscataway, N.J. 08854; Cpl., USMC, '62-'65; m. June 20, '67, Audrey Marie Zorna; s. Derek Kyndell, Justin Thayne.

SENAY, 1952, EDWARD CHARLES, M.D.—(*Psychiatry*)—Born Dec. 29, 1927, Holyoke, Mass.; Prof. of Psychiatry, Univ. of Chicago School of Medicine, Box 411, 950 E. 59th St., Chicago, Ill. 60637; res. 17 East Road, Chesterton, Ind. 46304; Residency in Psychiatry, V.A., West Haven, '58-'61; Staff Psychiatrist, V.A., Togus, Me., '61-'63; Acting Chief Psychiatric Consultation Service, Grace-New Haven Community Hosp., New Haven, '63-'64; Instr., Psychiatric Outpatient Clinic, '64-'65; Asst. Prof., NIMH Chief, Dana Psychiatric Clinic, Yale-New Haven Hosp., '65-'67; Chief, Psychiatric Consultation Service, Univ. of Chicago Hosp., '67-; Illinois Drug Abuse Program: Acting Clinical Dir., Mar. '69-Dec. '69, Chief of Drug Studies, Dec. '69-July '70, Acting Dir., July '70-Aug. '70, Dir, June '71-June '76; Assoc. Prof., Dept. of Psychiatry, Univ. of Chicago, '71-; Exec. Dir., Substance Abuse Services, Inc., '76-'78; Prof. of Psychiatry, Univ. of Chicago, '77-; Mbr., Fellow, American Psychiatric Assn., American Psychosomatic Society, New York Academy of Sciences, American Assn. for the Advancement of Science, Assn. of Academic Psychiatry, Dangerous Drugs Advisory Council, Drug Abuse Council of Illinois, International Narcotics Enforcement Officers Assn., Community Corrections Drug Abuse Program; Bd. of Dir., National Federation of Concerned Drug Abuse Workers; Chmn., Drug Abuse Council of Illinois, '79; Chmn., Ad Hoc Study Committee on

Designated Products for 1979-80; PFC, AUS, '46-'47; divorced; d. Suzanne ('80), Emily, Carolyn, Michelle.

SHARP, 1983, JONATHAN DOUGLAS—add. 2137 N. Troy St., Arlington, Va. 22201.

SHATTUCK, 1965, JOHN H. F., M.A., LL.B.—(*Law*)—Born Sept. 22, 1943, Pasadena, Calif.; Lawyer, Exec. Dir., American Civil Liberties Union, 600 Pennsylvania Ave., S.E., Washington, D.C. 20003; res. 2729 Woodley Place, N.W., Washington, D.C. 20008; Visiting Lecturer: Columbia, New York Univ. Law School, Princeton Univ.; Harvard, Virginia Law School; Mbr., Assn. of the Bar of the City of New York; Dir., A.C.L.U. Projects on Privacy & National Security; Dir., Correctional Assn. of New York; Law Clerk, Hon. Edward Weinfeld, U.S. Dist. Court, Southern Dist. of N.Y.; m. May 17, '70, Petra Tölle; s. Peter; d. Jessica, Rebecca.

SHEFFIELD, 1959, JAMES ROCKWELL, M.A.T., Ed.D.—(*Education*)—Born Dec. 15, 1936, New York, N.Y.; Pres., U.S. Committee for UNICEF, 331 E. 38th St., New York, N.Y. 10016; res. 262 Central Park West, New York, N.Y. 10024; Research Assoc., Education & World Affairs, '64-'65; Program Specialist, The Ford Found., '65-'67; Prof., Teachers College, Columbia Univ., '67-'81; Pres., Internatl. Medical & Research Found., '73-'76; m. June 27, '64, Jill Wilkinson; s. James R., III; d. Sarah T.

SHEFFIELD, 1983, JOHN VAN LOON—Born Sept. 14, 1961, St. Louis, Mo.; res. 539 Sherwood Drive, St. Louis, Mo. 63119.

SHEPARD, 1951, CHARLES R. S., M.A.—(*Education*)—Born Feb. 22, 1927, Chicago, Ill.; Lay Minister; Psychological Counselor; presently, candidate for M.Div., Yale Divinity School; res. 75 Howard Ave., New Haven, Conn. 06519; Pres., Yale-China, '71-'79 (continue on Bd.); Mbr., Advisory Bd., Dwight Hall; Assoc. Fellow, Pierson College, '70-; Headmaster, Hamden Hall Country Day School, Hamden, Conn., '64-'69; Teacher, Hillhouse High School, New Haven, '69-'81; Mbr: Bd. of Long Wharf Theatre, '66-, Vestry of Trinity Church on The Green, New Haven, '82-; Asst. Treas., RTA, '55-'57; Mbr., Mayor's Task Force on Education, New Haven, '76-; Cprl., AUS, June '45-Dec. '46; m. Aug. 8, '50, Mary Jo Pelkey; m. 1981, Derry Ann Moritz; s. Timothy C., ('75), Charles E.; d. M. Carrie.

SHEPARD, 1950, DONALD CARRINGTON—(*Business*)—Born May 6, 1924, Chicago, Ill.; Chief Exec. Officer, Manasha Corp., Box 367, Neenah, Wisc. 54956; res. 1113 E. Forest Ave., Neenah, Wisc. 54956; Pres.: Community Chest, Local Chapter-Chamber of Comm.,

School Board; Trustee, local hosp.; Mbr. School Bd., '65-'71; Tech. Sgt., USMC, '43-'46; m. Aug. 27, '49, Jane Ellen Steinborg; s. Donald C. III, William A.; d. Susan Sylvia, Julia R.

SHEPARD, 1939, LLOYD MONTGOMERY, JR.—(*Business*)—Born Sept. 27, 1916, St. Joseph, Mich.; Pres., Berrien County Abstract & Title Insurance Co., 100 Church St., P.O. Box 127, St. Joseph, Mich. 49085; res. 1756 North Shore Drive, Benton Harbor, Mich. 49022; Pres., Mich. Land Title Assn., '70-'72; Mbr., Berrien County Bldg. Authority, '60-'64, Area Planning Position, '56-'60; former Trustee, Kent School, Kent, Conn., Pres., Kent Alumni Assn.; Mich. Finance Chmn., Com. to Re-elect the President, '72; Delegate, Repub. Natl. Conventions, '56, '60, '72, '80; Mbr., Republican State Finance Committee, '60-'72; Mbr.-at-Large, Mich. Presidential Electoral College,, '76; Cmdr., USNR, '41-'46; Atlantic Mediterranean, & Pacific Campaign Ribbons with 7 Battle Stars, Letters of Commendation from Admiral Chester Nimitz, Admiral A.K. Hewit; m. Sept. 9, '50, Mary Helen Brown; m. May 27, '78, Anne Elizabeth Knell; d. Deborah, Sandra (Davis), Rebecca.

SHEPARD, 1935, ROGER BULKLEY, JR.—(*Insurance retired*)—Born Oct. 5, 1911, St. Paul, Minn.; res. 2155 Delaware Ave., St. Paul, Minn. 55118; formerly Sr. V.P., St. Paul Fire & Marine Insurance Co.; Pres., St. Paul YMCA, '58-'64; Bd. Mbr., Community Planning Organization, St. Paul, '80-'82; Bd. Mbr., Family Service, St. Paul, '82-; Lieut. Cmdr., USN, '42-'45; m. Jan. 29, '39, Mary Reed; s. Lansing Reed, Thomas B., Roger Whitten, ('68); d. Katherine (*Morris*).

SHERRILL, 1949, FRANKLIN GOLDWAITHE, S.T.M.—(*Ministry*)—Born May 5, 1928, Boston, Mass.; Rector, Grace Episc. Church, 254 Hicks St., Brooklyn, N.Y. 11201; res. 65 Joralemon St., Brooklyn, N.Y. 11201; m. June 12, '53, Mary Taylor; s. Edmund; d. Ann, Sarah.

SINGER, 1966, RONALD LEONARD, M.A. Cambridge Univ.—(*Business*)—Born March 10, 1944, Glenwood Springs, Colo.; Group V.P., James River Corp., 800 Connecticut Ave., West Norwalk, Conn. 06854; res. 9 Glen Avon Drive, Riverside, Conn. 06878; V.P. and General Mgr., American Can Co, '80-'82; V.P., Planning Control, American Can Co., '77-'80; Senior V.P. & Chief Financial Officer, Welsbach Corp., '71-'75; Dir., Education Section, New York City Budget Bureau, '70-'71; Operations Research Analyst, U.S. Dept. of Defense, '68-'70; Budget Analyst, N.Y. City Govt., '70-'71; m. June 15, '68, Anne Catherine Hallgren; s. Erik Kristian.

SINGLETON, 1961, THOMAS H.—(*Business*)—Born Feb. 16, 1939, Evanston, Ill.; Dir. of Marketing, Management Scope, International,

951 Mariner's Island, San Mateo, Calif. 94404; res. 275 Van Winkle Drive, San Anselmo, Calif. 94960; Yale Alumni Fund, '61-'75; formerly Business Mgr., Tennis Clothing, Wilson Sporting Goods Co., River Grove, Ill.; 1st Lieut., USMC, Mar. '62-May '65; m. Feb. 22, '69, Diane Lally; s. Matthew Thomas; d. Kristin.

SKIBELL, 1984, STEVEN ALAN—add. 4408 W. 10th St., Lubbock, Texas 79416.

SKROVAN, 1979, STEPHEN THOMAS—(*Theatre*)—Born March 4, 1957, Cleveland, Ohio; Stand Up Comedian, bus. and res. 48-24 43d. St., Apt. 2H, Woodside, N.Y. 11377.

SMITH, 1960, BRUCE DONALD III—(*Finance*)—Born Jan. 10, 1938, Chicago, Ill,; Commercial Investments, Development. 1616 Champa, Suite 210, Denver, Colo. 80202; res. 9344 E. Highway 86, P.O. Box 333, Franktown, Colo. 80116; m. Feb. 6, '82, Anndel Kininmonth; s. David; d. Kelly.

SMITH, 1966, FREDERICK W.—(*Business*)—Born Aug. 11, 1944, Marks, Miss.; bus. Federal Express Corp., P.O. Box 727, Memphis, Tenn. 38194; res. 46 Morningside Park, Memphis, Tenn. 38104; m. June 7, '70, Linda B. Grisham; d. Sandra Windland, Laura Fredette.

SMITH, 1929, LLOYD HILTON—(*Industrial*)—Born July 9, 1905, Pittsburgh, Pa.; Independent Oil & Gas Producer, 1630 First Western Bldg., 1300 Main St., Houston, Texas 77002; res. 2 Longfellow Lane, Houston, Texas 77005; Pres., Paraffine Oil Corp.; Dir., First Natl. Bank of Houston, '48-'55; *National Review*, '55-'70; Curtiss-Wright Corp., '53-'81; Information Storage Systems, '67-'70; Falcon Seaboard Corp., '68-'74; Kinetics Internatl. Corp., '70; Adv. Dir., First City Natl. Bank of Houston, '56-; Lieut. Cmdr., USNR, '42-'45; m. 1931, Jane Clay Zevely; m. 1940, Elizabeth Keith Weiss; d. Camilla Clay, Sandra Keith (*Mosbacher*), Sharon Lloyd (*Keller*), Sydney Carothers (*Kerr*).

SMITH, 1919, TRAVER—(*Ranching retired*)—Born June 14, 1897, Jamaica, West Indies; no address available; Lieut. (j.g.), USN, '18-'19; m. Dec. 4, '18, Catherine Clinton; s. Traver C., ('42); d. Shirley (*Shortlidge*).

SNELL, 1967, BRADFORD CURIE, J.D.—(*Law*)—Born April 27, 1946, Brookline, Mass.; Antitrust Attny., Author, add. 642 A St., N.E., Washington, D.C. 20002; Counsel, U.S. Senate Antitrust Subcommittee (Judiciary), '73-'75; Guest Scholar, Brookings Institution, '72; Assoc., Pillsbury, Madison & Sutro, San Francisco, '71-'72; Mbr., Energy & Environment Task Force & Transportation Task Force,

Democratic Natl. Com., '75-'76; Sp-5, USAR—M.I.D., '68-'74; m. Mary Martin Gant.

SOLBERT, 1941, PETER O. A., J.D.—(*Law*)—Born March 9, 1919, Copenhagen, Denmark; Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 416 West Neck Rd., Lloyd Harbor, N.Y. 11743; Chmn., Bd., Seven Springs Center (a Yale affiliate) '79-'82; Dir. and Mbr. Exec. Comm., Center for American Archeology, '79-; Deputy Asst. Sec. of Defense for Internatl. Security Affairs, '63-'65; Lieut. Cmdr., USN, '41-'45; Dept. of Defense Meritorious Civilian Service Medal; m. 1945, Deborah Kirk; s. Alan, ('75), Christopher; d. Leslie (*Fogg*), Elizabeth (*Solbert-Sheldon*), Alison C. (*Paine*).

SOLLEY, 1922, ROBERT FOLGER, M.D.—(*Medicine retired*)—Born Feb. 25, 1901, New York, N.Y.; res. 1859 11th St., Los Osos, Calif. 93402; Asst. Physician, St. Luke's Hosp., N.Y. City to Attending Physician, '35-'65; Consulting Physician to Consultant Emeritus, '66-'78; Asst. Physician, Presbyterian Hosp., N.Y., Neurological Institute, '35-'48; Cmdr. (M.C.), USNR, '18, '42-'46; m. July 15, '72, Ann Ewing; s. David Bennett, ('55), Robert Folger, Jr.

SOMERVILLE, 1957, JOHN W.—(*Finance*)—V.P., Brown Management Co., Financial Plaza Pac., 915 Fort St., Suite 1100, Honolulu, Hawaii 96813; res. c/o Waialae Country Club, 4997 Kahala Ave., Honolulu, Hawaii 96816; m. June 10, '61, Harriet Kittredge Metcalf; s. Henry Kittredge, James Atwell; d. Hannah Frances, Elizabeth G.

SPEAR, 1974, WESLEY JOHN—(*Art*)—Born Feb. 28, 1952, Cleveland, Ohio; Painter, add. 62 S. 11th St., Brooklyn, N.Y. 11211; m. Sept. 22, '79, Sarah J. Mustin.

SPEARS, 1952, ROBERT SAMUEL, A.M.P.—(*Business*)—Born Sept. 6, 1929, Minneapolis, Minn.; Asst. V.P. Commercial, Republic Steel Corp., P.O. Box 6778, Republic Bldg., Cleveland, Ohio 44101; res. 3520 Thornapple Lane, Pepper Pike, Ohio 44124; m. July 21, '56, Carolyn B. Marcy; s. Timothy B., ('80), Daniel B.; d. Gretchen M., Sara M.

SPEED, 1956, JAMES BRECKINRIDGE—(*Industrial*)—Born Jan. 3, 1934, Davenport, Iowa; Owner and Operator, Independent Oil & Gas Producer, Box 125, Fort Smith, Ark. 72902; res. 2323 South 40th St., Fort Smith, Ark. 72903; Admissions Rep., Class Dir.; Arkansas-Best Freight System, Inc.: Administrative Training, '58, Dir. of Terminals, '59, V.P., Terminal Operations, '63, Pres., '66-, Dir., Arkansas Best Corp., '64-; Dir.: Transport Insurance Co., Dallas, Southwest Operators Assn., Central & Southern Motor Freight Bureau, Truck-

ing Employers, Inc., Fort Smith Boys Club, City Natl. Bank; ATA Bd. of Gov. & Dir., ATA Found.; past Campaign Chmn., Fort Smith United Fund; past Dir.: Fort Smith Girls Club, Fort Smith Child-Family Guidance Center, Ark. Bus & Truck Assn., Mississippi Trucking Assn.; Mbr., Ark. Economic Development Study Comm., '75-; m. July 7, '56, Marilyn June Young; s. James Breckinridge III, Robert Young, John Fry.

SPITZ, 1962, ROBERT W., M.S.—(*Business*)—Born Dec. 11, 1940, Philadelphia, Pa.; Acct. Rep., IBM Corp., 5930 Hohman Ave., Hammond, Ind. 46320; res. 514 Jordan Way, Bolingbrook, Ill. 60439; m. March 7, '64, Honor Collins Florence Berger; s. Brian William, Eric Andrew.

SPITZER, 1935, LYMAN JR., Ph.D., D.Sc., LL.D.—(*Education*)—Born June 26, 1914, Toledo, Ohio; Charles A. Young Prof. of Astronomy Emeritus, Princeton University, Peyton Hall, Princeton, N.J. 08540; res. 659 Lake Drive, Princeton, N.J. 08540; Mbr., Yale Council; m. June 29, '40, Doreen Damaris Canaday; s. Nicholas Canaday, Dionis Griffin; d. Sarah Lutetia (*Saul*), Lydia Strong.

SPOFFORD, 1924, CHARLES MERVILLE, M.A. (Hon.), J.D., LL.D.—(*Law*)—Born Nov. 17, 1902, St. Louis, Missouri; res. Windmill Lane, East Hampton, N.Y. 11937; Instr., Yale, '24-'25; Alumni Fellow Corporation, '56-'64; Fellow, Saybrook Coll., '56-; Assoc., Isham, Lincoln & Beal, Chicago, '28-'30; Davis Polk & Wardwell, (and predecessor firms) since '30, mbr. of firm since '40; Dir.: Council on Foreign Relations, '55-'76, Metropolitan Opera Assn., (Chmn. Exec. Com. '56-'71, Pres. '46-'50), American Univ. in Beirut, '57-'63, Natl. Council, English Speaking Union, '55-'64, Distillers Co., Ltd., '52-'76, CIBA Corp., '57-'71, Institute for Defense Analyses, '60-'70; Trustee: Carnegie Corp. of New York, '53-'76, Juilliard Musical Found., Mutual Life Ins. Co. of New York, '55-'76; Vice Chmn. & Dir., Lincoln Center for the Performing Arts, Inc., '56-'76; Mbr. Exec. Com., Am. Branch, Internatl. Law Assn.; Mbr. Am. Soc. Internatl. Law; Deputy U.S. Rep., North Atlantic Council; Chmn., North Atlantic Council Deputies, '50-'52; Carnegie Lecturer, Hague Academy of Internatl. Law, '64; Commissioned Lieut. Col., Oct. '42, Col., Sept. '43, Brigadier General, Sept. '44; staff officer in Mediterranean & ETO, Oct. '42-July '45; Distinguished Service Medal, Purple Heart; decorations from Great Britain, Tunisia, Italy, France, Iceland, Belgium; m. 1930, Margaret M. Walker; m. 1960, Carolyn M. Storrs; m. 1970, Sydney R. Brewster; s. Charles Nicholas ('56), John S. W., ('64); d. Nancy (*Yerkes*), Margaret (*Benkard*).

SPROLE, 1942, Frank Arnott, LL.B.—(*Law*)—Born Sept. 13, 1918, Brooklyn, N.Y.; Vice Chmn. of Bd., Bristol-Myers Co., 345 Park Ave., New York, N.Y. 10154; res. 116 Delafield Island Road, Darien, Conn. 06820; Treas., Class of 1942, '42-'57; Pres., Yale Club of Darien, '61-'62; Dir.: Xomox Corp., '73-, The Knapp Fund, '50-; Trustee, The Hotchkiss School: '70-, Pres., Bd. of Trustees, '80-; Mbr., Bd. of Education, Darien, '58-'61; Chmn. of Bd., Council on Family Health, '80-; Lieut., USN, '42-'45; m. Sept. 23, '44, Sarah Louise Knapp; s. Frank Jared, ('69), Jonathan Knapp; d. Wendy Allen (*Bangs II*), Anne Louise (*Jacobs*), (PA Prog. '82), Sarah Elizabeth.

STACK, 1940, Joseph William Jr.—(*Business*)—Born July 13, 1918, Lansing, Mich.; Pres., Stack Associates, management consulting firm, 230 Park Ave., New York, N.Y. 10169; res. 1082 West Rd., New Canaan, Conn. 06840; A.Y.A. '72-'78; Class Sec., '70-'75; Pres., Football Y Assn., '83-; Mbr., Navy & Marine Acquisition Review Com., '74-'75; Lieut. Cmdr., USNR, '40-'45; Dir., RTA, '71-'73; m. Sept. 25, '48, Wolcott Rorick; s. Christopher D., Nathan S., Joseph W., III (dec.), David R., ('79), Peter S. ('84).

STANBERRY, 1966, William Burks Jr., J.D.—(*Business*)—Born Jan. 23, 1944, Austin, Texas; Pres. and Chief Exec. Officer, Surgicare Corp., 10688 Haddington, Houston, Texas 77043; res. 10918 Walwick, Houston, Texas 77024; Chmn., Class of 1966 25 Year Gift Fund; Corporate Staff Attny., Crutcher Resources Corp., '69-'71; Financial V.P. and Gen'l Counsel, Hycel, Inc., '71-'73, Pres. and Chief Exec. Officer, '74-'81; Pres., Chief Exec. Officer, Surgicare Corp., '82-; m. May 20, '72, Sandra Lynn Melass; s. Parker Andrew; d. Ashley Elisabeth.

STAVEN, 1981, Karl Eric—(*Psychology*)—Born July 24, 1959, San Francisco, Calif.; Psychodrama Intern, St. Elizabeths Hospital, Psychodrama Section, Martin Luther King Drive, Washington, D.C. 20032; res. 2339 40th Place N.W., Apt. 202, Washington, D.C. 20007.

STEADMAN, 1952, John Montague, LL.B.—(*Education*)—Born Aug. 8, 1930, Honolulu, Hawaii; Assoc. Dean and Prof. of Law, Georgetown University Law Center, 600 New Jersey Ave., N.W., Washington, D.C. 20001; res. 2960 Newark St. N.W., Washington, D.C. 20008; 1952 Class Sec., '72-'77; Mbr., Assn. of Yale Alumni, '72-'75; formerly Visiting Prof. of Law, Univ. of Penn.; Assoc., Pillsbury, Madison & Sutro, San Francisco, '56-'63, Of Counsel, '79-; Attny., U.S. Dept. of Justice, Washington, '63-'64; Deputy Under Sec. of Army, '64-'65; Special Asst. to Sec. of Defense, '65-'68; Gen.

Counsel of Air Force, '68-'70; m. Apr. 8, '61, Alison Storer Lunt; s. Eric Cammett; d. Catharine Neilson ('86), Juliette Montague.

STEADMAN, 1955, RICHARD COOKE, M.B.A.—(*Student*)—Born Oct. 1, 1932, Honolulu, Hawaii; Student, Columbia Univ. (stone cutting); res. 59 Barrow St., New York, N.Y. 10014; Class Secy., '55-'65; Chmn., National Convenience Stores, Inc.; Dir., Storage Technology, Inc.; Chmn., Childrens Computer Workshop, Inc.; Trustee, Childrens Television Workshop, Brearley School, '71-'76; Author, Presidentially mandated study "National Military Command System," '80; Head, Defense Transition Team, Carter/Mondale, '76-'77; Deputy Asst. Secy. of Defense, East Asia & Pacific Affairs, '66-'69; Staff Officer, Bd. of National Estimates, CIA, '57-'59; m. Aug. 20, '55, Jane Nuckolls; s. Peter, Christopher ('78); d. Lee.

STEBBINS, 1933, HART LYMAN—(*Ministry*)—Born Sept. 3, 1911, New York, N.Y.; Chmn., retired Pres., Catholics United for the Faith, Inc., 222 North Ave., Box S, New Rochelle, N.Y. 10801; res. 40 Oxford Rd., New Rochelle, N.Y. 10804; m. June 30, '59, Madeleine Froelicher; s. Timothy Neison, John Henry; d. Victoria Neison (*Wallop*).

STETSON, 1934, EUGENE WILLIAM JR.—(*Business retired*)—Born Oct. 4, 1911, New York, N.Y.; res. P.O. Box 1320, Hobe Sound, Fla. 33455; Yale Alumni Advisory Crew Committee, '46-'50; formerly Chmn., Winslow Cohu & Stetson, Inc.; Pres., Fairhill Oil & Gas Corp.; Lieut. Cmdr., USNR, '42-'45, Bronze Star; m. Sept. 20, '34, Grace Richardson; m. March 21, '56, Kathryna Ray Walbridge; s. Eugene William III; d. Nancy, Stuart (*Daly*), Patricia (*Tripp*); ss. Ryckman Walbridge; sd. Leslie (*Smith*).

STEVENS, 1940, ALBERT B.—(*Business*)—Born Dec. 14, 1917, Wallingford, Conn.; Sales Mgr., Lee Co., Westbrook, Conn. 06498; res. Box 354, Guilford, Conn. 06437; m. Sept. 14, '40, Elizabeth G. Berger; s. David B.; d. Lucy M., Mary E.

STEVENS, 1980, ERIC EUGENE—(*Student*)—Born July 6, 1958, Chapel Hill, N.C.; Medical Student, Washington Univ. Medical School, St. Louis, Mo.; res. Howard Road, Cumberland, R.I. 02864.

STEVENS, 1938, JOSEPH B., JR.,—(*Business*)—Born Oct. 4, 1916, Cleveland, Ohio; Chmn., Chief Exec. Officer, Harry M. Stevens, Inc., 2 S. Gold Industrial Park, Robbinsville, N.J. 08691; res. 4 E. Shore Drive, Princeton, N.J. 08540; Lieut. Cmdr., USN, '42-'45; m. Feb. 2, '40, Frances Pine; s. Joseph Brewster; d. Brooke, Sarah (*Webb*).

STEVENSON, 1979, CHARLES—(*Television*)—Born Dec. 8, 1954,

New York, N.Y.; TV News, KGTV, Box 81047, San Diego, Calif. 92138; res. 3613 State St., Apt. 6, San Diego, Calif. 92103.

STEVENSON, 1941, CHARLES P.—(*Industrial*)—Born Sept. 23, 1918, Buffalo, N.Y.; Treas. & Dir., Eastman Machine Co., 779 Washington St., Buffalo, N.Y. 14203; res. 27 Tudor Place, Buffalo, N.Y. 14203; m. Jan. 24, '43, Mary-Louise Lord; s. Wade II, Charles P., Jr., ('68), Robert Lord, ('72), Roy; d. Louise Lord (*Gillespie*).

STEVENSON, 1925, DONALD D., M.F.—(*Forestry retired*)—Born Oct. 2, 1903, New York, N.Y.; res. 23 Wagon Trail, Highland Farms, Black Mountain, N.C. 28711; Sec., Dwight Hall, '25-'27; Instr., Lingnan Univ., Canton, China, '30-'33; Prof., Penn. State Forestry School, '36-'45; Forester: Champion Papers, Canton, N.C. '45-'50, Buckeye Cellulose Corp., Perry, Fla., '52-'68; Quaker Commissioner, Arab Relief, Middle East, '51-'52; Clerk: Friends Meeting, Gainesville, Fla., '66-'67, Asheville, N.C., '74-'76; Mbr., Natl. Council, Soc. of American Foresters, '63-'67; m. June 11, '30, Lois E. Davis; s. J. Ross, Philip D., ('58).

STEWART, 1918, CHARLES JACOB—(*Finance retired*)—Born June 3, 1898, Dallas, Texas; res. River House, Bronxville, N.Y. 10708; (winter) 336 Galleon Drive, Naples, Fla. 33940; formerly Chmn. of Bd., Manufacturers Hanover Trust Co. of New York; 2d Lieut., F.A., 26th Div., Feb. '17-Apr. '19; m. June, '20, Maud Emily Tenison (dec. Jan. 1968); m. July, '69, Clothilde de Veze; s. Charles J., Jr., (deceased) ('48); d. Emily (*Goyer*).

STEWART, 1961, JAMES C., LL.B.—(*Finance*)—Born Apr. 7, 1939, Cleveland, Ohio; Asst. V.P. & Trust Officer, Security Trust Co. of Rochester, One East Ave., Rochester, N.Y. 14604; res. 3485 Elmwood Ave., Rochester, N.Y. 14610; m. May 4, '64, Barbara Hyde Dean; s. Whitney Alaire; d. Allison Dean.

STEWART, 1937, POTTER, LL.B., LL.D.—(*Government retired*)—Born Jan. 23, 1915, Jackson, Mich.; res. 5136 Palisade Lane, N.W., Washington, D.C. 20016; Exec. Committee, Yale Law School Assn., '55-; Assoc., Dinsmore, Stevenson, Plimpton & Page, '41-'42, '45-'47; Assoc., Dinsmore, Shohl, Sawyer & Dinsmore, '47-'50; Mbr., Cincinnati City Council, '50-'53; Vice Mayor, Cincinnati, '52-'53; appointed to 6th Circuit Court of Appeals, '54; appointed Assoc. Justice, Supreme Court of the U.S., '58, retired June '81; Mbr., White House Conference on Education, '54-'55; Mbr., Committee on Court Admin. of Judicial Conference of the U.S., '55-'58; Lieut. USNR, '42-'45; m. April 24, '43, Mary Anne Bertles; s. Potter, Jr. ('70), David Bertles; d. Harriet (*Virkstis*).

STEWART, 1943, ZEPH, M.A.(Hon.)—(*Education*)—Born Jan. 1, 1921, Jackson, Mich.; Andrew W. Mellon Prof. of the Humanities, Harvard Univ., Classics Dept., Boylston Hall 319, Cambridge, Mass. 02138; res. 104 School St., Belmont, Mass. 02178; Yale Univ. Council Committee on the Humanities, '58; Committee on Yale College, '62-'64; Chmn., Committee on Yale College, '76-'81; Campaign for Yale, National Committee of the Grad. School, '76-'78; Asst. Prof., Assoc. Prof., Prof. of the Classics and of Greek and Latin, Harvard, '53-'81; A.W. Mellon Prof. of the Humanities, '81-; Allston Burr Senior Tutor, Adams House, Harvard, '55-'60; Master, Lowell House, Harvard, '63-'75; Chmn., Dept. of the Classics, Harvard, '77-'82; Chmn., United Way of Mass. Bay Drive, Harvard, '76; Trustee: Radcliffe College, '72-'76, Hotchkiss School, '64-'79, '82-, Inst. for Advanced Study at Princeton, '79-, Bishop Rhinelander Found., '64-'70, Loeb Classical Library, '73-; Pres., American Philological Assn., '83, Dir., '77-'80; V.P., American Academy of Arts and Sciences, '79-'82; Capt. AUS, '43-'47, '51-'53, Legion of Merit; Dir., RTA, '61-'64, Pres., '63-'64; m. Dec. 29, '59, Diana Childers; s. Christopher Childers ('85); d. Sarah Barton, Mary Alden.

STILLMAN, 1940, PETER GORDON BRADLEY—(*Education*)—Born May 31, 1918, Rye, N.Y.; Headmaster, Riverdale Country School, 5250 Fieldston Road, Riverdale, N.Y. 10471; res. 5223 Fieldston Road, Riverdale, N.Y. 10471; 1940 Class Treas., '55-'65; Pres., N.Y. Guild of Independent Schools, '78-'80; Secy., Conn. Assn. of Independent Schools, '67-'71; V.P., Independent Day Schools, Middlefield, Conn., '61-'71; Co-Chmn., Charter Commission, Wallingford, Conn., '66-'68; Capt., AUS (Anti Aircraft), '40-'46; m. Dec. 12, '42, Eugenia W. Watters; s. Peter G. ('66, '73 Ph.D.), J. Frederick III ('75), Alfred III ('80), Waddell W. ('83); d. Anne S. (*Nordeman*).

STOKES, 1927, ANSON PHELPS, JR., B.D., D.D., S.T.D.—(*Ministry retired*)—Born Jan. 11, 1905, New Haven, Conn.; res. 99 Codman Road, Brookline, Mass. 02146; formerly Bishop of Episcopal Diocese of Mass.; Trustee of Episc. Ch. at Yale; Class Agt., Alumni Fund, '27-'28; Asst. Rector, St. Mark's Ch., Shreveport, La., '32-'33, Assoc. Rector, '33-'36; Rector, Trinity Ch., Columbus, Ohio, '37-'45; Rector & Canon, St. Andrew's Cathedral, Honolulu, '45-'50; Rector, St. Bartholomew's Ch., New York City, '50-'54; Bishop Co-Adjutor, '54-'56; Bishop, Diocese of Mass. '56-'70; City Planning Bd., Shreveport, La., '34-'46; Advisory Bd., Mass. Comm. Against Discrimination, '55-'60; m. July 10, '43, Hope Procter; d. Carol (*Freemont-Smith*), Mary Elizabeth.

STRATTON, 1981, DANIEL JAMES—Born Dec. 31, 1958, Osmond, Neb.; add. 11730 Dellwood Road, Stillwater, Minn. 55082.

STRAW, 1964, RALPH L., LL.B.—(*Law*)—Born June 1, 1942, Morristown, N.J.; Attny., Wharton, Stewart & Davis, 50 W. Main St., Somerville, N.J. 08876; res. R.D. 1, Cross Brook Rd., Califon, N.J. 07830; m. Aug. 29, '65, Diane Patricia Temme; d. Jennifer.

STRUZZI, 1975, THOMAS ALLEN—(*Aviation*)—Born Feb. 4, 1953, Greensburg, Pa.; Marketing Mgr., TWA, 605 Third Ave., New York, N.Y. 10158; res. Apt. SL, Winchester House, Campus Place, Scarsdale, N.Y. 10583; Internat'l Marketing Mgr., TWA, London, England, '81-'82; m. Aug. 28, '77, Susan Quillin.

SULLIVAN, 1978, CHARLES S.—Born March 5, 1956, Staten Island, N.Y.; add. 31 Livingston Court, Staten Island, N.Y. 10310.

SULZER, 1973, JAMES S.—(*Writing, Education*)—Born Feb. 4, 1952, Bethesda, Md.; Writer/Teacher, Nantucket Chamber Music Center, Box 1352, Nantucket, Mass. 02554; res. Back St., Nantucket, Mass. 02554; Project Mgr., WGBH TV, Boston, '77-'82; Model Secondary School for the Deaf, Washington, D.C.; m. 1979, Barbara L. Elder, s. William James.

SUMNER, 1945, WILLIAM S.—(*Insurance*)—Born March 10, 1923, New York, N.Y.; Managing Dir., Marsh & McLennan, Inc., 600 Grant St., Pittsburgh, Pa. 15219; res. 5600 Northumberland St., Pittsburgh, Pa. 15217; Pres., Plainfield, N.J. Yale Club, '56-'58; Trustee: Magee Women Hosp., '75-, Better Business Bureau, '78-; Lieut. (j.g.) USN '43-'46; m. June 5, '48, Janet L. Strong; s. William S., Jr., Robert D.; d. Susan B., Janet L.

SWENSON, 1940, EDWARD FRANCIS, JR.—(*Finance*)—Born Sept. 3, 1918, New York, N.Y.; Owner/Mgr., Edward F. Swenson & Co., 1711 Southeast Bank Bldg., Miami, Fla. 33131; res. 1030 Hardee Road, Coral Gables, Fla. 33146; Class of 1940 - 25th Reunion Gift Chmn.; Chmn., Yale Alumni Fund, '68-'70; National Chmn., The Campaign for Yale, '74-'77; Mbr. Founding Bd. A.Y.A.; Clark, Dodge & Co., N.Y. City; First National Bank of Miami; Trust Investment Officer and Sr. V.P., Southeast Banking Corp.; Bd. of Dir., Southeast Banking Corp., Southeast Bank N.A., Miami, Fla.; Chmn., Interama Authority, Dade County, Fla., '69-'70; Mbr., Community Relations Bd., Dade County, Fla., '61-'63; Pres., Greater Miami Coalition, '72-'73; Campaign Chmn. and Pres., United Fund of Dade County; Mbr., Bd. of Trustees, Florida Memorial College, Miami, Fla., Univ. of Miami; Capt., AUS, Infantry, '43-'46; m. July 11, '42, Marie A. Bassett; s. Edward F. III ('67); d. Katherine (*Lobell*).

SWIL, 1967, Roy Antony—(*Business*)—Born Oct. 10, 1945, Cape Town, South Africa; Management Accountant, Cape Gate, P.O. Box 17, Parow 7500 Cape, Rep. of South Africa; res. 8 Disa St., Milnerton, Cape 7405, Rep. of South Africa; Pres., Jaycee Sea Point, '80; National Membership Dir., Jaycee South Africa, '82; m. Sept. 10, '77, Rochelle Marcus; s. David; d. Caryn.

T

TABOR, 1943, John Kaye, B.A. & M.A. Cambridge, LL.B., D.Litt. Humane—(*Law, Government*)—Born Apr. 19, 1921, Uniontown, Pa.; Ptnr., Reavis & McGrath, 1776 F St. N.W., Washington, D.C. 20006; res. 1616 34th St. N.W., Washington, D.C. 20007; Yale Alumni Fund, '43-'56; Class Sec., '43-'53; Corresponding Secy., '82-; Yale Scholarship Com., Pittsburgh, '53-'63; Dir., of Yale Alumni Assn., Pittsburgh, '69-'73; Fund for Yale, Special Gifts (Washington Vice Chmn.), '76-; Assoc., Winthrop, Stimson, Putnam & Roberts, New York, '50-'53; Kirkpatrick, Pomeroy, Lockhart & Johnson, Pittsburgh: Assoc., '53-'58, Ptnr., '58-'63; Ptnr., Kirkpatrick, Lockhart, Johnson & Hutchison, Pittsburgh, '70-'73; Ptnr., Purcell & Nelson, '76-'80; Allegheny Cty. Health & Welfare Federation: Chmn., Housing Task Force, '70-'72, Housing Strike Force, '72-'73; Vestry, Calvary, Pittsburgh, '59-'62; Harrisburg Cathedral, '64-'67; St. John's, Georgetown, D.C., '77-'80; Trustee: Diocese of Pittsburgh, '70-'73, Masaryk Publications Trust, '58-; Penn. Sec. of Commerce, '63-'67; Penn. Sec. of Internal Affairs, '67-'68; Penn. Sec. of Labor & Industry, '68-'69; U.S. Under Sec. of Commerce, '73-'75; Lieut., USNR, '43-'46; Pacific Theatre, Atlantic Theatre, Victory Medals. RTA Club Solicitor, '75-'76; m. Dec. 13, '52, Kate Hill Williams; s. John Kaye, Jr., ('77), William H.

TAFT, 1971, Thomas Prindle—(*Education*)—Born July 19, 1948, Cleveland, Ohio; School Teacher & Carpenter; bus. & res. 1257 Ferrelo Rd., Santa Barbara, Calif. 93103; m. July 24, '71, Dudley; s. Nathan Dudley.

TEIG, 1980, Joseph Benjamin—(*Theatre*)—Born Aug. 17, 1958, Franklin, Pa.; Singer, Actor, bus. and res. 115 W. 71st, Apt. 2A, New York, N.Y. 10023; Rooms Controller, Marriott Corp., '81-.

TERRY, 1935, H. P. Baldwin—(*Insurance semi-retired*)—Born March 10, 1913, New York, N.Y.; res. 1519 Washington St., Bath, Me. 04530;

formerly V.P., Alexander & Alexander, New York; Spec. Internat'l Risk Consultant, The Foxboro Co., Foxboro, Mass.; Alumni Fund Agt., Pierson Coll., '35-'47; Class Sec., '70-; Pres., Syosset, N.Y. PTA, '46-'47; Trustee, N.Y. Eye & Ear Infirmary, '50-'60; Chmn., Planning Bd., Laurel Hollow, N.Y., '69-; Lieut. Col., F.A., Jan. '44-Dec. '47; Air Medal with 3 clusters; m. Sept. 27, '36, Barbara Mason; s. H. P. Baldwin, Jr., ('62), W. Gray; d. Sarah (*Graves*).

TERRY, 1962, WYLLYS III, M.F., Ed.M.—(*Education*)—Born Oct. 25, 1939, New York, N.Y.; Asst. Superintendent of Schools, Augusta Bd. of Education, Cony St. Ext., Augusta, Me. 04330; res. Old Kents Hill Road, Readfield, Me. 04355; Asst. Superintendent, Mt. Desert Island, Me., '78-'81; Head of The Upper School, Dallas, Texas, '76-'78; Teacher, Deerfield Academy, Deerfield, Mass., '70-'75; Bd. of Dir., Foruma, '81-, Harbor House, '78-'81; Bd. of Gov., Castion Golf Club, '75-'80, V.P., '80; 1st Lieut., USMC, '62-'65; m. June 25, '66, Leonie duBary Lyon; s. Wyllys, Lyon; d. Tiffany.

THOMAS, 1941, WALTON D., M.D., M.S.—(*Medicine*)—Born July 7, 1919, Montgomery, Ala.; Surgeon, Milwaukee Medical Clinic, 3003 West Good Hope Road, Milwaukee, Wisc. 53209; res. 7829 North Regent Rd., Milwaukee, Wisc. 53217; Founder & Pres., Milwaukee Medical Clinic, 67'-'80, Chmn. of Bd., '81-; Managing Ptnr., Good Hope Properties, '65-'80; Assoc. Clinical Prof. of Surgery, Medical Coll. of Wisc., '65-; Pres., Milwaukee Surgical Soc., '74-'75; Pres., Wisconsin Surgical Society, '78-'80, Milwaukee Country Club, '72-'74; Boys Club; Treas., Milwaukee Academy of Medicine, '70; Lieut. Cmdr., USN, '44-'45, '53-'55; m. July 5, '44, Jane Magin; s. Gregory W., Clay R.; d. Leslie L., Jan M.

THOMPSON, 1970, JONATHAN PENFIELD, B.S.M.E.— (*Engineering*)—Born Dec. 27, 1948, Winsted, Conn.; Engineer and Sales Mgr., Fairchild Automated Parts, Inc., 1 White St., Winsted, Conn. 06098; res. Thompson Road, Colebrook, Conn. 06021; Engr., Torrington Co.; Deer Island Club Corp: Secy., '78-'80, Pres., '80-'83; Secy., G.D. Miller Corp., '80-'83; m. Dec. 27, '80, Tara Boitet; s. James Emerson.

THOMPSON, 1967, STEPHEN EBERLY, JR., M.S., Ph.D.—(*Ecology*)—Born June 3, 1944, Pensacola, Fla.; Dir., Klah Klahnee Wildlife Sanctuary, P.O. Box 999, Sisters, Ore. 97759; res. same as above; Pres., American Marmotological Society, '79-; Commissioner, Deschutes County Planning Commission, Lieut., USN, '68-'71.

THOMPSON, 1969, WILLIAM MCILWAINE, JR., J.D.—(*Law*)—Born Feb. 19, 1947, New Haven, Conn.; Lawyer, 1300 Main St., Suite

1840, Houston, Texas 77002; res. 3829 Meadow Lake Lane, Houston, Texas 77027; Sec. Class of 1969 and A.Y.A. Rep., '69-'74; Christian, Barton, Epps, Brent & Chappell, Richmond, Va. '72-'76; V.P., Founder and Dir., Guardian Oil Co., '74-'80; Bd. of Dir., Houston Metropolitan Ministries, Chmn. of Youth Services Div., '80-; m. May 16, '81, Elsie Dunn Wilson; s. William McIlwaine III.

THOMSON, 1924, CLIFTON SAMUEL, LL.B.—(*Law retired*)—Born Jan. 3, 1903, Johannesburg, South Africa; res. Mosle Rd., Far Hills, N.J. 07931; Ptnr., Appleton, Rice & Perrin, '34-'70; Gen. Counsel and Dir., CIBA Corp., '46-'64; Mayor, Sands Point, N.Y., '40-'47; Mbr., Township Com., Mendham, N.J., '61-'71; m. June 4, '27, Charlotte Deyer; d. Victoria (*Romig*), Charlotte (*Iserbyt*).

THORNE, 1968, BRINKLEY STIMPSON, M.Arch.—(*Architecture*)—Born Aug. 13, 1945, New York, N.Y.; Ptnr., Metcalf & Thorne Architecture; Owner, Mgr., Thorne Market (specialty retail mall and art center), 150 Main St., Northampton, Mass. 01060; res. 48 Ward Ave., Northampton, Mass. 01060; m. Sept. 7, '73, Mazie Cox; d. Dune Delafield, Yarrow Livingston.

THORNE, 1974, CHARLES HEDGES MCKINSTRY, M.D.—(*Medicine*)—Born Oct. 27, 1952, Oakland, Calif.; Resident in General Surgery, Mass. General Hosp., Dept. of Surgery, Boston, Mass. 02114; res. 44 W. Cedar St., Boston, Mass. 02114; Peace Corps, Ghana, '74-'76; m. July 10, '82, Alisa Chaklai.

THORNE, 1966, DAVID HOADLEY, M.S.—(*Communications*)—Born Sept. 16, 1944, New York, N.Y.; Pres., Thorne & Co., 711 Boylston St., Boston, Mass. 02116; res. 301 Beacon St., Boston, Mass. 02116; Ptnr., Martilla, Payne, Kiley & Thorne; Dir.: Turner Corp., '80-, North American Energy Systems, '80-; Pres., Institute of Contemporary Art, Boston, '75-; Treas., Interfare Found., Boston, '81; Editor, *The New Soldier*, MacMillan, '71; Lieut., USN, '66-'70; Navy Commendation and Navy Achievement Medal, Combat Action Ribbon, Vietnam Service Ribbon; m. June 26, '71, Rose Geer.

THORNTON, 1954, EDMUND BRAXTON—(*Business*)—Born March 9, 1930, Chicago, Ill.; Mining Executive, Chmn. & Chief Exec. Officer, Ottawa Silica Co., P.O. Box 577, Ottawa, Ill. 61350; res. Thornwood, P.O. Box 1, Ottawa, Ill. 61350; 1954 Class Council; Yale Development Bd., '67; A.Y.A., '72, '78-'80; Chmn., Ill. Manufacturers Assn., '75-'76; Dir., Ill. State Chamber of Comm., '72-; V.P., Associated Employers of Ill., '75-'76; Chmn., LaSalle County Republican Central Comm.; Dir., Ill. State Historical Soc.; Chmn.: Ill. Nature Preserves Comm., '66-'72, Ill. Historic Sites Advisory Council, '69-'74,

National Parks Centennial Comm., '72-'73; 1st Lieut., USMCR, '50-'58; m. Dec. 31, '64 Elizabeth Moore (divorced) s. Thomas Volney, Jonathan Butler; d. Amanda Braxton, Susan Oakes.

THORSON, 1959, PETR ANDREAS, M.B.A.—(*Finance*)—Born Sept. 8, 1937, Dubuque, Iowa; Investment Counsel, Pres., Thorson Brown, Inc., 32 Lafayette Place, Greenwich, Conn. 06830; res. 38 Close Rd., Greenwich, Conn. 06830; V.P., Morgan Guaranty Trust Co., New York, '59-'68; Officer, Laird Inc., New York, '68-'70; Pres., Optical Sciences Group, Inc., San Francisco, '70-'71, (Dir., '70-); Dir., Trade Finance Corp., Miami, Fla., '82-; Pres. and Dir., Greenwich Health Assn., '81-; Dir., Greenwich Human Services Commission, '82-; Vice Chmn. & Dir., Greenwich Republican Roundtable, '81-; Dir., The Churchill School, New York City, '81-; Dir., RTA, '82-; Stanwich Club, Greenwich: Dir., '75-, Mbr. Exec. Com., '76-; m. Nov. 28, '59, Sarah Paull; d. Karen List, Elizabeth Morgan, Sara Andreas.

TIGHE, 1941, LAURENCE GOTZIAN, JR.—(*Education*)—Born Feb. 26, 1919, Brookline, Mass.; English Teacher, Rippowam-Cisqua School, Cantitoe Road, Bedford, N.Y. 10506; res. R.R. 2, Box 163, Pound Ridge, N.Y. 10576; Alumni Fund Agent, Davenport College; Northern Westchester Mental Health Assn., '64-'74; Westchester Council on Alcoholism, '63-'67; United Way, Westchester, '60-'62; 1st Lieut., AUS, Infantry, '42-'44; Dir., RTA, '67-'71; m. Sept. 8, '42, Frances Moffat; s. Laurence G. III; d. Lorna deZengotita.

TINGEY, 1981, DOUGLAS STUART—(*Business*)—Born June 11, 1957, Montreal, Ontario, Canada; Sales Rep., Xerox Canada, Inc., 6025 Airport Road, Mississauga, Ontario, Canada L4V 1R7; res. 6686 Barrisdale Drive, Mississauga, Ontario, Canada L5N 2H3.

TOM, 1977, CHAN BRUCE III—(*Business*)—Born March 31, 1955, Bethesda, Md.; V.P., Chinese Trading Co., Chinese Noodle Co., Man Chena Corp., 2263 S. Wentworth Ave., Chicago, Ill. 60616; res. 1120 Lake Shore Drive, Chicago, Ill. 60611; Yale Alumni Schools Committee; Past Chmn., U.S.-Asia Institute, '80.

TOWERS, 1982, JONATHAN DAVID—(*Television*)—Born July 5, 1960, New Haven, Conn.; Writer, Editor, Copy Producer, Satellite News Channels, Group W Satellite Comm., 41 Harbor Plaza Drive, Stamford, Conn. 06904; res. 30 Glenbrook Road, Stamford, Conn. 06902.

TRAIN, 1936, ROBERT—(*Industrial retired*)—Born June 9, 1913, Savannah, Ga.; formerly CEO, Bibb Mfg. Co., Macon, Ga.; res. 751 North Ave., Macon, Ga. 31211; Lieut. Cmdr., USNR, '41-'45; m. Jan. 17, '42, Geraldine Jones; s. Robert, Jr., John Comer, ('70), Gerald Jones; d. Campbell, Louise.

TRAPHAGEN, 1956, PETER A.—(*Business*)—Born Aug. 30, 1933, Erie, Pa.; V.P. Operations, Custom Engineering Co., P.O. Box 9099, Erie, Pa. 16504; res. 6390 West Lake Rd., Erie, Pa. 16505; Dir., Fairview Distr. School Bd., '72-; Sgt. E-5, AUS, '56-'58; m. 1958, Lorna Peplinski; s. Patrick Abraham; d. Katherine Anne, Sandra Elizabeth.

TROWER, 1970, C. CHRISTOPHER, J.D.—(*Law*)—Born June 21, 1948, Lexington, Ky.; Ptnr., Brown, Todd & Heyburn, Attorneys, 1600 Citizens Plaza, Louisville, Ky. 40202; res. 402 Club Lane, Louisville, Ky. 40222; Pres. Yale Club of Kentucky, '79-'81; Law Clerk, Chief Judge Elbert P. Tuttle, U.S. Court of Appeals, Fifth Judicial Circuit, '76-'77; Spec. Asst. to the Dir., Kentucky Crime Commission, '71-'73; m. Aug. 19, '71, Freida K. Smith.

TROY, 1981, ALEXANDER—(*Student*)—Born April 21, 1959, New York, N.Y.; Law Student, Harvard Law School, Cambridge, Mass.; res. 5 Lakeview Drive, West Orange, N.J. 07052; Assoc., Breed, Abbott & Morgan, Summer '82; Assoc., Sullivan & Cromwell, Summer '83.

TUCKER, 1931, LUTHER, B.D.—(*Ministry retired*)—Born June 20, 1909, New York, N.Y.; res. 4535 Drake Rd., Cincinnati, Ohio 45243; Dwight Hall: Sec., '31-'32, '42-'49, Advisory Bd., '43-; Trustee, Yale-China, '36-'59; Com. on Religion, Alumni Council, '56-'59; Large Gifts Campaign for Yale, '76-; Pres., Financial Management, Inc., '69-; Asst. Christ Ch., Cambridge, Mass., '34-'37; Far East Sec., '69-'76; World Student Christian Federation, '38-'40; Assoc. Ex. Nat. Student YMCA, '40-'42; Minister, Indian Hill Episcopal/Presbyterian Ch., '49-'73; Canon Pastor, Diocese of Southern Ohio, '73-'82; Dir., Union Seminary, New York City, '47-'50, '60-'75; V.P., M.B.T. Found., '57-; Mbr. Bd., Children's Home, Cincinnati, '51-; Asst. Treas., RTA, '43-'49; m. June 30, '34, Josephine L. Pullman; s. Luther, Jr.; d. Elizabeth (*Sanders*), Marcia (*Boogaard*), Naomi (*Stoehr*).

TUMPANE, 1980, TIMOTHY MICHAEL—(*Industry*)—Born May 15,1958, Chicago, Ill.; Production Planner, Quaker Oats Co., 400 2d St., N.E., Cedar Rapids, Iowa 52401; res. 3600 E Ave., N.E., Cedar Rapids, Iowa 52402; m. July 12, '80, Theresa Sertl.

TURNER, 1978, ELVIN D.—Born Dec. 11, 1955, Detroit, Mich.; res. 3200 Virginia Park, Detroit, Mich. 48206.

TURNER, 1937, HAROLD MCLEOD, M.S., M.A., Ph.D.—(*Library work, Education*)—Born Aug. 9, 1914, New York, N.Y.; res. 3 Stoneleigh, Alger Court, Bronxville, N.Y. 10708; Librarian; N.Y.C. Public Library, '59-'60, Sarah Lawrence Coll., '60-'62; Lecturer, Columbia School of Library Service, '62-'72; Instr., Humanities Dept., Poly-

technic Institute of New York, '72-'74; Library Consultant to Bangladesh Government, '73; Lecturer on Bangladesh, '75-'77; Spec. 1/C, Public Relations, U.S. Coast Guard, '42-'46; m. Sept. 12, '47, Virginia Wilson Binford; s. Harold McLeod III, James Binford; d. Louise Binford, Amy Barnes.

TWICHELL, 1945W, CHARLES PRATT, M.A.—(*Education*)—Born Feb. 27, 1924, New York, N.Y.; Vice Principal for Faculty, Choate Rosemary Hall, Box 788, Wallingford, Conn. 06492; res. 538 N. Main St., Wallingford, Conn. 06492; Ensign, USNR, '44-'46; m. May 1, '48, Ann Chase; d. Penelope Chase, Eliza T. (*Nichols*), Cary Hamilton.

TYLER, 1959, CHEEVER, LL.B.—(*Law*)—Born Oct. 6, 1937, Los Angeles, Calif.; Attny., Wiggin & Dana, 195 Church St., New Haven, Conn. 06510; res. 45 Lincoln St., New Haven, Conn. 06511; Chmn. of Class Agents, Class of 1959; Distributor Committee, New Haven Found.; Bd. Mbr.: Univ. of New Haven, New Haven Chamber of Commerce, United Way of Greater New Haven; Lieut. USN, '59-'69; m. June, '72, Sara S. Schlapp; s. Cheever Pierce, John Dawes, Haven M., Nathan M.; d. Katherine W., Sara C.

U

URQUIJO, 1984, GONZALO—add. Castellana 53, Madrid, Spain.

V

VAN DINE, 1949, VANCE, LL.B.—(*Finance*)—Born July 2, 1925, San Francisco, Calif.; Investment Banker, Managing Dir., Morgan Stanley & Co., Inc., 1251 Avenue of the Americas, New York, N.Y. 10020; res. 1165 Park Ave., New York, N.Y. 10028; Class of 1949 Exec. Com., '50-; Chmn., 10th Reunion, '59; Chmn., 15th Reunion Special Gifts Fund Drive, '64; Co-Chmn., 25th Reunion Special Gifts Fund Drive, '73-'74; Mbr., Leadership Gifts Committee and Major and Special Gifts Committee of The Campaign for Yale, '77-'78; Dir., Yale Alumni Fund, '78-'82; Gov., Foreign Policy Assn., '79-; Trustee, Long Island Univ., '80-; Dir., Recording for the Blind, Inc., '78-; Trustee, Cancer Research Institute, '75-; Seaman 1C, USN, '43-'46; m. Sept. 8, '56, Isabel Erskine Brewster; d. Rose M.

VAN LOAN, 1964, EUGENE MERRITT III, LL.B.—(*Law*)—Born Nov. 23,

1942, Fort Benning, Ga.; Lawyer, 95 Market St., Manchester, N.H., 03101; res. Chandler Rd., Bedford, N.H. 03102; Counsel for Senator-elect Louis C. Wyman, '75; Counsel for N.H. President Ford Campaign, '76; Pres.: Greater Manchester Mental Health Center, '75-'76, Bedford Historical Soc., '75-'76; V.P., N.H. Easter Seal Soc., '75-'76; Yale Club of New Hampshire; Capt., AUS, JAGC, '67-'71; Meritorious Service Medal; m. June 11, '66, Judith Ammon; s. Eric Schuyler; d. Ruby Anna.

VAN SLYCK, 1920, DEFOREST, Ph.D.—(*Government retired*)—Born Oct. 12, 1898, New York, N.Y.; res. 3121 Chain Bridge Rd., N.W., Washington, D.C. 20016; Instr. & Asst. Prof. of History, Yale, '20-'29; Chmn., Freshman History Faculty, Yale, '27-'29; Development Com.; Assoc., Lazard Freres, New York, '29-'37; Ptnr., Fahnestock & Co., New York, '37-'46; C.I.A., Washington, '46-'60; Mbr., Bd. of Natl. Estimates (C.I.A.), '50-'60; Internatl. Student House, Washington: Pres., '62-'65, Hon. Chmn., Bd. of Dir., '65-; W.W. I: Quartermaster 1C, USNR, July-Dec. 1918; W.W. II: Col., USAAF, Intelligence '42-'45; Legion of Merit; m. June 20, '20, Katharine W. Sneath (divorced); m. Dec. 11, '31, Katharine G. Rogers; s. DeForest, Jr., ('43), killed in action, July 8, '44, Ashley, Peter,('49); d. Anne (*King*), Edith.

VARGISH, 1966, THOMAS, M.D.—(*Medicine*)—Born Sept. 23, 1944, Brooklyn, N.Y.; Physician, Assoc. Prof. of Surgery, Dept. of Surgery, West Virginia Univ. Medical Center, Morgantown, W.Va. 26505; res. 144 Poplar Drive, Morgantown, W.Va. 26505; Asst. Prof., '78-'82, Assoc. Prof., '82-; Lieut. Cmdr., USN, '76-'78; m. June 22, '68, Kathryn Louise Griffin; s. Jacob Jon; d. Lisa.

VINCENT, 1931, FRANCIS T.—(*Business retired*)—Born Sept. 30, 1908, Torrington, Conn.; formerly, Supervisor of Payrolls, Southern New England Telephone Co.; res. 100 Gillies Rd., Hamden, Conn. 06514; m. July 5, '37, Alice L. Lynch; (deceased); s. Francis T., Jr., ('63); d. Joanna E., Barbara J.

VOGT, 1943, TOM D., M.A.—(*Education*)—Born Jan. 19, 1922, Louisville, Ky.; Rhodes School, 212 W. 83rd St., New York, N.Y. 10024; m. Feb. 12, '44, Helen Keith Ransdell; d. Ruth Hillsman, Kathleen Louise, Mary Ransdell, Emily Ransdell.

von HOLT, 1916, HERMAN VALDEMAR—(*Business*)—Born Jan. 29, 1894, Honolulu, Hawaii; Estate Management, Box 2933 (Suite 903, Davies Pacific Center), Honolulu, Hawaii 96802; res. 900 Alewa Drive, Honolulu, Hawaii 96817; Mbr. and Pres., Yale Club of Hawaii; Vestryman, Treas., St. Andrew's Cathedral Parish, '23-'48; Honolulu

Recreation Comm., '26-'46, Chmn., '32-'46; Hawaii Boxing Comm., '29-'36, Chmn., '33-'36; Honolulu Parks Bd., '32-'38; Dir., Chmn., Invest. Comm., Episc. Church in Hawaii, '32-'69; 2d Lieut., U.S. Tank Corps, AEF, Oct. '17-Aug. '19; m. April 26,'18, Betty Value (deceased).

VORYS, 1952, MARTIN W.—no address available.

VOSE, 1945W, ELLIOTT EVANS, LL.B.—(*Business*)—Born Nov. 30, 1923, Boston, Mass.; Sr. V.P., Aerospace Marketing, Grumman International Inc., 1111 Stewart Ave., Bethpage, N.Y. 11714; res. Old Point Rd., Quogue, N.Y. 11959; AYA; Chmn., Yale Law School Fund, '58-'59; Alumni Fund Agent, Calhoun College, '48-; Lawyer, Winthrop, Stimson, Putnam & Roberts, N.Y.C., '50-'55; The Singer Co.: Asst. to Pres., '55-'60, V.P. Latin America, '61-'66, Group V.P. & Dir., '67-'68, Administrative V.P., '68-'74; Village Planning Bd., Quogue: Mbr., '70-'79, Chmn., '72-'76; Lieut. (j.g.), USN, '43-'46; m. Nov. 18, '64, Pamela Daly. (divorced).

W

WADDELL, 1961, GEOFFREY HAMILTON—(*Theatre*)—Born Feb. 10, 1940, Milford, Conn.; Dir., Performing Arts Programs, New York State Council on the Arts, 80 Centre St., New York, N.Y.; res. 138 Columbia Heights, Brooklyn, N.Y. 11201; Lieut., USNR, '62-'65.

WAGNER, 1983, VICTOR EDMOND—Born Dec. 19, 1958, Ottawa, Ontario, Canada; res. 15 Charlotte St., Ottawa, Ontario, Canada K1N 8J9.

WALD, 1975, STEPHEN GEORGE—(*Student*)—Born March 5, 1953, Philadelphia, Pa.; Talmudist/Theologian, Fellow of Shalom Hartman Institute for Advanced Judaic Studies; Doctoral Candidate, Hebrew Univ. of Jerusalem; res. Gilo 433/14, Jerusalem, Israel; m. Nov. 24, '76, Stephanie Hannah Brilliant ('76); s. Joseph Jacob; d. Irene Judith.

WALDEN, 1972, ROBERT S.—Add. 53 W. 76th St., Apt. 7, New York, N.Y. 10023.

WALKER, 1953, GEORGE HERBERT III, J.D.—(*Finance*)—Born March 16, 1931, St. Louis, Mo.; Chmn., Pres. and Chief Exec. Officer, Stifel, Nicolaus & Co., Inc. and SN Alliance, Inc., 500 N. Broadway, Suite 1700, St. Louis, Mo. 63102; res. 136 S. Price, St. Louis, Mo. 63124; Yale Alumni Fund: Mbr. of Bd and Asst. Chmn., '64-'70; Yale Club of

Chicago: Pres., '70-'71, Officer and Dir., '64-'71; Officer and Dir., Yale Club of St. Louis, '59-'62, '72-; Dir.: Lafayette Federal Savings & Loan Assn., '71-'81, Laidlaw Corp., '74; Mbr.: Exec. Committee, Securities Industry Assn., '82, '83, Bd. of Dir., Securities Industry Assn., '81-'83, Regional Firms Advisory Committee to N.Y. Stock Exchange Bd. of Gov., '82-'83, Bd. of Gov., Midwest Stock Exchange, Inc., '83; Assoc. Dir., A. Gary Shilling & Co.; Dir.: Episcopal Church Found., Arts & Education Council, Vice Chmn. and Mbr. Exec. Committee of Downtown St. Louis, Inc., St. Louis Regional Commerce & Growth Assn.; Trustee, Diocesan Investment Trust of The Episcopal Diocese of Mo.; Vestry, St. Ann's Church, Kennebunkport, Me.; Dir. and Vice Chmn., Webster College, Webster Groves, Mo.; Mbr., Bd. of Trustees, St. Louis Children's Hospital; former Chmn., Business & Industrial Development Committee, St. Louis County Air Pollution Control Bd.; former Civilian Aide to Secy. of the Army for Eastern Mo., June '74-Oct. '79; 1st Lieut., USAFR, '56-'58; m. Dec. 23, '55, Sandra Canning; m. July 27, '68, Kimberly Gedge; s. George H. IV, Carter Gedge; d. Mary Elizabeth (*Bunzel*), Wendy Wear, Isabelle Talbot.

WALKER, 1944, JEFFREY POND—(*Education retired*)—Born Feb. 28, 1922, New York, N.Y.; res. P.O. Box 361, Salisbury, Conn. 06068; formerly Business Mgr. & Trustee, Salisbury School; Bd. of Finance, Town of Salisbury: Mbr., '69-, Chmn., '77-; Lieut., USNR '43-'46; m. Dec. 9, '44, Leonie K. Sullivan (divorced); m. March 7, '70, Dorothy Ritchie Pomeroy; s. Jeffrey L.; d. Sandra D., Carolyn P. (*Evans*).

WALKER, 1931, JOHN MERCER, M.D.—(*Medicine, Finance*)—Born Jan. 15, 1909, St. Louis, Mo.; Limited Partner, Alex. Brown & Sons (stock brokerage), 103 N. Washington St., Easton, Md. 21601; res. Route 2, Box 600, Easton, Md. 21601; Yale Alumni Board, '60-'62; Committee appointed by Pres. Griswold to make recommendations on Univ. Nursing School; Class of 1931, Class Agent, '55; G.H. Walker & Co.: Ptnr., '58-'64, Managing Ptnr., '64-'74; Consultant, White Weld & Co., '74-'78; Consultant, Merrill Lynch, '78-'82; Deputy Medical Dir., Memorial Sloan Kettering Hosp., '51-'58; American College of Surgeons, '42; American Board of Surgery, '43; Central Surgical Society, '47; Ewing Society, '53; Chmn. of Exec. Committee, and Chief Exec. Office Officer, Memorial Sloan Kettering, '60-'64, Pres. and Chief Exec. Officer, '64-'74; Trustee, Hill School, '60-'70; Bd. of Gov., Memorial Sloan Kettering, '60-; Lieut. Col., AUS, '42-'46; m. Nov. 25, '39, Louise Mead; s. John M., Jr. ('62), George M., Randolph T.; d. Lulie W. (deceased), Elsie M.

WALKER, 1936, LOUIS—(*Finance*)—Born Apr. 14, 1912, St. Louis, Mo.; V.P., Tucker, Anthony, R.L. Day, Inc., 1 Corporate Center, Hartford, Conn. 06103; res. P.O. Box 1255, Hobe Sound, Fla. 33455; formerly V.P., White Weld, Inc., Hartford, Conn.; A.Y.A., '73-'76; Dir., Alumni Fund, '60-'65; Chmn.: 25th Reunion Fund, '61, 50th Reunion Fund, '86; Maj. (Assimilated Rank), Psychological Warfare (SHAEF), '42-'44; m. June 17, '39, Grace Ballard White; s. James W. II; d. Suzanne (*Robinson*), Dorothy (*Stapleton*), Elizabeth (*Field*).

WALKER, 1955, RAY CARTER, M.B.A., M.D.—(*Medicine*)—Born Nov. 26, 1933, New York, N.Y.; Psychiatrist, 107 State St., Guilford, Conn. 06437; res. 74 Water St., Guilford, Conn. 06437; G. H. Walker & Co., '59-'64; 1st Lieut., AUS, '57-'59; m. Aug. 7, '54, Emily Thompson; m. Jan. 9, '71, Jean Cowan; s. Christopher, Scott, Daniel, David.

WALKER, 1948, SAMUEL SLOAN, JR.—(*Publishing*)—Born Nov. 2, 1926, New York, N.Y.; Pres., Walker Publishing Co., Inc., 720 Fifth Ave., New York, N.Y. 10019; res. 1040 Fifth Ave., New York, N.Y. 10028; War Correspondent, *N.Y. Post*, Paris, '45-'46; Asst. to Research Dir., Time, Inc., '49-'51; V.P., Free Europe Com., N.Y.C.; Dir., Free Europe Press, '51-'59; V.P., Radio Free Europe, '51-'59; Pres., Walker & Co., N.Y.C., '59-; Bd. of Dir., Am. Field Service; Trustee, Chmn., Exec. Committee; Pres., Bd. of Trustees, St. Bernards School; Chmn., Bd. of Dir., Brookfield, Conn., Library; Mbr., Brookfield Historical Soc.; Volunteer Ambulance Driver, Am. Field Service, France & Germany, '45; m. Oct. 28, '61, Beth Bready; s. Samuel Sloan, III ('85), Randolph Ramsey, ('86), Timothy Taggart.

WALSH, 1961, JOHN JOSEPH, JR., M.A., Ph.D.—(*Education*)—Born Dec. 9, 1937, Mason City, Wash.; res. 44 Allerton St., Brookline, Mass. 02146; Governing Bd., Yale Univ. Art Gallery, '76-; The Frick Collection, Lecturer & Curatorial Asst., '66-'68; The Metropolitan Museum of Art, N.Y.C.; Assoc. for Higher Education, '68-'71; Assoc. Curator of European Paintings, '71-'73, Curator, '73-'75; Democratic Cty. Com., N.Y. Cty., '68-; Petty Officer 3rd Class, USNR, '57-'59; m. Feb. '62, Virginia Alys Galston; s. Peter Wilson, Frederick Matthiessen; d. Anne Galston.

WARDWELL, 1927, EDWARD ROGERS—(*Law retired*)—Born Sept. 15, 1904, Lawrence, N.Y.; formerly Ptnr., Davis Polk & Wardwell; res. 911 Park Ave., New York, N.Y. 10021; University Council, '52-'58; Chmn., 30th Reunion Alumni Fund, '57; 55th Reunion Alumni Fund, '82; Yale Medal, '63; Lieut. Col., USAAF, '42-'45; Legion of Merit; m.

June 10, '30, Lelia Morgan; s. Allen, ('57); d. Helen (*DuBois*), Lelia (*Seidner*).

WARREN, 1945W, George U., M.A.—(*Education retired*)—Born Jan. 7, 1923, New York, N.Y.; res. Indian Trail, Cummaquid, Mass. 02637; Yale Alumni Fund, '76-'77; Teacher, Dept. Head, Chmn. of Faculty, '66-'67; Dir. of Admissions, '69-'76; 1st Lieut., USMC, '43-'46; m. March 3, '45, Dorothy Harvey; m. 1975, June Baker; s. Daniel, ('70), Caleb Thomas, Ethan Warren; d. Katherine Davis.

WATSON, 1940, William Berkey—(*Business retired*)—Born June 25, 1917, Brownsville, Pa.; res. 15 Grove Ave., Madison, Conn. 06443; formerly Chem. & Pres., Chester Electronic Laboratories, Inc., a division of General Telephone & Electronics Corp.; Lieut., USNR, '42-'46; Area Ribbons; RTA: Dir., '79-'82, Chmn. of Annual Giving Program, '79-; m. Dec. 7, '40, Helen Baur; d. Catharine Whiting (*Rapp*), Sarah McDowell (*Healy*).

WEBER, 1953, John William, M.B.A.—(*Business*)—Born Dec. 12, 1931, Warren, Ohio; Management Consultant, Pres., Putnam, Hayes & Bartlett, Inc., 50 Church St., Cambridge, Mass. 02138; res. 12 Falmouth Rd., Wellesley Hills, Mass. 02181; Class Agent, Alumni Fund, '63-; Alumni Schools Com., '66-'69, '78-; Dir., Yale Basketball Assn., '60-'64; McKinsey & Co.: Assoc. '60-'68, Principal, '68-'71; Pres., Chayes Virginia Inc., '72-'73; Asst. Administrator, Federal Energy Admin., '74; Principal, Temple, Barker & Sloane, '74-'79; Sr. V.P., Boston Gas Co., '79-'82; Lieut., USN, '55-'58; m. May 14, '55, Carolyn E. Rhoten (dec.); m. June 9, '72, Nancy B. Tieken (divorced); s. Bruce W.; d. Lisa J.

WEED, 1938, George Haines—(*Business*)—Born July 29, 1916, Savannah, Ga.; Manufacturers Rep., Duluth Filter Co., Duluth, Minn.; bus. & res. 2245 Delaware Ave., St. Paul, Minn. 55118; Enrollment & Scholarship Chmn., N. & S. Dakota & Minn., '48-'60; former Pres., N.W. Yale Alumni Assn.; Chmn., 35th Reunion; Chmn., College Agts., '69-'73; formerly Pres., W. H. Sweney Paint Co.; Cmdr., USNR, June '41-Aug. '46; m. June 11, '48, Alice Warren Sweney; s. George Haines, Jr.; d. Virginia Gordon.

WEINSTEIN, 1984, Adam—add. 265 Beverly Road, Scarsdale, N.Y. 10583.

WESTERFIELD, 1979, Richard H.—Born June 2, 1957, New York, N.Y.; add. 239 Bradley St., New Haven, Conn. 06511.

WHEELER, 1958, Thomas Beardsley—(*Insurance*)—Born Aug. 2, 1936, Buffalo, N.Y.; Exec. V.P., Massachusetts Mutual Life Insurance Co., 1290 State St., Springfield, Mass. 01111; res. 51 Cedar

Road, Weston, Mass. 02193; Pres.: Boston Life Underwriters Assn., '72-'73, Mass. Assn. of Life Underwriters, '76-'77; Dir., Boston Chapter of Chartered Life Underwriters, '69-'71, Pres., '81-'82; Mass. Mutual General Agents Assn., Secy/Treas., '82, V.P., '83; Trustee, Newton Wellesley Hosp., Heart Fund of N.E.; Estate Planning Council, '78-'82; Noble and Greenough School, '82-'83; Boston Children's Service Assn.: Past V.P., Dir., '69-'78; Dir. Roxbury Children's Service Assn., '75-; Vice Chmn., Republican Town Com., Sherborn, '72-; Lieut., USN, '58-'60; m. Nov. 25, '61, Anne T. Robertson; d. Elizabeth C., Wendy B.

WHITEHEAD, 1936, MATHER KIMBALL—(*Business retired*)—Born Dec. 23, 1913, Buffalo, N.Y.; res. 1555 Burr St., Fairfield, Conn. 06430; formerly V.P. & Treas., Intenatl. Mining Corp., N.Y.C.; Lieut Cmdr, USN-AVS, '42-'46; m. Elisabeth Vogel Uihlein.

WHITEHOUSE, 1944, CHARLES SHELDON—(*Government*)—Born Nov. 5, 1921, Paris, France; res. 2425 Foxhall Rd. N.W., Washington, D.C. 20007; in Foreign Service since 1948, with assignments in Belgium, the Congo, Turkey, Cambodia, South Africa, Guinea and Washington; Deputy Asst. Secy. of State for Foreign Affairs, '71; Deputy for CORDS III CTZ Vietnam, '69-'70; Deputy Ambassador, Saigon, '72-'73; Ambassador to Laos, '73-'75; Ambassador to Thailand, '75-'78; Pres., American Foreign Service Assn., '81-'82; Capt., USMCR, '42-'46; Air Medal, 2 Gold Stars; m. Feb. 1, '54, Mary C. Rand; s. Sheldon, ('78), Charles R.; d. Sarah P.

WHITMAN, 1938, FRANCIS SLINGLUFF, JR.—(*Journalism*)—Born July 18, 1916, Baltimore, Md.; res. 1423-25 Greenspring Valley Road, Stevenson, Md. 21153; retired Assoc. Adv. Dir., The Sunpapers, Baltimore, Md.; Pres., Baltimore Symphony, '51-'54; Maj., AUS, '40-'45.

WHITMORE, 1944, JAMES ALLEN, JR.—(*Theatre*)—Born Oct. 1, 1922, White Plains, N.Y.; Actor; res. Box 221, Mammoth Lakes, Calif. 93546; American Theatre Wing, '46-'47; m. Aug. 9, '47, Nancy R. Mygatt; s. James Allen III, Stephen Richmond, Daniel Crane.

WILBUR, 1933, JOHN SMITH—(*Industrial retired*)—Born June 15, 1911, East Cleveland, Ohio; res. 9935 Mitchells Mill Rd., R.D. 1, Mentor, Ohio; A.Y.A. Founding Bd.; A.Y.A. 1933 Rep.; Pres., Yale Alumni Assn. of Cleveland; formerly Vice Chmn., Cleveland Cliffs Iron Co.; Trustee and now Honorary Trustee, Cleveland Museum of Art, Holden Arboretum; past Trustee: Cleveland Clinic, University Hospitals, Cleveland Health Museum, Loomis School; Capt., AUS,

'41-'45; m. Oct. 10, '34, Atheline Miller; s. John Smith, Jr., ('64); d. Atheline (*Nixon*), Andrea (*de Chiara*), Maren Spencer.

WILBUR, 1964, JOHN SMITH, JR., J.D.—(*Law*)—Born July 20, 1941, Cleveland, Ohio; Attny., Ptnr., Caldwell Pacetti-Barrow & Salisbury (law firm), 324 Royal Palm Way, P.O. Box 2775, Palm Beach, Fla. 33480; res. 206 Caribbean Road, Palm Beach, Fla. 33480; Trial Attny., U.S. Dept. of Jusitce; Asst. U.S. Attny., U.S. Virgin Islands; Lieut., USN, Seal Team, Nov. '64-Sept. '68, Purple Heart Vietnam Service; m. March 22, '80, Beverly Stone.

WILBUR, 1938, RICHARD EMERY—(*Journalism*)—Born Aug. 23, 1916, Cleveland, Ohio; Reporter, *Tucson Daily Citizen*, P.O. 26767, Park & Irvington, Tucson, Ariz.; res. 2621 Calle Paraiso, Tucson, Ariz. 85705; Sgt., AUS, '42-'46; m. Roberta Kathleen Steger.

WILKE, 1945, VALLEAU, M.A.—(*Education*)—Born July 3, 1923, Summit, N.J.; Exec. V.P., Sid W. Richardson Found., 309 Main St., Fort Worth, Texas 76102; res. P.O. Box 12432, 4000 Pecan Lane, Fort Worth, Texas 76116; A.Y.A.; Instr. in History, Dormitory Counselor, Coach of Football and Baseball, Phillips Academy, '48-'59; Governor Dummer Academy, Byfield, Mass.: Headmaster, '59-'72, Dir. of Development, '72-'73; National Assn. of Independent Schools, '62-'68; New England Assn. of Schools and Colleges: Chmn., Comm. of Independent Secondary Schools, '68-'70, V.P., '71-'72, Pres., '72-'73; U.S. Office of Education: Mbr., Advisory Committee on Accreditation and Institutional Eligibility, '73-'77, Chmn., '78, Consultant, June '78-'79; Southwest Educational Development Lab., Mbr. Bd. of Dir., '76-; Pres., '81; Southwest Conference of Foundations, Mbr. Bd. of Dir., '77-, Pres., '81; National Council on Foundations, Mbr. Bd. of Dir., '79-; Foundation Center, Mbr. Bd. of Dir., '82-; 1st Lieut. U.S. Army Air Corps, '42-'45; m. Feb. 23, '46, Marjorie Hankin; s. Robert B.; d. Janice (*Fraser*).

WILLARD, 1926, CHARLES HASTINGS, LL.B.—(*Law retired*)—Born Apr. 7, 1905, Minneapolis, Minn.; res. 308C Heritage Hills, Somers, N.Y. 10589; Alumni Bd., '52; A.Y.A., '73-'76; formerly Partner, Davis Polk & Wardwell, New York, N.Y.; Mbr. of Council, American Law Institute, '51-'53; m. Oct. 20, '34, Nancy Olney; s. Albert Hastings, Richard Olney.

WILLIAMS, 1939, BURCH, LL.B.—(*Finance retired*)—Born July 6, 1917, Tunica, Miss.; formerly Investment Banker, Senior V.P., Blyth Eastman Dillon & Co., Inc., New York, N.Y.; res. 160 Uncas Point Rd., P.O. Box 336 Sachem's Head, Guilford, Conn. 06437; Class Agt., Pierson Coll., '51-'54; Comm. for Study of Yale Athletics,

'75-'76; Mbr., Exec. Com., Class of 1939; Maj., USAAF, '41-'45; Purple Heart, Air Medal with Cluster, D.F.C.; RTA: Dir., '48-'50, '73-'77, Pres., '73-'76; m. Sept. 22, '43, Marjorie Jane Maxim; d. Suzanne Marie (*Laprade*), Judith Holmes (*Gibbons*), Wendy Elizabeth, Elizabeth Maxim (*Houston*).

WILLIAMS, 1976, DARRYL L.—Add. 201-16 111th Ave., Hollis, N.Y. 11412.

WILLIAMS, 1932, SAMUEL GOODE—(*Transportation retired*)—Born Dec. 15, 1909, Charleston, S.C.; res. 4737 Carlisle Rd., Jacksonville, Fla. 32210; formerly Mgr. of Pricing, Seaboard Coast Line Railroad Co., Jacksonville, Fla.; m. Sept. 9, '33, Helen Olivia McCoy; s. Samuel G., Jr.; d. Helen O. (*Sanders*), Mary C. (*Vensel*).

WILLIAMS, 1957, WILLIAM BRUCE—(*Transportation*)—Born June 11, 1934, New York, N.Y.; 586 Laurel Court, Wauconda, Ill. 60084; Lieut. Co., USMC, June '57-Dec. '67; USMCR, Commanding Officer, Headquarters & Maintenance Squadron 49 NAS, Willow Grove, Pa., Jan. '68-; m. Apr. 20, '59, Jo Anne Phillips; s. Philip, Neil; d. Karen

WILSON, 1979, DANIEL RICHARD, M.D.—(*Medicine*)—Born Feb. 22, 1956, Fort Dodge, Iowa; Psychiatry Resident, McLean Hospital, 115 Mill St., Belmont, Mass. 02178; res. 84 Egerton Road, Arlington, Mass. 02174; Yale Club of Iowa; Sleyster Scholar of the AMA, '82-'83; Clinical Fellow in Psychiatry, Harvard Medical School and Resident in Psychiatry, McLean Hosp., '83-; m. Aug. 11, '79, Sandra Lea Jean Davis.

WILSON, 1972, ZEBULON VANCE, M.A., Diploma, (Trinity College)—(*Writing*)—Born Aug. 8,1950, Asheville, N.C.; Writer; res. 1539 N. Morningside Drive, N.E., Atlanta, Ga. 30306; Teacher, The Lovett School, '74-'79, Principal, '77-'79; Southeast Dir., Independent Educational Services, '79-'83; m. Aug. 4, '79, Linda Dager.

WISEMAN, 1984, DAVID BATSHAW—add. 43 Martin, Cambridge, Mass. 02138.

WOLFE, 1964, STEPHEN H., M.Div.—(*Ministry, Finance*)—Born Aug. 23, 1942, Glen Cove, N.Y.; Investment Planner, U.S. Trust Co., 45 Wall St., New York, N.Y. 10005; res. 853 7th Ave., New York, N.Y. 10019.

WOODLOCK, 1969, DOUGLAS PRESTON, J.D.—(*Law*)—Born Feb. 27, 1947, Hartford, Conn.; Asst. U.S. Attny., Dist. of Mass., New England Organized Crime Strike Force, 19th Floor, U.S. Post Office & Courthouse, Boston, Mass. 02109; res. 52 Turkey Shore Road, Ipswich, Mass. 01938; Newspaperman, *Chicago Sun-Times*, Chicago,

Ill. and Washington, D.C., '69-'73; Staff, U.S. Securities & Exchange Commission, '73-'75; Law Clerk to Judge Frank J. Murray, U.S. Dist. Court for the Dist. of Mass., '75-'76; Lawyer, Goodwin, Procter & Hoar, Boston, Mass., '76-'79; Instr., Havard Law School, '81-'82; Asst., U.S. Attny., '79-; Chmn., Town of Hamilton, Mass. Board of Appeals, '78-'79; m. Aug. 30, '69, Patricia Powers; s. Benjamin Powers; d. Pamela Powers.

WOODSUM, 1953, Harold Edward, Jr., LL.B.—(*Law*)—Born Aug. 13, 1931, Portland, Me.; Ptnr. & Co-founder, Drummond, Woodsum, Plimpton & MacMahon, P.A., 900 Maine Savings Plaza, Portland, Me. 04101; res. McKenney Point, Two Lights Rd., Cape Elizabeth, Me. 04107; Football Advisory Com., '58-; Yale Comm. on Athletics, '75-'76; Search Com. for Athletic Dir. to succeed Delaney Kiphuth, '76-; Interviewer for Yale Applicants, '65-'74; Campaign for Yale; Jones Commission, May '75-March '76; Yale Corp., Successor Trustee, '79- (12 years); Portland Symphony Orchestra: Trustee, '65-'74, Pres. '72-'73; Dir., Portland Boys Club, '68-'74, '76-; Trustee Waynflete School, '70-; Dir., Quebec-Labrador Mission Found., Inc., '69-; Maine Coast Heritage Trust: Dir., '70-, Pres., '72-; Town Council, Cape Elizabeth: Mbr., '65-'75, Chmn., '73-'74; Mbr., and Chmn., Section of Committee to Revise Maine's Corporation Law, '69-'70; Dir., National Audubon Society, '81-; Pvt., AUS, '53-'55; m. Oct. 18, '57, Joan C. Patterson; s. Douglas H.; d. Lee (*Jones*) ('81), Rae, Alix.

WOODWARD, 1922, Stanley, LL.D., D.C.L.—(*Government retired*)—Born March 12, 1899, Philadelphia, Pa.; res. 3009 N St. N.W., Washington, D.C. 20007; Yale-in-China Teacher, '22-'23; Endowment; Woodward Chair in American History, Yale Univ., '72; U.S. Foreign Service Officer, Geneva, Brussels, Port-au-Prince, '26-'34; Commissioner, Fairmont Park, Philadelphia, '34-'37; U.S. Dept. of State; Asst. Chief Protocol, '37-'45, Chief of Protocol, '45-'50; Ambassador Extraordinary & Plenipotentiary, Canada, '50-'53; Treas., Democratic Natl. Com., '54-'55; Mbr., U.S. Delegations to U.N., '60-'62; Founding Trustee, The Woodward Found; Pres.: George Woodward Inc., Philadelphia, Washington Humane Soc.; Dir. (Emeritus), Am. Security & Trust Co.; Penn. Chamber of Commerce Ambassador Award & Germantown Community Award; Scroll of Appreciation, Dept. of State; D.C. Education Assn. Certificate for Untiring Services & Generous Acts; D.C. Humanitarian of the Year Award; donation of Thomas Jefferson statue to Dept. of State for Jefferson Room; Contributor to Chair in memory

of Dean Acheson, Johns Hopkins Univ.; Bd. of Dir., Salzburg Seminar in American Studies; Fine Arts Com., Dept. of State; Trustee, Corcoran Gallery of Art; Treas., Natl. Council of Friends of Kennedy Center; Advisory Council, John Hopkins Univ. Advanced Internatl. Studies; Sgt., F.A., U.S. Army, '18; m. Oct. 20, '23, Sarah Crescentia Rutherford; s. Stanley, Jr.

WOOLLEY, 1917, KNIGHT—(*Finance*)—Born May 1, 1895, Brooklyn, N.Y.; Limited Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 810 5th Ave., New York, N.Y. 10021; presently Dir., Southern R.R. System, Merchants Sterling Corp., Orama Corp., Tiger Corp.; Trustee, Boys' Club of N.Y., '27-; Major, F.A., U.S. Army, '17-'19; Victory Medal with 4 Major Combat Stars; m. Aug. 7, '34, Sarah Currier (dec.); m. April 16, '57, Marjorie Fleming.

WRIGHT, 1982, WILLIAM HENRY II—(*Finance*)—Born April 13, 1960, Hempstead, Texas; Investment Banker/Financial Analyst, Mergers & Acquisitions, Morgan Stanley & Co., Inc., 1251 Ave. of the Americas, New York, N.Y. 10020; res. 275 W. 96th St., Apt. 7-0, New York, N.Y. 10025; Head Page, Republican Cloakroom, U.S. House of Rep., '77-'78; Mbr., Hugh O'Brian Youth Found. Alumni Bd. of Dir., '79-.

Y

YANG, 1982, JAMES TING-YEH—(*Student*)—Born Feb. 16, 1958, Taipei, Taiwan; Student, Yale Law School; add. P.O. Box 18 Yale Station, New Haven, Conn. 06520; res. 35 Cushman Road, Scarsdale, N.Y. 10583.

YENT, 1979, JAMES B., JR.—Born March 25, 1957; add. 23801 Hartland St., Canoga Park, Calif. 91307.

Z

ZALLINGER, 1965, PETER FRANZ—(*Art*)—Born Nov. 29, 1943, New Haven, Conn.; Free Lance Illustrator; bus. and res. 646 Orange St., New Haven, Conn. 06511; Lieut., USNR, '66-'69.

ZIEGLER, 1972, STAN WARREN, Ph.D.—(*Psychology*)—Born Sept. 29, 1950, New York, N.Y.; Clinical Psychologist, private practice and

Consultant to industry, 450 N. Bedford Drive, Room 204, Beverly Hills, Calif. 90210; res. 11750 Sunset Blvd., Apt. 124, Los Angeles, Calif. 90049; Dir. and Founder, The Erik & Joan Erikson Center for Adolescent Advancement, '79-'81; Advisory Bd., Project Lift, '81-.

ZIGERELLI, 1980, LAWRENCE JOHN—(*Industry*)—Born Aug. 8, 1958, Monaca, Pa.; Asst. Brand Mgr., Marketing, Procter and Gamble, P.O. Box 599, Cincinnati, Ohio 45201; res. 2435 Madison Road, Cincinnati, Ohio 45208; Mbr., Alumni Basketball Assn.; Volunteer Chmn., Cincinnati Chapter March of Dimes.

ZORTHIAN, 1941, BARRY, LL.B., LL.D.—(*Business*)—Born Oct. 8, 1920, Kutahya, Turkey; Sr. V.P. (public relations), Gray and Co., 3255 Grace St., N.W., Washington, D.C. 20007; res. Apt. 405E—The Towers, 4201 Cathedral Ave., N.W., Washington, D.C. 20016; Yale Alumni Fund Agent, '41-'61; Yale Communications Bd., '71-'76, Chmn., '73-'76; A.Y.A. Bd. of Gov., '70-'71; 1941 Class Secy., '71-'76; 1941 Class Council, '69-; Bd. of Dir., Yale Club of Washington, '76-'81; Newspaper Reporter, '41-'42, '47-'48; Voice of America: Chief News Branch, Chief, Policy Guidance, '48-'61, Prog. Mgr., '56-'61; Deputy Public Affairs Officer, New Delhi, India, '61-'64; Minister-Counselor for Information, Saigon, Vietnam, '64-'68; Pres., Time-Life Broadcast and Time-Life Cable, '69-'74; V.P., Time, Inc. for Govt. Affairs, '75-'79; Pres., Washington/Baltimore Regional Assn., '79-'81; Sr., V.P., Gray and Co., '81-; Col., USMC, '42-'46 (active duty), '47-'73 (reserve), Campaign Ribbons; m. June 6, '48, Margaret Aylaian; s. Gregory Jannig ('75), Stephen Arnak.

ZORTHIAN, 1975, GREGORY JANNIG, M.B.A.—(*Publishing*)—Born July 23, 1953, New York, N.Y.; New Business Mgr., Circulation, *Fortune* Magazine, Time, Inc., Time & Life Bldg., Rockefeller Center, New York, N.Y. 10020; res. 55 W. 69th St., Apt. 2A, New York, N.Y. 10023; 1975 Class Council, '74-; formerly Legislative Aide to Congressman Jonathan Bingham, U.S. House of Rep.; Dir., Deer Island Club Corp., '78-'79.

ZUCKER, 1962, BERNARD BENJAMIN, LL.B., M.A.—(*Writing*)—Born Dec. 22, 1940, Nice, France; Novelist; Author; Gem Dealer, Precious Stones Co., 580 5th Ave., New York, N.Y. 10036; res. same as above; Yale Alumni Fund Drive; Class Treas.; Author *How to Buy & Sell Gems*, New York Times Books 1980; Lecturer, Gemmological Institute, Smithsonian; m. Sept. 7, '69, Diane Wolkstein (separated); d. Rachel Cloudstone.

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Mattoon

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Northbrook

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†Hansen, R. A. '55
Michel, A. L., '26

Winnetka
†Connors, J. J., '59
†Cruikshank, P. F., Jr., '52
†Fritzsche, P. B., '57E
†Lutz, K. E., '72

INDIANA

Chesterton
†Senay, E. C., '52

Hammond
Nondorf, K. D., '79
Spitz, R. W., '62

Indianapolis
Bockrath, R. C., Jr., '61

Madison
Schnaitter, S. J., '24

New Castle
Franklin, R. D., '83

IOWA

Cedar Rapids
Tumpane, T. M., '80

Des Moines
Peterson, P. C., '81

Fairfield
Fulton, R. B., '32

KANSAS

Tonganoxie
Hurlbut, G. B., Jr., '45W

Wichita
Blue, L. S., '58
Meyer, R. W., Jr., '54

KENTUCKY

Anchorage
†Caldwell, S. S., '33

Bowling Green
Kafoglis, C. N., '83

Louisville
†Caldwell, S. S. '33
Mallon, J. H., '19
Morton, T. B., Jr., '54
Price, C. B., Jr., '41
Trower, C. C., '70

LOUISIANA

New Orleans
Babst, J. A., '71
Ohene-Frempong, K., '70

MAINE

Augusta
†Terry, W. III, '62

Bath
Terry, H. P. B., '35

Berwick
Cangelosi, R. J., '72

Cape Elizabeth
†Woodsum, H. E., Jr., '53

Farmington
Bissell, G. T., '61

Kittery Point
†Hallett, J. F., '34

Mount Desert
†Palmer, A. E., '30

North Edgecomb
Hall, E. T., '41

Portland
O'Leary, J. J., Jr., '69
†Woodsum, H. E., Jr. '53

Readfield
†Terry, W. III, '62

MARYLAND

Annapolis
†Ekfelt, R. H., '71

Baldwin
†McNamara, T. P., '51E

Baltimore
Benninghoff, H. B., '54
†Eisenberg, B. A., '74

Bethesda
†Allen, C. E., '58
†Bell, W. T., '42
†Cowdry, R. W., '68
Drain, R. D., '43

Chevy Chase
†McBride, J. E., '64

College Park
†Ekfelt, R. H., '71

Columbia
†Eisenberg, B. A., '74

Easton
Walker, J. M., '31

Glen Arm
†McNamara, T. P., '51

New Carrollton
Peters, D. J., '70

Pasadena
Holmboe, J. A., '79

Potomac
†Mathews, C., '51

Ruxton
†Jones, T. S., '33

Stevenson
Whitman, F. S., Jr., '38

Timonium
†Hambleton, T. E., '34

Trappe
†Glover, C. C. III, '40

MASSACHUSETTS

Agawam

Benoit, C. E., Jr. '65

Andover

Harrison, F. H., '42
Herskovits, D. N., '84

Arlington

†Wilson, D. R., '79

Auburndale

Coggins, D. S., '84

Bedford

Davenport, S. R., '15

Belmont

†Seeley, G. W., '61
†Stewart, Z., '43
†Wilson, D. R., '79

Boston

†Belin, G. d'A., '39
†Bouscaren, M. F., '69
Bryan, L. T., Jr., '55
†Dilworth, G. T., '80
†Ellis, A., Jr., '44
†Gallico, G. G. III, '68
†Hart, D. C., '76
†Hudson, F. D., '55
†Kerry, J. F., '66
†Lorenson, D. H., '79
†MacLean, K., Jr., '61
†Norton, W. B., '25
O'Brien, F., Jr., '44
†Preston, J. M., '67
†Rizzo, R. J., '78
†Russell, R. W., '51
Thorne, C. H. M., '74
Thorne, D. H., '66
†Woodlock, D. P., '69

Brookline

†Ellis, F. H., Jr., '41
†Gallico, G. G. III, '68
†Hart, D. C., '76
Piel, G. D., '78
Stokes, A. P., Jr., 27
Walsh, J. J., Jr., '61

Burlington

†Ellis, F. H., Jr., '41

Cambridge

†Belin, G. d'A., '39
†Brandt, J. H., '62
Bronson, D. B., '44
†Hart, D. C., '76
†Howe, H. II, '40
O'Keefe, R. J., '81
†Preston, J. M., '67
†Schlesinger, D. A., '77
†Stewart, Z., '43
†Troy, A., '81
†Weber, J. W., '53
Wiseman, D. B., '84

Cummaquid

Warren, G. U., '45W

Dedham

†Lorenson, D. H., '79

Framingham

†Hudson, F. D., '55

Harvard

Ritterbush, S. G., Jr., '72

Hingham

†MacLean, K., Jr., '61

Holyoke

O'Brien, P., Jr., '45W

Hudson

Guidotti, H. G., Jr., '55

Ipswich

Foster, M. E., '23
†Woodlock, D. P., '69

Jamaica Plain

Gates, E. R., '76

Lexington

Abrams, P. M., '83
Cooke, F. J., '33

Lincoln

†Brandt, J. H., '62
†Ellis, A., Jr., '44
Kingsbury, H. T., '26
†Seeley, G. W., '61

Littleton

†Clark, D. W., '72

Manchester

Bundy, F. McC., '21

Marblehead

Dowling, B. J., '69
Gwin, S. L., Jr., '63
McLane, J. P.,'53

Martha's Vineyard

McCullough, D. G., '55

Medford

†Clark, D. W., '72

Nantucket

Sulzer, J. S., '73

Needham

Curtin, F. C., '35
†Harman, A., Jr., '45
†Russell, R. W., '51E

New Bedford

†Bockstoce, J. R., '66

Newton

Ashenfelter, A. T., '75
Cheney, R. L., '58
†Dilworth, G. T., '80
†Kerry, J. F., '66

Newton Highlands

†Bouscaren, M. F., '69

Northampton

Thorne, B. S., '68

Plymouth

Ashburn, F. D., '25

Provincetown

Russell, R. G., '81

South Dartmouth

†Bockstoce, J. R., '66
Brooke, F. H., Jr., '37

Springfield

†Wheeler, T. B., '58

Watertown

†Fortgang, J., '71

Wellesley

†Harman, A., Jr., '45

Wellesley Hills

†Norton, W. B., '25
†Weber, J. W., '53E

Westport Harbor
Harrison, F. H., '42

Weston
†Wheeler, T. B., '58

Woburn
†Fortgang, J., '71

Woods Hole
MacLeish, W. H., '50

MICHIGAN
Benton Harbor
†Shepard, L. M., Jr., '39

Birmingham
†Ryan, J. M., 51

Detroit
†Rankin, B. C., '36
†Ryan, J. M., '51
Turner, E. L., '78

Grosse Pointe Farms
Caulkins, J. E., '48

Grosse Pointe Shores
†Rankin, B. C., '36

Lathrup
Mulhern, D. K., '80

North Muskegon
Andrie, P. J., '84

St. Joseph
†Shepard, L. M., Jr., '39

MINNESOTA
Duluth
Hartley, C., '12

Hamel
†Daniels, J. H., '43

Long Lake
†Daniels, J. H., '43

Minneapolis
Allen, H. E., '24
Cooper, C., '77
†Pillsbury, J. S., '35

St. Paul
Musser, J. M., '30
Shepard, R. B., Jr., '35
Weed, G. H., '38

Stillwater
Stratton, D. J., '81

Wayzata
Adams, S., '59
†Pillsbury, J. S., '35

MISSOURI
Creve Coeur
†Searles, P. D., '55

St. Louis
†Searles, P. D., '55
Sheffield, J. Van L., '83
Walker, G. H. III, '53

MONTANA
Helena
Schmidt, T. C., '68

Missoula
Brown, W. S., '70

NEBRASKA
Omaha
Howe, G. W., '58
Kemp, P. S., '50E

NEVADA
Glenbrook
Kelly, W. C., '44

Las Vegas
Noyes, E. MacA. III, '71

NEW HAMPSHIRE
Bedford
Van Loan, E. M. III, '64

Francestown
Parker R. B., '33

Hanover
Mayor, M. B., '59E

Portsmouth
†Hallett, J. F., '34

NEW JERSEY
Atlantic Highlands
Ellis, G. C., Jr., '51
Ferguson, A. L., Jr., '26

Chatham
†Francis, S. H., '64

East Brunswick
†Selander, D. A., '69

Englewood
†Frank, V. H., Jr., '50

Englewood Cliffs
†Frank, V. H., Jr., '50

Far Hills
Thomson, C. S., '24

Kingston
Ives, C. B., '28
†Rulon-Miller, P., '63

Livingston
†Rizzo, R. J., '78

Madison
†Brown, W. H., '45W

Middletown
Davenport, J., '26

Morristown
Fortunato, S. J., '54

North Branch
deNeufville, J. P., '61

Oldwick
†Lovejoy, W. M., '25,

Palisades Park
†Bender, K. A., '75

Piscataway
†Cross, R. J., '37
†Selander, D. A., '69

Princeton
†Bundy, W. P., '39
†Cross, R. J., '37
†Dilworth, J. R., '38
Jamieson, T. C., Jr., '56

Kilborne W. S., '35
Knapp, J. M., '36
Spitzer, L., Jr., '35
†Stevens, J. B., Jr., '38

Ridgewood

Fore, J. A., '79

Robbinsville

†Stevens, J. B., Jr., '38

Rumson

†Lynch, D. P., '64

Short Hills

Henston, D. R., '84

Somerville

Straw, R. L., '64

Toms River

Baran, M. R., '78

West Orange

†Troy, A., '81

Whippany

†Francis, S. H., '64

NEW MEXICO

Albuquerque

Clay, J. L., '68

NEW YORK

Albany

†Hessberg, A. II, '38

Bedford

†Claude, A., Jr., '52
McGregor, J. E., '56
†Tighe, L. G., '41

Bethpage

†Vose, E. E., '45W

Blauvelt

†Leiper, J. M., '49E

Bronx

†Bingham, J. B., '36
Clark, R. I., Jr., '57
†Fox, J. C., '38

Bronxville

Gill, B., '36

†Stewart, C. J., '18
Turner, H. McL., '37

Brooklyn

†Feinerman, J. V., '71
†Frank, C. A. III, '63
†Leverett, M. W., '76
†Madden, J. B., '41
Miller, W. E., '69
†Price, R. K., Jr., '51
†Reid, E. S., '51
Sherrill, F. G., '49
Spear, W. J., 3d., '74
Waddell, G. H., '61

Buffalo

Kahle, J. L., '84
Montesano, M. J., '83
Stevenson, C. P., '41

Corning

Peck, A. J., Jr., '62

Delhi

Breen, J. G., '50

East Hampton

Aldrich, M. P., '22
Bench, E. C., '25
Bullock, S. B., '81
Lord, W. G., '22
Spofford, C. M., '24

East Northport

Leone, F. A., '82

Glen Cove

Corey, A. L. III, '65
†O'Connell, T. J., '63

Glen Head

Nichols, W. A., '83

Harrison

†Brown, G. C., '66
†Devor, D. S., Jr., '41

Hempstead

Clark, J. B., '78

Hollis

Williams, D. L., '76

Katonah

†Holbrook, D. D., '60

Larchmont

†Towers, J. D., '82

Lloyd Harbor

†Solbert, P. O. A., '41

Locust Valley

†Davison, D. P., '49
Davison, H. P. II, '84
†Lovett, R. A., '18

Long Island City

Fredericks, J. R., '77

Manhasset

McCrary, J. R., Jr., '32
Peters, E. B., '79
Peters, K. G., '81

Mount Kisco

†Cross, W. R., Jr., '41
Rodd, D. B., '40
†Rodd, T., '35

New Rochelle

Stebbins, H. L., '33

New York

Allen, A. J., Jr., '45
Alling, C. B., Jr., '47
Austin, S. M. III, '80
Barasch, A. S., '73
†Bender, K. A., '75
Best, G. D. C., '64
†Bingham, J. B., '36
Brewster, W. R., '21
†Brooks, T. A., '62
Brown, R. N., '79
†Brown, W. H., '45W
Buckley, W. F., Jr., '50
Bundy, McG., '40
†Bundy, W. P., '39
Bush, J. J., '53
Campbell, K. C., '81
†Carey, J., '45
Cerveris, M. E., '83
†Chittenden, G. H., '39
Choa, C. J., '81
†Claude, A., Jr., '52
Coffin, W. S., Jr., '49
Cohen, R. L., '74
Connick, A. J., '52
Conway, J. L., Jr., '81
Coombs, O. M., '65
Cooper, H. S. F., '17
Costikyan, G., '29

†Cross, W. R., Jr., '41
†Cushman, R. E., '58
Davies, P. T., '76
†Davison, D. P., '49
Diamond, P. C., '74
†Dilworth, J. R., '38
Donaldson, W. H., '53
Doyle, T. J., Jr., '74
Eisler, C. T., '52
†Embersits, J. F., '58
†Ercklentz, A. T., '59
Evans, P. S., '72
†Feinerman, J. V., '71
Finney, C. R., '73
†Fox, J. C., '38
†Frank, C. A. III, '63
†Gaines, E. F., '75
Gill, M. G., '63
†Gillespie, S. H., '32
†Goedecke, W. S., '44
Guinzburg, T. H., '50
Haight, C. S., Jr., '52
Haight, G. W., '28
Haines, T. F. D., '24
†Hambleton, T. E., '34
Hamilton, W., '62
Healy, H. H., Jr., '43
†Hodes, D. M., '70
†Holbrook, D. D., '60
Hook, N., '78
Jackson, W. E., '41
†Jessup, J. B., '42
†Kelly, B. C., '74
†Kittredge, F. D., '52
Klots, A. T., '43
Lambert, P. C., '50
†Lapham, L. A., '31
†Leiper, J. McC., '49
†Leverett, M. W., '76
Levering, W. B., '33
†Levin, C. H., '71
Lewis, G. E., '74
Ligon, T. B., '62
Lindgren, R. H., '60
Lindley, F. V., '33
Lindsay, D. A., Jr., '61
Lippincott, D. M., '49
Little, S. W., '44
Lord, W., '59
Love, R. F., '51
†Lovejoy, W. M., '25
†Lovett, R. A., '18
†Lufkin, D. W., '53
Lusk, P. A., '60
†Lydgate, W. A., '31
†Lynch, D. P., '64
†Madden, J. B., '41
McGauley, J. M., '33
†Miles, R. C., '37
Moore, J. I., '45
Ogden, A., '32
Oler, C. K., Jr., '76
Owens, S. L., '78
†Palmer, A. E., '30
Peters, E. R., '80
Pionzio, D. J., '50
†Price, R. K., Jr., '51
Prideaux, T., '30
†Reid, E. S., '51
Reid, J., '82
†Reigeluth, D. S., '75
†Richards, D. A., '67
†Rodd, T., '35
Ross, L. P., '28
Ross, T. B., '51
†Rulon-Miller, P., '63
Ryan, A. A. III, '54
Saxon, J. M., '67
Schwarzman, S. A., '69
Scott, E. L., '60
Sheffield, J. R., '59
†Solbert, P. O. A., '41
†Sprole, F. A., '42
†Stack, J. W., Jr., '40
Steadman, R. C., '55
†Struzzi, T. A., '75
Teig, J. B., '80
Van Dine, V., '49
Vogt, T. D., '43
Walden, R. S., '72
Walker, S. S., Jr., '48
Wardwell, E. R., '27
Wolfe, S. H., '64
Woolley, K., '17
Wright, W. H. II, '82
Zorthian, G. J., '75
Zucker, B., '62

North Tarrytown

†Morgan, J. W., '71

Nyack

†Gillespie, S. H., '32

Peekskill

Polich, R. F., '54

Pelham

†Lydgate, W. A., '31

Pelham Manor

†Henningsen, V. W., Jr., '50
†Palmer, L. G. II, '57

Port Chester

Johnson, W. J., Jr., '71

Port Washington

†Hodes, D. M., '70
†O'Connell, T. J., '63

Pound Ridge

†Tighe, L. G., '41

Purchase

†Ali, M. R., '65

Quogue

†Vose, E. E., '45

Remsenburg

Cooke, R. B., '36

Riverdale

Stillman, P. G. B., '40

Riverhead

†Bellis, T. L., '73

Rochester

Stewart, J. C., '61

Roslyn

Lampert, E. S., '84

Rye

†Brooks, T. A., '62
†Carey, J., '45W
†Chittenden, G. H., '39
Gile, L. M., '78
†Goedecke, W. S., '44
†Reigeluth, D. S., '75

Scarsdale

Graves, E. C., Jr., '84
†Richards, D. A., '67
†Struzzi, T. A., '75
Weinstein, A., '84
†Yang, J. T.-Y., '82

Setauket

†Bellis, T. L., '73

Skaneateles

Pickett, L. K., '41

Slingerlands

†Hessberg, A. II, '38

Somers
Willard, C. H., '26

South Salem
† Devor, D. S., Jr., '41

Staten Island
Sullivan, C. S., '78

Syosset
† Miller, A. O., Jr., '39

Tuckahoe
Cutler, B. C., '26

White Plains
† Brown, G. C., '66
† Henningsen, V. W., Jr., '50

Woodside
Skrovan, S. T., '79

NORTH CAROLINA

Black Mountain
Stevenson, D. D., '25

Carrboro
† Bryan, J. T. III, '71

Chapel Hill
† Bryan, J. T. III, '71
Cross, A. W., '66
Edozien, A. O., '79
Robinson, H. C., Jr., '45

Durham
Rowe, T. D., Jr., '64

Lincolnton
Fleming, A. T., '80

Raleigh
† Schlesinger, D. A., '77

Swannanoa
Holden, R. A., '40

Wadesboro
† Liles, C. R., '73

OHIO

Bedford
† Oberlin, J. P., '57

Bratenahl
† Dempsey, A. S., '56

Chagrin Falls
† Dempsey, J. H., Jr., '38
Hall, J. A., '36
† Ingalls, D. S., '20
† Ingalls, D. S., Jr., '56

Cincinnati
Burke, J. E. III, '75
Crawley, B. S., '84
DeVore, M. S., '80
Tucker, L., '31
Zigerelli, L. J., '80

Cleveland
Clark, T. W., '61
† Dempsey, A. S., '56
† Dempsey, J. H., Jr., '38
† Dunn, G. J., '57
† Esselstyn, C. B., Jr., '56
† Hollister, J. B., Jr., '49
† Moseley, T. W., '45W
† Spears, R. S., '52

Cleveland Heights
Breslau, J., '82
† Dunn, G. J., '57E

Columbus
† Foster, D. J., '67

Gates Mills
† Hollister, J. B., Jr., '49

Hudson
† Oberlin, J. P., '57

Marietta
Case, P. B., Jr., '71

Mentor
Wilbur, J. S., '33

Pepper Pike
† Esselstyn, C. B., Jr., '56
† Spears, R. S., '52

Perrysburg
† Menton, J. D., '53

Shaker Heights
† Ingalls, D. S., '20
† Ingalls, D. S., Jr., '56
† Moseley, T. W., '45W

Toledo
† Menton, J. D., '53

Upper Arlington
† Foster, D. J., '67

OKLAHOMA

Seminole
† Boren, D. L., '63

OREGON

Beaverton
Bartholemy, A. E., '42

Lake Oswego
Schollander, D. A., '68

Newport
Capozzalo, D. D., '76

Portland
Hewitt, H. H., '63
Litt, D. G., '84

Prairie City
† Lufkin, D. W., '53

Sisters
Thompson, S. E., Jr., '68

PENNSYLVANIA

Bethel Park
Huey, M. C., '73

Bethlehem
Jung, M. D., '84

Bradfordwoods
† Preston, J. L., '58

Charleroi
† Bassi, K. A., '78

Cheswick
† Preston, J. L., '58

Erie
Traphagen, P. A., '56E

Gladwyne
† Malloy, T. R., '56

Glenshaw
† Connelly, W. J., Jr., '45

Greensburg

Mitinger, J. B., '53

Lower Burrell

Moses, J. T., '79

Media

† Mathias, P. H., '55

Monongahela

† Bassi, K. A., '78

Narberth

† Marinelli, D. L., '78

Norristown

† Orr, A. A., '56

Philadelphia

Brown, C. W., '68
† Burr, C. B. II, '62
Finney, G. S., '52
Giegengack, R. F., Jr., '60
Kee, C. A., '77
† Malloy, T. R., '56
† Mathias, P. H., '55
Scattergood, T. B., '70
Scott, L. G., '77

Pittsburgh

Ahlbrandt, R. S., Jr., '62E
† Baribault, R. P., '49
† Connelly, W. J., Jr., '45
Durfee, C. G., Jr., '56E
Goldberg, R. J., '77
† Heinz, H. J. II, '31
Howard, J. E., '66
† McLean, R. III, '50
Sumner, W. S., '45

Radnor

† Burr, C. B. II, '62

Sewickley

† Baribault, R. P., '49
† Heinz, H. J. II, '31
† McLean, R. III, '50

State College

† Austin, R. L., '68
Lewis, M. S., '72

University Park

† Austin, R. L., '68

Wayne

† Orr, A. A., '56E

PUERTO RICO

Guaynabo

Roy, J. M., '78

RHODE ISLAND

Cumberland

Stevens, E. E., '80

East Greenwich

† Chafee, J. H., '44

Providence

† Doolittle, D. H., '43

Wakefield

† Doolittle, D. H., '43

Westerly

† Back, S. H., '62

SOUTH CAROLINA

Aiken

Goodyear, R. M., '49

Camden

Buckley, F. R., '52

Dillon

† Cooper, C., '77

Pawley's Island

Clark, W. J., '45

TENNESSEE

Crossville

† Novkov, D. A., '53

Fairfield Glade

† Novkov, D. A., '53

Knoxville

Ashe, V. H. II, '67

Memphis

Blanchard, J. G., '39
Fort, D. K., '76
Mallory, B. L., Jr., '28,
† McLaren, M. G., '72
Smith, F. W., '66

Millington

† McLaren, M. G., '72

Nashville

Brubaker, J. K., '76
Lufkin, P. W., Sr., '49E

TEXAS

Austin

Becket, P. L., '63
Green, R., '75
Johanson, S. M., '55E
Prindle, T. H., '64

Brenham

Grove, M. J., '29

Carrollton

† Gonzalez, T. F., '74

Corpus Christi

Durham, E. A. II, '53

Dallas

Ardrey, R. L., '25
Barr, R. J., Jr., '36
Bass, J. E., '82
† Gonzalez, T. F., '74
Lynch, R. V., '45
McElroy, B. T., '45

Fort Worth

Wilke, V., '45

Houston

† Brooks, P. M., '83
Dyess, A. D., Jr., '39
Gow, R. H., '55E
Jenkins, R. E., '45
Kaminsky, R. I., '64
O'Brien, D. P., '79
Smith, L. H., '29
Stanberry, W. B., Jr., '66
Thompson, W. McI., Jr., '69

Lubbock

Skibell, S. A., '84

Midland

Bush, G. W., '68

Mission

Greene, W. W., '30

Plano

† Jackson, T. J., '70

Richardson

† Jackson, T. J., '70

San Antonio
Lalley, P. W., '77

UTAH

Farmington
†Connors, D. M., '74

Salt Lake City
†Connors, D. M., '74

VERMONT

Arlington
Bradford, A. H., '34

East Calais
Noel, C., '83

East Fairfield
Cassel, J. A., '58

Essex Junction
Kaushal, S., '83

Grafton
Holbrook, J., Jr., '59

Londonderry
Laundon, M. H., '32

Ludlow
McAfee, W. A., '82

Manchester
Peltz, W. L., '31

Proctor
Ford, W., '42

Sharon
Ladd, L. W., Jr., '30

VIRGINIA

Alexandria
Cunningham, H. T., '34
Guthrie, R. K., '68
†McNally, E. E. II, '79
†Parsons, H. McI., '33
†Rose, J. C., '63

Annandale
†Miller, T. C., '70

Arlington
†Grayson, W. C., Jr., '77
†Miller, T. C., '70
†Parsons, H. McI., '33
Sharp, J. D., '83

Buckingham
†Holmes, P. S., '78

Charlottesville
Eyre, L. L., '70
†Holmes, P. S., '78
Ritchie, W. P., Jr., '57

Free Union
Quarles, J. P. III, '65

Lexington
Murchison, B. C., '74

McLean
†Chafee, J. H., '47
†Eden, J. W., '51
†Grayson, W. C., Jr., '77

Middleburg
†Ellis, G. McC., '51
Mills, J. P., '32

Millwood
†Ellis, G. McC., '51

Mount Vernon
†McNally, E. E. II, '79

Norfolk
†Meek, J. B., Jr., '60E

Orange
Blake, D. B., '37

Portsmouth
†Meek, J. B., Jr., '60E

Richmond
Davenport, B. W., '38

Upperville
†Grayson, C. T., Jr., '42
†Grayson, J. G., '40

Verona
†Giesen, A. R., Jr., '54

Waynesboro
†Giesen, A. R., Jr., '54

WASHINGTON

Bainbridge Island
Pelly, B. B., '23

Bellevue
Biglow, L. H., Jr., '45W
Carlsen, R. A., '57
Kimball, W. S., '34

Seattle
Andrews, E. W., Jr., '45W
†Arras, R. E., Jr., '69
Boulos, W. M., '47
DeForest, S. E., '55
Fehr, G. F., '55E
Ketcham, H. H., '14
Root, R. D., '26

Tacoma
†Lufkin, C. F., Jr., '51

Tumwater
†Lufkin, C. F., Jr., '51

WEST VIRGINIA

Morgantown
Vargish, T., '66

Shepherdstown
Hoxton, A. R., Jr., '39

WISCONSIN

Lake Geneva
Kolar, B. W., '68

Madison
Grandine, T. A., '81

Milwaukee
Thomas, W. D., '41

Neenah
Shepard, D. C., Jr., '50

St. Germain
Robertson, A. C., '28

FOREIGN

AUSTRALIA

VICTORIA

Syndal

Price, R. E., '54E

CANADA

BRITISH COLUMBIA

Vancouver

Bisaro, L. R., '74

MANITOBA

Winnipeg

MacKenzie, K. M., '75

NOVA SCOTIA

Baddeck

Fuller, H. W., '69

ONTARIO

Brampton

Lawrence, G. M., '80

Mississauga

Tingey, D. S., '81

Ottawa

Wagner, V. E., '83

Toronto

Inman, R. D., '71
MacDonald, S. J., '73
Scott, W. I., '73

CHILE

Santiago

Finley, J. G. G., '47

CHINA, PEOPLE'S REPUBLIC OF

Hunan

†Salzman, M. J., '82

COLOMBIA

Bogota

Hernandez, C. A., '71

ENGLAND

Gerrards Cross

†Holland, H. T., '62

Hounslow

†Holland, H. T., '62

London

Lilley, R. McG., '67

Oxford

Goodenough, J. B., '44

FRANCE

Biarritz

Kilcullen, J. M., '34

Neuilly-sur-Seine

†Clay, T. J., '65

Paris

Adams, F. B., Jr., '32
†Clay, T. J., '65
Galbraith, E. G., '50
†Moore, D. C., '73

HONG KONG

Shatin

Devlin, M. W., '82

INDIA

Udaipur

Mehta, A. S., '76

ISRAEL

Haifa

Friendland, J. D., '70

Jerusalem

Wald, S. G., '75

JAPAN

Tokyo

Cushman, C. W., '57

NETHERLANDS

Diemen

†Moore, D. C., '73

NIGERIA

Lagos

Chibundu, M. O., '80

PHILIPPINES

Manila

†Arras, R. E., Jr., '69

REPUBLIC OF SOUTH AFRICA

Parow

†Swil, R. A., '67

Milnerton

†Swil, R. A., '67

SPAIN

Madrid

Urquijo, G., '84

SWEDEN

Jarna

Carlsson, M. E., '81

UNITED ARAB EMIRATES

Dubai

Desjardins, P. E., '65

WEST GERMANY

Munich

Buckley, J. L., '44

NO ADDRESS AVAILABLE

Burtt, E. A., '15
Bush, D. G., '67
Capron, P., '60,
Crile, G., Jr., '29
Evans, T. B., '54
Hatem, J. J., '80
Highfill, P. H. III, '73
Kanehl, P. E., '75
Lagercrantz, B. M., '65
Lavelli, A., Jr., '49
Macdonald, R. H., '15
MacDonald, R. J., '72
Roy, J. M., '78
Smith, Traver, '19
Vorys, M. W., '52

YALE CLASSES

1833
*Bates, S. H.
*Beach, J. C.
*Bishop, N.
*Crump, J.
*Davis. B. F.
*Hart, R. E.
*Lewis, A. H.
*Marshall, S. D.
*Mather, F. E.
*Miller, P. T.
— —
*Robertson, R.
*Russell, W. H.
*Taft, A.
*Wood, G. I.

1834
*Beaumont, G. A. O.
*Burr, W. S.
*Coffing, C.
*Emerson, A.
*Foster, E. K.
*Gordon, A. B.
*Hall, D. E.
*Houston, J. W.
*Kendall, J. N.
*Kingsley, H. C.
*Lea, J. N.
*Southmayd, S. G.
*Spencer, G.G.
*Tweedy, J. H.
*Washington, W. H.

1835
*Anderson, E. A.
*Davis, J.
*Howard, O. R.
*Johnston, F.
*McLellan, W.
*Mills, E. S.
*Rafferty, J. C.
*Seeley, J. E.
*Seymour, J. F.
*Sheffey, H. W.
*Strong, C.
*Stubbs, A.
*Sturges, T. B.
*Thacher, T. A.
*Walsh, H.

1836
*Darling, T.
*Deming, H. C.
*Dent, H. H.
*Dunwody, J. B.
*Harris, H. R.
*Hurd, J. C.
*Martin, J. G.
*Marvin, G. L.
*Pierson, W. S.
*Preston, H. K.
*Rowland, W. S.
*Sherman, F. R.
*Swift, J. M.
*Tyler, G. P.
*Wray, J. M.

1837
*Carter, E. O.
*Coit, W.
*Day, T. M.
*Evarts, W. M.
*Hatch, W. T.
*Hyatt, R. U.
*Law, W. F.
*Lyman, C. S.
*Owen, A. F.
*Robeson, A. B.
*Scarborough, W. S.
*Silliman, B.
*Waite, M. R.
*Williams, H.
*Yerkes, S.

1838
*Bartlett, J. K.
*Cooper, W. F.
*Dodd, A.
*Fleming, W. S.
*Jones, S. A.
*Key, T. M.
*Law, W. L.
*Lynde, C. J.
*Ribeiro, C. F.
*Rich, C.
*Spalding, E.
*Talcott, T. G.
*Thompson, J. P.
*Varnum, J. B.
*Williams, T. S.

1839
*Beach, J. S.
*Biddle, T. B.
*Chandler, W. H.
*Eldredge, C. St. J.
*Faulkner, E.
*Hubbard, R. D.
*Jackson, H. R.
*Norris, W. H.
*Putnam, J. O.
*Stile, C. J.
*Trotter, S. F.
*Washington, G.
*Watson, J. M.
*Williams. W. P.
*Wolcott, E.

1840
*Beirne. C. J.
*Benedict, T. H.
*Burnham, C. F.
*Chauvenet, W.
*Fisk, S. W.
*Hoppin, J. M.
*Hoyt, J. G.
*Hudson, W. W.
*Jesup, J. R.
*McCall, H.
*March, D.
*Perkins, J.
*Perkins, W.
*Richards, G.
*Tiffany, W. H.

1841
*Barry, W. T. S.
*deSa, P. A.
*Emerson, J.
*Eustis, W. T.
*Field, D. I.
*Gillett, A. C.
*Helfenstein, C. P.
*Leaf, E.
*Learned, W. L.
*Mitchell, D. G.
*Raymond, H. H.
*Sturges, H.
*Willis, R. S.
*Woolfolk, W. G.
*Yarnall, T. C.

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*Indicates deceased members.

1842

•Benton, J. A.
•Brown, J. V.
•Buttles, A. B.
•Edwards, N.
•Gready, W. P.
•Halsey, J.
•Hennen, W. D.
•Huggins, W. S.
•Lewis, H.
•MacWhorter, A.
•Mathews, A.
•Miller, F. W.
•Perkins, N. S.
•Peters. J. A.
•Pratt, J. H.

1843

•Baratte, J. A.
•Chambers, W. L.
•Eames, B. T.
•Gachet, C. N.
•Grammar, C.
•Granger, G.
•Hart, R.
•Havens, D. W.
•Lambert, A.
•Lane, W. G.
•Lent, J. A.
•Moody, T. H.
•Lent, J. A.
•Moody, T. H.
•Robb, J. H.
•Robinson, L. F.
•Stevens, H.

1844

•Bell, R. D. S.
•Breed, E. A.
•Elliott, W. H.
•Felder, J. H.
•Ferry, O. S.
•FewSmith, W.
•Fish, S. A.
•Foote, T.
•Lanier, A. C.
•Lovell, J.
•Robb, J. M.
•Walker, J. B
•Washburn, W. B.
•Wetherell, J. W.
•Wilson, A.

1845

•Brickell, J. N.
•Conner, L. P.
•Conner, W. G.
•Cushman, I. L.
•Esty, C. C.
•Gould, J. G.
•Harding, J. W.
•Hill, G. C.
•Hyde, A. P.
•Kennedy, T.
•Metcalfe, O.
•Nickerson, S. D.
•Rankin, R.
•Taylor, R.
•Wales, L. E.

1846

•Backus, J. W.
•Brisbin, J. B.
•Eakin, W. S.
•Harrison, H. B.
•Hawley, D.
•Kellogg, S. W.
•Linton, S. D.
•Mulford, D. H.
•Nelson, R. R.
•Nevins, W. R.
•Phinney, E.
•Savage, J.
•Steele, H. T.
•Stiles, J.
•Trask, C. H.

1847

•Allison, S. P.
•Baldwin, R. S.
•Bayne, T. L.
•Coon, J.
•Fitch, J.
•Haight, D. C.
•Hayden, W. H.
•McLallen, P. F.
•Mills, A.
•Moore, W. E.
•Munn, J.
•Olmsted, J. H.
•Sanford, C. F.
•Smith, J. D.
•Wilson, J.

1848

•Abbe, F. R.
•Aitchison, W.
•Blake, H. T.
•Colton, H. M.
•Condit, C.
•Emerson, S.
•Foster, D.
•Hitchcock, H.
•Kinne, W.
•Mesick, R. S.
•Pinckard, T. C.
•Strickler, S. A
•White, G.
•Willcox, G. B.
•Young, B. D.

1849

•Brandegee, A.
•Came, C. G.
•Campbell, J.
•Clarke, W. B.
•Dwight, T.
•Finch, F. M.
•Fisk, F. W.
•Hough, E. C.
•Hurlbut, J.
•Kirby, J. B.
•Metcalfe, H. L.
•Miles, J. B.
•Morris, E. D.
•Richardson, W.
•Rockwell, J.

1850

•Bentley, E. W.
•Bliss, R.
•Bliss, W. R.
•Camp, C.
•Chase, H.
•Colton, W. S.
•Condit, A. P.
•Converse, G. S.
•Dechert, H. M.
•Foote, J. F.
•Ludden, W.
•Manross, N. S.
•Roberts, E. H.
•Storrs, C.
•Woodford, O. L.

1851

•Alexander, W. F.
•Beman, H. DeW.
•Brinsmade, H. W
•Crampton, R. C.
•Dana, W. B.
•Evans, E. W.
•Halderman, R. J.
•Hebard, A.
•Little, R.
•Manice, W. DeF
•Slade, J. M.
•Vose, J. G.
•Wells, H. D.
•White, H. D.
•Whitney, E. C.

1852

•Bigelow, A.
•Blakeslee, H. C.
•Bliss, C. M.
•Cooper, J.
•Crapo, W. W.
•Gilman, D. C.
•Helmer, C. D.
•Houghton, E.
•Johnston, W. P.
•McCormick, H.
•Marmaduke, V.
•Ross, W. B.
•Safford, G. B.
•Sill, G. G.
•Stanley, W.

1853

•Aiken, W. P.
•Babcock, H. H.
•Baldwin, G. W.
•Capron, S. M.
•Coit, J.
•Davies, T. F.
•Gleason, W. H.
•Grout, A.
•Heard, A. F.
•Jack, T. M.
•Johnson, G. A.
•Kent, A. E.
•White, A. D.
•Whiton, J. M.
•Willard, A. J.

1854

•Blackman, S. C.
•Cutler, C.
•Denny, T.
•Fenn, W. H.
•Hooker, J. W.
•Lambert, E. W.
•Lombard, J. K.
•Lord, G. DeF.
•Morris, L. B.
•Potwin, L. S.
•Purnell, C. T.
•Slade, F. H.
•Twombly, A. S.
•White, C. A.
•Whitney, E. P.

1855

•Alexander, W. D.
•Barnes, W. H. L.
•Bumstead, N. W.
•Child, L. M.
•Cobb, H. N.
•Granger, J. A.
•Johnson, C. F.
•Kittredge, G. A.
•Lampson, G.
•Mulford, E.
•Spring, A. J.
•Tyler, C. M.
•Wheeler, W.
•Woodward, S.
•Yardley, H. A.

1856

•Arnot, M. H.
•Barker, G. P.
•Brown, J. M.
•Campbell, W. H. W.
•Condit, S.
•Depew, C. M.
•Dickinson, A.
•Eakin, E. A.
•Fisher, L. C.
•Magruder, B. D.
•Nettleton, E. P.
•Packard, L. R.
•Paine, L. L.
•Robinson, G. C.
•Whitney, J. L.

1857

•Blackman, C. S.
•Blake, E. W.
•Buckland, J. P.
•Butler, F. E.
•Croxton, J. T.
•Day, J. C.
•Edwards, A. L.
•Green, J. P.
•Holmes, J. M.
•Jackson, J. C.
•Northrop, C.
•Pratt, G.
•Seymour, S. O.
•Tyler, M. C.
•Wells, N. D.

1858

•Blake, E. F.
•Eichelberger, M. S.
•Grant, E. D.
•Haskell, R. C.
•Heermance, E. L.
•Hollister, A. N.
•Kimball, J. E.
•Lee, S. H.
•MacLellan, G. B.
•Perkins, T. A.
•Porter, E. C.
•Scott, E. G.
•Stevens, F. W.
•VanName, A.
•Woodward, W. H.

1859

•Bristol, I. H.
•Brodhead, H.
•Carpenter, R.
•Clay, G.
•Dunham, G. E.
•Hall, W. K.
•Hannahs, D. C.
•Harrison, B. N.
•Robertson, C. F.
•Schuyler, E.
•Smith, E.
•Stiles, W. A.
•Taylor, A. J.
•White, R. S.
•Wilcox, A. H.

1860

*Beckley, J. W.
*Boies, C. A.
*Boltwood, E.
*Daniels, J. L.
*Davis, L. H.
*Davis, R. S.
*Fowler, W.
*Furbish, E. B.
*Hebard, D.
*Johnston, W. C.
*Jones, L. M.
*Owen, C. H.
*Phelps, W. W.
*Seely, J. F.
*Smith, W. T.

1861

*Baldwin, S. E.
*Brown, H. S.
*Chamberlain, R. L.
*Dexter, F. B.
*Fuller, W. H.
*Higgins, A.
*Kernochan, F. E.
*Mitchell, J. H.
*Newell, S.
*Park, W. E.
*Peck, T.
*Root, A. P.
*Shearer, S.
*Sill, E. R.
*Williams, R. O.

1862

*Adams, F.
*Chamberlain, D. H.
*Coe, E. B.
*Day, M. C.
*Eaton, S. B.
*Johnston, H. P.
*Kitchel, C. L.
*Lampson, W.
*MacVeagh, F.
*Ripley, G. C.
*Seely, W. W.
*Stebbins, H. H.
*Taylor, J. P.
*Ward, J. A.
*Weeks, R. K.

1863

*Allen, W.
*Arms, C. J.
*Bingham, E. B.
*Bull, C. W.
*Butler, J. H.
*Chamberlain, L. T.
*Dimock, H. F.
*Fowler, H. W.
*Kernochan, J. F.
*Perry, D. B.
*Sheffield, G. St.J.
*Southworth, G. C. S.
*Sumner, W. G.
*Wesson, C. H.
*Whitney, W. C.

1864

*Boltwood, T. K.
*Borden, M. C. D.
*Boyden, H. P.
*Clark, A. B.
*Hewitt, T. B.
*MacLean, C. F.
*Merriam, G. S.
*Miller, A. D.
*Owen, H. E.
*Palmer, W. H.
*Pratt, W. H. B.
*Pugsley, I. P.
*Sterling, J. W.
*White, O. S.
*Woodruff, F. E.

1865

*Bent, J. A.
*Brooks, J. E.
*Brown, H. A.
*Buckley, T.
*Bushnell, W. B.
*Caskey, T. F.
*Charnley, C. M.
*Ewell, J. L.
*Ford, G. T.
*Merrill, P.
*Riggs, B. C.
*Smith, C. E.
*Stimson, H. A.
*Stone, W.
*Warren, H. W.

1866

*Adams, C. H.
*Brand, J.
*Coffin, E.
*Cole, H.
*Farnam, W. W.
*Foote, H. W.
*Hall, J. M.
*Hincks, E. Y.
*Holt, G. C.
*Judson, F. N.
*Lampman, L.
*Sloane, H. T.
*Southgate, C. M.
*Wade, L. C.
*White, G. E.

1867

*Bissell, A. D.
*Dexter, M.
*DuBois, J. J.
*Dunning, A. E.
*Harding, W. B.
*Hartshorn, J. W.
*Hedge, T.
*Lamb, A. E.
*Libbey, F.
*Merriam, J. F.
*Seymour, H.
*Spencer, J. M.
*Taft, P. R.
*Wetmore, G. P.
*Woodward, R. W.

1868

*Berry, C. D.
*Brewster, C. B.
*Colt, L. B.
*Dixon, W. P.
*Farnam, C. H.
*Lewis, J.
*McKinney, W. A.
*Sloane, T. C.
*Thacher, J. K.
*Tinker, A. P.
*Tweedy, S.
*Tytus, E. J.
*Wood, W. C.
*Wright, H. P.

1869

*Bannard, H. C.
*Beers, H. A.
*Bissell, W. S.
*Brown, A. L.
*Eno, J. C.
*Foster, J. P. C.
*Freeman, H. V.
*Heaton, E.
*Hooker, T.
*Isham, J. B.
*Lear, H.
*Perrin, B.
*Raymond, H. W.
*Richardson, R. B.
*Shirley, A.

1870

*Andrews, J. W., Jr.
*Gulliver, W. C.
*Johnston, R.
*Learned, D. W.
*McClure, J. G. K.
*McCutchen, S. St.J.
*Mason, H. B.
*Miller, G. D.
*Perry, J. H.
*Selden, E. G.
*Shattuck, J. W.
*Stearns, E. R.
*Strong, C. H.
*Tilney, J. J.
*Welch, W. H.

1871

*Clark, C. H.
*Collin, F.
*Elliott, H. R.
*Hine, C. D.
*Kinney, H. E.
*Lea, R. B.
*Mansfield, H.
*Mason, A. B.
*Mead, F.
*Perry, W. W.
*Sperry, W. R.
*Strong, G. A.
*Sweet, E. F.
*Thacher, T.
*Townsend, W. K.

1872

*Coe, R. E.
*Cushing, W. L.
*Deming, C.
*Deming, C. C.
*Deming, H. C.
*Dennis, F. S.
*Hincks, J. H.
*Hoppin, B.
*Merriam, A. R.
*Moore, G. F.
*Owen, E. T.
*Payson, H. S.
*Ramsdell, C. B.
*Spalding, G. A.
*Woolsey, T. S.

1873

*Alexander, E.
*Allen, A. H.
*Beebe, W.
*Daniels, R. W.
*Denslow, H. M.
*Elder, S. J.
*Flagg, W. W.
*Grubb, C. R.
*Johnes, E. R.
*Judson, I. N.
*Lathe, H. W.
*Ord, J. P.
*Prentice, S. O.
*Tarbell, F. B.
*Thomas, C. H.

1874

*Aldis, O. F.
*Barnes, P.
*Bushnell, S. C.
*Farnam, H. W.
*Grover, T. W.
*James, H. A.
*Munroe, G. E.
*Parkin, W.
*Robbins, E. D.
*Stapler, H. B. B.
*Townsend, J. M.
*Walden, R.
*Wickes, T. P.
*Witherbee, F. S.
*Wood, J. S.

1875

*Avery, C. H.
*Brooks, J. W.
*Chester, C. T.
*Clarke, T. S.
*Day, R. W.
*Gulliver, H. S.
*Hotchkiss, W. H.
*Jencks, A. F.
*Jones, D. A.
*Jones, F. H.
*Patton, J.
*Seymour, J. S.
*Smith, E. C.
*Southworth, E. W.
*Tillinghast, C. T.

1876

*Allen, J. D. H.
*Andrews, J. W.
*Bannard, O. T.
*Blaine, W.
*Bottum, E. S.
*Cook, R. J.
*Dawes, C. M.
*Fowler, C. N.
*Hadley, A. T.
*Howe, E. P.
*Hyde, W. W.
*Marvin, J. H.
*Russell, P. G.
*Smith, R. B.
*Worcester, E. D.

1877

*Barnum, W. M.
*Bigelow, W. I.
*Brooks, W.
*Chapin, C. F.
*Collin, W. W.
*Cooke, E. C.
*Eaton, S. L.
*Gould, A.
*Hoysradt, A.
*Kimball, A. R.
*Perey, F. B.
*Sears, J. M.
*Thacher, J. S.
*Tuttle, G. M.
*Winston, F. S.

1878

•Campbell, T.
•Carter, C. F.
•Curtis, G. L.
•Edwards, G. B.
•Foster, R.
•James, W. K.
•Jenks, T.
•Kelsey, C. H.
•Knott, G. T.
•Pollock, G. E.
•Seely, E. H.
•Spencer, C. L.
•Stone, C. M.
•Taft, W. H.
•Whitney, E. B.

1879

•Bowers, L. W.
•Burpee, L. F.
•Foster, G. F.
•Green, H. S.
•Hitchcock, H.
•Hyde, F. E.
•James, W. B.
•Livingston, H.
•Perrin, J.
•Platt, L. A.
•Rodman, R. S.
•Swinburne, L. J.
•Thompson, O. D.
•Tighe, A.
•Woodruff, T. L.

1880

•Allen, W. P.
•Amundson, J. A.
•Bentley, E. M.
•Camp, W.
•Green, E.F.
•Jennings, W.
•Nichols, A. B.
•Ordway, H. C.
•Parker, W.
•Partridge, S. C.
•Peters, W. A.
•Scudder, D.
•Spencer, E. C.
•Taft, H. W.
•Witherbee, W. C.

1881

•Aiken, E. E.
•Barney, D. N.
•Bartlett, P. G.
•Burrell, J. D.
•Coleman, J. C.
•Evarts, S.
•Fuller, P. C.
•Ives, H.
•Leighton, J.
•Osborne, T. B.
•Thompson, N. F.
•VandeGraff, A. S.
•Vernon, F. R.
•Walden, H. T.
•White, H. C.

1882

•Badger, W. I.
•Brewster, B.
•Campbell, J. A.
•Eno, W. P.
•French, A. P.
•Johnson, B.
•Knapp, H. H.
•Lyman, C. W.
•McBride, W.
•Osborne, A. S.
•Platt, H. B.
•Pollock, W.
•Wells, J. L.
•Whitney, J. E.
•Worcester, F. E.

1883

•Burpee, C. W.
•Deming, L. C.
•Folsom, H. T.
•Foote, C. S.
•Frost, E. B.
•Hillard, L. B.
•Hull, L. K.
•Kellogg, F. W.
•McLaughlin, E. T.
•Moore, E. H.
•Palmer, H. H.
•Parrott, J. R.
•Taft, H. D.
•Thacher, S. D.
•Woodward, J. B.

1884

•Blodgett, G. R.
•Booth, S. A.
•Booth, W. F.
•Evarts, M.
•Foster, R.
•Gruener, G.
•Jenks, P. E.
•Jones, F. S.
•Lambert, A.
•Lawrence, T. G.
•McMillan, W. C.
•Painter, H. M.
•Tompkins, R.
•Twombly, H. B.
•Wilder, A. P.

1885

•Arnot, J. H.
•Baldwin, H. deF.
•Bertron, S. R.
•Brandegee, F. B.
•Bridgman, J. C.
•Brooks, H. S.
•Flanders, H. R.
•Hidden, E.
•Hobbs, C. B.
•McHenry, J.
•Mallon, G. W.
•Richards, E. L.
•Robinson, L. F.
•Terry, W.
•Worcester, W. J.

1886

•Anthony, B. H.
•Brenner, S. K.
•Cowles, A.
•Crapo, S. T.
•Day, T. M.
•Knapp, W. P.
•Lewis, C. M.
•Peters. F. G.
•Phelps, E. J.
•Phelps, S.
•Pierson, C. W.
•Schwab, J. C.
•Shipman, A. L.
•Stewart, P. B.
•Winston, D.

1887

*Bennetto, J.
*Corwin, R. N.
*Cowles, W. H.
*Coxe, A. B.
*Douglass, W. R.
*Hare, C. L.
*Haven, G. G.
*Jennings, O. G.
*Kendall, W. B., Jr.
*Kent, W.
*Knight, S.
*Pomeroy, J. N.
*Rogers, J.
*Sheppard, W. B.
*Thacher, W. L.

1888

*Cooley, H. W.
*Fisher, I.
*Gill, G. M.
*Hurd, R. M.
*Isbell, O. S.
*McMillan, J. H.
*Morison, D. W.
*Roby, S. S. B.
*Seward, W. H.
*Solley, F. P.
*Stagg, A. A.
*Stevenson, F. A.
*Stimson, H. L.
*Waite, M. R.
*Walker, S. J.

1889

*Buchanan, T. W.
*Corbin, W. H.
*Donnelley, T. E.
*Fisher, S. H.
*Gil, C. O.
*Griggs, J. C.
*McQuaid, W. A.
*Pinchot, G.
*Reed, H. L.
*Robinson, H. S.
*Smith, H. A.
*Stokes, H. S.
*Walker, H. F.
*Wells, H. W.
*Woodruff, G. W.

1890

*Bayard, T. F.
*Corwith, J. W.
*Crosby, J.
*Day, A. P.
*Farnham, J. D.
*Harrison, F.
*Haslam, L. S.
*James, N.
*Kellogg, C. P.
*Kneeland, Y.
*Morse, S. N.
*Sage, H. M.
*Simmons, W. D.
*Stewart, P. H.
*Tracy, E.

1891

*Calhoun, G.
*Cox, J. J.
*Doane, J. W.
*Estill, J. G.
*Graves, W. P.
*Isham, E. S.
*Kenerson, V.
*McClintock, N.
*Morison, S. B.
*Poole, W. F.
*Simms, W. E.
*Thompson, S. C.
*Townsend, J. B.
*Tweedy, H. H.
*Walcott, F. C.

1892

*Bayne, H. A.
*Boltwood, E.
*Cheney, H.
*Cheney, K. D.
*Crosby, B. L., Jr.
*Day, C.
*Graves, H. S.
*Husted, J. W.
*Ingersoll, J. W. D.
*Jay, P.
*Kitchel, W. L.
*McClung, L.
*Morison, S. N.
*Price, F. J.
*Ryle, E.

1893

*Begg, W. R.
*Cooke, J. B.
*Dwight, W. E.
*Gallaudet, E. F.
*Hay, L.
*Ives, S. B.
*Jones, A. H.
*Lambert, A. V.
*Martin, G. G.
*Parker, W. W. W.
*Parsons, F.
*Robinson, J. T.
*Roby, J.
*Rogers, D.
*Wallis, A. H.

1894

*Case, G. B.
*Cochran, T.
*Davies, T. F.
*Hall, J. L.
*Hare, M.
*Holter, E. O.
*Howland, J.
*James, R. C.
*McMillan, P. H.
*Paine, R. D.
*Stewart, W. E., Jr.
*Stilman, L. S.
*Walcott, W. S.
*Whitney, H. P.
*Word, C. F.

1895

*Beard, A. M.
*Buckner, M. N.
*Butterworth, F. S.
*Cable, B. S.
*Carter, W. F.
*Clark, A. R.
*Cooke, W. E.
*Davis, B.
*Denison, L.
*Harrison, F. B.
*Hinkey, F. A.
*McKee, L.
*Phelps, Z. B.
*Shepley, A. B.
*Sloane, W.

1896

*Beard, W. M.
*Brown, A.
*Cheney, W.
*Cross, W. R.
*deSibour, J. H.
*Griggs, M. F.
*McKee, McK. D.
*Neale, J. B.
*Smith, W. D.
*Stokes, A. P.
*Thorne, S.
*Thorne, S. B.
*Treadway, R. B.
*Trudeau, E. L., Jr.
*Weyerhaeuser, F. E.

1897

*Bailey, P. H.
*Brooke, G. C.
*Coffin, H. S.
*Fincke, C. M.
*Garrison, E. E.
*Gerard, S.
*Gillette, C.
*Kerr, A. B.
*Kitchel, C. P.
*Pinchot, A. R. E.
*Sage, D.
*Smyth, N. A.
*Sumner, G.
*Wheelwright, J. S.
*Williams, N. A.

1898

*Cheney, C. D.
*Fearey, M. L.
*Gallaudet, H. D.
*Hale, E.
*Hinsdale, F. G.
*Kernochan, F.
*Lord, F. A.
*Montgomery, G. D.
*Parker, G.
*Rogers, D. F.
*Simmons, F. H.
*Wadsworth, J. W., Jr.
*Whitney, P.
*Wickes, F.
*Wright, H. B.

1899

*Adams, M. T.
*Ames, S. D.
*Bowles, H. T.
*Brooke, F. H.
*Brown, J.
*Callahan, H. A.
*Day, D. H.
*Griswold, W. E. S.
*Maffitt, T. S.
*Magee, J. M.
*Preston, O.
*Sweet, C. F.
*Vanderbilt, A. G.
*Welles. C. H., Jr.
*Whitehouse, W. F.

1900

*Adams, F. B.
*Allen, F. W.
*Camp, S. B.
*Cheney, F. D.
*Coffin, W. S.
*Cross, J. W.
*Douglas, M.
*Greenway, J. C.
*Hopkins, J. M.
*Leavitt, A. D.
*Lyon, G. A.
*Paddock, B. W.
*Rockefeller, P. A.
*Sullivan, C. A.
*Taft, H.

1901

*Allen, A. D.
*Carlisle, J. M.
*Cheney, P.
*Cheney, T. L.
*Christian, H. H.
*Coy, S. L.
*Edwards. R. H.
*Eels, J. S.
*Hixon, R.
*Hoysradt, W. J.
*Keppelman, J. A.
*Morris, R.
*Richardson, A. H.
*Welsh, G. A.
*Wright, A. P.

1902

*Carpenter, G. B.
*Cressler, A. M.
*Cushing, C. C. S.
*Day, W. E.
*Ferguson, A. L.
*Guernsey, R. G.
*Potter, R.
*Rumsey, B. C.
*Sincerbeaux, F. H.
*Stebbins, E. A.
*Stone, H.
*Swan, J. R.
*Taylor, A. McL.
*Trowbridge, M.
*White, P. G.

1903

*Chadwick, G. B.
*Clark, H. T.
*Corning, E.
*Dreisbach, J. M.
*Hamlin, C. J.
*Hewitt, B.
*Holt, H. C.
*Lamb, A. R.
*Moore, F. W.
*Sutphin, S. B.
*Thompson, D.
*Wallace, H. M.
*Waring, A. J.
*White, J. R.
*Wilhelmi, F. W.

1904

*Adams, C. E.
*Adams, G. W.
*Cheney, R.
*Crane, W. M., Jr.
*Cross, W. S.
*Dodge, F. T.
*Jennings, P. H.
*Kittle, J. C.
*Metcalf, H. G.
*Miller, J. E.
*Pierce, F. E.
*Reed, L. P.
*Soper, W. B.
*Thacher, T. D.
*Wiggin, F. H.

1905

•Bradford, A. H.
•Ellsworth, J. S.
•Fish, S.
•Hogan, J. J.
•Hollister, B.
•Hughes, B.
•Lathrop, J. H.
•Richardson, G.
•Rogers, E. P.
•Sargent, M.
•Sloane, J.
•Tilney, R. F., 2d
•Turner, H. M.
•Van Reypen, W. K., Jr.
•Whitehouse, E. S.

1906

•Bruce, D.
•Dousman, L. deV.
•Ely, G.
•Flinn, A. R.
•Hoyt, L.
•McClure, J. K. G., Jr.
•McGee, D. A.
•Magee, J. G.
•Moorhead, W. S.
•O'Brien, F.
•Perrin, L. J.
•Rockwell, F. H.
•Smith, B. D.
•Turner, S.
•Wilson, H. R.

1907

•Barnes, W. D.
•Blair, W. McC.
•Camp, A. G.
•Daniels, F. L.
•Danielson, R. E.
•Dixon, T. P.
•Dodge, P. L.
•Glaenzer, G. B.
•Knox, H. S.
•Little, M. S.
•Morse, S. F. B.
•Truesdale, C.
•Tuttle, G. C.
•Wells, H. S.
•Woolsey, H. M.

1908

•Biglow, L. H.
•Dahl, G.
•Davis, W. G.
•Dines, T.
•Foster, J. T.
•Griswold, D. T.
•Perrin, L. W.
•Seymour, C.
•Shepard, R. B.
•Stanley, H.
•Thornton, J. C.
•Townsend, G. H.
•Townsend, J. M.
•Watkins, C. L.
•Williams, J. W.

1909

•Bundy, H. H.
•Burch, R. B.
•Campbell, C. S.
•Clark, A. A.
•Dominick, G. G.
•Howard, J. M.
•Howe, H. A.
•Jefferson, E. F.
•Klots, A. T.
•Lippitt, H.
•Perrin, J. B.
•Rand, S. C.
•Sanderson, B. B.
•Seabury, M. A.
•Stokes, H. P.

1910

•Bayne-Jones, S.
•Coy, E. H.
•DeSilver, A.
•Franchot, C. P.
•French, R. D.
•Harrison, G. L.
•Heron, J.
•King, L. M.
•Knight, A.
•Logan, W. S.
•Lohmann, C. A.
•Murphy, F. J.
•Philbin, S. H.
•Taft, R. A.
•Wodell, R. A.

1911

•Badger, P. B.
•Corey, A. L.
•Daly, F. J.
•Davis, C. W.
•Day, S. S.
•Dempsey, J. B.
•Gammell, A. A.
•Hyde, F. W.
•Lombardi, C. E.
•McDonnell, J. V.
•Randolph, F. F.
•Rowland, J. T.
•Soule, L.
•Van Sinderen, H. B.
•Wheeler, L. R.

1912

•Boyd, F. T.
•Gardner, R. A.
Hartley, C.
•Howe, A.
•Hyde, D. R.
•McClure, A.
•Merritt, H. N.
•Mullins, F. P.
•Murphy, G. C.
•Paul, C. H.
•Smith, J. G.
•Street, H. A.
•Strout, E. A., Jr.
•Tener, A. C.
•Twombly, E. B.

1913

•Allen, C. D.
•Allen, C. E., Jr.
•Baker, R. W.
•Colgate, H. A.
•Cortelyou, G. B., Jr.
Cowles, A., 3d
•Harman, A.
Harriman, W. A.
•Lovett, S.
•McAndrew, A.
•Philbin, J. H.
•Sawyer, H. E., Jr.
•Schwab, L. vonP.
•Shelden, A.
•Waters, W. O., Jr.

1914

•Avery, B. F.
•Cornish, P. G., Jr.
•Daniels, T. L.
•Gile, C. M.
•Hobson, H. W.
•Jenks, A. F.
•Jones, G. G.
Ketcham, H. H.
•King, S.
•Lippincott, W. J.
•Osborn, R.
•Patterson, G. W., Jr.
•Rogers, H. L.
•Shepard, L. A.
•Warren, W. C., Jr.

1915

Burtt, E. A.
•Carter, L.
•Cornell, T. H.
Davenport, S. R.
•Denegre, T. B.
Macdonald, R. H.
•MacLeish, A.
•Middlebrook, L. S.
•Paris, I., 2d
•Pumpelly, H. A.
•Reilly, J. S.
•Shedden, W. M.
•Slocum, E. L.
•Stackpole, E. J., Jr.
•Swift, W. E.

1916

•Darling, A. B.
•Gaillard, S. G., Jr.
•Hadley, M.
•Johnstone, H. W.
•Knapp, F.
•Oler, W. M.
•Porter, G. E., 3d
•Putnam, P.
•Roberts, C. H., Jr.
•Shepard, D. C.
•Stewart, D. O.
•Tener, K. J.
•Tighe, L. G.
VonHolt, H. V.
•Walker, C. R.

1917

•Bellinger, A. R.
•Bush, P. S.
Cooper, H. S. F.
•Cunningham, O. B.
•Duryee, S. S.
•Harriman, E. R.
•Isham, H. P.
•James, E. S.
•LeGore, H. W.
Mallon, H. N.
•Olsen, A. W.
•Overton, J. W.
•Shepard, F. P.
•Simpson, K. F.
Woolley, K.

1918

•Ames, A. W.
Baldrige, H. M.
•Clay, C. M.
•Davison, F. T.
Deans, R. B.
•Farrar, J. C.
•Garfield, N.
•Gates, A. L.
•Gould, J.
Lovett, R. A.
•Snell, R. F.
Stewart, C. J.
Taft, C. P.
•Vorys, J. M.
•Woolley, J. E.

1919

•Allen, P. B.
•Baldwin, S.
•Campbell, A. B.
•Carter, F. D.
•Depew, G. G.
•Gaillard, E. M.
•Hadley, H.
•Haffner, C. C., Jr.
•McCormick,
A. A., Jr.
McKee, E. M.
Mallon, J. H.
•Mead, W.
•Otis, J. S.
Smith, T.
•Walker, G. N

1920

•Adams, L. G.
•Davison, H. P.
•Hadden, B.
•Heffelfinger, F. P.
•Hincks, J. M.
•Hobson, F. T.
Ingalls, D. S.
•Luce, H. R.
•McHenry, J.
•Patterson, M.
•Safford, T. L.
•Sargent, J. W.
•Schermerhorn, A. C.
VanSlyck, DeF.
•Winter, D. R.

1921

•Acosta, J. S.
•Bradley, C. H., Jr.
Brewster, W. R.
Bundy, F. McG.
Cowles, W. S., Jr.
•Hemingway, B. L.
•Hord, S. Y.
•Jenckes, M.
•Litt, W. D.
•Lunt, S. B.
Neville, J. E.
•Parsons, L.
•Shevlin, E. L.
•Stewart, J.
•Winter, E. W. 2d.

1922

Aldrich, M. P.
•Bush, J. S.
•Cheney, W.
•Crosby, A. H.
•Frost, A. C., Jr.
•Hilles, F. W.
•Larner, R. J.
Lord, W. G.
•Page, R. G.
Root, W.
Solley, R. F.
•Strong, H. B.
•Thomas, J. A. M.
•Townsend, F. deP., Jr.
Woodward, S.

1923

Becket, G. C.
•Bulkley, J. O.
Cooper, J. S.
•Davenport, R. W.
•Day, H. T.
Foster, M. E.
•Hyde, L. K., Jr.
Jones, E. A.
•Jordan, R. E.
•Luckey, C. P.
•Matthiessen, F. O.
•Norton, G. W.
•Pelly, B. B.
•Tighe, R. L.
•Wheeler, A. N., Jr.

1924

Allen, H. E.
•Appel, G. F. B.
•Blair, E. F.
•Diller, J. C.
•Ewing, S.
Haines, T. F. D.
•Heffelfinger, G. W. P.
•Hilles, C. D., Jr.
•Houghton, W. E.
•Lusk, W. T.
McCallum, R.
•Mallory, W. N.
•Melton, W. D., Jr.
Spofford, C. M.
Thomson, C. S.

1925

Ardrey, R. L.
Ashburn, F. D.
Bench, E. C.
Bissell, W. T.
•Blair, J. G.
Gage, C. S.
•Ives, G. M.
•Jones, W. C.
Lovejoy, W. M.
•Lufkin, E. M.
•Luman, R. J.
Norton, W. B.
•Scott, H. C.
•Stevens, M. A.
Stevenson, D. D.

1926

•Allen, D.
•Bronson, J. D.
•Coke, H. C., Jr.
•Crosby, H. S.
Cutler, B. C.
Davenport, J.
Ferguson, A. L., Jr.
Hoysradt, J. McA.
Kingsbury, H. T.
Lord, O. B.
•Michel, A. L.
•Poore, C. G.
Root, R. D.
•Russell, F. F.
Willard, C. H.

1927

Bunnell, P. W.
•Look, A. M.
•McIntosh, H.
Noble, L. M.
•Patterson, T. C.
•Post, R. L.
•Ritchie, W. P.
•Robbins, W. W.
•Robinson, F. F.
Stokes, A. P., Jr.
•Wadsworth, J. J.
•Walker, G. H., Jr.
Wardwell, E. R.
•Warren, J. D.
•Watson, C., 3d.

1928

Bartholomew, D. T.
•Berger, G. B., Jr.
Bingham, C. T.
•Fishwick, D. B.
•Griggs, H. S., Jr.
Haight, G. W.
Ives, C. B.
•Lapham, R. W.
Mallory, B. L., Jr.
•Prentice, J. R.
Robertson, A. C.
Ross, L. P.
•Scott, S. P.
•Stewart, P. H.
•Walker, S.

1929

•Ashforth, A. B.
Costikyan, G. K.
Crile, G., Jr.
•Decker, E. L., Jr.
•Dodge, W.
•Eddy, M. H.
•Garvey, J. J.
•Gillespie, K. S.
Grove, M. J.
•Manville, H. E., Jr.
Merrill, H. R.
Paine, R. D., Jr.
Smith, L. H.
•Wack, D. deB.
•Wells, G., 2d.

1930

•Allison, R. S., Jr.
•Ellis, H. M.
•Ellis, R. W.
•Erskine, A. DeW.
•Garnsey, W. W.
Greene, W. W.
•Gwin, S. L.
Hall, R. A.
•Janeway, C. A.
Ladd, L. W., Jr.
Longstreth, G. B.
•Look, F. B.
Musser, J. M.
Palmer, A. E.
Prideaux, T.

1931

•Austen, D. E.
Donnelley, G.
Heinz, H. J., 2d.
Lapham, L. A.
Loeser, F. W.
Lydgate, W. A.
•Messimer, R. L., Jr.
Peltz, W. L.
•Rathborne, J. C.
•Stewart, J. R.
•Sutherland, R. O.
•Swoope, W. M.
Tucker, L.
Vincent, F. T.
Walker, J. M.

1932

Adams, F. B., Jr.
Barres, H.
Bates, E. W.
Fitch, G. H.
Fulton, R. B.
Gillespie, S. H.
Hodges, W. V., Jr.
Laundon, M. H., Jr.
•Lindenberg, J. T.
McCrary, J. R., Jr.
Mills, J. P.
Ogden, A.
•O'Neill, E. G., Jr.
•Savage, B.
Williams, S. G.

1933

Caldwell, S. S., Jr.
Cooke, F. J.
Davis, R. M.
Fletcher, A. C.
Garnsey, W. S.
•Hall, F. B., Jr.
Jones, T. S.
Levering, W. B.
•Lindley, F. V.
McGauley, J. M.
Newton, J. Q., Jr.
Parker, R. B.
Parsons, M.
Stebbins, H. L.
Wilbur, J. S.

1934

Bradford, A. H.
Cunningham, H. T.
Gordon, G. A.
Hallett, J. F.
Hambleton, T. E.
•Harper, H. H., Jr.
Holmes, J. G.
•Jackson, J. H.
Kilcullen, J. M.
Kimball, W. S.
Mills, E. E.
Morse, J. B.
Nichols, E.
Ranney, G. A.
Stetson, E. W., Jr.

1935

Bowles, J. E.
•Collier, S. C.
Curtin, F. C.
Fuller, S. E.
Haas, F. P.
Johnson, J. H.
Kilborne, W. S.
Pillsbury, J. S., Jr.
Rodd, T.
•Seymour, C., Jr.
Shepard, R. B., Jr.
Spitzer, L., Jr.
•Stillman, G. S.
Terry, H. P. B.
•Tufts, B. C.

1936

Barr, R. J., Jr.
Bingham, J. B.
Cooke, R. B.
•Davis, H. W., 2d
Gill, B.
Hall, J. A.
Hersey, J.
Knapp, J. M.
Moore, R. A.
•Pillsbury, E. P.
Rankin, B. C.
•Shepard, B.
Train, R.
Walker, L.
Whitehead, M. K.

1937

Blake, D. B.
Brooke, F. H., Jr.
Burke, C. C., Jr.
Cross, R. J.
Draper, A. J.
Field, J. W.
Kelley, L. M.
•McLemore, B., Jr.
Miles, R. C.
Orrick, W. H., Jr.
•Robinson, J. T.
•Runnals, J. F. B.
Stewart, P.
•Stone, L. T., Jr.
Turner, H. M.

1938

Davenport, B. W.
Dempsey, J. H., Jr.
Dilworth, J. R.
•Dunham, L. B., Jr.
Ecklund, J. E.
Fox, J. C.
Frank, C. E.
•Gordon, McG.
Hessberg, A., 2d
•Schermerhorn, A. E.
Stevens, J. B., Jr.
•Thompson, J. R.
Weed, G. H.
Whitman, F. S., Jr.
Wilbur, R.

1939

Belin, G. deA.
Blanchard, J. G.
Bundy, W. P.
Chittenden, G. H.
Clucas, L. M.
Dyess, A. D., Jr.
•Gile, C. D.
Hoxton, A. R., Jr.
Kellogg, W. W.
Miller, A. O., Jr.
Miller, C. L., Jr.
Mitchell, H. H.
Shepard, L. M.
•Wilhelmi, F. W., Jr.
Williams, B.

1940

Bundy, McG.
Erickson, T. F.
Glover, C. C., 3d
Grayson, J. G.
Holden, R. A.
Howe, H., 2d
Orrick, A. D.
Rodd, D. B.
Stack, J. W., Jr.
Stevens, A. B.
Stillman, P. G. B.
•Stucky, W. McD.
Swenson, E. F., Jr.
•Thorne, P. B.
Watson, W. B., Jr.

1941

Cross, W. R., Jr.
Devor, D. S., Jr.
Ellis, F. H., Jr.
Hall, E. T.
Jackson, W. E.
Kiphuth, D.
Madden, J. B.
Pickett, L. K.
Price, C. B., Jr.
Solbert, P. O. A.
Stevenson, C. P.
Thomas, W. D.
Tighe, L. G.
•White, W. B.
Zorthian, B.

1942

•Aycrigg, W. A., 2d
Bartholemy, A. E.
Bell, W. T.
•Chouteau, R. A.
Ford, W.
Grayson, C. T.
Halsey, R. W., Jr.
Harrison, F. H.
Jessup, J. B.
Kemp, F. A.
Kirchwey, G. W.
•Smith, H. F., Jr.
Sprole, F. A.
•Walker, J. S.
•White, W. G.

1943

Acheson, D. C.
Caulkins, G. P., Jr.
Daniels, J. H.
Doolittle, D. H.
Drain, R. D.
Healy, H. H., Jr.
Hoagland, D. W.
Klots, A. T., Jr.
•Lilley, F. W., Jr.
•Maclean, J. H.
•Miller, D. L.
Moseley, S. D.
Stewart, Z.
Tabor, J. K.
Vogt, T.

1944

Brown, S. T. G.
Buckley, J. L.
Elebash, S. D.
Ellis, A., Jr.
Ferguson, J. L.
Goodenough, J. B.
•Grayson, W. C.
Holden, J. M.
Hoopes, T. W.
Kelly, W. C., 2d
•Lindsay, D. A.
Little, S. W.
Walker, J. P.
Whitmore, J. A., Jr.
•Witter, D., Jr.

1945

Allen, A. J., Jr.
•Blake, G. D., Jr.
Connick, L.
Dale, E. L., Jr.
Davison, E. P.
Early, H. E.
•Elwell, F. B., Jr.
Harman, A., Jr.
Lynch, R. V.
McElroy, B. T.
McGaughey, G. E., Jr.
Moorhead, W. S.
Seaman, I., Jr.
•Spaulding, J. A.
Sumner, W. S.

1945W

Brown, W. H.
Carey, J.
Finney, J. W.
Holmes, G. B.
Hurlbut, G. B., Jr.
•Mallon, T. R.
O'Brien, P., Jr.
Twichell, C. P.
Vose, E. E.
Warren, G. U.

1947

Alling, C. B., Jr.
Andrews, E. W., Jr.
Boulos, W. M. (formerly Bouliaratis)
Bronson, D. B.
Chafee, J. H.
Finley, J. G. G.
Goedecke, W. S.
Leavenworth, D. L.
Moore, J. I.
O'Brien, F., Jr.
•Palmer, C. E.
•Read, R. R.
Robinson, H. C., Jr.
•Tucker, C., Jr.
Whitehouse, C. S.

1948

Ashley, T. L.
Biglow, L. H., Jr.
Bush, G. H. W.
Caulkins, J. E.
Clark, W. J.
Connelly, W. J., Jr.
•Cook, G., 3d
Grimes, D. C.
Jenkins, R. E.
•Mack, R. G.
Moseley, T. W.
Pfau, G. H., Jr.
Walker, S. S., Jr.
•Weaver, H. S.
Wilkie, V., Jr.

1949

Baribault, R. P.
Bassett, B. B., 2d
Coffin, W. S., Jr.
Davison, D. P.
Goodyear, R. M.
Hollister, J. B., Jr.
Lavelli, A., Jr.
Leiper, J. McC.
Lippincott, D. McC.
Lord, C. E.
Lufkin, P. W.
•Raymond, G. T. P.
Sherrill, F. G.
Van Dine, V.
•Wickwire, W. R.

1950

Breen, J. G.
Buckley, W. F., Jr.
Draper, W. H., III
Frank, V. H., Jr.
Galbraith, E. G.
Guinzburg, T. H.
Henningsen, V. W., Jr.
Kemp, P. S.
Lambert, P. C.
Lovett, S.
•Luckey, C. P., Jr.
MacLeish, W. H.
McLean, R., 3d
Pionzio, D. J.
Shepard, D. C., Jr.

1951

•Anderson, T. H.
Eden, J. W.
Ellis, G. C., Jr.
Ellis, G. McC.
Love, R. F.
Lufkin, C. F., Jr.
McNamara, T. P.
Mathews, C.
Mayer, C. T.
Price, R. K., Jr.
Reid, E. S., III
Ross, T. B.
Russell, R. W.
Ryan, J. M.
Shepard, C. R. S.

1952

Aberg, D. V., Jr.
Buckley, F. R.
Claude, A., Jr.
Connick, A. J.
Cruikshank, P. F., Jr.
Eisler, C. T.
Finney, G. S.
Haight, C. S., Jr.
Hincks, J. W.
Kittredge, F. D.
Roberts, G. B., Jr.
Senay, E. C.
Spears, R. S.
Steadman, J. M.
Vorys, M. W.

1953

•Bulkley, J. D.
Bush, J. J.
Donaldson, W. H.
Durham, E. A.
Emerson, C. P.
Lufkin, D.W.
•Marshall, J. B.
McLane, J. P.
Menton, J. D.
Mitinger, J. B.
Noble, L. M., Jr.
Novkov, D. A.
Walker, G. H., III
Weber, J. W.
Woodsum, H. E., Jr.

1954

Benninghoff, H. B.
Evans, T. B.
Fortunato, S. J.
Giesen, A. R., Jr.
Gifford, R. C.
Hiers, R. H.
Kilrea, W. C.
Meyer, R. W., Jr.
Morton, T. B., Jr.
Polich, R. F.
Price, R. E.
•Reponen, R. G.
Ryan, A. A., III
Schnaitter, S. J.
Thornton, E. B.

1955

Bryan, L. T., Jr.
DeForest, S. E.
Fehr, G. F.
Gow, R. H.
•Green, C. G.
Guidotti, H. G., Jr.
Hansen, R. A.
Hudson, F. D.
Johanson, S. M.
McCullough, D. G.
Mathias, P. H.
Searles, P. D.
•Shugart, T. M.
Steadman, R. C.
Walker, R. C.

1956

Banks, H. D.
Boasberg, E., III
D'Avanzo, L. A.
Dempsey, A. S.
Durfee, C. G., Jr.
Esselstyn, C. B., Jr.
Gaines, M. J.
Ingalls, D. S., Jr.
Jamieson, T. C., Jr.
McGregor, J. E.
Malloy, T. R.
•Menton, J. P.
Orr, A. A.
Speed, J. B.
Traphagen, P. A.

1957

Ackerman, S. H.
•Bowman, R. D.
Carlsen, R. A.
Clark, R. I., Jr.
Cushman, C. W.
Dunn, G. J.
Fritzsche, P. B.
Loucks, V. R., Jr.
Loughran, A. H.
Lumpkin, R. A.
Oberlin, J. P. (formerly Owseichik)
Palmer, L. G., II
Ritchie, W. P.
Somerville, J. W.
Williams, W. B.

1958

Allen, C. E.
Blue, L. S.
Cassel, J. A.
Cheney, R. L.
Cushman, R. E., Jr.
Embersits, J. F.
Howe, G. W.
Morey, R. W., Jr.
Pendexter, J. F.
Phelan, H. T.
Post, R. L., Jr.
Preston, J. L.
•Shackleford, R. C.
•Van Antwerp, W. M., Jr.
Wheeler, T. B.

1959

Adams, S.
Bodman, W. C.
Connors, J. J., III
Cooke, J. P.
Ercklentz, A. T.
Esselstyn, E. C.
Hemphill, J. T., Jr.
Holbrook, J., Jr.
Kingsley, C. C.
Lightfoot, R. B.
Lord, W.
Mayor, M. B.
Sheffield, J. R.
Thorson, P. A.
Tyler, C.

1960

Ball, D. G.
Beane, F. E., Jr.
Capron, P.
Dominick, D. D.
Ernst, F. V.
Garnsey, W. H.
Giegengack,
R. F., Jr.
Holbrook, D. D.
Lindgren, R. H.
Lusk, P. A.
McCarthy, C. E., Jr.
Meek, J. B., Jr.
Northrup, R. S.
Scott, E. L.
Smith, B. D., III

1961

Bissell, G. T.
Bockrath, R. C., Jr.
•Bowles, W. C., Jr.
Clark, T. W.
Cogswell, J. M.
de Neufville, J. P.
Hamlin, C.
Lindsay, D. A., Jr.
MacLean, K., Jr.
Pyle, M. J.
Seeley, G. W.
Singleton, T. H.
Stewart, J. C.
Waddell, G. H.
Walsh, J. J., Jr.

1962

Back, S. H.
Brandt, J. H.
Brewster, J. H., IV
Brooks, T. A.
Burr, C. B.
Childs, H. C.
Chimenti, N. V.
Hamilton, W.
Holland, H. T.
LeFevre, R. E.
Ligon, T. B.
Peck, A. J., Jr.
Spitz, R. W.
Terry, W., III
Zucker, B.

1963

Ahlbrandt, R. S.
Becket, P. L.
Boren, D. L.
Clay, J. L.
Frank, C. A., III
Gill, M. G.
Gwin, S. L., Jr.
Hewitt, H. H.
Jones, T. S.
Marsh, L.
Moser, R. E.
Nordhaus, W. D.
O'Connell, T. J.
Rose, J. C.
Rulon-Miller, P.

1964

Best, G. D. C.
Cirie, J. A.
Clay, A. S., IV
Francis, S. H.
Gillette, H. F., Jr.
Kaminsky, R. I.
Lynch, D. P.
McBnde, J. E.
Prindle, T. H.
Pulaski, C. A., Jr.
Rowe, T. D.
Straw, R. L., Jr.
Van Loan, E. M.
Wilbur, J. S., Jr.
Wolfe, S. H.

1965

Ali, M. R.
Benoit, C. E., Jr.
Clark, G. H.
Clark, S. E.
Clay, T. J.
Coombs, O. M.
Corey, A. L., III
DesJardins, P. E.
Fetner, P. J.
Lagercrantz, M. B.
Pinney, J. M.
Pond, J. C.
Quarles, J. P.
Shattuck, J. H. F., III
Zallinger, P. F.

1966

Bockstoce, J. R.
Bradford, T. M.
Brown, G. C.
Cross, A. W.
Dalby, M. T.
Howard, J. E.
Kerry, J. F.
Laidley, F. D.
•Pershing, R. W.
Rumsey, D. M.
Singer, R. L.
Smith, F. W.
Stanberry, W. B., Jr.
Thorne, D. H.
Vargish, T.

1967

Afoeju, B. I.
Ashe, V. H., II
Bush, D. C.
Foster, D. J.
Garnsey,
W. W., Jr.
Lilley, R. M.
Miller, J. W.
Mitchell, H. C.
Neigher, G. M.
Preston, J. M.
Richards, D. A.
Saxon, J. M.
Snell, B. C.
Swil, R. A.
Thompson, S. E., Jr.

1968

Austin, R. I.
Birge, R. R.
Brown, C. W.
Bush, G. W.
Cohen, K. S.
Cowdry, R. W.
Etra, D.
Gallico, G. G., III
Guthrie, R. K.
Kolar, B. W.
McCallum, R. D., Jr.
Saleh, M. A.
Schmidt, T. C.
Schollander, D. A.
Thorne, B. S.

1969

Arras, R. E., Jr.
Bouscaren, M. F.
Buck, C. H., III
Cosgrove, T. F., Jr.
Demaree, F. E.
Dowling, B.
Fuller, H. W.
Livingston, R. H. B.
Madden, B. P.
Miller, W. E.
O'Leary, J. J.
Schwarzman, S. A.
Selander, D.
Thompson, W. M., Jr.
Woodlock, D. P.

1970

Brown, W. S.
Case, P. B., Jr.
Downing, E. S.
Eyre, L. L.
Friedland, J. D.
Greenberg, S. D.
Hodes, D. M.
Jackson, T. J.
Miller, T. C.
Morgan, R. M.
Ohene-Frempong, K.
Peters, D. J.
Scattergood, T. B.
Thompson, J. P.
Trower, C. C.

1971

Babst, J. A.
Bryan, J. T., III
Ekfelt, R. H.
Feinerman, J. V.
Fortgang, J.
Galvin, M. G.
Halpin, T. M.
Hernandez, C. A.
Inman, R. D.
Johnson, W. J., Jr.
Kosturko, W. T.
Levin, C. H.
Morgan, J. W.
Noyes, E. M., III
Taft, T. P.

1972

Cangelosi, R. J.
Clark, D. W.
Csar, M. F.
Evans, P. S.
Fisher, S. B.
Lewis, M. S.
Lutz, K. E.
MacDonald, R. J.
McLaren, M. G.
Moyer, D. R.
Ritterbush, S. G., Jr.
Sauber, R. A.
Walden, R. S.
Wilson, Z. V.
Ziegler, S. W.

1973

Barasch, A. S.
Bellis, T. L.
Finney, C. R.
Green, B. P.
Highfill, P. H.
Huey, M. C.
Karageorge, J. L.
Liles, C. R.
Lonsdorf, D. B.
MacDonald, S. J.
McPhee, S. J.
Mattlin, F. W.
Moore, D. C.
Scott, W. I.
Sulzer, J. S.

1974

Ayeroff, F. C.
Barge, R. M.
Bellis, J. M.
Bisaro, L. R.
Cohen, R. L.
Connors, D. M.
Diamond, P. C.
Doyle, T. J.
Eisenberg, B. A.
Gonzalez, T. F.
Kelly, B. C.
Lewis, G. E.
Murchison, B. C.
Spear, W. J., III
Thorne, C. H. M.

1975

Ashenfelter, A. T.
Bender, K. A.
Buckley, C. T.
Burke, J. E.
English, W. D., V.
Gaines, E. F.
Green, R. H.
Kanehl, P. E.
MacKenzie, K. M.
Reigeluth, D. S.
Saffen, D. W.
Struzzi, T. A.
Wald, S. G.
Zorthian, G. J.

1976

Blattner, R. W.
Brubaker, J. K.
Capozzalo, D. D.
Casscells, C. D.
Childs, S. W., II
Davies, P.
Fort, D. K.
Gates, E. R.
Gibson, R. C.
Hart, D.
Leverett, M. W., III
Mehta, A. S.
Morgenstern, M. J.
Oler, C. K., Jr.
Williams, D.

1977

Blakely, M.
Brubaker, J. R.
Cooper, C.
Fredericks, J. R.
Goldberg, R. J.
Grayson, W. C., Jr.
Kee, C. A.
Lalley, P. W.
Lawler, Q. J.
Newman, T. M.
Perry, D. B.
Rimar, S., III
Schlesinger, D. A.
Scott, L. G.
Tom, C. B., III

1978

Albritton, P. B.
Baran, M. R.
Bassi, K. A.
Clark, J. B.
Gile, L. M.
Holmes, P. S.
Hook, N.
Karp, B. C.
Marinelli, D. L.
Owens, S. L.
Piel, G. D.
Rizzo, R. J.
Roy, J. M.
Sullivan, C. S.
Turner, E. L.

1979

Brown, R. N.
Edozien, A. O.
Fore, J. A.
Holmboe, J. A.
Lorenson, D. H.
McNally, E. E., II
Moses, J. T.
Nondorf, K. D.
O'Brien, D. P.
Peters, E. B.
Skrovan, S. T.
Stevenson, C.
Westerfield, R. H.
Wilson, D. R.
Yent, J. B., Jr.

1980

Austin, S. M., III
Chibundu, M. O.
Davenport, G. L.
DeVore, M. S.
Dilworth, G. T.
Fleming, A. T.
Hatem, J. J.
Kagan, R. W.
Lawrence, G. M.
Mulhern, D. K.
Peters, E. R.
Stevens, E. E.
Teig, J. B.
Tumpane, T. M.
Zigerelli, L. J.

1981

Bullock, S. B.
Campbell, K. C.
Carlsson, M. E.
Choa, C. J.
Conway, J. L., Jr.
Grandine, T. A.
Novosel, D. G.
O'Keefe, R. J.
Peters, K. G.
Peterson, P. C.
Russell, R. G.
Staven, K. E.
Stratton, D. J.
Tingey, D. S.
Troy, A.

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Bass, J. E.
Breslau, J.
Campbell, G. E.
Devlin, M. W.
Leone, F. A.
McAfee, W. A.
Meyers, B. F.
Murchison, R. E.
Rachlin, D. I.
Reid, J.
Salzman, M. J.
Santiago, E.
Towers, J. D.
Wright, W. H., II
Yang, J. T.-Y.

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Abrams, P. M.
Brooks, P. M.
Burkus, G. J.
Cerveris, M. E.
Franklin, R. D.
Gale, F. S.
Kafoglis, C. N.
Kaushal, S.
Montesano, M. J.
Nichols, W. A.
Noel, C.
Pinela, C.
Sharp, J. D.
Sheffield, J. Van L.
Wagner, V. E.

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Andrie, P. J.
Coggins, D. S.
Crawley, B. S.
Davison, H. P., II
Graves, E. G., Jr.
Henston, D. R.
Herskovits, D. N.
Jung, M. D.
Kahle, J. L.
Lampert, E. S.
Litt, D. G.
Skibell, S. A.
Urquijo, G.
Weinstein, A.
Wiseman, D. B.

CATALOGUE

OCTOBER 1983

VOL. II

DECEASED MEMBERS

The following abbreviations are used in this Catalogue:

Admin.	Administration	Gen.	General
Agt.	Agent	Grtr.	Greater
Am.	American	Hosp.	Hospital
Assn.	Association	Inf.	Infantry
Assoc.	Associate	Ins.	Insurance
Asst.	Assistant	Instr.	Instructor
Attny.	Attorney	Lieut.	Lieutenant
A.U.S.	United States Army	m.	Married
Bd.	Board	Maj.	Major
Ch.	Church	Mbr.	Member
Chmn.	Chairman	Med.	Medical
Chmbr.	Chamber	Mfg.	Manufacturing
Cmdr.	Commander	Mgr.	Manager
Co.	Company	Natl.	National
Col.	Colonel	Pgh.	Pittsburgh
Coll.	College	Pres.	President
Com.	Committee	Presb.	Presbyterian
Comm.	Commission, Commerce	Priv.	Private
		Prof.	Professor
Cong.	Congregational	Ptnr.	Partner
Corp.	Corporation	Rep.	Representative
Cprl.	Corporal	Repub.	Republican
Cty.	County	res.	Residence
d.	daughter, daughters	Res.	Reserve
Del.	Delegate	s.	son, sons
Dir.	Director	sd.	step-daughter
Distr.	District	Sec.	Secretary
Div.	Division	Sgt.	Sergeant
Episc.	Episcopal	Soc.	Society
Exec.	Executive	Spkr.	Speaker
F.A.	Field Artillery	ss.	step-son
Fed.	Federal	Treas.	Treasurer
Fgn.	Foreign	Univ.	University
Found.	Foundation	V.P.	Vice-President

Please send any corrections to:

The Secretary

RTA Incorporated

P.O. Box 2138 Yale Station

New Haven, Conn. 06520

A

ABBE, 1848, Frederic Randolph—(*Ministry*)—Born Oct. 28, 1827, Litchfield, Conn.; died Mar. 31, 1889, Dorchester, Mass.

ACOSTA, 1921, John Sidney—(*Insurance*)—Born Dec. 13, 1898, Jacksonville, Fla.; died July 18, 1929, Waverly, Pa. 2d Lieut., F.A., World War I.

ADAMS, 1904, Charles Edward—(*Industrial*)—Born Oct. 29, 1881, Toledo, Ohio; died Jan. 27, 1957, New York City; Chief, Iron and Steel Div., War Production Bd., World War II.

ADAMS, 1866, Charles Hemmenway—(*Literary work*)—Born Sept. 26, 1845, Fairfield, Conn.; died Aug. 28, 1915, Derby, Conn.

ADAMS, 1862, Frederic, LL.D.—(*Law*)—Born Oct. 9, 1840, Amherst, N.H.; died July 24, 1923, Hollywood, Calif. Judge, Circuit Court of Errors and Appeals of N.J., 1897-1903, and of Circuit Court of Essex County, N.J., '03-'19.

ADAMS, 1900, Frederick Baldwin—(*Transportation*)—Born Feb. 5, 1878, Toledo, Ohio; died Oct. 23, 1961.

ADAMS, 1904, George Webster—(*Finance*)—Born May 21, 1881, Utica, N.Y.; died Oct. 12, 1955, New Haven, Conn.

ADAMS, 1920, Lewis G., DPLG—(*Architecture*)—Born Nov. 23, 1897, Lenox, Mass.; died Nov. 29, 1977. Pres. Architectural League of N.Y., '54-'55; Cmdr. USNRF, '17-'19, '42-'45.

ADAMS, 1899, Mason Tyler, M.E.—(*Industrial*)—Born May 18, 1877, New York City; died May 1, 1933, Waterbury, Conn.

AIKEN, 1881, Edwin Edgerton, B.D.—(*Ministry*)—Born Mar. 1, 1859, Newington, Conn.; died Jan. 5, 1951, New Haven, Conn.

AIKEN, 1853, William Pope, M.A.—(*Ministry*)—Born July 9, 1825, Fairhaven, Mass.; died Mar. 29, 1884, Rutland, Vt.

AITCHISON, 1848, William—(*Ministry*)—Born Jan. 4, 1826, Glasgow, Scotland; died Aug. 15, 1859, near Peking, China.

ALDIS, 1874, Owen Franklin—(*Law*)—Born June 6, 1852, St. Albans, Vt.; died Aug. 5, 1925, Paris, France.

ALEXANDER, 1873, Eben, Ph.D., LL.D.—(*Education*)—Born Mar. 9, 1851, Knoxville, Tenn.; died Mar. 11, 1910, Knoxville. Prof. of ancient languages, Univ. of Tennessee, 1877-1886; Prof. of Greek, Univ. of North Carolina, 1886-1893 and 1897-1910; U.S. Minister to Greece, 1893-1897.

ALEXANDER, 1855, William DeWitt, M.A., LL.D.—(*Government*)—Born April 2, 1833, Honolulu, Hi.; died Feb. 21, 1913, Honolulu. Prof. of Greek, Oahu College, 1858-1864; Pres., 1864-1871. Surveyor-general, Hawaii, 1871-1900.

ALEXANDER, 1851, William Felix—(*Finance*)—Born May 7, 1832, Washington, Ga.; died Aug. 15, 1907, Atlanta, Ga. Served in Confederate Army, Civil War.

ALLEN, 1901, Arthur Dwight—(*Art*)—Born May 25, 1879, Pewee Valley, Ky.; died Apr. 8, 1949, Louisville, Ky.

ALLEN, 1873, Arthur Huntington—(*Ministry*)—Born Oct. 20, 1851, New York City; died April 20, 1923, New York City.

ALLEN, 1913, Calvin Durand—(*Insurance*)—Born Nov. 24, 1890, Orange, N.J.; died Oct. 27, 1960; Conn. Mutual Life Ins. Co.; Capt., AUS, '17-'18, F.A., Major, Reserve.

ALLEN, 1913, Clarence Emir, Jr.—(*Law*)—Born Nov. 18, 1891, Salt Lake City, Utah; died July 15, 1918, Chateau-Thierry, France. 1st Lieut., Inf., World War I (A.E.F.).

ALLEN, 1926, Daniel—(*Insurance*)—Born May 24, 1904, Andover, Mass.; died April 14, 1970; Mayor of Larkspur, Calif. '58-'60.

ALLEN, 1900, Frederic Winthrop—(*Finance*)—Born May 26, 1877, Walpole, Mass.; died Nov. 25, 1933, New York City. Trustee, Barnard College, '28-'33 and Johns Hopkins University, '31-'33. Mbr., Yale Alumni Board, '23-'27. Mbr. Raw Materials Committee, Washington, '17; Director of War Savings for Greater New York, '18.

ALLEN, 1876, John DeWitt Hamilton—(*Business*)—Born Aug. 28, 1853, Peekskill, N.Y.; died Nov. 8, 1902, Riverdale-on-Hudson, N.Y.

ALLEN, 1919, Parker Breese—(*Industrial*)—Born. Oct. 31, 1895, Meriden, Conn.; died Dec. 12, 1980. Chmn. Meriden Gravure Co., Box 747, Meriden, Conn. 06450; A.Y.A. '76; F.A., '17-'19, Lieut. Col. A.F., '42-'45; Bronze Star, O.B.E.

ALLEN, 1863, Walter, M.A.—(*Literary work*)—Born Mar. 21, 1840, Boston, Mass.; died Feb. 7, 1907, Newton Highlands, Mass.; Acting Asst. Paymaster, U.S. Navy Civil War.

ALLEN, 1880, William Palmer—(*Literary work*)—Born Mar. 12, 1857, Auburn, N.Y.; died Mar. 20, 1904, Auburn.

ALLISON, 1930, Robert Seaman Jr.—(*Business*)—Born July 7, 1907, Utah; died Dec. 27, 1981. Sec., Treas. & Advertising Dir., Colorizer Associates, world wide manufacturers of colorants for paint & paint bases; Pres., Civic Music Assn., '50-'52, Dir., '53-'75; Founding V.P., Ballet West, '64-'68; Trustee, Art Center, '47-'75; Lieut. (j.g.), U.S. Maritime Service, '43-'46.

ALLISON, 1847, Samuel Perkins—(*Law*)—Born Sept. 28, 1927, Williamson County, Tenn.; died April 1, 1858, Nashville, Tenn.

AMES, 1918, Allan Wallace—(*Finance*)—Born May 9, 1893, St. Paul, Minn.; died Jan. 16, 1966; Marine Midland Trust Co., N.Y.C.; W.W. I: Lieut., U.S. Naval Air Service; W.W. II: Capt., U.S. Naval Air Service.

AMES, 1899, Sullivan Dorr—(*Law student*)—Born Jan. 5, 1878, Boston, Mass.; died Feb. 22, 1903, Cromwell, Conn.

AMUNDSON, 1880, John Arnold—(*Law*)—Born April 2, 1856, Madison, Wis.; died Aug. 9, 1909, Paris, France.

ANDERSON, 1835, Edwin Alexander, M.A., M.D.—(*Medicine*)—Born June 17, 1816, Wilmington, N.C.; died Mar. 11, 1894, Wilmington. Surgeon, Confederate Army, Civil War.

ANDERSON, 1951, Thomas Hill—Born Jan. 13, 1929, Spokane, Wash.; in second yr. Med. School at time of death; died May 28, 1953, Bucyrus, Ohio.

ANDREWS, 1870, John Wallingford, Jr., LL.B.—(*Law*)—Born May 4, 1849, Columbus, Ohio; died May 8, 1880, Helena, Mont. U.S. district attorney, Mont., 1879-1880.

ANDREWS, 1876, John Wolcott—(*Industrial*)—Born June 10, 1853, Steubenville, Ohio; died Dec. 30, 1887, San Antonio, Texas.

ANTHONY, 1886, Benjamin Harris—(*Industrial*)—Born Aug. 1, 1863, New Bedford, Mass.; died Oct. 16, 1932, New Bedford.

APPEL, 1924, George Frederick Baer, LL.B.—(*Law*)—Born Jan. 6, 1903, Lancaster, Pa.; died Mar. 12, 1970; Chmn., Local Govt. Sec., Amer. Bar Assn., '56-'58; Mbr., House of Delegates, Amer. Bar Assn., '58-'62; Penn State Bd. of Law Examiners, Chmn., '61-; Lend Lease Adminis., '42-'44; Foreign Econ. Adminis., '44-'45.

ARMS, 1863, Charles Jesup, M.A.—(*Law*)—Born June 9, 1841, Norwich, Conn.; died March 9, 1901, Providence, R.I. Mbr., R.I. State Senate, 1894-1895. Capt., Union Army, Civil War.

ARNOT, 1885, John Hulett—(*Finance*)—Born July 7, 1860, Elmira, N.Y.; died May 25, 1899, Elmira.

ARNOT, 1856, Matthias Hollenback—(*Finance*)—Born Nov. 10, 1833, Elmira, N.Y.; died Feb. 15, 1910, Elmira.

ASHFORTH, 1929, Albert Blackhurst—(*Business*)—Born Feb. 22, 1905, New York City; died Jan. 3, 1958, New York City; Lt. Cmdr., U.S.N.R., World War II.

AUSTEN, 1931, David E., LL.B.— Born Oct. 21, 1909, Charlottesville, Va.; died May 2, 1981.

AVERY, 1914, Benjamin F., M.F.—(*Industrial*)—Born Oct. 21, 1890 Aurora, N.Y.; died Nov. 9, 1965; Pres., Canadian Soc. of Forest Engineers, '27-'29; 2d Lieut., Inf., AUS, '18.

AVERY, 1875, Charles Hammond, LL.B.—(*Law*)—Born April 8, 1954, Cincinnati, Ohio; died Jan. 3, 1927, Clearwater, Fla.

AYCRIGG, 1942, William Anderson—Born Aug. 22, 1919, Stamford, Conn.; missing in action Jan. 25, 1944, in the Pacific area, presumptive date of death, Jan. 26, 1944. 1st Lieut., U.S. Marine Corps Reserve, World War II.

B

BABCOCK, 1853, Henry Harper—(*Industrial*)—Born July 24, 1833, New Haven, Conn.; died Dec. 2, 1901, New Haven.

BACKUS, 1846, Joseph Willes, M.A., D.D.—(*Ministry*)—Born Feb. 19, 1823, Franklin, Conn.; died July 4, 1901, Farmington, Conn. Member, Yale Corp., 1875-1899.

BADGER, 1911, Paul Bradford—(*Industrial*)—Born July 29, 1888, Winchester, Mass.; died Jan. 15, 1969; Socony Vacuum Oil Co..

BADGER, 1882, Walter Irving, LL.B.—(*Law*)—Born Jan. 15, 1859, Boston, Mass.; died March 17, 1926, Cambridge, Mass.

BAILEY, 1897, Philip Horton—(*Business*)—Born Aug. 24, 1873, Windsor Locks, Conn.; died Feb. 6, 1957, Walpole, Mass.; 2d Lieut., Regular Army, Spanish-American War.

BAKER, 1913, Richard Wheeler, LL.B.—(*Law*)—Born Oct. 7, 1891, Cincinnati, Ohio; died Feb. 8, 1937, Princeton, N.J. 2d Lieut., Air Service, World War I.

BALDWIN, 1853, George William—(*Law*)—Born April 24, 1832, New Haven, Conn.; died Jan. 23, 1930, Vevey, Switzerland. Asst. Adj.-Gen. of Volunteers, Spanish-American War.

BALDWIN, 1885, HENRY DEFOREST, LL.B.—(*Law*)—Born Nov. 7, 1862, Clinton, Iowa; died May 18, 1847, New York City. Chmn., N.Y. Charter Comm., 1922-1923.

BALDWIN, 1847, ROGER SHERMAN, M.A.—(*Law*)—Born July 4, 1826, New Haven, Conn.; died Nov. 11, 1856, Baker's Ranch, Calif.

BALDWIN, 1919, SHERMAN, LL.B.—(*Law*)—Born July 13, 1897, Bellport, N.Y.; died Jan. 21, 1969; Mbr., Lord, Day & Lord, N.Y.C., '27; Alumni Bd., '35-'50; Class Sec., '20-'59; Trustee, Pomfret School, '30-'48, Brearley School, '34-'54, Pres., '44-'54, Vassar College, '51-'61, '62-'65; Mbr., Bd. Mgrs. and Exec. Com., N.Y. Botanical Garden, '47-; Trustee, Metropolitan Museum of Art, '63-'67; Trustee, Sec., Exec. Com., American Academy, Rome, '45-'69; V.P., Bar Assn. of City of N.Y., '55-'56; 2d Lieut., F.A., May '17-Dec. '18.

BALDWIN, 1861, SIMEON EBEN, M.A., LL.D—(*Law*)—Born Feb. 5, 1840, New Haven, Conn.; died Jan. 30, 1927, New Haven. Prof. at Yale Law School, 1872-1919, and Prof. emeritus, 1919-1927. Assoc. justice, Conn. Supreme Court of Errors, 1893-1907, and chief justice, 1907-1910. Gov. of Conn., '11-'14. Mbr., Yale Corp., '11-'14.

BANNARD, 1869, HENRY CLAY—(*Industrial*)—Born Dec. 21, 1844, New York City; died April 15, 1929, Chicago, Ill.

BANNARD, 1876, OTTO TREMONT, LL.B., M.A.—(*Law and finance*)—Born April 28, 1854, Brooklyn, N.Y.; died Jan. 15, 1929, at sea, en route from Seattle, Wash., to Manila, P.I. Mbr., Yale Corporation, 1910-1928.

BARATTE, 1843, JULIUS ADOLPHUS—(*Law*)—Born July 9, 1825, St. Mary's, Ga.; died Nov. 2, 1859, St. Mary's.

BARKER, 1856, GEORGE PAYSON—(*Law*)—Born Dec. 24, 1835, Norwich, Conn.; died Jan. 28, 1868, Norwich.

BARNES, 1874, PEARCE, LL.B.—(*Law*)—Born Sept. 14, 1851, Mt. Sterling, Ky.; died Nov. 22, 1925, Kent, Conn.

BARNES, 1907, WILLIAM DELUCE, B.D., S.T.M.—(*Ministry and public welfare*)—Born April 25, 1885, Brooklyn, N.Y.; died Jan. 23, 1957, Hartford, Conn.; Chmn. State Com. for Prevention of Crime and Delinquency; Pres., Conn. Probation and Parole Assn.; Exec. Sec., Conn. Prison Assn.; Mbr., Conn. State Legislature, '49-'51; Y.M.C.A. work, World War I.

BARNES, 1855, WILLIAM HENRY LIENOW, M.A.—(*Law*)—Born Feb. 9, 1835, West Point, N.Y.; died July 21, 1902, San Francisco, Calif.

BARNEY, 1881, DANFORD NEWTON—(*Business*)—Born Jan. 10, 1859, Berlin, Conn.; died Feb. 23, 1936, Farmington, Conn. Mbr. Conn. State Senate, 1905.

BARNUM, 1877, William Milo, LL.B.—(*Finance*)—Born Jan. 25, 1856, Lime Rock, Conn.; died Oct. 5, 1926, New York City.

BARRY, 1841, William Taylor Sullivan—(*Law*)—Born Dec. 12, 1821, Columbus, Miss.; died Jan. 29, 1868, Columbus. Mbr., Miss. State Legislature, 1849-1853. Mbr. of Congress, 1853-1855. Mbr. of Confederate Provisional Congress, 1861. Served in Confederate Army, Civil War.

BARTLETT, 1838, John Knowlton, M.D.—(*Medicine*)—Born Feb. 28, 1816, Portsmouth, N.H.; died Nov. 26, 1889, Los Angeles, Calif.

BARTLETT, 1881, Philip Golden—(*Law*)—Born Nov. 25, 1859, Washington, D.C.; died Aug. 2, 1932, Southbury, Conn.

BATES, 1833, Samuel Henshaw—(*Farming*)—Born Jan. 10, 1814, Northampton, Mass.; died Jan. 3, 1879, Santa Rosa, Calif. Priv., Union Army, Civil War.

BAYARD, 1890, Thomas Francis—(*Law*)—Born June 4, 1868, Wilmington, Del.; died July 12, 1942, Wilmington. City Solicitor of Wilmington, '17-'19; Mbr., U.S. Senate, '22-'29; Govt. Appeal Agent, Wilmington, World War I.

BAYNE, 1892, Hugh Aiken, LL.B., LL.D.—(*Law*)—Born Feb. 15, 1870, New Orleans, La.; died Dec. 25, 1954, New Haven, Conn.; Lt. Col., Judge Advocate Generals' Depts., World War I (A.E.F.); Counsel, Liquidation Com. of War Dept. (France), '19; Counsel, Reparation Com. (Paris), '20-'25.

BAYNE, 1847, Thomas Levingston—(*Law*)—Born Aug. 4, 1826, Clinton, Jones County, Ga.; died Dec. 11, 1891, New Orleans, La. Lieut. Col., Artillery, Confederate Army, Civil War.

BAYNE-JONES, 1910, Stanhope, M.D., M.A., M.S., ScD., LL.D.—(*Medicine retired*)—Born Nov. 6, 1888, New Orleans, La., died Feb. 20, 1970; Consultant in Med., Res. to Surgeon Gen., U.S. Army; Assoc. Prof. Bacteriology, Johns Hopkins Univ. Sch. of Med., '19-'24; Prof. Bacteriology and Immunology, Univ. of Rochester, '24-'32; Prof. Bacteriology, Yale Med. Sch., '32-'47, Dean, '35-'40; Master, Trumbull Coll., '32-'38; Pres., Joint Adminis. Bd., N.Y. Hosp.-Cornell Univ. Med. Center, '47-'53; Chmn., Adv. Com., Med. Educa. and Res., U.S. Dept. H.E.W., '57-'58; Mbr., Yale Corp., '57-'58; W.W. I: April '17-July '19; W.W. II: Feb. '42-Sept. '46; Rank, Brig. Gen.; Military Cross (British), *Croix de Guerre*, Silver Star with 3 Oak Leaf Clusters.

BEACH, 1833, John Campbell, M.A.—(*Law*)—Born May 19, 1813, Auburn, N.Y.; died July 27, 1856, New York City.

BEACH, 1839, JOHN SHELDON, M.A., LL.D.—(*Law*)—Born July 23, 1819, New Haven, Conn.; died Sept. 12, 1887, New Haven.

BEARD, 1895, ANSON MCCOOK, LL.B.—(*Law*)—Born Mar. 17, 1874, Richmond, Va.; died Nov. 9, 1929, Tuxedo Park, N.Y.

BEARD, 1896, WILLIAM MOSSGROVE, LL.B.—(*Business*)—Born Mar. 8, 1876, St. Louis, Mo.; died Oct. 28, 1941, Glen Ridge, N.J. Member, N.J. State Legislature, '12.

BEAUMONT, 1834, GEORGE ANSON OLIVER, M.A.—(*Law*)—Born April 7, 1812, Columbia, Conn.; died Dec. 18, 1845, Columbia.

BECKLEY, 1860, JOHN WERLE—(*Business*)—Born Oct. 8, 1838, Shelbyville, Ky.; died Mar. 11, 1917, Louisville, Ky.

BEEBE, 1873, WILLIAM, M.A.—(*Education*)—Born Sept. 4, 1851, Litchfield, Conn.; died Mar. 11, 1917, New Haven, Conn. Asst. Prof. of mathematics, Yale University, 1882-1887; and of mathematics and astronomy, 1887-1898; Prof. of mathematics, 1898-1917.

BEERS, 1869, HENRY AUGUSTIN, M.A.—(*Education*)—Born July 2, 1847, Buffalo, N.Y.; died Sept. 7, 1926, New Haven, Conn. Asst. Prof. of English literature, Yale Univ., 1874-1880, Prof., 1880-1916.

BEGG, 1893, WILLIAM REYNOLDS, LL.B.—(*Law*)—Born Feb. 12, 1869, Spartanburg, S.C.; died Oct. 10, 1930, New York City.

BEIRNE, 1840, CHRISTOPHER JAMES—(*Law*)—Born July 9, 1819, Union, W. Va.; died Oct. 22, 1868, near Union. Member, W. Va. State Legislature.

BELL, 1844, RICHARD DOBBS SPAIGHT—(*Business*)—Born 1823, Newbern, N.C.; died Aug. 8, 1908, Nashville, Tenn.

BELLINGER, 1917, ALFRED R., Ph.D.—(*Education retired*)—Born July 24, 1893, Durham, Penn.; died Feb. 11, 1978; Lampson Prof. of Latin, Yale Univ.; Acting Dean of Yale College, '53-'54; Visiting Scholar,'64; Editor, Volume X, "Yale Classical Studies"; Sec. and Pres. R.T.A. '68.

BEMAN, 1851, HENRY DEWITT—(*Law*)—Born Mar. 28, 1830, Mt. Zion, Ga.; died July 17, 1891, Sparta, Ga. Served in Confederate Army, Civil War.

BENEDICT, 1840, THEODORE HUDSON, M.A.—(*Government*)—Born Mar. 13, 1821, New York City; died June 14, 1885, Tarrytown, N.Y. Mbr. N. Y. State Legislature, 1850.

BENNETTO, 1887, JOHN, LL.B., M.A.—(*Law*)—Born Jan. 22, 1862, Poole, England; died Oct. 10, 1892, New York City.

BENT, 1865, JOSEPH APPLETON—(*Law*)—Born Feb. 22, 1843, Boston, Mass.; died Aug. 12, 1869, Nashua, N.H.

BENTLEY, 1880, EDWARD MANROSS—(*Engineering*)—Born July 31, 1858, Ellenville, N.Y.; died April 30, 1936, Lawrence, N.Y.

BENTLEY, 1850, EDWARD WARREN, D.D.—(*Ministry*)—Born July 23, 1826, Tyringham, Mass.; died Oct. 23, 1886, Canton Center, Conn.

BENTON, 1842, JOSEPH AUGUSTINE, M.A., D.D.—(*Education*)—Born May 7, 1818, Guilford, Conn.; died April 8, 1892, Oakland, Calif. Prof., Pacific Theological Seminary, 1869-1892.

BERGER, 1928, GEORGE BART, JR.—(*Finance*)—Born Nov. 20, 1905, Denver, Colo.; died Dec. 2, 1957; Cmdr., U.S.N.R., World War II.

BERRY, 1868, COBURN DEWEES, M.A.—(*Law*)—Born Oct. 7, 1844, Nashville, Tenn.; died Sept. 13, 1911, Fairfield, Conn.

BERTRON, 1885, SAMUEL READING—(*Finance*)—Born Feb. 26, 1865, Port Gibson, Miss.; died, June 30, 1938, Oyster Bay Cove, N.Y.; Advisor, Excess Profits Tax Bd., Washington, D.C., '17-'21; Mbr. Excess Profits Tax Comm., '18; Mbr., U.S. Mission to Russia, '18; established French War Relief Bureau, World War I.

BIDDLE, 1839, THOMAS BRADISH—(*Law*)—Born Dec. 23, 1821, Philadelphia, Pa.; died Aug. 15, 1850, Sacramento, Calif.

BIGELOW, 1852, ALBERT—(*Ministry*)—Born Oct. 11, 1827, Stafford, N.Y.; died June 27, 1892, Harrisburg, Pa.

BIGELOW, 1877, WALTER IRVING—(*Finance*)— Born Oct. 7, 1855, Grafton, Mass.; died Jan. 8, 1936, Brookline, Mass.

BIGLOW, 1908, LUCIUS HORATIO, LL.B.—(*Law*)—Born Feb. 28, 1885, Brooklyn, N.Y.; died July 9, 1961; Pres., Middlesex Cty. Bar Assn.; Conn. Legislature, '49; Capt. Inf., AUS, '17-'19.

BINGHAM, 1863, EGBERT BYRON—(*Ministry*)—Born Feb. 17, 1839, Scotland, Conn.; died June 11, 1891, Woodstock, Conn.

BISHOP, 1833, NOAH, M.A.—(*Ministry*)—Born Jan. 12, 1806, Litchfield, Conn.; died Sept. 22, 1869, Ironton, Mo.

BISSELL, 1867, ARTHUR DOUGLAS—(*Finance*)—Born Jan. 10, 1844, New London, N.Y.; died Nov. 13, 1926, Buffalo, N.Y.

BISSELL, 1869, WILSON SHANNON, M.A. LL.D.—(*Law*)—Born Dec. 31, 1847, Rome, N.Y.; died Oct. 6, 1903, Buffalo, N.Y. Postmaster-General of the U.S. 1893-1895. Vice-chancellor, University of Buffalo, 1895-1902, and chancellor, '02-'03.

BLACKMAN, 1857, CHARLES SEYMOUR—(*Business*)—Born Mar. 29, 1837, Seymour, Conn.; died Dec. 20, 1906, Montreal, Que., Canada.

BLACKMAN, 1854, SAMUEL CURTIS—(*Law*)—Born April 7, 1833, Seymour, Conn.; died Aug. 20, 1864, New Haven, Conn.

BLAINE, 1876, WALKER, LL.B.—(*Law*)—Born May 8, 1855, Augusta, Me.; died Jan. 15, 1890, Washington, D.C. 3d. Asst. Secretary of

State, 1881-1882. Asst. attorney for the U.S. before Court of Commissioners of Alabama Claims, 1882-1885. Examiner of claims in State Department, 1889-1890.

BLAIR, 1924, EDWIN FOSTER, LL.B., M.A., LL.D.—(*Law*)—Born Dec. 15, 1901, Weatherford, Texas; died Nov. 6, 1970; Ptnr., Hughes, Hubbard, Blair & Reed, N.Y.C.; Fellow, Yale Corp., '46-; Chmn., Alumni Fund. '42-'44; Chmn., Alumni Bd., '49-'52; Assoc. Fellow, Branford Coll., '44-; Pres., Yale Law School Assn., '55-'58; Chmn., Exec. Com., '58-'60; '24 Exec. Com., '24-; Pres., Football "Y" Assn., '42-'46, Dir., '42; Pres., Yale Club of N.Y., '46-'48; Yale Medal recipient, '53.

BLAIR, 1925, JAMES GRANT—(*Industrial*)—Born Mar. 1, 1903, Weatherford, Texas; died Nov. 18, 1968; Pres., Hopi-Grants-Piñon-Shiprock Oil Companies.

BLAIR, 1907, WILLIAM McCORMICK, LL.D., LITT.D.—(*Finance*)—Born May 2, 1884 Chicago, Ill.; died Mar. 29, 1982; Senior Ptnr., William Blair & Co.; Nominating Com. to Yale Corp; Exec. Com. Alumni Bd.; Yale Athletic Com.; Past Pres. Yale Club of Chicago; Life Trustee, The Art Institute of Chicago; Field Museum of Natural History; University of Chicago; Pres. of Congregation & Trustee of Fourth Presb. Ch.; Past Pres., Art Institute of Chicago, '58-'66; Past Pres., Chicago Historical Soc.; Past Pres., The Commercial Club of Chicago; Past Pres., Bd. of Trustees of Fourth Presb. Ch.; Priv., OC, A.U.S.

BLAKE, 1858, EDWARD FOSTER, M.A.—(*Law*)—Born Nov. 25, 1837, New Haven, Conn.; died Aug. 9, 1862, Cedar Mountain, Va. Maj., Inf., Union Army, Civil War.

BLAKE, 1857, ELI WHITNEY, M.A., LL.D.—(*Education*)—Born April 20, 1836, New Haven, Conn.; died Oct. 1, 1895, Hampton, Conn. Prof. of physics and industrial mechanics, Cornell Univ., 1868-1870; Prof. of physics, Brown Univ, 1870-1895.

BLAKE, 1945, GILMAN DORR, JR.—(*Student*)—Born Feb. 22, 1923, New York City; died Jan. 20, 1945, England. 2d Lieut., U.S.A.A.F., World War II.

BLAKE, 1848, HENRY TAYLOR—(*Law*)—Born April 17, 1828, New Haven, Conn.; died April 6, 1922, New Haven.

BLAKESLEE, 1852, HENRY CLAY, M.A.—(*Engineering*)—Born Jan. 21, 1831, New Haven, Conn.; died Aug. 19, 1857, Chicago, Ill.

BLISS, 1852, CHARLES MILLER—(*Literary work*)—Born Jan. 1, 1827, Hartford, Conn.; died Dec. 21, 1905, Bennington, Vt. 2d Lieut., Inf., Union Army, Civil War.

BLISS, 1850, ROBERT—(*Finance*)—Born Dec. 3, 1828, Jewett City, Conn.; died Sept. 12, 1905, New York City.

BLISS, 1850, WILLIAM ROOT—(*Insurance*)—Born Oct. 20, 1825, Jewett City, Conn.; died April 8, 1906, Short Hills, N.J.

BLODGETT, 1884, GEORGE REDDINGTON—(*Law*)—Born Sept. 19, 1862, Bangor, Me.; died Dec. 4, 1897, Schenectady, N.Y.

BOIES, 1860, CHARLES ALFRED—(*Theological student*)—Born June 3, 1838, Boston, Mass.; died May 14, 1863, Keene, N.H.

BOLTWOOD, 1860, EDWARD—(*Insurance*)—Born Sept. 4, 1839, Amherst, Mass.; died Feb. 6, 1878, Cairo, Egypt.

BOLTWOOD, 1892, EDWARD, LL.B.—(*Literary work*)—Born Mar. 25, 1870, Pittsfield, Mass.; died Sept. 6, 1924, New Lebanon, N.Y.

BOLTWOOD, 1864, THOMAS KAST, LL.B.—(*Law*)—Born Feb. 15, 1844, Amherst, Mass.; died Dec. 25, 1872, Hartford, Conn.

BOOTH, 1884, SAMUEL ALBERT—(*Law*)—Born Feb. 3, 1860, Litchfield, Conn.; died Dec. 3, 1898, Minneapolis, Minn.

BOOTH, 1884, WILBUR FRANKLIN, LL.B.—(*Law*)— Born Aug. 22, 1861, Seymour, Conn.; died July 7, 1944, Minneapolis, Minn. State district judge, Hennepin County, Minn. '09-'14; U.S. district judge, Minn., '14-'25; U.S. circuit judge, 8th Circuit, '25-'44.

BORDEN, 1864, MATTHEW CHALONER DURFEE—(*Industrial*)—Born July 18, 1842, Fall River, Mass.; died May 27, 1912, Oceanic, N.J.

BOTTUM, 1876, ELISHA SLOCUM—(*Law*)—Born July 24, 1854, Norwich, Conn.; died Mar. 15, 1898, Chicago, Ill.

BOWERS, 1879, LLOYD WHEATON, LL.B.—(*Law*)—Born Mar. 9, 1859, Springfield, Mass.; died Sept. 9, 1910, Boston, Mass. Solicitor-General of the U.S. '09-'10.

BOWLES, 1899, HENRY THORNTON—(*Engineer*)—Born May 7, 1877, Springfield, Mass.; died Mar. 27, 1964.

BOWLES, 1961, WILLIAM CARTER, JR., LL.B.—(*Law*)—Born Oct. 1, 1938, Washington, D.C.; died July 10, 1973, Potomac, Washington, D.C.; Assoc. Lawyer, Covington & Burling, Washington; Assoc., Hawkins, Delafield & Wood, '65-'68. Asst. Campaign Mgr., Hon. Charles McC. Mathias, Jr. (R-Md.), '68; Treas., Deer Island Fund Drive, '66-'68.

BOYD, 1912, FRANCIS T.—(*Business*)—Born Dec. 28, 1888, Philadelphia, Pa.; died Sept. 15, 1977; 1st Asst. Sec., N.Y. Stock Exchange; V.P. Natl. Research Bureau; Capt., A.U.S., '16.

BOYDEN, 1864, HENRY PAINE—(*Literary work*)—Born Feb. 12, 1842, Machias, Me.; died April 1, 1908, Cincinnati, Ohio.

BRADFORD, 1905, ARTHUR HOWE, M.A., D.D., L.H.D.—(*Ministry*)—Born Nov. 19, 1883, Montclair, N.J.; died Aug. 29, 1973, Peterborough, N.H.; Asst. Minister, South Cong. Church, Springfield, Mass., '09-'12; Minister, Rutland (Vt.) Cong. Church, '13-'18, and Central Cong. Church, Providence, R.I., '18-'52; Yale Corporation, '25-'52.

BRADLEY, 1921, CHARLES HARVEY, LL.B.—(*Business*)—Born April 20, 1899, Dubuque, Iowa; died Sept. 1, 1972; Pres., W.J. Holliday & Co., '24-'55, Monarch Steel Co., and Chmn. Bd., P. R. Mallory & Co., Inc., Indianapolis; Alumni Board, '46-'50; Pvt., USMC, '17-'18.

BRAND, 1866, JAMES, D.D.—(*Ministry*)—Born Feb. 26, 1834, Three Rivers, Que., Canada; died April 11, 1899; Oberlin, Ohio. Color Sgt., Union Army, Civil War.

BRANDEGEE, 1849, AUGUSTUS—(*Law*)—Born June 15, 1828, New London, Conn.; died Nov.10, 1904, New London. Mbr., Conn. State Legislature, 1854-1857, and Spkr., 1861. Mbr. of Congress, 1863-1867.

BRANDEGEE, 1885, FRANK BOSWORTH—(*Law*)—Born July 8, 1864, New London, Conn.; died Oct. 14, 1924, Washington, D.C. Mbr., Conn. State Legislature, 1888, and Spkr., 1899. Mbr. of Congress, 1902-05. Mbr., U.S. Senate, '05-'24.

BREED, 1844, EDWARD ANDREWS—(*Business*)—Born Sept. 20, 1823, Lynn, Mass; died Mar. 6, 1896, Capitola, Calif.

BREMMER, 1886, SAMUEL KIMBALL, M.D.—(*Medicine*)—Born July 28, 1864, Boxford, Mass.; died Dec. 10, 1919, Waverly, Mass.

BREWSTER, 1882, BENJAMIN, B.D., D.D., L.H.D.—(*Ministry*)—Born Nov. 25, 1860, New Haven, Conn.; died Feb. 2, 1941, Portland, Me. Prot. Episc. Bishop of Maine, 1916-40.

BREWSTER, 1868, CHAUNCEY BUNCE, M.A., D.D.—(*Ministry*)—Born Sept. 5, 1848, Windham, Conn.; died April 9, 1941, Hartford, Conn. Prot. Episc. Bishop of Conn., 1899-1928.

BRICKELL, 1845, JAMES NOAILLE—(*Law*)—Born June 5, 1823, Columbia, S.C.; died Sept. 26, 1877, New Orleans, La. 1st Lieut., Ord., Confederate Army, Civil War.

BRIDGMAN, 1885, JOHN CLOYSE—(*Industrial*)—Born Dec. 22, 1862, Andover, Mass.; died May 28, 1917, Wilkes Barre, Pa.

BRINSMADE, 1851, HORATIO WALSH—(*Medical student*)—Born Oct. 25, 1831, Troy, N.Y.; died July 25, 1852, Troy.

BRISBIN, 1846, JOHN BALL—(*Law*)—Born Jan. 10, 1826, Schuylerville, N.Y.; died Mar. 22, 1898, St. Paul, Minn. Mbr., Minn. State Legislature, 1858 and 1864.

BRISTOL, 1859, Louis Henry—(*Law*)—Born Mar. 2, 1839, New Haven, Conn.; died July 20, 1910, New Haven.

BRODHEAD, 1859, Henry, LL.B.—(*Law*)—Born July 2, 1837, Milford, Pa.; died Jan. 26, 1925, Churchtown, Pa.

BRONSON, 1926, James Davis—(*Industrial*)—Born Oct. 12, 1904, Stillwater, Minn.; died Dec. 27, 1982; Operator of orchards; Pres. Am. Forest Institute, '63-'65; Pres. Natl. Forest Products Assn., '68-'69; Pres., Bd. of Trustees, Yakima Valley Memorial Hosp., '67.

BROOKE, 1899, Frederick Hiester—(*Architecture*)—Born Oct. 9, 1876, Birdsboro, Pa.; died Dec. 24, 1960; Capt., Air Service, W.W. I.

BROOKE, 1897, George Clymer—(*Finance*)—Born June 5, 1875, Birdsboro, Pa.; died May 7, 1915, Ardmore, Pa.

BROOKS, 1885, Henry Stanford, LL.B., M.A.—(*Business*)—Born Aug. 28, 1864, San Francisco, Calif.; died July 27, 1938, Woodstock, Vt. Chmn. Yale Alumni Fund, '16-'18.

BROOKS, 1875, James Wilton, LL.D.—(*Law and literary work*)—Born April 19, 1853, New York City; died July 6, 1916, Atlantic City, N.J. Mbr., N.Y. State Legislature, 1882-1884.

BROOKS, 1865, John Edward, LL.B.—(*Business*)—Born May 6, 1844, Rye, N.Y.; died Feb. 20, 1913, London, England.

BROOKS, 1877, Walter—(*Business*)—Born Mar. 19, 1856, New York City; died Mar. 26, 1933, New York City.

BROWN, 1896, Alexander—Born Sept. 25, 1872, Torresdale, Pa.; died Oct. 24, 1916, Essington, Pa. Asst. Paymaster, U.S. Navy, Spanish-American War.

BROWN, 1869, Alexander Lardner, M.A.—(*Business*)—Born June 21, 1847, Philadelphia, Pa.; died April 1, 1880, Burlington, N.J.

BROWN, 1865, Henry Armitt, M.A.—(*Law*)—Born Dec. 1, 1844, Philadelphia, Pa.; died Aug. 21, 1878, Philadelphia, Pa.

BROWN, 1861, Hubert Sanford—(*Business*)—Born Mar. 28, 1840, New Hartford, Conn.; died April 16, 1917, Beaulieu-sur-Mer, France. Lieut Col., Union Army, Civil War.

BROWN, 1899, Jamot—(*Business*)—Born May 18, 1877, Chicago, Ill.; died Sept. 30, 1941, Corpus Christi, Texas.

BROWN, 1856, John Mason—(*Law*)—Born April 26, 1837, Frankfort, Ky.; died Jan. 29, 1890, Louisville, Ky. Col., Cav., Union Army, Civil War.

BROWN, 1842, Joseph Venen—(*Business*)—Born Aug. 23, 1816, Conneaut, Ohio; died Jan. 22, 1893, Conneaut.

BRUCE, 1906, Donald, M.F.—(*Forestry*)—Born July 23, 1884, New-

tonville, Mass.; died Oct. 16, 1966; Ptnr., Mason, Bruce & Girard, Portland, Ore.; Capt., Eng. Corp. AEF, W.W. I.

BUCHANAN, 1889, THOMAS WALTER—(*Literary work*)—Born June 14, 1863, Albany, Vt.; died Feb. 24, 1892, West Glover, Vt.

BUCKLAND, 1857, JOSEPH PAYSON—(*Law and education*)—Born Oct. 7, 1835, Springfield, Mass.; died Oct. 25, 1879, Holyoke, Mass.

BUCKNER, 1895, MORTIMER NORTON, M.A., LL.D.—(*Finance*)—Born Mar. 10, 1873, New Orleans, La.; died Feb. 25, 1942, New York City. Mbr., Yale Alumni Bd., '22-'28, and of Yale Corporation, '28-'40; Assoc. Fellow Calhoun College, '34-'42.

BULKLEY, 1923, JONATHAN OGDEN—(*Business*)—Born June 28, 1898, Bernardsville, N.J.; died Mar. 25, 1967; Pulp & Paper Distributor, N.Y.C.; Cprl. S.S.U., W.W. II.

BULKLEY, 1865, Tuzar—(*Law student*)—Born April 27, 1840, Catskill, N.Y.; died Nov. 28, 1867, Catskill.

BULL, 1863, CORNELIUS WADE—M.D.—(*Medicine*)—Born April 8, 1839, Tallahassee, Fla.; died May 19, 1876, Hartford, Conn. Acting Asst. Paymaster, U.S. Navy, Civil War.

BUMSTEAD, 1855, NATHANIEL WILLIS M.D.—(*Industrial*)—Born Mar. 19, 1834, Boston, Mass.; died Feb. 1, 1912, Boston, Mass. Capt., Inf., Union Army, Civil War.

BUNDY, 1909, HARVEY HOLLISTER, LL.B.—(*Law*)—Born Mar. 30, 1888, Grand Rapids, Mich.; died Oct. 7, 1963; Ptnr., Choate, Hall & Stewart, Boston; Chmn. of Trustees, Carnegie Endowment for Internatl. Peace; Chmn., Boston Chap., Amer. Red Cross, '46-52; Asst. Sec. of State, '31-'33; Special Asst. to Sec. of War, '41-'45; Asst. Counsel, U.S. Food Adminis., '17-'19; Yale Alumni Bd.; Fellow, Jonathan Edwards Coll.; Pres., Yale Club of Boston, '38-'41.

BURCH, 1909, ROBERT BOYD, LL.B.—(*Law*)—Born Aug. 11, 1886, Cincinnati, Ohio; died Nov. 15, 1967; Judge, Superior Court, San Diego, County, Calif. '39-; Judge, Juvenile Court, '49-; Maj., Inf., W.W. I, AEF.

BURNHAM, 1840, CURTIS FIELD, LL.B., M.A. LL.D.—(*Law*)—Born May 24, 1820, Richmond, Ky.; died Mar. 1909, Richmond. Mbr. Ky. State Legislature, 1851 and 1859-1863 (Spkr., 1863). Mbr., Ky State Senate, 1899 and 1903. Asst. Treasurer of the U.S., 1875-1876. Prof. of Law, Central University.

BURPEE, 1883, CHARLES WINSLOW—(*Literary work*)—Born Nov. 13, 1859, Rockville, Conn.; died May 13, 1945, Hartford, Conn. Volunteer aide on Colonel's staff, 1st Conn. Inf., Spanish-American War. Col., Conn. State Guard, World War I.

BURPEE, 1879, LUCIEN FRANCIS, LL.B.—(*Law*)—Born Oct. 12, 1855, Rockville, Conn.; died May 9, 1924, West Hartford Conn. Judge, Waterbury (Conn.) City Court, 1897-1909, and of Conn. Superior Court, '09-'21; justice, Conn. Supreme Court of Errors, '21-'24. Lieut. Col. and Judge Advocate, U.S. vols., Spanish-American War. Pres., Military Emergency Board of Conn., and Major Gen., Conn. State Guard, World War I.

BURR, 1834, WILLIAM SHEDDEN, M.A.—(*Industrial*)—Born June 7, 1814, Richmond, Va.; died Dec. 17, 1858, Richmond.

BURRELL, 1881, JOSEPH DUNN, M.A., D.D.—(*Ministry*)—Born Dec. 12, 1858, Freeport, Ill.; died April 13, 1930, Barcelona, Spain. Chaplin (Capt.), American Red Cross, World War I (Foreign Service).

BUSH, 1922, JAMES S.—Born Apr. 11, 1901, Milwaukee, Wisc.; died May 5, 1978.

BUSH, 1917, PRESCOTT S., M.A., LL.D.—(*Finance*)—Born May 15, 1895, Columbus, Ohio; died Oct. 8, 1972, New York, N.Y.; Greenwich Rep. Town Meeting, '32-'52 (Moderator, '35-'52); Yale Corporation, '44-'58; U.S. Senator (R. Conn.), '52-'63; formerly Ptnr., Brown Brothers Harriman & Co., N.Y.

BUSHNELL, 1874, SAMUEL CLARKE, B.D.—(*Ministry*)—Born Mar. 8, 1852, New Haven, Conn.; died April 27, 1930, New Haven.

BUSHNELL, 1865, WILLIAM BENEDICT—(*Industrial*)—Born Mar. 4, 1845, Quincy, Ill.; died July 5, 1916, Manitowoc, Wis.

BUTLER, 1857, FRANCIS EUGENE, M.A.—(*Ministry*)—Born Feb. 7, 1825, Suffield, Conn.; died May 4, 1863, Suffolk, Va. Chaplain, Inf., Union Army, Civil War.

BUTLER, 1863, JOHN HASKELL—Born Aug. 31, 1841, Middleton, Mass.; died Sept. 8, 1917, East Somerville, Mass. Mbr., Mass. State Legislature, 1880-1881. Served in U.S. Navy, Civil War.

BUTTERWORTH, 1895, FRANK SEILER—(*Finance*)—Born Sept. 21, 1872, Maineville, Ohio; died Aug. 21, 1950, Mt. Carmel, Conn.; Conn. State Senator, '07-'09; 2d Lieut., Chemical Warfare Service, World War I (A.E.F.).

BUTTLES, 1842, ALBERT BARNES, LL.B., M.A.—(*Law*)—Born April 25, 1822, Columbus, Ohio; died Jan. 27, 1872, Columbus.

C

CABLE, 1895, BENJAMIN STICKNEY, LL.B.—(*Law*)—Born Sept. 24, 1872, Rock Island, Ill.; died Sept. 27, 1915, near Ipswich, Mass. Asst. Sec. of Commerce and Labor of the U.S., '09-'13.

CALHOUN, 1891, GOUVERNEUR—(*Business*)—Born Sept. 11, 1868, Chicago, Ill.; died May 15, 1916, St. Louis, Mo.

CALLAHAN, 1899, HUGH ANDREW—(*Insurance*)—Born Jan. 24, 1877, Chicago, Ill.; died Jan. 16, 1935, Phoenix, Ariz. Chief Clerk Ariz. House of Representatives, '17-'18; Sec. Bd. Directors of State Institutions, '18-'19; City Clerk and City Magistrate, Phoenix, '22-'27; Mbr., State House of Representatives, '30-'33.

CAME, 1849, CHARLES GREEN—(*Literary work*)—Born Sept. 26, 1826, Buxton, Me.; died Jan. 16, 1879, Boston, Mass. Mbr., Maine State Legislature, 1852-1855.

CAMP, 1907, ARTHUR GOODWIN—(*Insurance*)—Born Jan. 14, 1884, Winsted, Conn.; died Feb. 8, 1949, Litchfield, Conn.

CAMP, 1850, CLINTON—(*Theological student*)—Born Dec. 19, 1829, Trumansburg, N.Y.; died May 17, 1853, Pisa, Italy.

CAMP, 1900, STUART BROWN—(*Industrial*)—Born July 3, 1876, Winsted, Conn.; died Sept. 25, 1924, Winsted.

CAMP, 1880, WALTER, M.A.—(*Industrial*)—Born April 7, 1859, New Britain, Conn.; died Mar. 14, 1925, New York City. Head advisory football coach at Yale, 1888-1912; Chmn., University Athletic Assn.; Chmn., Intercollegiate Football Rules Com. many years. Chmn., Athletic Div., Navy Comm. on Training Camp Activities, and dir. of athletics, Naval Training Camps, World War 1.

CAMPBELL, 1919, ALLAN BARNETTE—(*Industrial*)—Born Sept. 2, 1897, New York City; died Jan. 28, 1921, Parkersburg, Pa. 2d Lieut., F.A., World War I.

CAMPBELL, 1909, CHARLES SOUTTER, B.D.—(*Industrial*)—Born Aug. 2, 1887, Cedar Rapids, Iowa; died Sept. 21, 1954, New Haven, Conn.; Chmn. Advisory Bd., Yale Christian Assn.

CAMPBELL, 1849, JAMES, LL.B.—(*Transportation*)—Born April 4, 1828, Mobile, Ala.; died at Houston, Texas.

CAMPBELL, 1882,, James Alexander, LL.B.—(*Law*)—Born Mar. 16, 1860, St. Louis, Mo.; died July 13, 1890, Paris, France.

CAMPBELL, 1878, TREAT—(*Law*)—Born Jan. 23, 1855, Springfield, Ill.; died Feb. 12, 1908, New York City.

CAMPBELL, 1856, WILLIAM HARVEY WILSON—(*Literary work*)—Born Oct. 23, 1833, Boston, Mass.; died Dec. 9, 1892, New Haven, Conn.

CAPRON, 1853, SAMUEL MILLS, M.A.—(*Education*)—Born May 15, 1832, Uxbridge, Mass.; died Jan. 4, 1874, Hartford, Conn.

CARLISLE, 1901, JAMES MANDEVILLE, LL.B.—(*Law and Finance*)—Born July 30, 1879, Richmond, Va.; died Nov. 10, 1922, Washington, D.C. Maj., Adj.-General's Dept. World War I (A.E.F.)

CARPENTER, 1902, GEORGE BOONE—(*Farming*)—Born May 7, 1879, Chicago, Ill.; died Feb.14, 1961.

CARPENTER, 1859, ROBERT JOHN—(*Industrial*)—Born Oct. 13, 1837, Demorestville, Ont., Canada; died Feb. 2, 1879, Berlin, N.H.

CARTER, 1878, CHARLES FRANCIS, D.D.—(*Ministry*)—Born June 14, 1856, Chicopee Falls, Mass.; died Feb. 26, 1928, Hartford, Conn. Mbr., Mass. State Council of Defense, World War I.

CARTER, 1837, EDWIN OSGOOD, M.A.—(*Law*)—Born Oct. 30, 1815, Brimfield, Mass.; died Jan. 20, 1881, Chicopee Falls, Mass.

CARTER, 1919, FREDERIC DEWHURST, LL.B.—(*Finance*)—Born April 10, 1897, Lexington, Mass.; died Aug. 24, 1959, Greensboro, Vt.; 1st Lieut., F.A., World War I; former Pres., Yale Westchester Alumni Assn., and Yale Glee Club Assn.; Mbr. Alumni Bd.

CARTER, 1915, LYON—(*Finance*)—Born Feb. 21, 1892, Burlington, Vt.; died Sept. 20, 1950, Hyannis, Mass.; 1st Lieut., C.A.C., World War I; V.P., Yale Club of Boston.

CARTER, 1895, WALTER FREDERICK, LL,B.—(*Law*)—Born Dec. 10, 1873, Brooklyn, N.Y.; died Aug. 7, 1946, Brooklyn, N.Y.

CASE, 1894, GEORGE BOWEN, LL.B.—(*Law*)—Born June 9, 1872, Kansas City, Mo.; died July 19, 1955, Englewood, N.J.; Mbr., Red Cross War Council, World War I.

CASKEY, 1865, TALIAFERRO FRANKLIN, M.A., D.D.—(*Ministry*)—Born Aug. 29, 1838, near Fort Black, Drake County, Ohio; died Apr. 22, 1919, Southport, Conn.

CHADWICK, 1903, GEORGE BREWSTER—(*Education*)—Born June 11, 1880, Brooklyn, N.Y.; died Oct. 17, 1961; Capt. Chemical Warfare Service, W.W. I.

CHAMBERLAIN, 1862, DANIEL HENRY LL.B., M.A., LL.D.—(*Law*)—Born June 23, 1835, West Brookfield, Mass.; died April 13, 1907, Charlottesville, Va. Attny. Gen., S.C., 1868-1872. Gov. of S.C., 1874-1876. 1st Lieut., Cav., Union Army, Civil War.

CHAMBERLAIN, 1863, Leander Trowbridge, M.A., D.D.—(*Ministry*)—Born Sept. 26, 1837, Brookfield, Mass.; died May 9, 1913, Pasadena, Calif. Judge Advocate, U.S. Navy, Civil War.

CHAMBERLAIN, 1861, Robert Linton, M.A.—(*Law*)—Born May 13, 1838, Johnstown, Pa.; died Aug. 11, 1888, Santa Barbara, Calif. Priv., Inf., Union Army, Civil War.

CHAMBERS, 1843, William Lyon—(*Business*)—Born in Jan. 1823, Chambersburg, Pa.; died April 26, 1889, Chambersburg.

CHANDLER, 1839, William Henry, M.A.—(*Farming*)—Born April 14, 1815, Providence, R.I.; died May 13, 1888, Thompson, Conn. Mbr., Conn. State Legislature, 1847, and Conn. State Senate, 1867-1871.

CHAPIN, 1877, Charles Frederick—(*Literary work*)—Born Aug. 3, 1852, South Hadley Falls, Mass.; died Oct. 27, 1926, Waterbury, Conn.

CHARNEY, 1865, Charles Meigs—Born Oct. 20, 1845, Philadelphia, Pa.; died July, 1931, Gainesville, Ga.

CHASE, 1850, Henry—(*Law*)—Born Oct. 10, 1827, Lyndon, Vt.; died Feb. 12, 1904, Calais, Me. Mbr., Vt. State Legislature, 1865.

CHAUVENET, 1840, William, LL.D.—(*Education*)—Born May 24, 1820, Milford, Pa.; died Dec. 13, 1870, St. Paul, Minn. Prof. of astronomy and mathematics and dir. of the Observatory, U.S. Naval Academy, Annapolis, 1845-1859; Prof. of astronomy and mathematics, Washington Univ., St. Louis, 1859-1869; also chancellor, 1862-1869

CHENEY, 1898, Clifford Dudley—(*Industrial*)—Born Jan. 3, 1877, South Manchester, Conn.; died Sept. 6, 1948, Noank, Conn. Capt. Cav., Mexican Border, 1916; Lieut. Col., Ord. Dept., World War I (A.E.F.)

CHENEY, 1900, Frank Dexter—(*Industrial*)—Born Oct. 16, 1878, South Manchester, Conn.; died Nov. 20, 1955, Manchester, Conn.; Mbr., Conn. State Council of Defense, World War I.

CHENEY, 1892, Howell, M.A.—(*Industrial*)—Born Jan. 1, 1870, South Manchester, Conn.; died Aug. 21, 1957, St. Petersburg, Fla.; Mbr., Com. on Consolidation of State Comms., '07, of State Bd. of Education, '09-'19, Conn. Unemployment Com.; Chmn., Comm. on State Prison Systems; Mbr., Yale Corp., '13-'38; Chmn. War Savings Com. for Conn., World War I.

CHENEY, 1892, Knight Dexter, Jr.—(*Industrial*)—Born June 1, 1870, South Manchester, Conn.; died Aug. 17, 1910, South Manchester.

CHENEY, 1901, PHILIP—(*Industrial*)—Born, May 8, 1878, South Manchester, Conn.; died Jan. 21, 1848, Hartford, Conn. Capt. Inf., World War I (A.E.F.)

CHENEY, 1904, RUSSELL—(*Art*)—Born Oct. 16, 1881, Manchester, Conn.; died July 12, 1945, Portsmouth, N.H. Mbr., Conn. Academy of Arts and Sciences.

CHENEY, 1901, THOMAS LANGDON—(*Industrial*)—Born Nov. 20, 1880, South Manchester, Conn.; died Oct. 23, 1916, Colorado Springs, Colo.

CHENEY, 1896, WARD—(*Literary work*)—Born May 26, 1875, South Manchester, Conn.; died Jan. 7, 1900, Imus, Luzon. 1st Lieut., Inf., U.S. Army, Spanish-American War.

CHENEY, 1922, WARD—(*Industrial*)—Born Nov. 3, 1899, South Manchester, Conn.; died Jan. 22, 1963; formerly Pres., Cheney Bros., Textile Mfrs.; Pvt., OTC, W.W. I; Cmdr., USN, W.W.II; Chmn., Com. for Dept. of Fine Arts at Yale.

CHESTER, 1875, CARL THURSTON, LL.B.—(*Law*)—Born Aug. 1, 1853, Norwich, Conn.; died Aug. 29, 1912, Buffalo, N.Y.

CHILD, 1855, LINUS MASON, LL.B., M.A.—(*Law*)—Born Mar. 14, 1835, Southbridge, Mass.; died Jan. 21, 1898, Boston, Mass. Mbr., Mass. State Legislature, 1868-1869.

CHOUTEAU, 1942, RENE AUGUSTE—(*Student*)—Born July 7, 1921, St. Louis, Mo.; died Sept. 5, 1944, Pensacola, Fla.; 1st Lieut., U.S.M.C. (Aviation), World War II.

CHRISTIAN, 1901, HENRY HALL—Born May 2, 1878, Minneapolis, Minn.; died July 8, 1905, Flagstaff, Ariz.

CLARK, 1864, ALBERT BARNES—(*Farming*)—Born Aug. 24, 1842, La-Porte, Ind.; died April 24, 1883, Orange, Calif. Asst. Paymaster, U.S. Navy, Civil War.

CLARK, 1895, ALEXANDER RAY, LL.B.—(*Finance*)—Born Dec. 26, 1872, Cincinnati, Ohio; died Mar. 19, 1925, New York City.

CLARK, 1909, AVERY ARTISON—(*Industrial*)—Born Dec. 4, 1883, Middlebury, Conn.; died June 22, 1969; formerly engaged in sugar mfg.

CLARK, 1871, CHARLES HOPKINS, M.A., Litt.D.—(*Literary work*)—Born April 1, 1848, Hartford, Conn.; died Sept. 5, 1926, Hartford. Mbr., Yale Corp., 1910-1925.

CLARK, 1903, HAROLD TERRY, LL.B., LL.D., L.H.D., HH.D.—(*Law*)—Born Sept. 4, 1882, Derby, Conn.; died May 31, 1965; Asst. to Chmn., U.S. War Industries Bd.,'18; Amer. Peace Comm., Paris, '19; Yale Class Fund Com.; Class Agt., '59-'60.

CLARKE, 1875, THOMAS SLIDELL, LL.B.—(*Law*)—Born Mar. 25, 1854, New Orleans, La.; died Aug. 10, 1883, St. Paul, Minn.

CLARKE, 1849, WILLIAM BARKER, M.A.—(*Ministry*)—Born Dec. 27, 1829, Gibara, Cuba; died Sept. 18, 1905, Durham, Conn. College pastor and Chittenden Prof. of divinity, Yale University, 1863-1866.

CLAY, 1918, CASSIUS MARCELLUS, LL.B.—(*Farming, Law*)—Born Mar. 2, 1895, Bourbon City, Ky.; died Nov. 26, 1959, Lexington, Ky.; Gen. Solicitor B.&O. R.R. '41-'45; Asst. Gen. Counsel, Reconstruction Finance Corp., Washington, D.C., '33-'41; Ky. State Legislature, '53-55; Ky. Senate, Pres., *pro tem*, '57; 1st Lieut., F.A., World War I.

CLAY, 1859, GREEN, LL.B., M.A.—(*Farming*)—Born Feb. 11, 1839, near Paris, Ky,; died Oct. 31, 1912, Mexico, Mo. Sec., U.S. Legation, Russia, 1861-1862, and Italy, 1862-1868. Mbr. Miss. State Legislature, Mbr., Mo. State Senate, 1891, and Mo. State Legislature, 1902. Col., Union Army, Civil War.

COBB, 1855, HENRY NITCHIE, M.A., D.D.—(*Ministry*)—Born Nov. 15, 1834, New York City; died April 17, 1910, East Orange, N.J.

COCHRAN, 1894, THOMAS, LL.D., Litt.D.—(*Finance*)—Born Mar. 20, 1871, St. Paul, Minn.; died Oct. 29, 1936, Bedford, N.Y.

COE, 1862, EDWARD BENTON, D.D., LL.D.—(*Ministry*)—Born June 11, 1842, Milford, Conn.; died Mar. 19, 1914, New York City. Street Prof. of modern languages, Yale University, 1864-1879.

COE, 1872, ROBERT ELMER—(*Student*)—Born Dec. 13, 1850, New York City; died Nov. 12, 1872, New Haven, Conn.

COFFIN, 1866, EDMUND, LL.B.—(*Law*)—Born Nov. 8, 1844, New York City; died Dec. 26, 1928, New York City.

COFFIN, 1897, HENRY SLOANE, B.D., M.A., Litt.D., D.D., LL.D., D.J.L.—(*Ministry*)—Born Jan. 15, 1877, New York City; died Nov. 25, 1954, Lakeville, Conn.; Mbr., N.Y. City Comm. on Racial and Rel. Tolerance, '44-'46; N.Y. State Comm. on Birth Control Legislation; Moderator, Gen. Assembly of the Presb. Ch., '43-'44; Y.M.C.A. Chaplain, World War I (Fgn. Service); Mbr., Yale Corp., '21-'45; Lyman Beecher Lecturer, Yale Div. School, '17.

COFFIN, 1868, JAMES, M.A.—(*Finance*)—Born Oct. 13, 1847, New York City; died Dec. 28, 1906, Ross, Calif.

COFFIN, 1900, WILLIAM SLOANE, M.A.—(*Business*)—Born April 15, 1879, New York City; died Dec. 16, 1933, New York City. Pres. Metropolitan Museum of Art, '31-'33; Y.M.C.A. work, World War I (Fgn. service).

COFFING, 1834, CHURCHILL, M.A.—(*Law*)—Born Nov. 13, 1813, Salisbury, Conn.; died May 17, 1873, Chicago, Ill.

COIT, 1853, JOSHUA—(*Ministry*)—Born Feb. 4, 1832, New London, Conn.; died Dec. 14, 1907, Winchester, Mass.

COIT, 1837, WILLIAM—(*Law*)—Born July 1, 1815, Griswold, Conn.; died Aug. 23, 1891, Elberon, N.J.

COKE, 1926, HENRY C., JR., LL.B.—(*Law*)—Born Aug. 24, 1903, Dallas, Tex.; died Dec. 5, 1982; Ptnr., Coke & Coke, Dallas, Tex.; Maj., U.S.A.F., Aug. '42-Sept. '45; D.F.C., Bronze Star, Air Medal.

COLE, 1866, HAMILTON—(*Law*)—Born May 4, 1845, Claverack, N.Y.; died Oct 27, 1889, New York City.

COLEMAN, 1881, JOHN CALDWELL, LL.B.—(*Law*)—Born Aug. 25, 1858, New York City; died Feb. 17, 1917, New York City.

COLGATE, 1913, HENRY AUCHINCLOSS—(*Finance*)—Born Sept. 29, 1890, West Orange, N.J.; died Oct. 16, 1957, New York City; former Pres., Harding Township Bd. of Education; Trustee, Natl. Soc. for Prevention of Blindness; 2d Lieut., Air Service, World War I.

COLLIER, 1935, SAMUEL CARNES—(*Business*)—Born May 14, 1912, New York City; died Sept. 23, 1950, Mountour Falls, N.Y.; Lt. Cmdr., U.S.N.R., World War II.

COLLIN, 1871, FREDERICK, M.A.—(*Law*)—Born Aug. 20, 1850. Township of Benton, N.Y.; died Nov. 26, 1939, Elmira, N.Y. Assoc. judge, N.Y. Court of Appeals, '10-'21; Mayor, Elmira, 1894-1898.

COLLIN, 1877, WILLIAM WELCH—(*Business*)—Born Jan. 2, 1856, Benton Center, N.Y.; died Jan. 7, 1941, Northampton, Mass.

COLT, 1868, LEBARON BRADFORD, LL.B., M.A., LL.D.—(*Law*)—Born June 25, 1846, Dedham, Mass.; died Aug. 18, 1924, Bristol, R.I. U.S. district judge for R.I. 1881-1884; U.S. circuit judge, 1884-1913. Mbr. U.S. Senate, 1913-1924.

COLTON, 1848, HENRY MARTYN, M.A.—(*Education*)—Born Nov. 5, 1826, Royalton, N.Y.; died June 2, 1872, Middletown, Conn.

COLTON, 1850, WILLIS STRONG, M.A.—(*Ministry*)—Born Jan. 25, 1828, Royalton, Niagara County, N.Y.; died Nov. 26, 1907, Toledo, Ohio.

CONDIT, 1850, ALBERT PIERSON, M.A.—(*Law*)—Born Dec. 10, 1829, Orange, N.J.; died Dec. 14, 1901, West Orange. Mbr., N.J. State Legislature, 1866, 1867, and Spkr., 1871.

CONDIT, 1848, CHARLES, M.A.—(*Law*)—Born Dec. 8, 1827, Orange, N.J.; died Oct. 19, 1876, Brooklyn, N.Y.

CONDIT, 1856, STEPHEN—(*Law*)—Born Sept. 23, 1835, Orange, N.J.; died Oct. 6, 1897, Brooklyn, N.Y.,

CONNOR, 1845, LEMUEL PARKER—(*Law*)—Born Sept. 30, 1827,

Adams County, Miss.; died Mar. 24, 1891, Woodland, Miss. Maj., Confederate Army, Civil War.

CONNOR, 1845, William Gustine—(*Farming*)—Born April 5, 1826, Adams County, Miss.; died July 3, 1863, Gettysburg, Pa. Maj., Confederate Army, Civil War.

CONVERSE, 1850, George Sherman, M.A., D.D.—(*Ministry*)—Born Sept. 2, 1828, New York City; died Nov. 2, 1895, Boston, Mass.

COOK, 1945, George III—(*Industrial*)—Born June 5, 1923, Baltimore, Md.; died May 31, 1970; Licensing Co-ordinator, Natl. Distillers & Chemical Corp., N.Y.C.; Sec., Yale Club of Md., '49-'52; Co-Chmn., Class Council '66-; Chmn., Alumni Schools Com.; Exec. Com., Alumni Bd., '66-; Grad. Track Com., '53-; Mgr., Internatl. Div., Owens-Corning Fiberglas Corp, '55-'68; Gen. Mgr., Owens-Corning Fiberglas Europe, '63-'64; Dir., Bus. Council for Internatl. Understanding, '58-'64, Internatl. Center, N.Y., Inc., '66-; 2d Lieut., Mountain Inf., '43-'46; Pres. Deer Island Club Corp., '56-'58.

COOK, 1876, Robert Johnston—(*Industrial*)—Born Mar. 21, 1849, near Cookstown, Pa.; died Dec. 3, 1922, near Belle Vernon, Pa.

COOKE, 1877, Elbridge Clinton—(*Finance*)—Born Oct. 31, 1854, Tiskilwa, Ill.; died Nov. 4, 1931, Minneapolis, Minn.

COOKE, 1893, James Barclay—(*Industrial*)—Born Dec. 13, 1871, Paterson, N.J.; died May 26, 1936, Wyckoff, N.J.

COOKE, 1895, Walter Evans, LL.B.—(*Industrial*)—Born May 3, 1874, Paterson, N.J.; died Oct. 9, 1939, New York City.

COOLEY, 1888, Harlan Ward—(*Law and Insurance*)—Born Jan. 29, 1866, Washington, D.C.; died June 21, 1938, Harbert, Michigan.

COON, 1847, John, M.A.—(*Industrial*)—Born July 28, 1822, Ballston Spa, N.Y.; died Sept. 24, 1908, Lyons, Mich. Paymaster, Union Army, Civil War.

COOPER, 1852, Jacob, M.A., Ph.D., D.C.L., D.D., LL.D.—(*Education*)—Born Dec. 7, 1830, near Somerville, Ohio; died Jan. 31, 1904, New Brunswick, N.J. Prof. of Greek, Center College, 1855-1862 and 1863-1866; Prof. of Greek, Rutgers College, 1866-1893, and of logic and metaphysics, 1893-1904. Chaplain, Union Army, Civil War.

COOPER, 1838, William Frierson, LL.D.—(*Law*)—Born Mar. 11, 1820, Franklin, Tenn.; died May 7, 1909, New York City. Judge, Tenn. Supreme Court, 1861-1862 and 1878-1886. Chancellor, Nashville district, Tenn.

CORBIN, 1889, William Herbert, M.A.—(*Business*)—Born July 20,

1864, Union, Conn.; died April 14, 1945, Hartford, Conn. Tax Com'r., State of Conn., '07-'20; Pres., Hartford Pub. Library, '39-'45; Mbr., Yale Alumni Bd., '10-'30.

COREY, 1911, ALAN LYLE—(*Finance*)—Born Aug. 6, 1889, Braddock, Pa.; died Feb. 21, 1970; Ensign, USNRF, W.W. I.

CORNELL, 1915, THOMAS HILARY—(*BUSINESS*)—Born Jan. 14, 1891, Pittsburgh, Pa.; died July 18, 1957, Bryn Mawr, Pa.; 1st Lieut., F.A., World War I (A.E.F.).

CORNING, 1903, ERASTUS, M.D.—(*Medicine*)—Born Oct. 22, 1879, Albany, N.Y.; died Nov. 11, 1942, Albany. Lieut Col., Med. Corps, World War I (A.E.F.); Chief surgeon, Am. Exp. Force, Archangel, North Russia, 1919; Mbr.; Yale Alumni Bd., 1928-1929

CORNISH, 1914, PERCY GILLETTE, JR., M.D.—(*Medicine*)— Born Jan. 10, 1892, Flagstaff, Ariz., died June 17, 1958, Albuquerque, N. Mex.; Priv., Medical Corps, '17-'18.

CORTELYOU, 1913, GEORGE BRUCE, JR.—(*Business*)—Born June 25, 1889, Roslyn, N.Y.; died March 31, 1973, Rumson, N.J.; formerly Asst. Treas., Central Trust Co. of Illinois; Pres. Distributors Group, N.Y.C., '30-'32; Asst. Treas., N.Y. Life Ins. Co., N.Y.C. (retired in '55); Sr. Consultant, James Talcott, Inc., N.Y.C.; Bd. of Mgrs., Jacob A. Riis Neighborhood Settlement, N.Y.C., many yrs.; Capt., 17th Engineers Railway, Apr. '17-'19; Order of Black Star of French Legion of Honor.

CORWIN, 1887, ROBERT NELSON, M.A., Ph.D.—(*Education*)—Born Oct. 6, 1864, Baiting Hollow, N.Y.; died Oct 14, 1944, New Haven, Conn. Asst. Prof. of German, Yale University, 1897-1899, and Prof., 1899-1944; Chmn. Bd. of Admissions, '19-'33; Assoc. fellow, Pierson College, '33-'44; Pres., N.E. Assoc. of Colleges and Secondary Schools, '29-30.

CORWITH, 1890, JOHN WHITE—Born Feb. 20, 1868, Galena, Ill.; died Sept. 7, 1923, West Chester, Pa.

COWLES, 1886, ALFRED—(*Law*)— Born Jan. 5, 1865, Chicago, Ill.; died Jan. 15, 1939, Chicago.

COWLES, 1887, WILLIAM HUTCHINSON, LL.B.—(*Journalism*)—Born Evanston, Ill.; died Jan. 15, 1946, Spokane, Wash.

COX, 1891, JOHN JOUGHIN—(*Law student*)—Born Sept. 28, 1869, Bedford, N.Y.; died Dec. 17, 1892, Cambridge, Mass.

COXE, 1887, ALEXANDER BROWN—(*Farming*)—Born Sept. 9, 1865, Philadelphia, Pa.; died April 16, 1926, Philadelphia.

COY, 1910, EDWARD HARRIS—(*Insurance*)—Born May 24, 1888, Andover, Mass.; died Sept. 8, 1935, New York City.

COY, 1901, SHERMAN LOCKWOOD—(*Industrial*)—Born Aug. 26, 1879, Andover, Mass.; died Feb. 15, 1946, Libertyville, Ill.

CRAMPTON, 1851, RUFUS COWLES, M.A., LL.D.—(*Education*)—Born 1828, Farmington, Conn.; died July 13, 1888, Jacksonville, Ill. Prof. of mathematics and astronomy, Illinois College, 1854-1888; also acting Pres., 1877-1881. Lieut. Col., Union Army, Civil War.

CRANE, 1904, WINTHROP MURRAY, JR.—(*Industrial*)—Born Sept. 12, 1881, Dalton, Mass.; died Mar. 28, 1968; formerly Pres. Crane & Co., Inc., Dalton; Lieut. Col., Ord. Dept., W.W.I; Yale Alumni Bd.

CRAPO, 1886, STANFORD TAPPAN—(*Industrial*)—Born June 13, 1865, New Bedford, Mass.; died Jan. 26, 1939, Tryon, N.C.

CRAPO, 1852, WILLIAM WALLACE, M.A., LL.D.—(*Law*)—Born May 16, 1830, Dartmouth, Mass.; died Feb. 28, 1926, New Bedford, Mass. Mbr., Mass. State Legislature, 1857. Mbr. of Congress, 1875-1883.

CRESSLER, 1902, ALFRED MILLER, M.A.—(*Finance*)—Born Sept. 19, 1877; died Nov. 19, 1939, Cincinnati, Ohio.

CROSBY, 1922, ALBERT HASTINGS—(*Finance*)—Born Feb. 12, 1900, Minneapolis, Minn.; died Sept. 6, 1946, Ardmore, Pa. Mbr., Yale Alumni Bd., '38-'40. Priv., S.A.C.T., World War I.

CROSBY, 1892, BENJAMIN LEWIS, JR.—(*Law student*)—Born Mar. 22, 1868, Halcott Center, N.Y.; died Dec. 29, 1892, New York City.

CROSBY, 1926, HENRY STETSON, B.S.—(*Engineering*)—Born May 29, 1904, Minneapolis, Minn.; died Mar. 3, 1953, Trumansburg, N.Y.; Maj., U.S.A.A.F., World War II.

CROSBY, 1890, JOHN, M.A.—(*Law and Industrial*)—Born Aug. 23, 1867, Hampden, Me.; died Mar. 1, 1962; Pres., Washburn Crosby Co., Minneapolis; Trustee, Dunwoody Industrial Inst.; Mbr., Fed. Adv. Council, Washington, D.C., City Council, Minneapolis, 1894-1948.

CROSS, 1900, JOHN WALTER, A.D.G.—(*Architecture*)—Born Feb. 24, 1878, South Orange, N.J.; died July 25, 1951, Hot Springs, Va.; Mbr., Natl. Comm. of Fine Arts and N.Y. Art Comm.; Chief Architect, U.S. Housing Corp., '18.

CROSS, 1904, WALTER SNELL—(*Ministry*)—Born Mar. 5, 1881, Fitchburg, Mass.; died June 8, 1971, Brookline, Mass.; Christian Science Practitioner; Pres., The Mother Church, First Church of Christ, Scientist, Boston, '50-'51; Lieut. Chaplain, Army, W.W.I.

CROSS, 1896, WILLIAM REDMUND—(*Finance*)—Born June 8, 1874, South Orange, N.J.; died Nov. 16, 1940, Princeton, N.J. Keeper of maps, Yale University library, '31-'39; Pres., N.Y. Zoological Soc., '37-'40.

CROXTON, 1857, JOHN THOMAS—(*Law*)—Born Nov. 20, 1837, near Paris, Ky.; died April 16, 1874, La Paz, Bolivia. U.S. Minister to Bolivia, 1873-1874. Brig-Gen., Inf., Union Army, Civil War.

CRUMP, 1833, JOHN—(*Medical Student*)—Born Sept. 3, 1814, New York City; died July 4, 1835, New London, Conn.

CUNNINGHAM, 1917, OLIVER BATY—(*Student*)—Born Sept. 17, 1894, Chicago, Ill.; died Sept. 17, 1918, near Thiaucourt, France. Capt., F.A., World War I (A.E.F.).

CURTIS, 1878, GEORGE LOUIS, D.D.—(*Ministry*)—Born May 21, 1885, Adrian, Mich.; died July 11, 1917, Simsbury, Conn.

CUSHING, 1902, CHARLES CYPRIAN STRONG—(*Literary work*)—Born Oct. 27, 1879, New Haven, Conn.; died Mar. 6, 1941, Boston, Mass. Y.M.C.A. Secretary, World War I (Fgn. service).

CUSHING, 1872, WILLIAM LEE, M.A.—(*Education*)—Born July 24, 1849, Phippsburg, Me.; died Dec. 11, 1921, Simsbury, Conn.

CUSHMAN, 1845, ISAAC LAFAYETTE—(*Education*)—Born Mar. 17, 1823, Burlington, N.Y.; died June 12, 1857, Quincy, Ill.

CUTLER, 1854, CARROLL, M.A., D.D.—(*Education*)—Born Jan. 31, 1829, Windham, N.H.; died Jan. 25, 1894, Talladega, Ala. Prof. of metaphysics and rhetoric, Western Reserve College (now Adelbert College, Western Reserve University), 1860-1889, and Pres., 1871-1886; Prof. of theology, Biddle University, 1889-1891.

D

DAHL, 1908, GEORGE, M.A., Ph.D.—(*Education*)—Born Jan. 11, 1881, Chicago, Ill.; died July 31, 1962; Holmes Prof. of Hebrew, Yale Divinity School, '10-'49; W.W.I, YMCA, Educational; Yale Div. and Grad. Schools Coms.

DALY, 1911, FREDERICK JOSEPH—(*Education*)—Born Dec. 5, 1885, Cambridge, Mass.; died May 8, 1965; 1st Lieut., Motor Transport Corps, W.W. I, AEF; Major, AUS, W.W. II.

DANA, 1851, WILLIAM BUCK, M.A.—(*Industrial*)—Born Aug. 26, 1829, Utica, N.Y.; died Oct. 10, 1910, New York City.

DANIELS, 1907, FORREST LEONARD—Born Oct. 19, 1884, Piqua, Ohio; died Jan. 25, 1908, Saranac, N.Y.

DANIELS, 1860, JOSEPH LEONARD, B.D., M.A., D.D., LL.D.—(*Education*)—Born Aug. 1, 1833, East Medway (now Millis), Mass.; died Oct. 22, 1924, Tryon, N.C. Prof. of Greek, Olivet College,

1865-1906; also served as dean of the faculty, as acting pres., 1892-1893 and 1903-1904, and as college librarian, 1865-1872 and 1883-1908.

DANIELS, 1873, RENSSELAER WILKINSON—(*Finance*)—Born Oct.6, 1851, Lockport, N.Y.; died June 15, 1923, Arcadia, Calif.

DANIELS, 1914, THOMAS LEONARD M.F.A. (Hon.)—(*Industrial*)—Born July 4, 1892, Piqua, Ohio; died May 23, 1978; Chmn. of Bd., Archer Daniels Midland Corp.; U.S. Diplomatic Service, '22-'29; War Prod. Bd. & War Food Admin., '42-'43; Mbr., Food Requir. Com.'42; Chmn., Minneapolis Soc. of Fine Arts; Bd. of Gov., Charles T. Miller Hosp., St. Paul, Minn.; Trustee, Carlton Coll., St. Paul; Capt., F.A. & Balloon Corps, '17-'19.

DANIELSON, 1907, RICHARD ELY, M.A.—(*Literary work*)—Born Nov. 7, 1885, Brooklyn, Conn.; died May 23, 1957, Groton, Mass.; Capt., Inf. World War I (A.E.F.); Lt. Col., G.S.C., World War II.

DARLING, 1916, ARTHUR BURR, M.A., Ph.D.—(*Education, Writing*)—Born Dec. 28, 1892, Witchita, Kans.; died Nov. 27, 1971, Paris, France; engaged in research and writing on British-American Relations; Instr. to Assoc. Prof., Yale, '22-'33; Class Officer, Exec. Com. of Yale Coll., Class of '31; Current History Assoc., *N.Y. Times*, '24-'31; Chmn., History Dept., Phillips Academy, Andover, '33-'51; U.S. Govt.; Historian, '51-'54, Fulbright Sr. Fellow, Italy, '55-'56; Ensign, USNRF, '17-'19.

DARLING, 1836, THOMAS, M.A.—(*Finance*)—Born April 13, 1816, New York City; died Sept. 23, 1899, New York City. Served in U.S. Navy, Civil War.

DAVENPORT, 1923, RUSSELL WHEELER, LL.D.—(*Literary work*)—Born July 12, 1899, South Bethlehem, Pa.; died April 19, 1954, New York City; Priv., Ambulance Service, World War I (A.E.F.)

DAVIES, 1853, THOMAS FREDERICK, M.A., D.D., LL.D.—(*Ministry*)—Born Aug 31, 1831, Fairfield, Conn.; died Nov. 9, 1905, Detroit, Mich. Prof. of Hebrew, Berkeley Divinity School, 1862. Prot. Episc. Bishop of Mich., 1889-1905.

DAVIES, 1894, THOMAS FREDERICK, B.D., M.A., D.D.—(*Ministry*)—Born July 20, 1872, Philadelphia, Pa.; died Aug. 25, 1936, Lenox, Mass. Prot. Episc. Bishop of Western Mass., 1911-1936; Representative, Y.M.C.A. War Work Council, World War I (Fgn. service).

DAVIS, 1895, BENJAMIN—(*Law*)—Born Jan. 1, 1871, Chicago, Ill.; died Feb. 6, 1920, Chicago.

DAVIS, 1833, BENJAMIN FRANKLIN, M.A.—(*Medicine*)—Born Dec. 23, 1812, Monticello, S.C.; died June 13, 1853, Yazoo City, Miss. Served in Seminole War.

DAVIS, 1911, CLINTON WILDES—(*Industrial*)—Born June 2, 1888, Portland, Me.; died Oct. 15, 1958, Cape Elizabeth, Me.; Maj., F.A., World War I.

DAVIS, 1936, HORACE WEBBER II—(*Finance*)—Born Sept. 9, 1912, Sharon, Pa.; died Sept. 9, 1965; Trust Officer, Union & New Haven Trust Co.; Treas. and Dir., Farnam Neighborhood House, Inc., '56-; Dir., Arthritis and Rheumatism Found., Conn. Chapter, '52-; Lieut. Cmdr., USNR, W.W. II; Class Treas., '48-'54.

DAVIS, 1835, JOHN—(*Law*)—Born Oct. 25, 1813, Trenton, Me.; died Sept. 20, 1844, Northboro, Mass.

DAVIS, 1860, LOWNDES HENRY, LL.B.—(*Law*)—Born Dec. 14, 1836, Jackson, Mo.; died Feb. 5, 1920, Cape Girardeau, Mo. Circuit attny., 10th judicial district of Mo., 1865-1869. Mbr., Mo. State Legislature, 1876. Mbr. of Congress, 1879-1885.

DAVIS, 1860, ROBERT STEWART—(*Industrial*)— Born April 23, 1838, Philadelphia, Pa.; died Mar. 17, 1911, Philadelphia.

DAVIS, 1908, WALTER GOODWIN, LL.B.—(*Law, Finance*)—Born May 14, 1885, Portland, Me.; died June 11, 1966; Pres., Maine Historical Soc., Portland Community Chest, Maine Gen. Hosp. Corp.; House of Rep., Maine Legislature, '26; Capt., Inf., W.W. I, AEF Milit. Intelligence.

DAVISON, 1918, FREDERICK TRUBEE, LL.B., M.A., LL.D.—(*Museum work*)—Born Feb. 7, 1896, New York, N.Y.; died Nov. 14, 1974, Locust Valley, N.Y.; Pres., Amer. Mus. Nat. History, '33-'53; State Legislature, '21-'26; Asst. Sec. War (Air), '26-'33; Yale Corporation, '31-'53; Lieut. (j.g.), Naval Air Serv., W.W. I; Brig. Gen., USAF, W.W. II; Navy Cross, Distinguished Service Medal.

DAVISON, 1920, HARRY POMEROY—(*Finance*)—Born April 3, 1898, Englewood, N.J.; died July 2, 1961; Sr. V.P., J. P. Morgan & Co., N.Y.C.; W.W. I: Lieut., Naval Air Service; W.W. II: Cmdr., USN.

DAWES, 1876, CHESTER MITCHELL—(*Law*)—Born July 14, 1855, North Adams, Mass.; died April 12, 1917, Chicago, Ill. Asst. U.S. attny., northern district of Ill., 1884-1886.

DAY, ARTHUR POMEROY, LL.B.—(*Finance*)—Born Nov. 6, 1868, Hartford, Conn.; died Aug. 26, 1952, Greensboro, Vt.; Mbr. Hartford Redevelopment Com. and Conn. River Bridge and Highway Comm.; Class Treas.

DAY, 1892, CLIVE, Ph.D.—(*Education*)—Born Feb. 11, 1871, Hartford, Conn.; died July 27, 1951, Greensboro, Vt.; Chmn., Balkan Div., U.S. Peace Comm., Paris, '18; Mbr. Conn. Unemployment

Comm., '31-'33; Asst. Prof. Economic History, Yale University, '02-'07, and Prof., '07-'22; Prof., Political Economy, '22-'38.

DAY, 1899, DWIGHT HUNTINGTON—(*Finance*)—Born April 1, 1876, Chicago, Ill.; died Feb. 9, 1936, New York City. Y.M.C.A. Sec. World War I.

DAY, 1923, HUNTINGTON T., LL.B.—(*Law*)—Born Apr. 21, 1901, St. Louis, Missouri; died Mar. 14, 1981; Ptnr. Wiggin & Dana, New Haven, Conn.

DAY, 1857, JOHN CALVIN, M.A.—(*Law*)—Born Nov. 3, 1835, Hartford, Conn.; died June 24, 1899, Dublin, N.H.

DAY, 1862, MELVILLE COX—(*Law*)—Born June 2, 1839, Biddeford, Me.; died Dec. 29, 1913, Florence, Italy.

DAY, 1875, ROBERT WEBSTER—(*Real estate*)—Born Oct. 9, 1854, Philadelphia, Pa.; died July 11, 1932, Tallahassee, Fla.

DAY, 1911, SHERWOOD SUNDERLAND—(*Ministry*)—Born April 18, 1887, Catskill, N.Y.; died May 15, 1974, Amherst, Va. Formerly Presbyterian minister.

DAY, 1837, THOMAS MILLS, M.A.—(*Literary work*)—Born Nov. 21, 1817, Hartford, Conn,; died Oct. 17, 1905, Hartford.

DAY, 1886, THOMAS MILLS, LL.B.—(*Law*)—Born Aug. 13, 1864, Hartford, Conn.; died Dec. 27, 1947, Plainfield, N.J.

DAY, 1902, WILLIAM EDWARDS—(*Finance, Industry*)—Born Feb. 12, 1878, Indianapolis, Ind.; died July 17, 1964.

DECHERT, 1850, HENRY MARTYN—(*Law*)—Born Mar. 11, 1832, Reading, Pa.; died May 27, 1918, Philadelphia, Pa., 1st Lieut., Inf., Union Army, Civil War.

DECKER, 1929, EDMUND LOCKWOOD, JR.—(*Industrial*)—Born Mar. 5, 1907, Montclair, N.J.; died July 30, 1967.

DEMING, 1872, CHARLES CLERC, LL.B.—(*Law*)—Born May 22, 1852, Hartford, Conn.; died July 23, 1924, New York City.

DEMING, 1872, CLARENCE—(*Literary work*)—Born Oct. 1, 1848, Litchfield, Conn.; died May 8, 1913, New Haven, Conn.

DEMING, 1836, HENRY CHAMPION, LL.B., LL.D.—(*Law*)—Born May 23, 1815, Colchester, Conn.; died Oct. 9, 1872, Hartford, Conn. Mbr. Conn. State Legislature, 1849, 1850, 1859 and 1860. Mbr. of Congress, 1863-1867. Collector of internal revenue, 1869-1872. Col., Union Army Civil War.

DEMING, 1872, HENRY CHAMPION—(*Finance*)—Born Nov. 25, 1850, Hartford, Conn.; died Jan. 19, 1931, New York City.

DEMING, 1883, LAURENT CLERC—(*Transportation*)—Born Nov. 21, 1860, Hartford, Conn.; died Oct. 12, 1945, New York City.

DEMPSEY, 1911, John Bourne, M.A., LL.B.—(*Law*)—Born Sept. 26, 1888, Cleveland, Ohio; died May 20, 1963; Ohio House of Representatives, '23-'27; Yale Univ. Council, '48-'55; Alumni Bd. Chmn., '40-'43; Capt. F.A., W.W.I.

DENEGRE, 1915, Thomas Bayne, LL.D.—(*Finance*)—Born Jan. 18, 1893, New Orleans, La.; died June 18, 1967; with First Natl. Bank of Biloxi, Miss.; 1st Lieut., F.A., W.W. I, AEF.

DENISON, 1895, Lindsay—(*Literary work*)—Born Mar. 23, 1873, Salem, Mass.; died Mar. 25, 1934, Thomaston, N.Y. Capt., QMC., World War I (A.E.F.).

DENNIS, 1872, Frederic Shepard, M.D., F.R.C.S., F.A.C.S.—(*Medicine*)—Born April 17, 1850, Newark, N.J.; died Mar. 8, 1934, New York City. Prof. of surgery, Bellevue Hosp., Medical College, 1883-1893; Prof. of clinical surgery, Cornell University Medical College, 1898-1910, and Prof. emeritus, 1910-1934.

DENNY, 1854, Thomas—(*Finance*)—Born Aug. 22, 1833, Boston, Mass.; died July 29, 1906, Lake Meacham, Malone, N.Y.

DENSLOW, 1873, Herbert McKenzie, M.A., D.D.—(*Ministry*)—Born Aug. 20, 1852, Lynn, Mass.; died Sept. 7, 1944, Hartford, Conn. Instructor at General Russell's Collegiate and Commercial Institute, New Haven, 1873-1874; Prof. of pastoral theology, General Theological Seminary, 1902-1927; and Prof. emeritus, 1927-1944.

DENT, 1836, Henry Hatch, M.A.—(*Law*)—Born Feb. 11, 1815, Bryantown, Md.; died Nov. 19, 1872, Baltimore, Md.

DEPEW, 1856, Chauncey Mitchell, LL.D.—(*Law*)—Born April 23, 1834, Peekskill, N.Y.; died April 5, 1928, New York City. Mbr. N.Y. State Legislature, 1861-1863. Sec. of State, N.Y., 1863-1865. Appointed U.S. Minister to Japan, 1866, but resigned. Mbr. U.S. Senate, 1899-1911. Regent, University of the State of N.Y., 1874-1904. Mbr. Yale Corp., 1888-1906. Col. and Judge Advocate, N.Y.N.G., Civil War.

DEPEW, 1919, Ganson Goodyear, LL.B.—(*Law*)—Born Nov. 2, 1895, Buffalo, N.Y.; died Mar. 31, 1924, Aiken, S.C. Asst. District Attny., Western N.Y., 1922-1924. Lieut., Naval Air Service, World War I.

deSA, 1841, Pompeo Ascenco—(*Farming*)—Born April 20, 1818, Alcantara, Maranham, Brazil; died in 1879, Alcantara.

deSIBOUR, 1896, Jules Henri—(*Architecture*)—Born Dec. 23, 1872, Paris, France; died Nov. 4, 1938, Washington, D.C. Architect for the French embassy and the Canadian legation in Washington, D.C., and other public buildings.

DESILVER, 1910, ALBERT, LL.B.—(*Law*)—Born Aug. 27, 1888, Brooklyn, N.Y.; died Dec. 7, 1924, Rye, N.Y.

DEXTER, 1861, FRANKLIN BOWDITCH, M.A., Litt.D.—(*Education and library work*)—Born Sept. 11, 1842, Fairhaven, Mass.; died Aug. 13, 1920, New Haven, Conn. Asst. Librarian, Yale University, 1869-1912; also Sec. of the University 1869-1899, and Larned Prof. of American History, 1877-1888.

DEXTER, 1867, MORTON, M.A.—(*Literary work*)—Born July 12, 1846, Manchester, N.H.; died Oct. 29, 1910, Edgartown, Mass.

DICKINSON, 1856, ARTHUR—(*Business*)—Born July 15, 1835, Hillsboro, N.C.; died Oct. 13, 1904, Baltimore, Md. Served in Commissary Dept., Confederate Army, Civil War.

DILLER, 1924, JOHN CABOT—(*Military retired*)—Born Sept. 20, 1895, Sterling, Ill.; died June 2, 1981; Assoc. Dir., Bureau of Appointments, '27-'32; Capt. AUS, Inf., '16-'19; Col., USAF, '42-'55; Bronze Star; Asst. Treas., RTA, '28-'42.

DIMOCK, 1863, HENRY FARNAM, M.A.—(*Business*)—Born Mar. 28, 1842, South Coventry, Conn.; died April 10, 1911, New York City. Mbr. Yale Corp., 1899-1911.

DINES, 1908, TYSON, LL.B.—(*Law*)—Born Oct. 31, 1885, Brunswick, Mo.; died Nov. 17, 1965.

DIXON, 1907, THEODORE POLHEMUS—(*Finance*)—Born June 27, 1883, Brooklyn, N.Y.; died July 28, 1959, Weekapaug, R.I.; Capt., Intelligence, World War I; former Class Treas. and Chmn., Class Exec. Com.

DIXON, 1868, WILLIAM PALMER, LL.B., M.A.—(*Law*)—Born Mar. 19, 1847, New York City; died June 24, 1926, Lawrence, N.Y.

DOANE, 1891, JOHN WESLEY—(*Finance*)—Born Mar. 22, 1869, Thompson, Conn.; died Sept. 25, 1933, New York City.

DODD, 1838, ALBERT—(*Law*)—Born 1818; drowned June 1844, near Bloomington, Ill.

DODGE, 1904, FRANCIS TALMAGE—(*Business*)—Born Feb. 25, 1882, Brooklyn, N.Y.; died July 18, 1970; pres. Dodge & Olcott Co., '04-'52; Al. Fd. Agt., '45.

DODGE, 1907, PHILIP LYNDON—(*Finance*)—Born Nov. 28, 1885, Brooklyn, N.Y.; died June 17, 1974, New York, N.Y.; formerly Ptnr., Laird, Bissell & Meeds; Alumni Fund Agt. for Class, '07; Dir., Alumni Fund, one term.

DODGE, 1929, WASHINGTON—(*Finance*)—Born Sept. 23, 1907, San Francisco, Calif.; died Dec. 1974; Stockbroker, V.P., Clark, Dodge & Co., Inc.

DOMINICK, 1909, GAYER GARDNER—(*Finance*)—Born Mar. 16, 1887, New York, N.Y.; died Aug. 18, 1961; Limited Ptnr., Dominick & Dominick, N.Y.C.; Gov., Stock Exchange, 3 terms; Pres., Roosevelt Hosp., '48–'53; Trustee, Iolani School, Honolulu, '54; W.W. I: Lieut. (s.g.), Navy-Submarine, Lighter-than-Air.

DONNELLEY, 1889, THOMAS ELLIOTT—(*Industrial*)—Born Aug. 18, 1867, Chicago, Ill.; died Feb. 6, 1955, Lake Forest, Ill.; Dir., Pulp and Paper Div., War Industries Bd., World War I; Chmn. Citizens' Com., Chicago, '22; Mbr., Council, Yale-in-China, '25–'32, and Com. for rebuilding plant, '47.

DOUGLAS, 1900, MALCOLM, M.D.—(*Medicine*)—Born Sept. 5, 1876, Albany, N.Y.; died Feb. 12, 1939, Montecito, Calif. Maj., Med. Corps, World War I (AEF)

DOUGLASS, 1887, WILLARD ROBINSON, LL.B.—(*Law*)—Born Dec. 22, 1865, Leavenworth, Kans.; died Jan. 2, 1956, Kansas City, Mo.

DOUSMAN, 1906, LOUIS DEVIERVILLE—(*Insurance*)—Born Feb. 17, 1882, St. Louis, Mo.; died Aug. 11, 1955, Billings, Mont.; former Mbr. Billings City Park Bd., and Mont. State Park Bd.

DREISBACH, 1903, JOHN MARTIN—(*Business*)—Born Nov. 26, 1879, Wilkes-Barre, Pa.; died Nov. 10, 1958, Summit, N.J.

DuBOIS, 1867, JOHN JAY, LL.B., M.A.—(*Law*)—Born June 6, 1846, Newton Falls, Ohio; died Nov. 11, 1898, Lakewood, N.J.

DUNHAM, 1859, GEORGE ELLIOTT—(*Student*)—Born Nov. 27, 1838, Hartford, Conn.; drowned July 17, 1858, Springfield, Mass.

DUNHAM, 1938, LAWRENCE BOARDMAN, JR.—(*Business*)—Born Mar. 3, 1916, New York, N.Y.; died May 29, 1982; Sr. Dir., Office of Univ. Development, Yale Univ. '67–'73; Management Supervisor, Compton Advertising, Inc., '56–'67; Lieut., USN, '41–'46; Presidential Unit Citation; Sec., RTA, '68–.

DUNNING, 1867, ALBERT ELIJAH, D.D., S.T.D.—(*Ministry*)—Born Jan. 5, 1844, Brookfield, Conn.; died Nov. 14, 1923, Brookline, Mass.

DUNWODY, 1836, JAMES BULLOCH—(*Ministry*)—Born Sept. 24, 1816, Washington, Ga.; died June 26, 1902, Walterboro, S.C.

DURYEE, 1917, SAMUEL SLOAN, LL.B.—(*Law*)—Born Nov. 18, 1893, New York, N.Y.; died Apr. 27, 1979; of Counsel to Parker, Duryee, Zunino, Malone & Carter; Dir., Alumni Fund; Chmn., '47–'48; Univ. Council, '48; Alumni Bd., '47; Assoc. Fellow, Trumbull Coll. '47–; Chief, Tax Amortization Section, Office Under Sec. of War, '40–'41; Chmn., Tax Amortization Bd., '41–'42; Pres., Hosp. for Special Surgery, '48–'58; Life Gov., New York Hosp., '75; Pres., Trustees of Groton School, '48–'65; Dir., Am. Subsidiaries of Zurich Ins. Co.;

City Bank Farmers Trust Co.; Ptnr., Parker & Duryee and associated and successive firms; Capt., F.A., A.E.F., '17–'19; 2nd Lieut., Natl. Guard, Conn., '16.

DWIGHT, 1849, Timothy, M.A., D.D., LL.D.—(*Education*)—Born Nov. 16, 1828, Norwich, Conn.; died May 26, 1916, New Haven, Conn. Prof. of sacred literature, Yale Divinity School, 1858-1886; Pres., Yale University 1886-1899; also acting treasurer, 1886-1888.

DWIGHT, 1893, Winthrop Edwards, LL.B., Ph.D.—(*Law*)—Born Dec. 23, 1872, New Haven, Conn.; died Dec. 3, 1944, New York City, Assoc. Fellow, Timothy Dwight College, Yale University, '35-44.

E

EAKIN, 1856, Emmet Alexander—(*Farming*)—Born Mar. 26, 1836, Bedford County, Tenn.; died Dec. 27, 1864, Murfreesboro, Tenn.

EAKIN, 1846, William Spencer, M.A.—(*Business*)—Born July 6, 1820, Shelbyville, Tenn.; died Jan. 31, 1880, New York City.

EAMES, 1843. Benjamin Tucker, M.A.—(*Law*)—Born June 4, 1818, Dedham, Mass.; died Oct. 6, 1901, East Greenwich, R.I. Mbr., R.I. State Senate, 1854-1856, 1859, 1863, and 1884. Mbr., R.I. State Legislature, 1868, and Spkr., 1869. Mbr. of Congress, 1871-1879.

EATON, 1877, Samuel Lewis, M.A., M.D.—(*Medicine*)—Born Jan. 15, 1853, Lancaster, Wisc.; died April 17, 1930, Newton Highlands, Mass.

EATON, 1862, Sherburne Blake—(*Law*)—Born Feb. 23, 1840, Lowell, Mass.; died Dec. 1, 1914, New York City; Capt., Union Army, Civil War.

EDDY, 1929, Maxon Hunter, M.D.—(*Medicine*)—Born May 31, 1907, Middlebury, Vt.; died Nov. 22, 1982; Practicing Surgeon, Bridgeport & Fairfield, Conn., '39-'69; Volunteer Surgeon, Developing Countries, '69-; Lieut. Cmdr., USNR, Med. Corps, '43-'46; Battle Star.

EDWARDS, 1857, Alfred Lewis, LL.B., M.A.—(*Law*)—Born Dec. 2, 1836, New York City; died Feb. 23, 1910, Athol, N.Y.

EDWARDS, 1878, George Benjamin—(*Finance*)—Born Jan. 14, 1854, Russellville, Ky.; died Dec. 15, 1929, Louisville, Ky.

EDWARDS, 1842, Newton—(*Law*)—Born Mar 11, 1822, Andover, Mass.; died May 7, 1855, Augusta, Me.

EDWARDS, 1901, RICHARD HENRY, M.A.—(*Ministry*)—Born Oct. 22, 1877, Lisle, N.Y.; died April 7, 1954, Lisle; former Dir., Natl. Council on Religious Education in Higher Education; on Natl. War Work Council, YMCA, World War 1.

EELLS, 1901, JOHN SHEPHARD—(*Ranching*)—Born Nov. 23, 1878, Oakland, Calif.; died June 20, 1964.

EICHELBERGER, 1858, MARTIN SMYSER—(*Law*)—Born Jan. 27, 1836, York, Pa.; died July 10, 1893, York.

ELDER, 1873 SAMUEL JAMES, LL.D.—(*Law*)—Born Jan. 4, 1850, Hopeville, R.I.; died Jan. 22, 1918; Boston, Mass. Mbr., Mass. State Legislature, 1885.

ELDREDGE, 1839, CHARLES ST. JOHN—(*Student*)—Born Feb. 23, 1820, New York City; died Feb. 12, 1840, Townshend, Vt.

ELLIOT, 1871, HENRY RUTHERFORD—(*Literary work*)—Born April 21, 1849, Woodbridge, Conn.; died April 18, 1906, New York City.

ELLIOT, 1844, WILLIAM HORACE, LL.B., M.A.—(*Law*)—Born Dec. 31, 1824, New Haven, Conn.; died Dec. 8, 1852, Santa Cruz.

ELLIS, 1930, HARLAN MONTGOMERY—(*Industrial*)—Born Aug. 23, 1905, Charles City, Iowa; died May 22, 1953, Burbank, Calif.; Mbr., Yale Alumni Bd.; Class Agt.

ELLIS, 1930, RAYMOND WALLESER, LL.B.—(*Law*)—Born Dec. 23, 1907, Charles City, Iowa; died Mar. 15, 1981; Ptnr., Choate, Hall & Stewart, Boston, Mass.; Lieut., USN,'43-'46; Bronze Star.

ELLSWORTH, 1905, JOHN STOUGHTON—(*Farming*)—Born Aug. 21, 1883, Simsbury, Conn.; died Mar. 6, 1969.

ELWELL, 1945, FRANCIS BOLTON, JR., LL.B.—(*Law*)—Born May 7, 1923, Riverton, N.J.; died Dec. 29, 1958, Washington, D.C.; Asst. District Attny., New York City, '52-'57; Legal Advisor, Defense Air Transportation Admin. U.S. Dept. Comm.

ELY, 1906, GROSVENOR—(*Finance*)—Born Feb. 21, 1884, Norwich, Conn.; died Aug. 23, 1959, Warwick, N.Y.; Capt. Conn. State Guard, and Chief of Section, War Industries Bd., World War I; Vice-Chmn., Conn. State War Finance Comm., World War II; Mbr. Conn. State Banking Advisory Council.

EMERSON, 1834, ALFRED, M.A.—(*Ministry*)—Born April 5, 1812, Beverly, Mass.; died Feb. 7, 1896, Dochester, Mass. Prof. of mathematics and astronomy, Western Reserve College 1853-1856.

EMERSON, 1841, JOSEPH, M.A., D.D., LL.D.—(*Education*)—Born May 28, 1821, Norfolk, Conn.; died Aug. 4, 1900, Beloit, Wis. Prof. of ancient languages, Beloit College, 1848-1855, and of Greek, 1855-1888.

EMERSON, 1848, SAMUEL, M.A.—(*Education*)—Born May 9, 1827, Norfolk, Conn.; died Jan. 18, 1908, Charlottesville, Va.

ENO, 1869, JOHN CHESTER—(*Finance*)—Born Jan. 22, 1848, New York City; died Feb. 28, 1914, New York City.

ENO, 1882, WILLIAM PHELPS, M.A.—(*Transportation*)—Born June 3, 1858, New York City; died Dec. 3, 1945, Norwalk, Conn. Author, world's first street traffic regulations (New York, London and Paris) and other traffic control systems, including road traffic control codes of allied troops in World Wars I and II; Dir., Home Defense League of District of Columbia, World War I.

ERSKINE, 1930, ALBERT DEW., JR.—Died May 26, 1976.

ESTILL, 1891, JOE GARNER, M.A.—(*Education*)—Born Oct. 2, 1863, Winchester, Tenn.; died May 1, 1953, Lakeville, Conn.; Mbr., Conn. State Legislature, '32-'34, and '34-'36.

ESTY, 1845, CONSTANTINE CANARIS, M.A.—(*Law*)—Born Dec. 26, 1824, Framingham, Mass.; died Dec. 27, 1912, Framingham. Mbr., Mass. State Senate, 1857-1858, and of Mass. State Legislature, 1866, Mbr. of Congress, 1872-1873. Mbr., Mass. Bd. of Education, 1871-1879.

EUSTIS, 1841, WILLIAM TAPPAN, D.D.—(*Ministry*)—Born July 6, 1821, Boston, Mass.; died Mar. 30, 1888, Springfield, Mass.

EVANS, 1851, EVAN WILHELM, M.A.—(*Education*)—Born Jan. 6, 1827, near Swansea, South Wales; died May 22, 1874, Ithaca, N.Y. Prof. of natural philosophy and astronomy, Marietta College, 1857-1864; Prof. of mathematics, Cornell University, 1868-1872.

EVARTS, 1884, MAXWELL—(*Law*)—Born Nov. 15, 1862, New York City; died Oct. 7, 1913, Windsor, Vt. Asst. U.S. Attny., Southern N.Y., 1890-1892.

EVARTS, 1881, SHERMAN—(*Law*)—Born Oct. 10, 1859, New York City; died Oct. 21, 1922, Hanover, N.H.

EVARTS, 1837, WILLIAM MAXWELL, M.A., LL.D.—(*Law*)—Born Feb. 6, 1818, Boston, Mass.; died Feb. 28, 1901, New York City, Deputy U.S. district attny., Southern N.Y., 1849. Atty. Gen. of the U. S., 1868-1869. Sec. of State, 1877-1881. Mbr., U.S. Senate, 1885-1891. Mbr., Yale Corp., 1872-1891.

EWELL, 1865, JOHN LEWIS, D.D.—(*Education*)—Born Sept. 4, 1840, Byfield, Mass.; died Mar. 16, 1910, Washington, D.C. Prof. of Latin, Washington University, 1866-1867; Prof. of church history and Hebrew exegesis, Howard University, 1891-1910.

EWING, 1924, SHERMAN, LL.B.—(*Law*)—Born May 26, 1901, Yonkers, N.Y.; died May 15, 1975, New York, N.Y.; Lawyer.

F

FARNAM, 1868, Charles Henry, LL.B., M.A.—Born Sept. 12, 1846, New Haven, Conn.; died Sept. 24, 1909, Denver, Colo.

FARNAM, 1874, Henry Walcott, M.A., LL.D., R.P.D.—(*Education*)—Born Nov. 6, 1853, New Haven, Conn.; died Sept. 5, 1933, New Haven. Prof. of political economy, Yale University, 1880-1912; Prof. of economics, 1912-1918, and Prof. emeritus, 1918-1933. Pres., Hopkins Grammar School, 1927-1933. Mbr., Conn. State Council of Defense, World War I.

FARNAM, 1866, William Whitman, LL.B., M.A., J.U.D.—(*Education*)—Born April 6, 1844, New Haven, Conn.; died June 28, 1929, New Haven. Mbr., Yale Corp., 1885-1889; Treas., Yale University, 1888-1899; trustee, Sheffield Scientific School, 1894-1923.

FARNHAM, 1890, John Dorrance—(*Law*)—Born Dec. 28, 1867, Wilkes-Barre, Pa.; died April 14, 1940, Sayre, Pa.

FARRAR, 1918, John Chipman—(*Literary work*)—Born Feb. 25, 1896, Burlington, Vt.; died Nov. 5, 1974, New York, N.Y. Chmn. Bd., Farrar, Straus & Giroux, Inc., New York, N. Y.; Reporter, *N.Y. Sunday World*, '19-'21; Editor, The Bookman, '21-'27; Editor, George H. Doran Co., '25; Dir., Doubleday Doran & Co., '27; Editor, V.P., then Chmn. Bd., Farrar & Rinehart,, '29-'44; Editor then Chmn. Bd. Farrar, Straus & Co. (now Farrar, Straus & Giroux), '46-; publishing course, Columbia Univ. ext. prog., '48-'51; Dir., Bread Loaf Writers' Conf., Middlebury Coll., Vt., '26-'28; creative writing course, NYU, '20-'25; Writers' Bd. for World Govt., '40-'43; Federal Grand Jury Assn., '46-'50; Natl. Conf. Christians and Jews, '48-'52; lst Lieut., USAF, July '17-Feb.'19, Psychological Warfare Branch, OWI, June '43-July '44; Overseas Publications of OWI, editor of USA and Die Amerikanische Rundschau, Sept. '44-Dec. '45.

FAULKNER, 1839, Endress, M.A.—(*Finance*)—Born Mar. 25, 1818, Dansville, N.Y.; died Nov. 13, 1852, Dansville.

FEAREY, 1898, Morton Lazell, LL.B.—(*Law*)—Born Nov. 17, 1876, Albany, N.Y.; died Dec. 12, 1954, New York City; Chmn., Selective Service Bd. 128, World War I.

FELDER, 1844, JOHN HENRY—(*Farming*)—Born Dec. 17, 1821, Orangeburg, S.C.; died Aug. 16, 1861, Orangeburg. Mbr., S.C. State Legislature, 1852-1861. 1st Lieut., Inf., Confederate Army, Civil War.

FENN, 1854. WILLIAM HENRY, D.D.—(*Ministry*)—Born Mar. 1, 1834, Charleston, S.C.; died Mar.11, 1916, Daytona, Fla.

FERGUSON, 1902, ALFRED LUDLOW—(*Business*)—Born Mar. 7, 1879, Stamford, Conn.; died Oct. 7, 1965; Executive, N.Y.C.

FERRY, 1844, ORRIS SANFORD—(*Law*)—Born Aug. 15, 1923, Bethel, Conn.; died Nov. 21, 1875, Norwalk, Conn. Mbr., Conn. State Legislature, 1855 and 1856. Mbr. of Congress, 1859-1861, and of U.S. Senate, 1866-1875, Brig-Gen., Union Army, Civil War.

FEWSMITH, 1844, WILLIAM, M.A.—(*Education*)—Born Jan. 24, 1826, Philadelphia, Pa.; died June 19, 1900, Merchantville, N.J.

FIELD, 1841, DAVID IRVINE, LL.B.—(*Farming*)—Born April 28, 1820, Richmond, Ky.; died Sept. 11, 1859, Bolivar City, Miss.

FINCH, 1849, FRANCIS MILES, LL.D.—(*Law*)—Born June 9, 1827, Ithaca, N.Y.; died July 31, 1907, Ithaca. Assoc. judge, N.Y. Court of Appeals, 1880-1896. Dean, Cornell Law School, 1896-1903, and Prof. of the history and evolution of law, 1895-1903.

FINCKE, 1897, CLARENCE MANN—(*Finance*)—Born Oct. 12, 1894, Brooklyn, N.Y.; died June 19, 1959, Englewood, N.J.

FISCHER, 1856, LOUIS CHRISTOPHER—(*Finance*)—Born Aug. 13, 1834, Baltimore, Md.; died Nov. 29, 1899, Baltimore.

FISH, 1905, STUYVESANT—(*Finance*)—Born April 17, 1883, New York City; died June 26, 1952, New York City; Lieut., F.A., World War I.

FISHER, 1888, IRVING, Ph.D., LL.D.—(*Education*)—Born Feb. 27, 1867, Saugerties, N.Y.; died April 29, 1947, New York City. Asst. Prof. of mathematics, Yale University, 1893-1895; Asst. Prof. of political economy, 1895-1898 and Prof. 1898-1935. Prof. emeritus, 1935-1947.

FISHER, 1889, SAMUEL HERBERT, LL.B., M.A., LL.D.—(*Law*)—Born May 26, 1867, Cincinnati, Ohio; died June 7, 1957, Litchfield, Conn.; Chmn. Conn. Tercentenary Com., '33-'35, and Highway Safety Comm., '36-'40; Admin. of Defense, State of Conn., '41-'42; former Class Agt.; Trustee, Peabody Museum; fellow of Yale Corp., '20-'35.

FISHWICK, 1928, DWIGHT BROWN, M.D.—(*Medicine*)—Born July 3, 1906, Chicago, Ill.; died Mar. 5, 1956, Coral Gables, Fla.; Lt. Col., Medical Corps, World War II.

FISK, 1849, FRANKLIN WOODBURY, M.A., LL.D.—(*Education*)—Born Feb. 16, 1820, Hopkinton, N.H.; died July 4, 1901, Chicago, Ill. Prof.

of rhetoric and English literature, Beloit College, 1854-1859; Prof. of sacred rhetoric, Chicago Theological Seminary, 1857-1900; also Pres., 1887-1900.

FISK, 1844, SAMUEL AUGUSTUS, M.A., M.D.—(*Medicine*)—Born Mar. 26, 1821, Cambridge, Mass.; died Nov. 16, 1884, Northampton, Mass.

FISK, 1840, STUART WILKINS, LL.B., M.A.—(*Law*)—Born Aug. 25, 1820, Natchez, Miss.; died Dec. 31, 1862, Murfreesboro, Tenn. Col., Inf., Confederate Army, Civil War.

FITCH, 1847, JAMES—(*Law*)—Born April 23, 1821, Cherry Valley, N.Y.; died Feb. 16, 1904, Cleveland, Ohio.

FLAGG, 1873, WILBUR WELLS—(*Business*)—Born Jan. 20, 1851, Yonkers, N.Y.; died Sept. 18, 1912, Los Angeles, Calif.

FLANDERS, 1885, HENRY RICHMOND—(*Insurance*)—Born Sept. 14, 1859, Chilmark, Martha's Vineyard, Mass.; died Sept. 13, 1932, Tisbury, Mass.

FLEMING, 1838, WILLIAM STUART—(*Law*)—Born April 23, 1816, Zion Ch., Maury City, Tenn.; died July 13, 1896, Columbia, Tenn. Chancellor, 8th Div. of Tenn., 1870-1886.

FLINN, 1906, ALEXANDER REX—(*Business*)—Born Feb. 5, 1885, Pittsburgh, Pa.; died May 29, 1950, Pittsburgh; Mbr., Bd. of Education, '43-'50; Mbr., Natl. Exec. Comm., Natl. Economy League; Capt., F.A., World War I (AEF); V.P., Yale Club of Pittsburgh,'23-'30, Pres., '30-'32; Chmn. Western Pa., Nat'l Yale Alumni Placement Service, '45.

FOLSOM, 1883, HENRY TITUS—(*Business*)—Born Nov. 4, 1859, St. Louis, Mo.; died Feb. 26, 1937, Llewellyn Park, West Orange, N.J.

FOOTE, 1883, CHARLES SEWARD, LL.B.—(*Law*)—Born Feb. 7, 1860, Port Henry, N.Y.; died Jan. 11, 1939, Port Henry. Mbr., N.J. State Assembly, '00-'01.

FOOTE, 1866, HARRY WARD, M.A.—(*Law student*)—Born Aug. 5, 1844, Cincinnati, Ohio; died June 28, 1873, New Haven, Conn.

FOOTE, 1850, JOSEPH FORWARD—(*Law*)—Born Feb. 7, 1828, Southwick, Mass.; died Dec. 5, 1883, Norwalk, Conn.

FOOTE, 1844, THADDEUS—(*Law*)—Born April 27, 1821, Southwick, Mass.; died Feb. 3, 1903, Grand Rapids, Mich. Col., Cavalry, Union Army, Civil War.

FORD, 1865, GEORGE TOD—(*Law*)—Born May 21, 1841, Akron, Ohio; died Dec. 24, 1911, Washington, D.C.

FOSTER, 1848, DWIGHT, M.A., LL.D.—(*Law*)—Born Dec. 13, 1828,

Worcester, Mass.; died April 18, 1884, Boston, Mass. Attny. Gen. of Mass., 1861-1864, Assoc. judge, Mass. Supreme Court, 1866-1869.

FOSTER, 1834, ELEAZAR KINGSBURY—(*Law*)—Born May 20, 1813, New Haven, Conn.; died June 13, 1877, New Haven. Mbr., Conn. State Legislature, 1844 and 1845, and Spkr., 1865. Judge of probate, New Haven District 1845, 1846, 1848 and 1849.

FOSTER, 1879, GEORGE FORRIS—(*Business*)—Born Oct. 22, 1856, Grand Rapids, Mich.; died Aug. 24, 1914, Newburgh, N.Y.

FOSTER, 1869, JOHN PIERREPONT CODRINGTON, M.A., M.D.—(*Medicine*)—Born Mar. 2, 1847, New Haven, Conn.; died April 1, 1910, New Haven.

FOSTER, 1908, JOSEPH TAYLOR—(*Finance*)—Born June 1, 1895, Ashland, Pa.; died June 24, 1969; Investment Adviser, Foster & Co., Greenwich.

FOSTER, 1884, REGINALD, LL.B.—(*Law*)—Born Jan. 2, 1863, Worcester, Mass.; died Dec. 21, 1944, Boston, Mass.

FOSTER, 1878, ROGER, LL.B., M.A.—(*Law*)—Born April 21, 1857, Worcester, Mass.; died Feb. 22, 1924, New York City.

FOWLER, 1876, CHARLES NEWELL, LL.B.—(*Law*)—Born Nov. 2, 1852, Lena, Ill.; died May 27, 1932, Orange, N.J. Mbr. of Congress, 1895-1911.

FOWLER, 1863, HORACE WEBSTER, LL.B.—(*Law*)—Born Oct. 31, 1842, Elmira, N.Y.; died July 20, 1888, Orange, N.J. Capt., Artillery, Union Army, Civil War.

FOWLER, 1860, WILLIAM, LL.B.—(*Law*)—Born Sept. 26, 1839, Albany, N.Y.; died Nov. 26, 1874, New York City. Capt., Inf., Union Army, Civil War.

FRANCHOT, 1910, CHARLES PASCAL, LL.B.—(*Law*)—Born Oct. 8, 1886, Olean, N.Y.; died Sept. 8, 1953, New York City; Consular Agt. for France at Buffalo, '16-'26; Special Legal Advisor to Dir. Naval Petroleum Reserves, '46-'50; Maj. Cavalry, World War I (AEF); Capt., USNR, (J.A.G. Dept.), World War II.

FREEMAN, 1869, HENRY VARNUM, M.A.—(*Law*)—Born Dec. 20, 1842, Bridgeton, N.J.; died Sept. 5, 1916 enroute to Chicago, Ill. Judge, Superior Court of Ill., 1893-1898. Presiding justice, Appellate Court of Ill., 1898-1915. Capt., Inf., Union Army, Civil War.

FRENCH, 1882, ASA PALMER, LL.B—(*Law*)—Born Jan. 29, 1860, Braintree, Mass.; died Sept. 17, 1935, Wellesley, Mass. U.S. district attny., southeastern district of Mass., '02-'06; U.S. district attny., Mass., '06-'14.

FRENCH, 1910, ROBERT DUDLEY, M.A., Ph.D.—(*Education*)—Born

Nov. 4, 1888, New Haven, Conn.; died Aug. 22, 1954, New Haven; Asst. Prof., of English, Yale University, '19-'26, Assoc. Prof., '26-'29, and Prof., '30-'54; Chmn., English Dept., '45-'47; Master, Jonathan Edwards, '30-'54; former Class Sec.

FROST, 1922, ALBERT CARL, JR.—(*Finance*)—Born Oct. 21, 1899, Chicago, Ill.; died Oct. 27, 1969; Reg. Rep., Bache & Co., Inc., NYC. Apprentice Seaman, USN, Sept.—Nov. '18.

FROST, 1883, ELIHU BRINTNAL, LL.B.—(*Law*)—Born May 12, 1860, Peekskill, N.Y.; died Aug. 22, 1925, Beach Bluff, Mass.

FULLER, 1881, PHILO CARROLL—(*Industrial*)—Born Mar. 19, 1857, Groveland, N.Y.: died May 24, 1931, Grand Rapids, Mich.

FULLER, 1861, WILLIAM HENRY, LL.B.—(*Industrial*)—Born Nov. 6, 1836, Barryville, N.Y.; died Nov. 26, 1902, New York City.

FURBISH, 1860, EDWARD BROWN, M.A.—(*Ministry*)—Born May 21, 1837, Portland, Me.; died April 27, 1918, Rochester, N.Y. Chaplain, Union Army, Civil War.

G

GACHET, 1843, CHARLES NICHOLAS—(*Law*)—Born July 2, 1822, Lumpkin, Ga.; died April 14, 1863, Tullahoma, Tenn. Served in Confederate Army, Civil War.

GAILLARD, 1919, EDWARD MCCRADY—(*Finance*)—Born June 12, 1896, Philadelphia, Pa.; died Oct. 1, 1982. Yale Development Bd. '56-; Yale's Program for the Arts & Sciences, '60-'62; Alumni Fund Volunteer; Class Chmn, Reunion Major Gifts Com., '74; Citation from Pres. A. Whitney Griswold; Bankers Trust Co. of New York City, '20-'23; Union & New Haven Trust Co., '23-'68, Pres., '43-'63; Chmn., '63-'68; Dir.: United Illuminating Co., '48-'68, Wallace Silversmith Co., '56-'60; Pres., Conn. Bankers Assn., '36-'37; Mbr., Advisory Council on Banking, State of Conn. '45-'49; Exec. Council American Bankers Assn., '37-'40; Stockholders Advisory Com., Fed. Reserve Bank of Boston; Mbr., Bank Management Com., of New England Council, '38-'48; Trustee, Conn. Savings Bank, '38-'68, 1st Lieut., F.A. May '17-Sept. '19; Overseas Service Stripes; Dir. RTA during W.W. II.

GAILLARD, 1916, SAMUEL GOURDIN, JR.—(*Industrial*)—Born Mar. 22, 1894, Philadelphia, Pa.; died July 8, 1960, New Haven; 1st Lieut., Ord. Dept., World War I (AEF).

GALLAUDET, 1893, EDSON FESSENDEN, B.E., Ph.D.—(*Engineering*)—Born April 21, 1871, Washington, D.C.; died July 1, 1945, Pine Orchard, Conn. Instructor in physics, Yale University, 1897-1900 and head crew coach, 1900.

GALLAUDET, 1898, HERBERT DRAPER, B.D.—(*Ministry and literary work*)—Born Sept. 12, 1876, Washington, D.C.; died June 24, 1944, Pine Orchard, Conn. Capt., F.A., World War I (AEF).

GAMMELL, 1911, ARTHUR AMORY, LL.B.—(*Law*)—Born Sept. 5, 1888, Providence, R.I.; died Oct. 9, 1975, New York, N.Y.; Mbr. Milbank, Tweed, Hadley & McCloy, or predecessor firms, Jan. '24-Dec. '55; Dir., Albany & Susquehanna R.R. Co., '33-'45; Selective Service Adv. Bd., #50, N.Y.C., '42-'45; Major, F.A., AEF, Aug. '17-May '19.

GARDNER, 1912, ROBERT ABBE—(*Finance*)—Born April 9, 1890, Hinsdale, Ill.; died June 21, 1956, Lake Forest, Ill.; 1st Lieut., F.A., World War I (AEF); Col., G.S.C., World War II; Class Sec. '41-'56; former Class Co-Agt.; Pres., Yale Club of Chicago, '34-'36; Mbr., Alumni Bd. (Mbr., Exec. Com., '43-'46).

GARFIELD, 1918, NEWELL—(*Industrial*)—Born Aug. 1, 1895, Chicago, Ill.; died Sept. 3, 1975, Concord, Mass.; V.P., Zephyr Textiles, Ltd., Ormestown, P.Q., Canada; Dir., Riggs & Lombard, Lowell, Mass.; Mbr., Finance Com., Concord; Major, F.A., '17-'18.

GARNSEY, 1930, WALTER WOOD—(*Business*)—Born Oct. 21, 1908, Billings, Mont.; died October, 30, 1977; formerly Pres., Stokes Canning Co.

GARRISON, 1897, ELISHA ELY—(*Engineering*)—Born Aug. 16, 1871, Cincinnati, Ohio; died Mar. 26, 1935, St. Petersburg, Fla. Served in U.S. Vol. Cavalry (Rough Riders), Spanish-American War. Lieut. Col., F.A., World War I (AEF).

GARVEY, 1929, JOHN JOSEPH—(*Industrial*)—Born Sept. 6, 1903, Moosic, Pa.; died Jan. 17, 1959, Coral Gables, Fla.

GATES, 1918, ARTEMUS L., M.A.—(*Finance*)—Born Nov. 3, 1895, Cedar Rapids, Iowa; died June 14, 1976; Banker; Pres., N.Y. Trust Co., '29-'41; Dir., Time, Inc., Union Pacific R.R. Co.; Trustee, Mutual Life Ins. Co. and Presbyterian Hospital; Asst. Sec. of the Navy for Air, '41-'45; Under Sec. of Navy, '45; Lieut. Cmdr., Naval Air Service, '17-'19; 2 Distinguished Service Medals (USN); Distinguished Flying Cross (Great Britian); Legion d'Honneur and *Croix de Guerre* with palm (French).

GERARD, 1897, SUMNER—(*Law*)—Born Aug. 25, 1874, Albany, N.Y.; died Mar. 10, 1966; Lawyer, N.Y.C.; Pres., Aeon Realty Corp.,

G.B.W. Construction Co., Aeonitt Realty Corp.; Sgt., U.S. Vol. Cav. (Rough Riders), Spanish-American War; Major, F.A., W.W. I.

GILE, 1939, CLEMENT D.—(*Finance*)—Born Jan. 30, 1918, New York, N.Y.; died Nov. 21, 1978; formerly V.P., Morgan Guaranty Trust Co., N.Y.C.; Dir., Yale Alumni Fund; Naval Aviator, Lt. Cmdr., USN, '40-'45; D.F.C. (4), Air Medal (4), Purple Heart.

GILE, 1914, CLEMENT MOSES—(*Industrial*)—Born Oct. 16, 1891, Andover, Mass.; died June 13, 1964; Lieut. (j.g.), USNR, W.W. I.

GILL, 1889, CHARLES OTIS, B.D.—(*Ministry*)—Born Mar. 4, 1868, Walpole, Mass.; died June 1, 1959, Staunton, Va.; Inter-Church World Movement work in New England; Fed. Council of Churches of Christ in Am., Ohio.

GILL, 1888, GEORGE METCALF—(*Industrial*)—Born Mar. 1, 1866, Orange, N.J.; died April 18, 1954, East Orange, N.J.

GILLESPIE, 1929, KENRICK S.—(*Finance*)—Born Apr. 13, 1907, Morristown, N.J.; died July 8, 1982; Ptnr., Loeb, Rhoades & Co., New York, N.Y.

GILLETTE, 1841, AUGUSTUS CANFIELD, M.A.—(*Law and literary work*)—Born May 18, 1822, New York City; died Feb. 7, 1856, Washington, D.C.

GILLETTE, 1897, CURTENIUS, M.D.—(*Medicine*)—Born June 24, 1873, New York City; died Nov. 10, 1959, White Plains, N.Y.; Lt. Col., Med. Corps, World War I (AEF).

GILMAN, 1852, DANIEL COIT, M.A., LL.D.—(*Education*)—Born July 6, 1831, Norwich, Conn.; died Oct. 13, 1908, Norwich. Librarian, Yale College, 1858-1865, and Prof. of geog., Sheffield Scientific School, 1863-1872. Sec., Conn. State Bd. of Education, 1865-1866. Pres., University of Calif., 1872-1875, of Johns Hopkins University, 1875-1901, and of the Carnegie Institution of Washington, 1902-1905.

GLAENZER, 1907, GEORGES BRETTE—(*Industrial*)—Born Dec. 25, 1884, Brick Church, N.J.; died June 7, 1949, New York City.

GLEASON, 1853, WILLIAM HENRY, LL.B., D.D.—(*Ministry*)—Born Sept. 28, 1833, Durham, Conn.; died Feb. 21, 1892, New York City. Mbr., New York State Legislature, 1864-1865.

GORDON, 1834, ALEXANDER BLUCHER—(*Law*)—Born Mar. 30, 1814, Falmouth, Va.; died Nov. 28, 1861, Falmouth.

GORDON, 1938, EDWARD MCGUIRE—(*Finance*)—Born May 5, 1916, Savannah, Ga.; died Aug. 18, 1944, in the Pacific Area. Lt. Cmdr., USNR, World War II.

GOULD, 1877, ANTHONY—(*Law and literary work*)—Born Dec. 31, 1855, Albany, N.Y.; died Feb. 28, 1921, New York City.

GOULD, 1918, JAMES—(*Finance*)—Born May 15, 1894, Bristol, Pa.; died Sept. 18, 1950, Flourtown, Pa.; Capt., F.A., World War I (AEF).

GOULD, 1845, JAMES GARDNER, M.A.—(*Law*)—Born Aug. 14, 1825, Augusta, Ga.; died Sept. 21, 1854, Marietta, Ga.

GRAMMAR, 1843, CHRISTOPHER—(*Law*)—Born Mar. 17, 1822, Washington, D.C.; died Nov. 3, 1889, Washington.

GRANGER, 1843, GIDEON, M.A.—(*Law*)—Born Aug. 30, 1821, Canandaigua, N.Y.; died Sept. 3, 1868, Canandaigua.

GRANGER, 1855, JOHN ALBERT, M.A.—(*Farming*)—Born July 13, 1833, Canandaigua, N.Y.; died Oct. 27, 1906, Canandaigua.

GRANT, 1858, EDWARD DROMGOOLE, M.A.—(*Real estate*)—Born Feb. 12, 1836, Brunswick County, Va.; died Nov. 19, 1915, Farmington, Conn.

GRAVES, 1892, HENRY SOLON, M.A., LL.D.—(*Education*)—Born May 3, 1871, Marietta, Ohio; died Mar. 7, 1951, Brattleboro, Vt.; Dean, Yale Forestry School, '00-'10, and '22-'39; Asst. Chief, Div. of Forestry, U.S. Dept. of Agriculture, 1898-1900; Chief Forester, '10-'20; Lt. Col., Eng. Corps, World War I (AEF); Pres., Yale Alumni Assn. of Washington, '15-'16.

GRAVES, 1891, WILLIAM PHILLIPS, M.D., Sc.D., F.A.C.S.—(*Medicine*)—Born Jan. 29, 1870, Andover, Mass.; died Jan. 25, 1933, Boston, Mass. Prof. of gynecology, Harvard Medical School, '11-'27; W.H. Baker Prof. of gynecology, '27-'32, and Prof. emeritus, '32-'33.

GRAYSON, 1944, WILLIAM CABELL—(*Telecommunications*)—Born May 28, 1921, Washington, D.C.; died April 15, 1980. Special Coordinator for Public Affairs. Telecommunications. 25th Anniversary Class Gift Com., Campaign for Yale, Washington Area, Major & Special Gifts; National Broadcasting Co., Washington, D.C.: WRC-TV: Program Coordinator, Operations Dir., Sales Rep.; WRC-TV & WRC Radio: Program Mgr., '48-'62; Smithsonian Institution: Consultant, Broadcasting & Film, Chief, Broadcasting & Film, Special Asst. for Development & Public Affairs, '64-; Audubon Naturalist Soc. of the Central Atlantic States: Bd. of Dir., V.P. (Program), Pres., Chmn. of Bd., '59-; Bd. of Dir.; Upper Fauquier Assn., CINE, N.Y. State Historical Assn.; Exec. Com., Washington Film Council; Com. of 100 on the Federal City; St. Albans School Bd. of Governors, '58-'65; Trinity Ch., Upperville, Vestry; Exec. Bd., BSA, Natl. Capitol Area Council, '57-'63; Va. Comm. of the Arts & Humanities, '57-'63; 1st Lieut. USMC. '43-'46, (Capt., Reserves, '50).

GREADY, 1842, WILLIAM POSTELL, M.A.—(*Ministry*)—Born June 5, 1817, Charleston, S.C.; died Jan. 28, 1882, Toccoa City, Ga.

GREEN, 1955, Charles Grady—(*Finance*)—Born March 19, 1933, Little Rock, Ark.; died Dec. 2, 1976.

GREEN, 1880, Edmund Frank, LL.B.—(*Insurance*)—Born April 3, 1857, Corunna, Mich.; died April 16, 1942, San Francisco, Calif.

GREEN, 1879, Henry Sherwood, LL.D.—(*Library work*)—Born Nov. 12, 1854, New Milford, Conn.; died Jan. 22, 1933, New Haven, Conn. Prof. of Greek, Bethany College, 1896-1900, assoc. Prof. of Greek, West Virginia University, 1900-1901, and Prof. 1901-1912. Served as librarian, World War I.

GREEN, 1857, James Payne—(*Education*)—Born Jan. 7, 1836, Jefferson City, Miss.; died May 13, 1924, Jefferson City. Prof. of Greek and mathematics, Jefferson College, 1857-1859. Lieut., Cavalry, Confederate Army, Civil War.

GREENWAY, 1900, James Cowan, M.A., M.D.—(*Medicine*)—Born Jan. 28, 1877, Huntsville, Ala.; died July 20, 1976; Assoc. Attend. Physician, N.Y. Hosp., '08-'16; Dir., Yale Univ. Health Dept., '16-'36; Major, Medical Corps, Sept. '17-Mar. '18.

GRIGGS, 1928, Herbert Stanton, Jr.—(*Industrial*)—Born Jan. 27, 1906, Tacoma, Wash.; died Mar. 1, 1959, Tacoma; Lt. Cmdr., USNR, World War II; Trustee, Yale Assn. of Western Wash.

GRIGGS, 1889, John Cornelius, Ph.D.—(*Education*)—Born Sept. 29, 1865, Spring Valley, Minn.; died July 20, 1932, Palo Alto, Calif. Asst. Prof. of Music, Vassar College, 1897-1919; assoc. Prof. of English, Canton Christian College (now Lingman University, Canton), 1919-1929, and Prof. of English and Head of the dept., 1920-1927.

GRIGGS, 1896, Maitland Fuller, LL.B., L.H.D.—(*Law*)—Born Feb. 12, 1872, Granby, Conn.; died July 24, 1943, Old Lyme, Conn. Originator and a founder of Associates in Fine Arts at Yale University and Chmn., '26-'41; Chmn., Com. on accessions, Yale Art Gallery, '28-'40; Lt. Col., Ord. Dept., World War I.

GRISWOLD, 1908, Dwight Torrey—Born Dec. 18, 1884, Erie, Pa.; died Dec. 29, 1908, San Francisco, Calif.

GRISWOLD, 1899, William Edward Schenck, LL.D.—(*Business*)—Born Jan. 8, 1877, Erie, Pa.; died Jan. 19, 1964; Sec., Railroad Securities Comm., '09-'11; Chmn., Yale Alumni Fund, '23, '24.

GROUT, 1853, Alfred—(*Law*)—Born Sept. 3, 1830, Sherborn, Mass.; died July 26, 1866, Sherborn.

GROVER, 1874, Thomas Williams, LL.B—(*Education*)—Born Nov. 29, 1846, Nashua, N.H.; died Nov. 17, 1893, Chicago, Ill.

GRUBB, 1873, Charles Ross—(*Finance*)—Born Mar. 31, 1857, Burlington, N.J.; died Aug. 22, 1928, Manada, Pa.

GRUENER, 1884, GUSTAV, Ph.D., Litt.D.—(*Education*)—Born Mar. 30, 1863, New Haven, Conn.; died Dec. 5, 1928, Providence, R.I. Asst. Prof. of German, Yale University, 1892-1897, and Prof. 1897-1928.

GUERNSEY, 1902, RAYMOND GANO, LL.B.—(*Law*)—Born Aug. 21, 1880, Poughkeepsie, N.Y.; died May 19, 1959, Poughkeepsie; former Mbr., Poughkeepsie Bd. of Education; Sec., Dutchess Cty. Health Assn.; Off. Candidate, F.A., World War I; Mbr., Class Fund Com.

GULLIVER, 1875, HENRY STRONG, LL.B., M.A.—(*Education*)—Born Oct. 31, 1853, Norwich, Conn.; died April 13, 1923, Waterbury, Conn.

GULLIVER, 1870, WILLIAM CURTIS, LL.B., M.A.—(*Law*)—Born April 8, 1847, Norwich, Conn.; died May 24, 1909, New York City.

GWIN, 1930, SAMUEL LAWRENCE, LL.B.—(*Law*)—Born Apr. 4, 1908, Greenwood, Miss.; died Mar. 9, 1982; Sec., Yale Club of Boston, '48; Pres., '49; Bequest & Endowment Chm. for Class of 1930, '72-'74; Ptnr., Choate, Hall & Stewart, Boston, '33-'74; Maj., USAAF, Apr. '42-Nov. '45; Legion of Merit-Legionnaire, Asiatic Pacific Ribbon with 1 Bronze Star.

H

HADDEN, 1920, BRITON—(*Literary work*)—Born Feb. 18, 1898, Brooklyn, N.Y.; died Feb. 27, 1929, Brookyn. 2d Lieut., F.A. World War I.

HADLEY, 1876, ARTHUR TWINING, M.A., M.L.A., Ph.D., LL.D.—(*Education*)—Born April 23, 1856, New Haven, Conn.; died Mar. 6, 1930, Kobe, Japan. Prof. of political and social science, Yale University, 1886-1891, and of political economy, 1891-1899; Dean of the Graduate School, 1892-1895; Acting Treas. of the University, 1909-1910; Pres., 1899-1921.

HADLEY, 1919, HAMILTON, LL.B.—(*Law, Writer*)—Born Jan. 13, 1896, New Haven, Conn.; died March 23, 1975, Armonk, N.Y.; Assoc. Fellow, Branford Coll., '39-; Com. on Humanities of Univ. Council; Ptnr., Winthrop, Stimson, Putnam & Roberts, '29-'40; Gov. (now Honorary) Soc. of N.Y. Hosp., '47-; Pres., '53-'57; Councillor, American Geographical Soc., '45-'53; Dir. Research Corp., '33-; Capt., AEF, Air Service, '17-'19.

HADLEY, 1916, MORRIS, M.A., LL.D.—(*Law*)—Born Mar. 21, 1894, New Haven, Conn.; died Jan. 17, 1979; bus. Milbank, Tweed, Hadley & McCloy. Mbr., Yale Corp., '40-'62; Trustee, Vassar Coll., '31-'41, Chmn. Bd., '39-'41; Trustee, N.Y. Public Library, '38-, Pres., '43-'58; Trustee, Carnegie Corp. of N. Y., '47-'67, Chmn., '55-'66; Deputy Dir., O.W.I. '41-'42; Maj., F.A. AUS, June-Sept., '16, Apr. '17-June '19; AEF, July '18-Apr. '19.

HAFFNER, 1919, CHARLES C., JR.—(*Industrial*)—Born March 15, 1895, Bloomville, Ohio; died Feb. 13, 1979; Chmn., Finance Com., R. R. Donnelley & Sons Co.

HAIGHT, 1847, DUGALD CAMERON, M.A.—(*Law*)—Born May 7, 1827, Bath, N.Y.; drowned Jan. 21, 1852, Chagres Bay, Central America.

HALDEMAN, 1851, RICHARD JACOBS—(*Literary work*)—Born May 19, 1831, Harrisburg, Pa.; died Oct. 1, 1885, Harrisburg. Member of Congress, 1869-1873.

HALE, 1898, EUGENE, JR.—(*Finance*)—Born Mar. 1, 1876, Washington, D.C.; died Feb.16, 1933, New York City. Priv., Med. Corps, World War I.

HALL, 1834, DANIEL EMERSON—(*Law*)—Born May 9, 1810, Granville, N.Y.; died April 24, 1852, Mobile, Ala.

HALL, 1933, FREDERICK BAGBY, JR.—(*Industrial*)—Born Dec. 21, 1910, St. Louis, Mo.; died Nov. 12, 1946, near Quantico, Va. Cmdr., USNR, World War II.

HALL, 1894, JOHN LOOMER, LL.B.—(*Law*)—Born Jan. 23, 1872, Willimantic, Conn.; died June 13, 1960, New Haven. Pres., Trustees Boston Public Library; Trustee, Boston Museum Fine Arts; Mass. Com. of Defense, Naval Intelligence, World War I; Yale Alumni Bd.; Exec. Com., Yale Law School; Fellow, Branford College.

HALL, 1866, JOHN MANNING—(*Law*)—Born Oct. 16, 1841, Willimantic, Conn.; died Jan. 28, 1905, New Haven, Conn. Mbr., Conn. State Legislature, 1870-1872 and 1881, and Spkr., 1882. Pres., Conn. State Senate, 1889; Judge, Conn. Superior Court 1889-1893.

HALL, 1859, WILLIAM KITTREDGE, M.A., D.D.—(*Ministry*)—Born Nov. 4, 1836, Boston, Mass.; died Sept. 17, 1906, Newburgh, N.Y. Chaplain, Union Army, Civil War.

HALSEY, 1842, JACOB—(*Law*)—Born Jan. 30, 1821, New York City; died Sept. 25, 1853, Orange Mountain Water Cure, N.J.

HAMLIN, 1903, CHAUNCEY JEROME, LL.B., LL.D.—(*Investment Banker, Lawyer*)—Born Jan. 11, 1881, Buffalo, N.Y.; died Sept. 23, 1963; Allegheny State Park Comm., '21-'47; Capt., F.A., AEF, W.W. I.

HANNAHS, 1859, DIODATE CUSHMAN—(*Law student*)—Born Feb. 9,

1839, Otsego, N.Y.; died Sept. 10, 1862, Williamsburg, Va. Capt., Cavalry, Union Army, Civil War.

HARDING, 1845, John Wheeler, M.A.—(*Ministry*)—Born Oct. 12, 1821, Waltham, Mass.; died April 14, 1896, Longmeadow, Mass.

HARDING, 1867, Wilder Bennett, M.A.—(*Farming*)—Born Feb. 6, 1839, Putney, Vt.; died Jan. 15, 1926, Springfield, Mass.

HARE, 1887, Clinton Larue—(*Business*)—Born Nov. 7, 1864, Noblesville, Ind.; died June 4, 1909, Indianapolis, Ind.

HARE, 1894, Meredith, LL.B.—(*Law*)—Born July 20, 1870, Orange, N.J.; died Aug. 17, 1932, Fort Garland, Colo.

HARMAN, 1913, Archer—(*Education*)—Born Oct. 11, 1889, Fort Riley, Kans.; died Mar. 25, 1954, Cambridge, Mass.; Capt., F.A., World War I.

HARPER, 1934, Harry Halsted, Jr.—(*Literary work*)—Born Dec. 2, 1910, Chicago, Ill.; died June 6, 1983; Former Exec. Editor & V.P., & Mbr., Bd. of Dir., Readers Digest; Capt., USMC, Sept. '42-'Feb. '46; Legion of Merit.

HARRIMAN, 1917, E. Roland, LL.D.—(*Finance*)—Born Dec. 24, 1895, New York, N.Y.; died Feb. 16, 1978. Ptnr., Brown Brothers Harriman & Co., New York, N.Y. Pres., Am. Natl. Red Cross, '50-'53, & Chmn., '53-'73; Pres., The Boys Club of N.Y., '34-'57, & Chmn., '57-; Lieut., U.S. Army, '17-'19.

HARRIS, 1836, Henry Reeder—(*Farming*)—Born Aug. 15, 1815, Leonardtown, Md.; died May 6, 1894, Harris Lot, Charles City, Md.

HARRISON, 1859, Burton Norvell—(*Law*)—Born July 6, 1838, New Orleans, La.; died Mar. 30, 1904, Washington, D.C., Asst. Prof. of physics, University of Miss., 1859-1860. Private Sec. to Jefferson Davis, Civil War.

HARRISON, 1890, Fairfax, M.A.—(*Transportation*)—Born Mar. 13, 1869, New York City; died Feb. 2, 1938, Baltimore, Md. Chmn., Railroad War Bd., 1917.

HARRISON, 1895, Francis Burton, LL.B., LL.D.—(*Government*)—Born Dec. 18, 1873, New York City; died Nov. 21, 1957, Flemington, N.J.; Mbr., Congress, '03-'05, and '07-'13; Gov.-Gen., Philippine Islands, '13-'21, later Advisor to Pres., Philippine Islands; Capt. and Adj.-Gen., U.S. Vol. Cavalry, Spanish-American War.

HARRISON, 1910, George Leslie, LL.B., M.A., LL.D.—(*Law and Insurance*)—Born Jan. 26, 1887, San Francisco, Calif.; died Mar. 5, 1958, New York City; Mbr., N.Y. State Banking Bd.; Special Consultant to Sec. of War, '43-'46; Mbr., Natl. Council of the Com. for the Marshall Plan, '48; Capt., Am. Red Cross, World War I (Fgn. Ser-

vice); Vice-Chmn., N.Y. Chapter, Am. Red Cross; Mbr., Yale Alumni Com. for investigations, '51-'52.

HARRISON, 1846, Henry Baldwin, M.A., LL.D.—(*Law*)—Born Sept. 11, 1821, New Haven, Conn., died Oct. 29, 1901, New Haven. Mbr. Conn. State Senate, 1854-1856, Mbr., Conn. State Legislature, 1865 and 1873, and Spkr., 1883. Gov. of Conn. 1885-1887, Mbr., Yale Corporation, 1872-1885.

HART, 1843, Roswell—(*Finance*)—Born Aug. 4, 1824, Rochester, N.Y.; died April 20, 1883, Rochester. Mbr. of Congress, 1864-1866.

HART, 1833, Rufus Erastus, M.A.—(*Law*)—Born Sept. 10, 1812, Middlebury, Ohio; died Dec. 24, 1891, Marietta, Ohio. Mbr., Ohio State Senate, 1845-1847.

HARTSHORN, 1867, Joseph William, B.D.—(*Ministry*)—Born June 22, 1840, South Coventry, Conn.; died Feb. 11, 1921, New Haven, Conn.

HASKELL, 1858, Robert Chandler, M.A.—(*Industrial*)—Born Sept. 6, 1834, Weathersfield, Vt.; died May 12, 1897, Lansingburg, N.Y.

HASLAM, 1890, Lewis Scofield, LL.B.—(*Law*)—Born Aug. 29, 1866, Stamford, Conn.; died Sept. 10, 1935, St. Louis, Mo. Sec. Yale Alumni University Fund Assoc., 1894-1903; Mbr., Yale Alumni Bd., 1933-1935.

HATCH, 1837, Walter Tilden, M.A.—(*Finance*)—Born Oct. 5, 1818, Haverhill, Mass.; died June 8, 1896, Brooklyn, N.Y.

HAVEN, 1887, George Griswold—(*Finance*)—Born June 14, 1866, New York City; died July 21, 1925, New York City.

HAVENS, 1843, Daniel William—(*Ministry*)—Born Jan. 24, 1815, Norwich, Conn.; died Aug. 31, 1889, East Haven, Conn.

HAWLEY, 1846, David—(*Law*)—Born Oct. 14, 1820, Arlington, Vt.; died Nov. 25, 1903, Yonkers, N.Y.

HAY, 1893, Logan, LL.B. LL.D.—(*Law*)—Born Feb. 13, 1871, Springfield, Ill.; died June 2, 1942, Springfield. Mbr., Ill. State Senate, 1907-1914.

HAYDEN, 1847, William Hallock—(*Industrial*)—Born Dec. 31, 1827, Haydenville, Mass.; died Aug. 6, 1891, Haydenville.

HEARD, 1853, Albert Farley—(*Government*)—Born Oct. 4, 1833, Ipswich, Mass.; died Mar. 26, 1890, Washington, D.C.

HEATON, 1869, EDWARD—(*Law*)—Born Sept. 29, 1842, Cincinnati, Ohio; died Jan. 12, 1884, Ridgefield, N.J. Lieut. Artillery, Union Army, Civil War.

HEBARD, 1851, ALBERT—(*Student*)—Born Jan. 5, 1826, Lebanon, Conn.; died May 18, 1851, Lebanon.

HEBARD, 1860, DANIEL—(*Education*)—Born Sept. 5, 1836, Lebanon, Conn.; died Aug. 7, 1862, New York City. Asst. Adj.-Gen., Union Army, Civil War.

HEDGE, 1867, THOMAS, LL.B.—(*Law*)—Born June 24, 1844, Burlington, Iowa; died Nov. 28, 1920, Burlington. Mbr. of Congress, 1899-1907. 2d Lieut., Union Army, Civil War.

HEERMANCE, 1858, EDGAR LAING, M.A.—(*Ministry*)—Born April 30, 1833, New York City; died April 29, 1888, White Plains, N.Y.

HEFFELFINGER, 1920, FRANK PEAVEY—(*Business*)—Born Oct. 15, 1897, Minneapolis, Minn.; died Aug. 13, 1979; Dir. Emeritus, Peavey Co., Minneapolis, Minn.; Mbr., Yale Alumni Bd.; Dir., Yale Track Assn.; Chmn., Effective Politics Com., Peavey Co.; Dir., Northwest Bancorporation; North Star Research & Development Institute; Chmn., Repub. Natl. Finance Co.; Trustee, Hazelden Found.; Great Northern Railway; Natl. Football Found. & Hall of Fame; V.P. Chamber of Commerce of the U.S.; Dir., Natl. Tax Equality Assn.; 2d Lieut., F.A. U.S. Army, W.W. I; Regional Dir., War Production Bd., W.W. II.

HEFFELFINGER, 1924, GEORGE WRIGHT PEAVEY—(*Business*)—Born July 24, 1900, Minneapolis, Minn.; died Oct. 6, 1970; Exec. V.P., F. H. Peavey & Co., Minneapolis, Minn,; Pres., Russell Miller Milling Co.; Lieut. Col. USAAF, W.W. II.

HELFENSTEIN, 1841, CHARLES PHILIP, M.A.—(*Industrial*)—Born Sept. 12, 1820, Carlisle, Pa.; died Feb. 15, 1900, Shamokin, Pa.

HELMER, 1852, CHARLES DOWNS, M.A., D.D—(*Ministry*)—Born Nov. 18, 1827, Canajoharie, N.Y.; died April 28, 1879, Lockport, N.Y.

HEMINWAY, 1921, BARTOW LEWIS—(*Industrial*)—Born Nov. 24, 1899, Watertown, Conn.; died April 15, 1970; Pres., Heminway Corp., Waterbury, Conn.; Trustee, Waterbury and Gaylord Hospitals; Trustee, Taft School and St. Margaret's School for Girls; 2d Lieut., F.A., W.W. I; former V.P., Naugatuck Valley Alumni Assn.

HENNEN, 1842, WILLIAM DAVISON, M.A.—(*Law*)—Born Mar. 25, 1823, New Orleans, La.; died May 16, 1883, New York City. Maj. Confederate Army, Civil War.

HERON, 1910, JOHN, LL.B.—(*Law*)—Born Nov. 20, 1880, Pittsburgh, Pa.; died Jan. 31, 1960, Pittsburgh. Capt., Inf., World War I (AEF).

HEWITT, 1903, BROWER—(*Industrial*)—Born April 28, 1881, Brooklyn, N.Y.; died Nov. 5, 1958, North Stonington, Conn.; Treas., Marine Historical Assn. of Mystic Seaport.

HEWITT, 1864, THOMAS BROWNING, M.A.—(*Law*)—Born Sept. 9, 1842, North Stonington, Conn.; died Jan. 6, 1921, Brooklyn, N.Y.

HIDDEN, 1885, EDWARD, LL.B.—(*Finance*)—Born July 4, 1860, Cincinnati, Ohio; died July 15, 1938, St. Louis, Mo.; Chmn., U.S. Comm. on relations with Haiti; Mbr., Yale Alumni Bd., '12–'18. Regional rep., U.S. Food Admin., and chmn., Southwestern states, third Red Cross roll call, World War I.

HIGGINS, 1861, ANTHONY, LL.D.—(*Law*)—Born Oct. 1, 1840, St. George's, Del.; died June 26, 1912, New York City. U.S. district attny., Del. 1869-1876. Mbr. U.S. Senate, 1889-1895.

HILL, 1845, GEORGE CANNING—(*Literary work*)—Born Feb. 10, 1825, Norwich, Conn.; died Nov. 14, 1898, Boston, Mass.

HILLARD, 1883, LORD BUTLER—(*Law and business*)—Born Dec. 5, 1860, Wilkes Barre, Pa.; died Jan. 30, 1934, Wilkes Barre, Pa.

HILLES, 1924, CHARLES DEWEY, JR., LL.B.—(*Law*)—Born June 17, 1902, Lancaster, Ohio; died April 28, 1974, New York, N.Y.; Spec. Legal Adviser, U.S. High Commissioner for Germany, '54-'55.

HILLES, 1922, FREDERICK WHILEY, Ph.D., L.H.D.—(*Education*)—Born June 1, 1900, Lancaster, Ohio; died Dec. 10, 1975; Bodman Prof. English emeritus, Yale Univ.; Mbr. English Dept., '26, '65, Chmn. Dept. '47-'56, '62-'64; Dir. of Humanities '56-'59; Univ. Council's Com. on Library, '58-'61; Chmn., Library Assoc., '66-'70; V.P., Yale Univ. Press, '58-; W.W. I: App. Seaman, USN, Sept.-Dec. '18; W.W. II: Lieut. Col., AUS, '42-'46; Legion of Merit; Hon. O.B.E.; RTA: Pres.

HINCKS, 1866, EDWARD YOUNG, M.A., D.D., S.T.D.—(*Education*)—Born Aug. 13, 1844, Bucksport, Me.; died Dec. 23, 1927, Cambridge, Mass. Prof. of biblical theology, Andover Theological Seminary, 1883-1900, and of Christian theology, 1900-1908; Prof. of biblical theology, Harvard University, 1908-1922, and prof. emeritus, 1922-1927.

HINCKS, 1872, JOHN HOWARD—(*Ministry and education*)—Born Mar. 19, 1849, Bucksport, Me.; died Dec. 11, 1894, Atlanta, Ga. Prof. of history and social science, Atlanta University; also dean of the faculty.

HINCKS, 1920, JOHN MORRIS, M.B.A.—(*Insurance, Finance*)—Born

July 23, 1898, Bridgeport, Conn.; died Nov. 22, 1973, Farmington, Conn.; Chmn., Middlesex Mutual Assurance Co., Chmn., Middletown Savings Bank; Chmn., 25th Reunion in '45; Class Sec., '68-; Alumni Bd., '69-; Hincks Bros. & Co., '22-'30; Calvin Bullock, '30-'42; Middlesex Mutual '44-; Dir., Institute for Living, '50-; Trustee, Vassar Coll., '59-'67; W.W. I: 2d Lieut., F.A., Sept.-Dec. '18; W.W. II: Lieut. Col., Fiscal Div., AUS, '42-'44; Dir RTA, '66-'69.

HINE, 1871, Charles Daniel, LL.B.—(*Education*)—Born Feb. 26, 1845, Fairhaven, Vt.; died Aug. 27, 1923, Winsted, Conn. Sec., Conn. State Bd. of Education, 1883-1920. State dir. for school war activities and of State War Library Council, and mbr., State Council of Defense, World War I.

HINKEY, 1895, Frank Augustus—(*Finance*)—Born Dec. 23, 1870, Tonawanda, N.Y.; died Dec. 30, 1925, Southern Pines, N.C.

HINSDALE, 1898, Frank Gilbert—(*Industrial*)—Born Feb. 11, 1874, Pittsfield, Mass.; died Oct. 12, 1940, New York City.

HITCHCOCK, 1848, Henry, LL.D.—(*Law*)—Born July 3, 1829, Mobile, Ala.; died Mar. 18, 1902, St. Louis, Mo. Dean, St. Louis Law School, Washington University, 1867-1879, and Prof. of law, 1867-1884. Asst. Adj.-Gen., Union Army, Civil War.

HITCHCOCK, 1879, Henry, LL.B.—(*Law*)—Born June 6, 1858, St. Louis, Mo.; died April 20, 1933, Orange, N.J.

HIXON, 1901, Robert—(*Business*)—Born May 23, 1878, LaCrosse, Wis.; died Dec. 27, 1945, Lake Forest, Ill. Maj., Am. Red Cross, World War I (Fgn. service).

HOBBS, 1885, Charles Buxton, LL.B.—(*Law*)—Born Jan. 7, 1863, Richmond, Va.; died Oct. 8, 1944, Bay Shore, N.Y.

HOBSON, 1920, Francis Thayer—(*Literary work*)—Born Sept. 4, 1897, Denver, Colo.; died Oct. 19, 1967; Chmn. Bd. William Morrow & Co. Publishers, N.Y.C.; Pfc., AEF, Sgt., French Army, W.W. I; Asst. Instr., English, Yale '22-'23.

HOBSON, 1914, Henry Wise, B.D., S.T.D., LL.D., L.H.D., D.D.—(*Ministry*)—Born May 16, 1891, Denver, Colo.; died Feb. 9, 1983; Treas., Yale Athletic Assn., '15; Sec., Com. of 21 to build Yale Bowl, '14-'15; Class Agent, '59-'83; Dir., Yale Alumni Fund, '63-'68, '69-'76; A.Y.A., '72-'75; Yale Medal, '67; Bishop Emeritus, Diocese of Southern Ohio, Bishop, Diocese of Southern Ohio, Episc. Ch., '30-'59; Asst. Minister, St. John's Ch., Waterbury, Conn., '20-'21; Rector, All Saints Ch., Worcester, Mass., '21-'30; Exec. Com., Protestant Episc. Ch., '37-'46, '49-'55; Chmn., Exec. Com., Forward Movement Publications, Episc. Ch., '34-'76; Chmn., Natl. Com., Fight for Freedom

Com., '41-'42; Trustee, Phillips Academy, Andover, Mass., '37-'66, Pres., '47-'66; Trustee, Kenyon Coll., '30-'59; Dir., Cincinnati YMCA, '31-'59; Chmn., Trustees of Childrens' Hosp., Cincinnati, '30-'59; Maj., U.S. Army, Mar. '17-Dec. '19; Distinguished Service Cross.

HOGAN, 1905, JAMES JOSEPH, LL.B.—(*Law*)—Born Oct. 31, 1872, Glenbane, Ireland; died Mar. 20, 1910, New Haven, Conn.

HOLLISTER, 1858, ARTHUR NELSON, M.A.—(*Education*)—Born Dec. 28, 1835, Andover, Conn.; died Jan. 18, 1897, Hartford, Conn.

HOLLISTER, 1905, BUELL—(*Finance*)—Born Sept. 13, 1883, New York, N.Y.; died Aug. 26, 1966; Sr. Ptnr., Pyne, Kendall & Hollister, N.Y.C.; Bd., YMCA, N.Y.C.; Treas., Trustee, Southside Hosp., Bayshore, N.Y., '22-;Vestryman, Sr. Warden, St. Mark's Episc. Church, Islip, '18-; Civilian Chmn., War Funds, Suffolk County Chap., Amer. Red Cross, W.W. I.

HOLMES, 1857, JOHN MILTON—(*Ministry*)—Born May 23, 1831, Isle of Sheppey, Kent, England; died Sept. 20, 1871, Jersey City, N.J.

HOLT, 1903, HENRY CHANDLER—(*Finance*)—Born Jan. 13, 1881, Spuyten Duyvil, N.Y.; died Feb. 20, 1954, Putnam, Conn.; Chmn., Treas., Internatl. Grenfell Assn.; former Sec. and Treas., Class Fund.

HOLT, 1866, GEORGE CHANDLER, LL.B., LL.D.—(*Law*)—Born Dec. 31, 1843, Mexico, N.Y.; died Jan. 26, 1931, Nice, France. U.S. District judge, southern district of N.Y., '03-'14.

HOLSTER, 1894, EDWIN OLAF, LL.B.—(*Law*)—Born April 23, 1871, Helena, Mont.; died June 7, 1964; Pres. Prison Assn. of N.Y.; Trustee, Amer. Scandinavian Found.; 2d Lieut., Signal Corps, U.S. Vols., Spanish American War.

HOOKER, 1854, JOHN WORTHINGTON, M.A., M.D.—(*Medicine*)—Born July 14, 1833, Norwich, Conn.; died Jan. 26, 1863, New Haven, Conn.; Prof. of Hygiene, Amherst College, 1860-1863.

HOOKER, 1869, THOMAS, M.A.—(*Finance*)—Born Sept. 3, 1849, Macon, Ga.; died Oct. 28, 1924, New Haven, Conn.

HOPKINS, 1900, JOHN MORGAN—(*Education*)—Born Nov. 12, 1861, College Grove, Tenn.; died Jan 1, 1929, Charlottesville, Va.

HOPPIN, 1872, BENJAMIN—(*Literary work*)—Born Mar. 15, 1851, Salem, Mass.; died June 2, 1923, Baddeck, N.S., Canada.

HOPPIN, 1840, JAMES MASON, LL.B., M.A., D.D., LL.D.—(*Education*)—Born Jan. 17, 1820, Providence, R.I.; died Nov. 15, 1906, New Haven, Conn. Prof. of homiletics, Yale University, 1861-1879; Prof. of the history of art, 1879-1899, and Prof emeritus, 1899-1906.

HORD, 1921, STEPHEN YOUNG—(*Finance*)—Born Nov. 7, 1897, Indi-

anapolis, Ind.; died Oct. 21, 1981; Gen. Ptnr., Brown Brothers Harriman & Co., Chicago, Ill. Mbr., Yale Crew Assn.; Major Gifts Com., Yale's Program for the Arts & Sciences, '60-'62; Yale Graduate Rowing Com. '22-; Cowles Comm. for Research in Economics, '54-; Phillips Academy, Andover, Mass., Charter Trustee, '63-'68, Trustee Emeritus, '68-; Northwestern Memorial Hosp., Chicago; Citizens' Bd. of Univ. of Chicago, '45-; Chamber of Commerce of U.S., '61-'66; Charter Mbr., Chicago Planetarium Soc.; Pvt., USMC, AEF, '18-'22.

HOTCHKISS, 1875, William Henry—(*Business*)—Born April 17, 1851, Bristol, Conn.; died Nov. 30, 1918, Buffalo, N.Y.

HOUGH, 1849, Edward Clement, M.A.—(*Finance*)—Born Sept. 10, 1827, Bloomfield, Conn.; died June 11, 1872, Savannah, Ga.

HOUGHTON, 1852, Edward—(*Farming*)—Born Nov. 15, 1829, Lancaster, Mass.; died Feb. 7, 1910, Lancaster.

HOUGHTON, 1924, Walter Edwards, M.A., Ph.D., L.H.D.—(*Education*)—Born Sept. 21, 1904, Stamford, Conn.; died April 11, 1983; Master, Hill School, Pottstown, Pa., '24-'25; Phillips-Andover Academy, Andover, Mass., '27-'29; Tutor & Instr., Harvard Univ. & Radcliffe Coll., '31-'35; Faculty Instr. & Tutor, Harvard Univ. & Radcliffe Coll., '35-'38; Asst. Prof. & Tutor, Harvard Univ. & Radcliffe Coll., '38-'41; Tutor, Radcliffe Coll., '41-'42; Teacher, School of English, Bread Loaf, Vt., summer '42; Assoc. Prof., English, Wellesley Coll., '42-'48; Prof., '48-'69, (appointed to Sophie Hart Chair of English, '57); Prof. Emeritus, Mbr., Am. Academy of Arts & Sciences.

HOUSTON, 1834, John Wallace, M.A.—(*Law*)—Born May 4, 1814, Concord, Sussex County, Del.; died April 26, 1896, Georgetown, Del. Sec. of State, Del., 1841-1844. Mbr. of Congress, 1845-1851. Assoc. justice, Del. Superior Court, 1855-1893.

HOWARD, 1909, James Merriam, B.D., D.D.—(*Ministry*)—Born May 25, 1886, Montclair, N.J.; died March 24, 1971; Sec. Dwight Hall, '09-'10; occasional preacher, Battell and Dwight Chapels, '21-'46; Trustee, Morristown School, '24-'30; Dir., Union Theol. Sem., '30-'35; Capt., Chaplain, F.A., Sept. '17-May '19.

HOWARD, 1835, Oran Reed, M.A., D.D.—(*Ministry*)—Born May 24, 1810, Franklin, N.Y.; died Mar. 2, 1893, Bath, N.Y.

HOWE, 1912, Arthur, M.A., LL.D.—(*Education*)—Born Mar. 3, 1890, South Orange, N.J.; died Mar. 28, 1955, Plymouth, N.H.; Dir. for Conn., U.S. Boys Working Res., World War I.

HOWE, 1876, ELMER PARKER—(*Law*)—Born Nov. 1, 1851, Westboro, Mass.; died June 18, 1918, Boston, Mass.

HOWE, 1909, HENRY ALMY, M.D.—(*Finance*)—Born April 18, 1887, South Orange, N.J.; died Feb. 15, 1935, Orange, N.J. Mbr., Yale Alumni Bd., '34-'35; Maj. F.A., World War I (AEF).

HOWLAND, 1894, JOHN, M.A., M.D.—(*Medicine*)—Born Feb. 3, 1873, New York City; died June 20, 1926, London, England, Prof. of pediatrics, Washington University Medical School, '10-'12, and at Johns Hopkins Medical School, '12-'26. Maj., Med. Corps, World War I.

HOYSRADT, 1877, ALBERT—(*Law*)—Born Feb. 19, 1855, Hudson, N.Y.; died Dec. 8, 1897, Hudson.

HOYSRADT, 1901, WARREN J.—(*Finance*)—Born Dec. 7, 1878, Hudson, N.Y.; died Feb. 1, 1944, Bronxville, N.Y.

HOYT, 1840, JOSEPH GIBSON, M.A., LL.D.—(*Education*)—Born Jan. 19, 1815, Dunbarton, N.H.; died Nov. 26, 1862, St. Louis, Mo. Chancellor and Prof. of Greek, Washington University, 1858-1862.

HOYT, 1906, LYDIG, LL.B.—(*Law*)—Born Dec. 27, 1883, New York City; died April 26, 1959, Staatsburg, N.Y.; Sec. to U.S. Ambassador to Great Britain, '07; Deputy Police Commissioner, New York City; 1st Lieut., F.A., World War I (AEF); Capt., Am. Field Service (overseas ambulance) World War II.

HUBBARD, 1839, RICHARD DUDLEY, M.A., LL.D.—(*Law*)—Born Sept. 7, 1818, Berlin, Conn.; died Feb. 28, 1884, Hartford, Conn. Mbr., Conn. State Legislature, 1842-1843, 1855, and 1858. Mbr.of Congress, 1867-1869. Gov. of Conn., 1877-1879. Mbr., Yale Corp. 1877-1879.

HUDSON, 1840, WARD WOODBRIDGE—(*Law*)—Born May 1, 1821, Hartford, Conn.; died Mar. 19, 1864, New York City.

HUGGINS, 1842, WILLIAM SIDNEY, M.A.—(*Ministry*)—Born Mar. 19, 1822, New Haven, Conn.; died Mar. 23, 1862, Kalamazoo, Mich.

HUGHES, 1905, BERRIEN, LL.B.—(*Law*)—Born Nov. 12, 1882, Richmond, Mo.; died May 27, 1939, Denver, Colo. Capt., F.A., World War I.

HULL, 1883, LOUIS KOSSUTH, LL.B.—(*Law*)—Born Nov. 9, 1861, Lebanon, Conn.; died Nov. 22, 1931, Minneapolis, Minn., U.S. District Attny., N. Dak., 1885-1887. Col., Spanish-American War.

HURD, 1836, JOHN CODMAN, M.A., LL.D.—(*Law and literary work*)—Born Nov. 11, 1816, Boston, Mass.; died June 25, 1892, Boston.

HURD, 1888, RICHARD MELANCTHON—(*Finance*)—Born June 14, 1865,

Brooklyn, N.Y.; died June 6, 1941, New York City. Prison commissioner, N.Y. State, '15-'18.

HURLBUT, 1849, JOSEPH, M.A.—(*Theological student*)—Born Feb. 19, 1828, New York City; died July 4, 1855, Paris, France.

HUSTED, 1892, JAMES WILLIAM, LL.B.—(*Law*)—Born Mar. 16, 1870, Peekskill, N.Y.; died Jan. 2, 1925, New York City. Mbr., N.Y. State Legislature, 1895, 1896, and 1897. Mbr. of Congress, 1915-1923. Mbr. Congressional Investigation Com. in France, World War I.

HYATT, 1837, ROBERT UNDERWOOD, LL.B.—(*Law*)—Born in Washington, D.C.; died Nov. 1, 1843, St. Francisville, La.

HYDE, 1845, ALVAN PINNEY, M.A.—(*Law*)—Born Mar. 10, 1825, Stafford, Conn.; died Feb. 5, 1894, Hartford, Conn. Mbr., Conn. State Legislature, 1854, 1858, and 1863.

HYDE, 1912, DONALD R.—(*Industrial*)—Born June 14, 1890, St. Albans, Vt.; died April 18, 1982; formerly Treas., John G. Paton Co.

HYDE, 1879, FRANK ELDRIDGE, LL.B.—(*Law*)—Born Jan. 21, 1858, Tolland, Conn.; died Dec. 1906, Paris, France. Mbr., Conn. State Legislature, 1887-1889, U.S. consul, Lyons, France, 1893-1897.

HYDE, 1911, FREDERICK WALTON—(*Industrial*)—Born May 18, 1889, St. Albans, Vt.; died Oct. 2, 1941, Burlington, Vt.

HYDE, 1923, LOUIS KEPLER, JR.—(*Investments*)—Born Oct. 5, 1901, Titusville, Pa.; died Jan. 1, 1979; Chmn. Investment Com. & Dir., E. W. Axe & Co., Inc.; Chmn. of Bd., E. W. Axe & Co.; Dep., Dir., Planning & Development Staff & Spec. Asst. to Dep. Adminstr., Lend-Lease Admin., '42-'43; Dep. Trade Relations Advisor, Foreign Econ. Admin., '43-'44; Asst. to Sec. of State, in charge of policy review & analysis, '45; Adviser to U.S. Delegation, U.N. General Assembly, 1st-4th sessions, & 1st-10th sessions of U.N. Economic & Social Council, '46-'69; Mbr., Permanent U.S. Mission to U.N. '46-'50.

HYDE, 1876, WILLIAM WALDO, LL.B.—(*Law*)—Born Mar. 25, 1854, Tolland, Conn.; died Oct. 30, 1915, Hartford, Conn.

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INGERSOLL, 1892, JAMES WERNHAM DUNSFORD, Ph.D.—(*Education*)—Born Sept. 18, 1867, Marengo, Ill.; died April 19, 1921, New Haven, Conn. Asst. Prof. of Latin, Yale University, 1897-1921.

ISBELL, 1888, ORLAND SIDNEY, LL.B.—(*Law*)—Born Nov. 19, 1866, Bridgeport, Conn.; died July 19, 1922, New York City.

ISHAM, 1891, EDWARD SWIFT—(*Industrial*)—Born Jan. 2, 1868, Chicago, Ill.; died May 14, 1927, New York City.

ISHAM, 1917, HENRY PORTER—(*Business*)—Born Dec. 6, 1894, Chicago, Ill.; died Aug. 18, 1969; Chmn. Bd., Clearing Industrial District, Inc., Chicago; Sec. and Pres., Passavant Mem. Hosp., '33-'47; Trustee, Field Mus. of Nat. Hist., Newberry Library; Capt., F.A., AEF, W.W. I; Chief Purchase Termination and Renegotiation Policy, Chicago Ordnance District, AUS, '43-'46; Meritorious Service, Distinguished Service Medals.

ISHAM, 1869, JOHN BEACH, M.A., M.D.—(*Medicine*)—Born Mar. 28, 1847, New York City; died July 19, 1894, Pasadena, Calif.

IVES, 1925, GERARD M., M.B.A.—(*Finance*)—Born Jan. 7, 1903, New York, N.Y.; died May 10, 1983; Pres., Yale Club of New York City, '50-'52; formerly Sr. V.P., Morgan Guaranty Trust Co.; Lieut. Col., Office Chief of Ordnance, '41-'45.

IVES, 1881, HENRY—(*Business*)—Born April 27, 1859, New Haven, Conn.; died Jan. 31, 1924, Omaha, Nebr.

IVES, 1893, SHERWOOD BISSELL, M.D.—(*Medicine*)—Born Dec. 30, 1870, New York City; died Feb. 16, 1907, Datil, N. Mexico.

J

JACK, 1853, THOMAS MCKINNEY—(*Law*)—Born Dec. 19, 1831, San Felipe de Austin, Tex.; died Aug. 26, 1880, Galveston, Tex. Cty., judge, 1856-1858. Mbr., Texas Legislature, 1859-1861. Lieut. Col., Cavalry, Confederate Army, Civil War.

JACKSON, 1839, HENRY ROOTES M.A.—(*Law*)—Born June 24, 1820, Athens, Ga.; died May 23, 1898, Savannah, Ga. U.S. District Attny., Ga., 1843-1849. Judge for eastern circuit, Ga. Superior Court, 1849-1853. U.S. Minister to Austria, 1854-1858, and to Mexico, 1885-1888. Col., Mexican War. Brig. Gen., Confederate Army, Civil War.

JACKSON, 1934, JOHN HERRICK—(*Publishing*)—Born Jan. 8, 1912, New Haven, Conn.; died July 29, 1951, Green Farms, Conn.; Deputy, Hamden Air Raid Warning Center and New Haven District Warning Center, World War II; Yale Class Treas., '34-'49; Mbr., Yale Alumni Rowing Com., '35-'51, and Yale Bd. of Athletic Control, '45-'48.

JACKSON, 1857, JOSEPH COOKE, LL.B., M.A.—(*Law*)—Born Aug. 5,

1835, Newark, N.J.; died May 22, 1913, New York City. Asst. U.S. District Attny., Southern District of N.Y., 1870. Brig. Gen., Union Army, Civil War.

JAMES, 1917, ELLERY SEDGWICK—(*Finance*)—Born Aug. 6, 1895, East Hampton, N.Y.; died Nov. 25, 1932, New York City. Capt., F.A., World War I (AEF).

JAMES, 1874, HENRY AMMON, LL.B.—(*Law*)—Born April 24, 1854, Baltimore, Md.; died Aug. 1, 1929, East Hampton, N.Y.

JAMES, 1890, NORMAN—(*Industrial*)—Born Sept. 2, 1868, Catonsville, Md.; died Jan. 24, 1939, Baltimore, Md.

JAMES, 1894, ROBERT CAMPBELL—(*Finance*)—Born July 23, 1872, Baltimore, Md.; died Mar. 17, 1896, Baltimore.

JAMES, 1879, WALTER BELKNAP, M.A., M.D., LL.D.—(*Medicine*)—Born May 11, 1858, Baltimore, Md.; died April 6, 1927, New York City. Prof. of medicine, Coll. of Physicians and Surgeons, '02-'04, Bard Prof. of medicine, '04-'09, and Prof. of clinical medicine, '09-'18. Served with Am. Red Cross, World War I (Fgn. service).

JAMES, 1878, WILLIAM KNOWLES—(*Law*)—Born Aug. 20, 1852, near Georgetown, Del.; died Nov. 11, 1927, St. Joseph, Mo.; Mbr., Mo. State Legislature, '17-'18.

JANEWAY, 1930, CHARLES ALDERSON, M.D., M.A., Doctor hon. causa, Reims—(*Medicine*)—Born May 26, 1909, New York, N.Y.; died May 28, 1981; Sr. Assoc. in Medicine, Children's Hospital Medical Center; Thomas Morgan Rotch Prof. of Pediatrics, Harvard Univ. '74-; Physician-in-Chief, Children's Hosp. Medical Center, '74-; Exec. Com. of International Pediatric Assn., '62-'68; Mbr., Exec. Bd., International Children's Center, Paris, France, '66; V.P., Center for Blood Research, Boston, '74-.

JAY, 1892, PIERRE, M.A.—(*Finance*)—Born May 4, 1870, Warwick, N.Y.; died Nov. 24, 1949, New York City; Bank Commissioner, Mass., '06-'09; Am. Mbr., Transfer Com. and Deputy Agt. of Reparations, Berlin, '26-'30; Natl. Treas., Russian War Relief, Inc., '41; Gov., Yale Publishing Assn.

JEFFERSON, 1909, EDWARD FRANCIS—(*Education*)—Born June 17, 1879, South Dennis, N.J.; died Nov. 5, 1952, Philadelphia, Pa.; YMCA Sec., World War I (Fgn. service).

JENCKES, 1921, MARCIEN, LL.B.—(*Law*)—Born April 5, 1900, Stamford, Conn.; died Oct. 24, 1971; Ptnr., Choate, Hall & Stewart, Boston, Mass.; Boston Delegate to Alumni Bd.; Sec., Yale Club of Boston, '24-'30; Mbr., Bd. Park Commissioners, '42-'45, Chmn., '50-'52; 2d Lieut., F.A., Army, '18-'19.

JENKS, 1875, Almet, Francis, LL.B., M.A., LL.D.—(*Law*)—Born May 21, 1853, Brooklyn, N.Y.; died Sept. 18, 1924, Greenwich, Conn., Judge Advocate Gen., N.Y., 1891-1895; judge, Supreme Court of N.Y., 1896-1921 (presiding justice, 1911-1921).

JENKS, 1914, Almet Francis—(*Literary work*)—Born April 18, 1892, Brooklyn, N.Y.; died Feb. 2, 1966; Writer; 1st Lieut., Cav., AEF, W.W. I; Major, USMCR, W.W. II.

JENKS, 1884, Paul Emmott—(*Government*)—Born April 6, 1862, Brooklyn, N.Y.; died Sept. 1, 1923, Yokohama, Japan. U.S. vice-counsel, Yokohama, '16-'23.

JENKS, 1878, Tudor, LL.B.—(*Law and literary work*)—Born May 7, 1857, Brooklyn, N.Y.; died Feb. 11, 1922, Bronxville, N.Y.

JENNINGS, 1904, Percy Hall—(*Industrial*)—Born May 16, 1881, New York City; died Oct. 2, 1951, New York City; Maj., Air Service, World War I (AEF), Assoc. Mgr., War Finance Com. of N.Y., and Supervisor, War Bond activities, Nassau and Suffolk Ctys., L.I.

JENNINGS, 1887, Oliver Gould, LL.B.—(*Law*)—Born April 27, 1865, New York City; died Oct. 13, 1936, New York City. Presidential elector from Conn., 1920; Mbr., Conn. State House of Representatives, 1923.

JENNINGS, 1880, Walter, LL.B.—(*Industrial*)—Born Sept. 14, 1858, San Francisco, Calif.; died Jan. 9, 1933, Jekyl Island, Brunswick, Ga.

JESUP, 1840, James Riley, M.A.—(*Law*)—Born Sept. 18, 1819, Saugatuck, Conn.; died Jan. 23, 1890, Lakewood, N.J.

JOHNES, 1873, Edward Rudolph, LL.B.—(*Law*)—Born Sept. 8, 1852, Whitesboro, N.Y.; died Mar. 28, 1903, New York City.

JOHNSON, 1882, Barclay—(*Law*)—Born Aug. 8, 1861, Beirut, Syria; died April 21, 1885, Greenwich, Conn.

JOHNSON, 1855, Charles Frederick, LL.B., M.A., L.H.D.—(*Education*)—Born May 8, 1836, New York City; died Jan. 9, 1931, Hartford, Conn. Asst. Prof. of mathematics, U.S. Naval Acad., 1865-1870; Prof. of English, Trinity College, 1884-1906, and Prof. emeritus, 1906-1931.

JOHNSON, 1853, George Asbury—(*Law*)—Born July 27, 1829, Salisbury, Md.; died Sept. 20, 1894, San Francisco, Calif. Judge, 17th Judicial Circuit Court, 1872-1874. Mbr., Calif. State Senate, 1882-1886. Attny. Gen. Calif. 1886-1890.

JOHNSTON, 1835, Frank, LL.B.—(*Literary work*)—Born Oct. 31, 1816, Philadelphia, Pa.; died Dec. 10, 1863, Pittsburgh, Pa.

JOHNSTON, 1862, Henry Phelps, M.A.—(*Education*)—Born April 19, 1842, Trebizond, Turkey; died Feb. 28, 1923, Middletown,

Conn. Prof of history, College of the City of New York, 1883-1916, and Prof. emeritus, 1916-1923. 2d Lieut., Union Army, Civil War.

JOHNSTON, 1870, Ross, M.A.—(*Business*)—Born Sept. 1, 1848, Allegheny, Pa.; died Mar. 11, 1885, Fortress Monroe, Va.

JOHNSTON, 1860, WILLIAM CURTIS—(*Ministry*)—Born June 11, 1839, Trebizond, Turkey; died Dec. 3, 1862, Munfordville, Ky. Chaplain, Inf., Union Army, Civil War.

JOHNSTON, 1852, WILLIAM PRESTON, LL.D.—(*Education*)—Born Jan. 5, 1831, Louisville, Ky.; died July 16, 1899, Lexington, Va. Prof. of English literature, history, and political economy, Washington and Lee University, 1867-1877. Pres., Louisiana State University, 1880-1883, and of Tulane University, 1883-1899. Col., Confederate Army, Civil War.

JOHNSTONE, 1916, HENRY WEBB—(*Industrial*)—Born Oct. 13, 1892, Mexico City, Mexico; died Apr. 5, 1971. Formerly Sr. V.P. and Dir., Merck & Co., Inc.; Dir., Kent & Queen Anne's Hosp., Chestertown, '58-'64, Pres., '60-'64; 1st Lieut., Army, June '17-May '19; *Croix de Guerre*.

JONES, 1893, ALFRED HENRY, LL.B.—(*Law*)—Born April 17, 1868, St. Louis, Mo.; died Jan. 15, 1901, Las Vegas, N. Mexico.

JONES, 1875, DWIGHT ARVEN, LL.B.—(*Law*)—Born Oct. 25, 1854, Utica, N.Y.; died Dec. 7, 1913, St. Louis, Mo.

JONES, 1875, FRANK HATCH, LL.B.—(*Finance*)—Born Mar. 6, 1854, Griggsville, Ill.; died Oct. 2, 1931, Chicago, Ill. Asst. postmaster gen. of the U.S., 1893-1897.

JONES, 1884, FREDERICK SCHEETZ, M.A., LL.D.—(*Education*)—Born April 7, 1862, Palmyra, Mo.; died Jan. 14, 1944, Hamden, Conn. Prof. of physics, University of Minnesota, 1889-1909, and dean of the College of Engineering, 1901-1909. Dean of Yale College, 1909-1926. Chmn., Conn. State Bd. of Education, 1918-1939; Assoc. fellow, Berkeley College, Yale University, 1933-1944; Chmn. of the Bd., The Hotchkiss School, 1921-1942.

JONES, 1914, GEORGE GILL—(*Communications*)—Born Sept. 17, 1891, Minneapolis, Minn.; died July 3, 1961; Lieut. (s.g.), USNR, W.W. I.

JONES, 1860, LUTHER MAYNARD, LL.B., M.A.—(*Law*)—Born April 21, 1837, Marlboro, N.H.; died Dec. 12, 1921, London, England. Served in Union Army, Civil War.

JONES, 1838, SEABORN AUGUSTUS, M.A.—(*Farming*)—Born Mar. 17, 1818, Burke County, Ga.; died April 25, 1856.

JONES, 1925, WALTER CLYDE, J.D.—(*Law*)—Born Dec. 7, 1902, Chi-

cago, Ill.; died July 4, 1979; formerly General Solicitor, Ill. Bell Telephone Co.

JORDAN, 1923, Ralph Edward—Born 1895, Bangor, Me.; died March 12, 1971.

JUDSON, 1866, Frederick Newton, LL.B., M.A., LL.D.—(*Law*)—Born Oct. 5, 1845, St. Mary's, Ga.; died Oct. 18, 1919, St. Louis, Mo.

JUDSON, 1873, Isaac Nichols—(*Education*)—Born July 3, 1853, Bridgeport, Conn.; died Dec. 30, 1926, New York City.

K

KELLOGG, 1890, Charles Poole, LL.B.—(*Welfare*)—Born April 27, 1868, Waterbury, Conn.; died Dec. 27, 1957, Waterbury; Sec., Conn. Dept. of Public Welfare, 1895-1928.

KELLOGG, 1883, Fred William—(*Education*)—Born Oct. 30, 1860, Watertown, Wis.; died Nov. 19, 1883, New Haven, Conn.

KELLOGG, 1846, Stephen Wright, M.A.—(*Law*)—Born April 5, 1822, Shelburne, Mass.; died Jan. 27, 1904, Waterbury, Conn. Mbr., Conn. State Senate, 1853, and of Conn. State Legislature, 1856. Mbr. of Congress, 1869-1873. Judge of probate, Waterbury district, 1854-1861; judge, New Haven Cty. Court, 1864.

KELSEY, 1878, Clarence Hill, LL.B., M.A.—(*Finance*)—Born Dec. 23, 1856, Bridgeport, Conn.; died April 30, 1930, West Orange, N.J., Mbr., Yale Corp., 1910-1925.

KENDALL, 1834, John Newton, M.D.—(*Medicine*)—Born Feb. 4, 1813, Granby, Conn.; died Aug. 18, 1877, Benton, Ala.

KENDALL, 1887, William Burrage, Jr.—(*Business*)—Born Sept. 10, 1865, Brooklyn, N.Y.; died Oct. 3, 1893, Brooklyn.

KENERSON, 1891, Vertner, M.A., M.D.—(*Medicine*)—Born Feb. 28, 1866, Boston, Mass.; died Feb. 2, 1935, Buffalo, N.Y. Surgeon, Spanish-American War.

KENNEDY, 1845, Thomas, M.A.—(*Ministry*)—Born Aug. 19, 1822 in Ireland; died Sept. 8, 1849, Baltimore, Md.

KENT, 1853, Albert Emmett—(*Business*)—Born Sept. 1, 1830, Suffield, Conn.; died Jan. 8, 1901, Genoa, Nebr.

KENT, 1887, William, M.A.—(*Business*)—Born Mar. 29, 1864, Chicago, Ill.; died Mar. 13, 1928, Kentfield, Calif. Mbr. of Congress, '11-'27. Mbr., U.S. Tariff Comm., '17-'21.

KEPPELMAN, 1901, JOHN ARTHUR, LL.B.—(*Law*)—Born June 18, 1878, Reading, Pa.; died Oct. 21, 1931, West Reading. Federal food administrator, Berks Cty., Pa. World War I.

KERNOCHAN, 1861, FRANCIS EDWARD, LL.B., M.A. —(*Industrial*)—Born Dec. 12, 1840, New York City; died Sept. 26, 1884, Pittsfield, Mass.

KERNOCHAN, 1898, FREDERIC, LL.B.—(*Law*)—Born Aug. 12, 1876, Newport, R.I.; died Jan. 9, 1937, Tuxedo Park, N.Y. Asst. district attny., New York Cty., '03-'05. Assoc. justice, N.Y. Court of Special Sessions, '13-'16, and chief justice, '16-'37. Served in Light Artillery, Spanish-American War.

KERNOCHAN, 1863, JOSEPH FREDERIC, LL.B.—(*Law*)—Born Dec. 8, 1842, New York City; died Aug. 17, 1929, New York City.

KERR, 1897, ALBERT BOARDMAN, LL.B.—(*Law*)—Born Mar. 17, 1875, Clearfield, Pa.; died June 20, 1945, Charlottesville, Va. Chief Counsel, U.S. Housing Corp., 1918.

KEY, 1838, THOMAS MARSHALL—(*Law*)—Born Aug. 8, 1819, Mason Cty., Ky.; died Jan. 15, 1869, Lebanon, Ohio. Mbr., Ky. State Senate, 1858-1861. Col., Union Army, Civil War.

KIMBALL, 1877, ARTHUR REED—(*Literary work*)—Born Feb. 1, 1855, New York City; died Jan. 27, 1933, Waterbury, Conn.

KIMBALL, 1858, JOHN EDWIN, M.A.—(*Education*)—Born July 18, 1833, Webster, Mass.; died Sept. 7, 1916, Worcester, Mass.

KING, 1910, LYNDON MARRS—(*Business*)—Born Dec. 6, 1887, Minneapolis, Minn.; died July 3, 1969; Pres. and Chmn., Northrup, King & Co., Minneapolis.

KING, 1914, STODDARD, M.A.—(*Literary work*)—Born Aug. 19, 1889, Jackson, Wis.; died June 13, 1933, Spokane, Wash. Capt., Inf., Wash. Natl. Guard, World War I.

KINGSLEY, 1834, HENRY COIT, M.A.—(*Law and finance*)—Born Dec. 11, 1815, New Haven, Conn.; died Dec. 19, 1886, New Haven. Treas., Yale University, 1862-1886.

KINNE, 1848, WILLIAM, M.A.—(*Education*)—Born Mar. 26, 1819, Plainfield, Conn.; died Mar. 11, 1898, Plainfield.

KINNEY, 1871, HERBERT EVELYN, LL.B.—(*Law*)—Born Mar. 28, 1847, Griswold, Conn.; died Aug. 24, 1916, Griswold.

KIRBY, 1849, JACOB BROWN, M.A.—(*Farming and industrial*)—Born April 7, 1827, Brownsville, N.Y.; died Mar. 9, 1860, Brownsville.

KITCHEL, 1862, CORNELIUS LADD, B.D., M.A.—(*Ministry and education*)—Born July 5, 1841, Thomaston, Conn.; died Feb. 15, 1929, New Haven, Conn. Sec., Bureau of Appointments, Yale Uni-

versity, '04-'09, and Sec. emeritus, '09-'20. Priv., Union Army, Civil War.

KITCHEL, 1897, Cornelius Porter, LL.B.—(*Law*)—Born Oct. 7, 1875, East Liverpool, Ohio; died Jan. 14, 1947, Vero Beach, Fla.

KITCHEL, 1892, William Lloyd, LL.B.—(*Law*)—Born Nov. 30, 1869, New Haven, Conn.; died June 1, 1947, Bronxville, N.Y.

KITTLE, 1904, John Caspar—(*Art*)—Born Oct. 8, 1882, San Francisco, Calif.; died Mar. 17, 1933, San Francisco. Capt., Q.M.C., World War I (AEF).

KITTREDGE, 1855, George Alvah, M.A.—(*Business*)—Born Mar. 29, 1833, Boston, Mass.; died Dec. 26, 1917, Brookline, Mass. Am. vice-consul, Bombay.

KLOTS, 1909, Allen Trafford, LL.B.—(*Law*)—Born Sept. 14, 1889, Brooklyn, N.Y.; died Dec. 31, 1964; Chmn., Mayor's Com. on the Courts, N.Y.C., '57-; Spec. Asst. to Sec. of State of the U.S., '31-'32; Mayor, Village of Laurel Hollow, N.Y., '42-'48; 1st Lieut., F.A., W.W. I.

KNAPP, 1916, Farwell, LL.B.—(*Law*)—Born Nov. 28, 1893, Bridgeport, Conn.; died Sept. 19, 1942, West Hartford, Conn. Asst. Tax Commissioner of Conn., '25-'37; instructor in law, Hartford College of Law, '28-'38; Dean, '32-'33; Pres., '38-'42; Sgt., F.A., World War I (AEF).

KNAPP, 1882, Howard Hoyt, LL.B.—(*Law*)—Born April 18, 1861, South Norwalk, Conn.; died June 17, 1918, Hartford, Conn.

KNAPP, 1886, Wallace Percy, LL.B., LL.M.—(*Law*) —Born Aug. 7, 1863, South Norwalk, Conn.; died Aug. 29, 1917, Long Beach, N.Y.

KNEELAND, 1890, Yale—(*Business*)—Born Aug. 5, 1869, Brooklyn, N.Y.; died Dec. 26, 1933, New York City.

KNIGHT, 1910, Augustus—(*Finance*)—Born July 23, 1887, Wichita, Kans.; died Oct. 1963; Pres., Family Welfare Assn. of Evanston, Evanston YMCA; Alderman, Evanston, '27-'31; Commissioner for Park Distr., '18-'38; Dir., Evanston Hosp. Assn.

KNIGHT, 1887, Samuel, LL.B., M.A.—(*Law*)—Born Dec. 28, 1863, San Francisco, Calif.; died Jan. 28, 1943, San Francisco, Calif. Asst. U.S. attny. (later attny.), northern district of Calif., 1893-1898. Maj., Judge Advocate General's Dept., World War I (AEF).

KNOTT, 1878, George Tapscott—(*Farming*)—Born Mar. 14, 1855, Clifton, Ohio; died May 14, 1924, Santa Barbara, Calif.

KNOX, 1907, Hugh Smith—(*Education*)—Born Jan. 27, 1883, Allegheny, Pa.; died Jan. 2, 1936, Ithaca, N.Y. Yeoman, U.S. Navy, World War I.

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LAMB, 1867, Albert Eugene—(*Law*)—Born Nov. 9, 1843, Worcester, Mass.; died Feb. 17, 1928, New York City. Deputy attny. gen., 1893.

LAMB, 1903, Albert Richard, M.D.—(*Medicine*)—Born April 22, 1881, Waterbury, Conn.; died Nov. 22, 1959, Pine Orchard, Conn.; Maj., Medical Corps, World War I (AEF).

LAMBERT, 1893, Adrian VanSinderen, M.D.—(*Medicine*)—Born June 30, 1872, New York City; died Oct. 15, 1952, New York City.

LAMBERT, 1884, Alexander, Ph.B, M.D.—(*Medicine*)—Born Dec. 15, 1861, New York City; died May 9, 1939, New York City. Prof. of clinical medicine, Cornell University Medical College, 1898-1931. Col., Med. Corps., World War I (AEF).

LAMBERT, 1843, Alfred, M.A., M.D.—(*Medicine*)—Born July 5, 1822, Boston, Mass.; died Jan 11, 1885, Springfield, Mass.

LAMBERT, 1854, Edward Wilberforce, M.A., M.D.—(*Medicine*)—Born Feb. 15, 1831, Boston, Mass.; died July 17, 1904, New York City.

LAMPMAN, 1866, Lewis, D.D.—(*Ministry*)—Born Feb. 5, 1843, Coxsackie, N.Y.; died Aug. 29, 1918, Coxsackie.

LAMPSON, 1855, George—(*Law*)—Born Jan. 23, 1833, Quebec, Que., Canada; died Jan. 29, 1906, Quebec.

LAMPSON, 1862, William, LL.B.—(*Finance*)—Born Feb. 25, 1840, LeRoy, N.Y.; died Feb. 14, 1897, LeRoy.

LANE, 1843, William Griswold—(*Law*)—Born Feb. 12, 1824, Norwalk, Ohio; died Oct. 28, 1877, Sandusky, Ohio.

LANIER, 1844, Alexander Chalmers—Born Oct. 20, 1820, Madison, Ind.; died Oct. 11, 1895, Madison.

LAPHAM, 1928, Raymond White—(*Business*)—Born Dec. 14, 1903, Worcester, Mass.; died July 11, 1976; Capt., AUS 2½ yrs.

LARNER, 1922, Robert Johnson—(*Finance*)—Born Dec. 10, 1899, Washington, D.C.; died Jan. 21, 1960, New York City; Gunnery Sgt., USMCAR, World War I.

LATHE, 1873, Herbert William—(*Ministry*)—Born June 15, 1851, Worcester, Mass.; died Aug. 24, 1932, Brookline, Mass.

LATHROP, 1905, John Hiram, LL.B.—(*Law*)—Born Oct. 3, 1884,

Kansas City, Mo.; died July 7, 1957, Kansas City; Mbr., Appellate Judicial Com. of Mo., '44-'49.

LAW, 1837, William Fabian, M.A.—(*Law*)—Born Nov. 14, 1817, Savannah, Ga.; died Oct. 9, 1891, Savannah.

LAW, 1838, William Lyon—Born April 8, 1814, Meredith, N.Y.; died Oct. 30, 1839, St. Mary's, Ga.

LAWRANCE, 1884, Thomas Garner—(*Student*)—Born June 1, 1862, Philadelphia, Pa.; died Oct. 16, 1883, New Haven, Conn.

LEA, 1834, James Neilsen—(*Law*)—Born Nov. 26, 1815, New Orleans, La.; died Oct. 26, 1884, Wilkes Barre, Pa. Mbr., La. State Legislature, 1846. Assoc. justice, La. Supreme Court, 1855-1863.

LEA, 1871, Robert Brinkley—(*Law*)—Born May 7, 1849, Nashville, Tenn.; died Jan. 9, 1895, Geneva, Switzerland.

LEAF, 1841, Edmund, M.A.—(*Ministry*)—Born Nov. 3, 1818, Pottstown, Pa.; died June 16, 1891, Birdsboro, Pa.

LEAR, 1869, Henry, M.A.—(*Law*)—Born Mar. 21, 1848, Doylestown, Pa.; died April 27, 1929, Germantown, Pa.

LEARNED, 1870, Dwight Whitney, Ph.D., D.D.—(*Education*)—Born Oct. 12, 1848, Canterbury, Conn.; died Mar. 19, 1943, Claremont, Calif. Prof. of Greek and mathematics, Thayer College, 1873-1875, and of church history, Bible theology, and Greek, Doshisha College, Japan, 1876-1928. Mbr., Com. for revision of Japanese version of New Testament, 1914-1917.

LEARNED, 1841, William Law, M.A., LL.D.—(*Law*)—Born July 24, 1821, New London, Conn.; died Sept. 20, 1904, Albany, N.Y. Justice, N.Y. Supreme Court, 1870-1892 (presiding justice, 1875-1892).

LEAVITT, 1900, Ashley Day, B.D., D.D.—(*Ministry*)—Born Oct. 10, 1877, Chicago, Ill.; died Jan. 22, 1959, Boston, Mass.

LEE, 1858, Samuel Henry, M.A.—(*Ministry and Education*)—Born Dec. 21, 1832, Lisbon, Conn.; died Oct. 20, 1918, Springfield, Mass. Prof of political economy, Oberlin College, 1872-1876. Prof of history and political economy, Am. International College, Springfield, Mass., 1890-1908; also Pres., 1893-1908; Pres; emeritus, 1908-1918.

LeGORE, 1917, Harry William—(*Industrial*)—Born Aug. 1, 1894, LeGore, Md.; died June 8, 1956, Frederick, Md.; Md. House of Delegates, '30-'34; Md. State Senate, '34-'38, (minority leader, '37-'38); Capt., USMC, AEF, W.W. I.

LEIGHTON, 1881, James—(*Law student*)—Born May 2, 1859, Abington, Pa.; died Dec. 5, 1883, Glenburn, Pa.

LENT, 1843, JOHN ABRAM—(*Business and Law*)—Born Oct. 24, 1821, New York City; died Jan. 2, 1863, San Francisco, Calif.

LEWIS, 1833, ASAHEL HOOKER—(*Literary work*)—Born Sept. 11, 1810, Farmington, Conn.; died Sept. 25, 1862, St. Louis, Mo. Mbr., Ohio State Legislature 1847-1848.

LEWIS, 1886, CHARLTON MINER, LL.B., Ph.D.—(*Education*)—Born Mar. 4, 1866, Brooklyn, N.Y.; died Mar. 12, 1923, New Haven, Conn. Asst. Prof. of English, Yale University, 1898-1899, and Emily Sanford Prof. of English, 1899-1923.

LEWIS, 1842, HENRY, M.A.—(*Student*)—Born May 29, 1821, near Lawrenceville, Va.; died Aug. 9, 1841, New Haven, Conn.

LEWIS, 1868, JOHN—(*Law*)—Born June 22, 1842, Suffield, Conn.; died June 26, 1921, Lawrence, Kansas. Served in Union Army, Civil War.

LIBBEY, 1867, FRANK—(*Business*)—Born Jan. 20, 1847, Georgetown, D.C.; died Oct. 9, 1929, Washington, D.C.

LILLEY, 1943, FRANK WALDER, JR.—Born Dec. 26, 1920, Wuhu, China; died May 14, 1946, Honshu, Japan. 1st Lieut., F.A., AUS, World War II.

LINDENBERG, 1932, JOHN TOWNSEND—(*Literary work*)—Born Oct. 16, 1909, Columbus, Ohio; died Aug. 25, 1940, New York City.

LINDLEY, 1933, FRANCIS VINTON, LL.B.—(*Business*)—Born Feb. 4, 1911, New York, N.Y.; died May 28, 1983. Assoc., Greater New York Blood Program, American Red Cross.

LINDSAY, 1944, DAVID A., LL.B.—Born Nov. 24, 1921, New York City; died Dec. 23, 1977.

LINTON, 1846, STEPHEN DUNCAN—(*Farming*)—Born July 25, 1826, New Orleans, La.; died Dec. 15, 1867, Paris, France.

LIPPINCOTT, 1914, WILLIAM JACKSON—(*Finance*)—Born April 5, 1891, Findlay, Ohio; died Mar. 10, 1946, Hobe Sound, Fla.

LIPPITT, 1909, HENRY—(*Industrial*)—Born July 13, 1886, Providence, R.I.; died Oct. 15, 1974, San Diego, Calif.

LITT, 1921, WILLARD DAVID—(*Finance*)—Born Dec. 17, 1899, East Patchogue, N.Y.; died Oct. 26, 1942 in the Pacific Area. 2d Lieut., F.A., World War I; Lt., USNR, World War II.

LITTLE, 1907, MITCHELL STUART—(*Industrial*)—Born Jan. 5, 1885, Hartford, Conn.; died Aug. 7, 1969; Mbr., Alumni Bd.

LITTLE, 1851, ROBBINS, LL.B., M.A.—(*Library work*)—Born Feb. 15, 1832, Newport, R.I.; died April 13, 1912, Newport. Examiner of claims, War Dept., 1873-1878.

LIVINGSTON, 1879, HERMAN, M.A.—(*Industrial*)—Born June 24, 1856, New York City; died Dec. 31, 1936, Greendale, N.Y.

LOGAN, 1910, WALTER SETH, LL.B.—(*Law*)—Born July 8, 1888, Washington, Conn.; died April 25, 1974, Washington, Conn.; law practice, Washington Depot, Conn. General Counsel Fed. Reserve Bd., Washington, D.C. '20-'22; V.P. and General Counsel, Federal Reserve Bank of N. Y., '28-'53; 1st Lieut., Chemical Warfare Service, July '18-Feb. '19.

LOHMANN, 1910, CARL ALBERT, M.A. L.H.D.—(*Education*)—Born Aug. 9, 1887, Akron, Ohio; died May 19, 1957, New Haven, Conn.; New Haven Bd. of Park Commissioners, '54-'56; Lieut., USNRF, World War I; Sec., Yale Alumni Advisory Bd., '25-'27; Sec., Yale Univ., '27-'53; Mbr., Alumni Bd.; Pres., Yale Assn. of Class Secs., '27-'28; Mbr., President's Com. on Undergraduate Housing, '30; Curator Prints, Yale Art Gallery, '26-'30, and '46-'53; Class Sec., '25-'51; Assoc. Fellow, Jonathan Edwards.

LOMBARD, 1854, JAMES KITTREDGE, M.A.—(*Ministry*)—Born Jan. 15, 1832, Burlington, N.Y.; died Aug. 14, 1889, Darien, Conn.

LOMBARDI, 1911, CORNELIUS ENNIS, LL.B.—(*Law*)—Born Oct. 3, 1888, Houston, Texas; died Feb. 12, 1956, Kansas City, Mo.; Chmn., Bd. of Commissioners, Redevelopment Authority of Kansas City; 1st Lieut., F.A., World War I (AEF); V.P. Yale Club of Kansas City; Mbr., Yale Alumni Bd.

LOOK, 1927, ALLEN M., LL.B.—(*Law*)—Born Nov. 11, 1902, Litchfield, Conn.; died April 22, 1977; V.P., Wellington Sears Co., New York, N.Y.

LOOK, 1930, FRANK BYRON—(*Transportation*)—Born Mar. 22, 1904, Hartford, Conn.; died April 27, 1967, New Bedford, Mass. Gen. Mgr., Woods Hole, Martha's Vineyard & Nantucket Steamship Authority, New Bedford, Mass.; Lieut. Cmdr., USNR, '41-'47.

LORD, 1898, FRANKLIN ATKINS, LL.B.—(*Law*)—Born Nov. 9, 1876, Winnebago, Minn.; died Jan. 16, 1945, New York City. Sec., U.S. Shipping Bd., '23-'32.

LORD, 1854, GEORGE DEFOREST, M.A.—(*Law*)—Born Nov. 21, 1833, New York City; died Mar. 3, 1892, New York City.

LOVELL, 1844, JOSEPH, M.A.—(*Law*)—Born June 11, 1824, Washington, D.C.; died Nov. 28, 1869, near Natchez, Miss. Brig. Gen., Confederate Army, Civil War.

LOVETT, 1913, AUGUSTUS SIDNEY, B.D., M.A., D. Litt., D.H.L., D.D.—(*Ministry, Education*)—Born Jan. 30, 1890, Boston, Mass.; died April 3, 1979; University Chaplain, '32-'58; Master, Pierson Coll.

'53-'58; University Council, '59-'64; Woolsey Prof. Biblical Literature, '37-'57; Minister, Mt. Vernon Ch., Boston, '19-'32; Chmn., World Student Service; Mbr., Dwight Hall Advisory Bd., '32-; Hon. Chmn., Yale-China Assn.; Pres., RTA.

LUCE, 1920, Henry Robinson, M.A., LL.D., Litt. D., L.H.D.—(*Literary work*)—Born April 3, 1898, Teng-chow, China; died Feb. 28, 1967; Ed.-in-Chief, *Time, Life, Fortune, Sports Illustrated, Architectural Forum, House & Home*, Time, Inc., N.Y.C.; Trustee: Amer. Heritage Found., China Institute in America, Metropolitan Museum of Art, Roosevelt Hosp., St. Mary's Coll., Yale-in-China Assn.; 2d Lieut., F.A., W.W. I; Assoc. Fellow, Pierson Coll., '48; Yale Univ. Council, '47-'56.

LUCKEY, 1923, Charles Pinckney—(*Finance*)—Born Feb. 17, 1899, New Haven, Conn.; died Nov. 17, 1966; Banker, N.Y.C.; Pvt., F.A., W.W. I; Yale Alumni Bd.

LUCKEY, 1950, Charles Pinckney, B.D.—(*Ministry*)—Born Dec. 29, 1924, Bronxville, N.Y.; died Jan. 20, 1975, Middlebury, Conn.; Minister Middlebury Congregational Church, Middlebury, Conn.; Sgt., Army, '43-'46.

LUDDEN, 1850, William—(*Music*)—Born May 19, 1823, Williamsburg, Mass.; died Jan. 2, 1912, Brooklyn, N.Y.

LUFKIN, 1925, Elgood Moulton—(*Finance*)—Born June 15, 1902, Buffalo, N.Y.; died Oct. 2, 1957, Norfolk, Conn.; Deputy District Chief and Acting District Chief, N.Y. Ordnance District, '41-'45; Mbr., Advisory Bd., N.Y. Ordnance Districts.

LUMAN, 1925, Richard John—(*Government*)—Born April 26, 1900, Rock Springs, Wyo.; died April 25, 1973, Houston, Tx.; Chmn., Wyoming Public Service Comm., Cheyenne, Wyo.; Rep., Wyo. State Legislature, '37-'45; Speaker of the House, '43-'45; Wyo. State Senator, '45-'49; Mbr., Wyo. Public Service Com., '53-'59, and Chmn., '63-; Wyo. Deputy State Treas., '59-'63.

LUNT, 1921, Storer Boardman, LL.D.—(*Publishing*)—Born July 8, 1897, Portland, Maine; died Sept. 10, 1977; formerly Chmn., W. W. Norton, Inc., New York; Yale Bureau of Appointments, (in charge of Student Employment) '21-'22; Mbr., Governing Bd., Yale Univ. Press, '55-'65; Pres., Am. Book Publishers Council, '62-'65; Chmn., International Publishers Assn., '65-'69; Book Publishing Rep., U.S. Natl. Com. of UNESCO, '63-'69; 2d Lieut., F.A., '17-'18.

LUSK, 1924, William Thompson—(*Business*)—Born March 30, 1901, New York, N.Y.; died March 5, 1978; Tiffany & Co.: V.P., '32-'52, Exec. V.P., '52-'55, Pres., '55-'67, Dir., '30-; Mbr. of Council, Yale

Club of N.Y.C., '44-'50; Exec. Com., Jewelers Vigilance Com., '60-'67; Bd. of Gov., Gemological Institute of America, '62-'68; New Canaan Country School: Trustee, '43-'56, V.P., '44-'46, Pres., '46-'48.

LYMAN, 1837, CHESTER SMITH, M.A.—(*Education*)—Born Jan. 13, 1814, Manchester, Conn.; died Jan. 29, 1890, New Haven, Conn. Prof. of industrial mechanics and physics, Yale University, 1859-1871, of astronomy and physics, 1871-1884, and of astronomy, 1884-1889; Prof. emeritus, 1889-1890.

LYMAN, 1882, CHESTER WOLCOTT, M.A.—(*Industrial*)—Born May 25, 1861, New Haven, Conn.; died April 7, 1926, Boston, Mass.; Chmn., Red Cross and War Work committees, World War I.

LYNDE, 1838, CHARLES JAMES, M.A.—(*Law*)—Born April 7, 1816, Shelburne, N.Y.; died Aug. 9, 1841, Lake Erie.

LYON, 1900, GEORGE ARMSTRONG, LL.B.—(*Finance*)—Born Oct. 7, 1879, Erie, Pa.; died Jan. 16, 1954, Providence, R.I.; Capt., Inf., World War I (AEF); served with Boston Information Center, AAF, World War II.

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McANDREW, 1913, ALEXANDER—died July 19, 1971, Ross, Calif.

McBRIDE, 1882, WILBER—(*Law*)—Born June 6, 1860, Goshen, N.Y.; died Feb. 5, 1933, Goshen.

McCALL, 1840, HENRY, M.A.—(*Farming*)—Born April 9, 1821, Donaldsonville, La.; died Nov. 12, 1886, Philadelphia, Pa.

McCLINTOCK, 1891, NORMAN—(*Education*)—Born June 13, 1868, Pittsburgh, Pa.; died Feb. 26, 1938, Orlando, Fla. Prof. in the Dept. of Zoology, Univ. of Pittsburgh, '25-'30; on faculty, Rutgers Univ., '32-'36.

McCLUNG, 1892, LEE, M.A.—(*Finance*)—Born Mar. 26, 1870, Knoxville, Tenn.; died Dec. 19, 1914, London, England. Treas., Yale Univ., '04-'09. Treasurer of the U.S., '09-'12.

McCLURE, 1912, ARCHIBALD, B.D.—(*Ministry*)—Born Dec. 30, 1890, Lake Forest, Ill.; died April 8, 1931, South Bend, Ind.

McCLURE, 1870, JAMES GORE KING, D.D., LL.D.—(*Education*)—Born Nov. 24, 1848, Albany, N.Y.; died Jan. 18, 1932, Lake Forest, Ill. Pres., Lake Forest Univ., 1897-1901, and of McCormick Theological Seminary, '05-'28; Pres. emeritus, '28-'32.

McCLURE, 1901, JAMES GORE KING, JR., M.A., Sc.D., LL.D.—(*Farming*)—Born Oct. 28, 1884, Lake Forest, Ill.; died June 17, 1956, Asheville, N.C.; Mbr., N.C. Bd. of Conservation and Development, '25-'33; Mbr., Natl. Comm. for Public Schools; Pres., Am. Forestry Assn.

McCORMICK, 1919, ALEXANDER AGNEW, JR.—(*Student*)—Born Dec. 15, 1897, Chicago, Ill.; died Sept. 24, 1918, near Calais, France. Lieut. (j.g.), Naval Air Service, World War I (Foreign service).

McCORMICK, 1852, HENRY, M.A.—(*Industrial*)—Born Mar. 10, 1831, Harrisburg, Pa.; died July 14, 1900, Rosegarten, Pa. Col., Union Army, Civil War.

McCUTCHEN, 1870, SAMUEL ST. JOHN, LL.B.—(*Law*)—Born Jan. 14, 1849, Williamsburg, N.Y.; died June 4, 1915, Belmar, N.J.

McDONNELL, 1911, JOHN VINCENT—(*Industrial*)—Born Dec. 30, 1889, New York City; died May 23, 1926, New York City. Sgt., Inf., World War I.

McGEE, 1906, DONALD ASHBROOK—(*Finance*)—Born Dec. 29, 1883, Plainfield, N.J.; died Oct. 26, 1937, Plainfield, N.J. Mbr., Troop D, National Guard of N.J., Mexican Border service, '16; Distr. Dir., War Dept. Comm. of Training Camp Activities, World War I.

McHENRY, 1920, JAMES—(*Finance*)—Born Jan. 30, 1899, Baltimore, Md.; died Feb. 17, 1976, Glyndon, Md.; Ptnr., Alex Brown & Sons, Baltimore; W.W. I: 2d Lieut., F.A. U.S. Army; W.W. II: Capt., USMCR.

McHENRY, 1885, JOHN—(*Finance*)—Born Aug. 29, 1863, Pikesville, Md.; died Dec. 17, 1939, Chattolanee, Md.

McINTOSH, 1927, HARRIS—(*Industrial*)—Born July 25, 1904, Cayuga, N.Y.; died Nov. 20, 1982; formerly Pres., Toledo Scale Co.

MACK, 1948, RICHARD G.—(*Business*)—Born Aug. 21, 1925, San Francisco, Calif.; died June 13, 1979; Pres., South Pacific Foods, Ltd.

McKEE, 1895, LANIER, LL.B.—(*Law*)—Born Mar. 1, 1872, Washington, D.C.; died Jan. 5, 1943, Lawrence, N.Y.

McKEE, 1896, McKEE DUNN—(*Insurance*)—Born Oct. 21, 1873, Washington, D.C.; died Feb. 3, 1910, Washington, D.C., 2d Lieut., Signal Corps, Spanish-American War.

McKINNEY, 1868, WILLIAM ALLISON, LL.B. M.A.—(*Law*)—Born Aug. 30, 1845, Cooperstown, N.Y.; died Jan 27, 1923, Binghamton, N.Y. Served in Union Army, Civil War.

McLALLEN, 1847, PHILEMON FERDINAND—(*Law*)—Born Aug. 20, 1823, Trumansburg, N.Y.; died June 4, 1853, St. Louis, Mo.

McLAUGHLIN, 1883, Edward Tompkins—(*Education*)—Born May 27, 1860, Sharon, Conn.; died July 25, 1893, New Haven, Conn. Asst. Prof. of English, Yale Univ., 1890-1893, and Prof. of rhetoric and belles-lettres, 1893.

MacLEAN, 1864, Charles Fraser, Ph.D., J.U.D.—(*Law*)—Born Nov. 21, 1841, New Hartford, N.Y.; died Mar. 20, 1924, New York City. Justice, N.Y. Supreme Court, 1895-1909.

MacLEAN, 1943, John Helm—Born July 31, 1921, Haverford, Pa.; died July 21, 1944, in France, 1st Lieut., Armored Force, AUS, World War II.

MacLEISH, 1915, Archibald, LL.B., Litt.D., LL.D.—(*Literary work, Education*)—Born May 7, 1892, Glencoe, Ill.; died April 20, 1982; Yale University Council; Writer, Poet & Playwright; Asst. Sec. of State, '44-'45; Librarian of Congress, '39-'44; Bolyston Prof., Harvard, '49-'62; Pres., Am. Academy of Arts & Letters, '53-'56; Capt., AEF, F.A., '17-'18.

MacLELLAN, 1858, George Boardman, M.A.—(*Education*)—Born July 27, 1833, King and Queen City, Va., died Oct. 30, 1897, Jacksonville, Fla. Asst. engineer, Confederate Army, Civil War.

McLELLAN, 1835, William—(*Law*)—Born May 8, 1815, Greencastle, Pa.; died Oct. 21, 1879, Chambersburg, Pa.

McLEMORE, 1937, John Briggs, Jr., LL.B.—(*Business*)—Born Sept. 29, 1914, Nashville, Tenn.; died Oct. 25, 1976; Sales Rep., Tennessee Mirror Co.; Attny., Curtis, Mallet, Prevost, Mosle, New York, '40-'42; Major-Assimilated, United Stated Office of War Information, '42-'46.

McMILLAN, 1888, James Howard—(*Law*)—Born Sept. 17, 1866, Detroit, Mich.; died May 9, 1902, Colorado Springs, Colo. Major, Spanish-American War.

McMILLAN, 1894, Philip Hamilton, LL.B.—(*Law and business*)—Born Dec. 28, 1872, Detroit, Mich.; died Oct. 4, 1919, Grosse Pointe Farms, Mich.

McMILLAN, 1884, William Charles—(*Industrial*)—Born Mar. 1, 1861, Detroit, Mich.; died Feb. 21, 1907, Detroit.

McQUAID, 1889, William Adolphe, LL.B.—(*Law*)—Born Oct. 3, 1865, Webster, Mass.; died June 15, 1951, New York City; First Deputy Attny. Gen., N.Y., '11-'14; Asst. Distr. Attny., New York City, '18-'27; Class Sec., '89-'95.

MacVEAGH, 1862, Franklin, LL.B., LL.D.—(*Business*)—Born Nov. 22, 1837, West Chester, Pa.; died July 6, 1934, Chicago, Ill. Sec. of

Treasury of the U.S. '09-'13. Trustee, Univ. of Chicago, '01-'13. Chmn., First Int. Congress of Social Insurance, '14.

MacWHORTER, 1842, Alexander—(*Ministry*)—Born Jan.1, 1822, Newark, N.J.; died June 28, 1880, New Haven, Conn. Prof. of metaphysics and English literature, Troy Univ., 1859-1860.

MAFFITT, 1899, Thomas Skinner—(*Industrial*)—Born Mar. 6, 1876, St. Louis, Mo.; died Aug. 16, 1940, Estes Park, Colo. Capt. Military Intelligence Div., World War I.

MAGEE, 1899, James McDevitt, LL.B.—(*Law*)—Born April 5, 1877, Pittsburgh, Pa.; died April 16, 1949, Pittsburgh, Pa. Mbr. of Congress, '23-'27. Capt., Air Service, World War I.

MAGEE, 1906, John Gillespie, B.D.—(*Ministry*)—Born Oct. 10, 1884, Pittsburgh, Pa.; died Sept. 9, 1953, Pittsburgh, Chmn., Int. Red Cross Com., Nanking, China, World War II; Minister to Episc. Students at Yale, and Assoc. Fellow, Jonathan Edwards Coll., '46-'53; a Founder and Vice-Pres., Yale Hope Mission.

MAGRUDER, 1856, Benjamin Drake, LL.D.—(*Law*)—Born Sept. 27, 1838, Magnolia Springs, Miss.; died April 21, 1910, Chicago, Ill. Justice, Ill. Supreme Court, 1885-1906 (chief justice, 1891-1900).

MALLON, 1885, Guy Ward, LL.B.—(*Law*)—Born April 28, 1864, Cincinnati, Ohio; died Dec. 23, 1933, Cincinnati, Ohio. Mbr., Ohio State Leg., 1890-1891. Mbr., Cincinnati City Council, 1906-1908, and sec., City Charter Committee, '24-'32. Trustee of Ohio State Univ., '03-'19 and of Berea Coll., 1896-1933, (Vice-Pres.,'32-'33).

MALLON, 1917, Henry Neil—(*Industrial*)—Born Jan. 11, 1895, Cincinnati, Ohio; died Feb. 28, 1983. Formerly Chmn. & Chief Exec. Officer Dresser Industries, Inc. Dallas.

MALLON, 1945W, Thomas Ridgway—(*Business*)—Born June 19, 1923, Louisville, Ky.; died Jan. 7, 1970; V.P., Gen. Mgr., Materials Div., Arundel Corp., Baltimore, Md.; Ensign, USNR, '43-'46.

MALLORY, 1924, William Neely—(*Industrial*)—Born Nov. 20, 1901, Memphis, Tenn.; died Feb. 19, 1945 in Italy. Dir., Southwestern Coll., '37-'45 and Treas., '38-'45. Major, USAAF, World War II.

MANICE, 1851, William DeForest, M.A.—(*Law*)—Born July 11, 1830, New York City; died Sept. 6, 1903, Tuxedo Park, N.Y.

MANROSS, 1850, Newton Spaulding, Ph.D.—(*Science*)—Born June 20, 1825, Bristol, Conn.; died Sept. 17, 1862, Antietam, Md. Prof. of chemistry, Amherst Coll., 1861-1862. Capt., Union Army, Civil War.

MANSFIELD, 1871, Howard, LL.B., M.A.—(*Law*)—Born July 2, 1849, Hamden, Conn.; died Aug. 14, 1938, Seal Harbor, Me., Treas.,

Metropolitan Museum of Art, '09-'29. Chmn., Advisory Bd. on Compulsory Service, World War I.

MANVILLE, 1929, HIRAM EDWARD, JR., LL.D.—(*Industrial*)—Born Feb. 14, 1906, New York, N.Y.; died Nov. 23, 1982; formerly Dir., Johns-Manville Corp.; Trustee: Judge Baker Guidance Center, '53-, Hiram Edward Manville Found., '45-, Mzuti Safari Found., '72-'75; Chmn., Advisory Bd. Univ. of Nevada Medical School, '71-; Capt. USAF, Aug. '41-Aug. '45.

MARCH, 1840, DANIEL, M.A., D.D.—(*Ministry*)—Born July 21, 1816, Millbury, Mass.; died Mar. 2, 1909, Woburn, Mass.

MARMADUKE, 1852, VINCENT—(*Literary work*)—Born April 14, 1831, Arrow Rock, Mo.; died Mar. 25, 1904, Marshall, Mo. Mbr., Mo. State Legislature, 1882-1884. Col., Confederate Army, Civil War.

MARSHALL, 1953, JOHN BIRNIE—(*Industrial*)—Born Mar. 29, 1930, Bondi, New South Wales, Australia; died Jan. 30, '57, Australia.

MARSHALL, 1833, SAMUEL DAVIES—(*Law and literary work*)—Born Oct. 8, 1812, Knox Cnty., Ill.; died April 12, 1854, Shawneetown, Ill. Mbr., Ill. State Legislature. Major, Mexican War.

MARTIN, 1893, GEORGE GREENE—(*Communications*)—Born Feb. 22, 1871, New Orleans, La.; died Feb. 24, 1907, St. Louis, Mo.

MARTIN, 1836, JOHN GRIFFITH, LL.B.—(*Law*)—Born Jan. 10, 1817, Paris, Ky.; died Aug. 27, 1847, Paris.

MARVIN, 1836, GEORGE LOCKWOOD—(*Law*)—Born April 29, 1810, Clinton, N.Y.; died Oct. 31, 1882, Buffalo, N.Y.

MARVIN, 1876, JOSEPH HOWARD, LL.B.—(*Law*)—Born Mar. 17, 1853, Brooklyn, N.Y.; died Aug. 26, 1887, New York City.

MASON, 1871, ALFRED BISHOP, M.A.—(*Business*)—Born Feb. 23, 1851, Bridgeport, Conn.; died Jan. 25, 1933, Florence, Italy.

MASON, 1870, HENRY BURRALL, LL.B.—(*Law*)—Born Dec. 20, 1848, Bridgeport, Conn.; died Feb. 20, 1932, Chicago, Ill.

MATHER, 1833, FREDERICK ELLSWORTH, M.A.—(*Law*)—Born May 23, 1809, Windsor, Conn.; died Nov. 9, 1900, New York City. Mbr., N.Y. State Legislature, 1845.

MATHEWS, 1842, ALBERT, M.A.—(*Law and literary work*)—Born Sept. 8, 1820, New York City; died Sept. 9, 1903, Lake Mohonk, N.Y.

MATTHIESSEN, 1923, FRANCIS OTTO, B. Litt., M.A., Ph.D., Litt.D.—(*Education*)—Born Feb. 19, 1902, Pasadena, Calif.; died April 1, 1950, Boston, Mass.; Cadet, R.A.F., Canada, World War I; Instr., Yale Univ., '27-'29; Bergen Lecturer, Yale, '48.

MEAD, 1871, FREDERICK, M.A.—(*Business*)—Born Sept. 11, 1848, New York City; died Nov. 6, 1918, Greenwich, Conn.

MEAD, 1919, WINTER—(*Business*)—Born Dec. 18, 1897, St. Paul Minn.; died Dec. 10, 1952, Morristown, N.J.; Mbr., Bd. Assessors, Morristown; 2d Lieut., F.A. World War I; Chmn., Civil Defense, Morristown, World War II; Class Agt.; Trustee, Ellen B. Stoeckel Trust (Yale Summer Music and Art School).

MELTON, 1924, WILLIAM DAVIS, JR., LL.B.—(*Law*)—Born Mar. 17, 1903, Columbia, S.C.; died Sept. 3, 1962; Asst. Gen. Counsel, Duke Power Co., Charlotte, N.C.

MENTON, 1956, JAMES PAUL—(*Business*)—Born Nov. 6, 1934, Baltimore, Md.; died Jan. 31, 1966; Stewart & Co., Baltimore; Lieut., USMC, '56-'59.

MERRIAM, 1872, ALEXANDER ROSS, D.D., S.T.D.—(*Ministry*)—Born Jan. 20, 1849, Goshen, N.Y.; died Dec. 26, 1927, Hartford, Conn. Prof. of practical theology and Christian sociology, Hartford Theological Seminary, 1893-1918, and Prof. emeritus, 1918-1927.

MERRIAM, 1864, GEORGE SPRING, M.A.—(*Literary work*)—Born Jan. 13, 1843, Springfield, Mass.; died Jan. 22, 1914, Springfield.

MERRIAM, 1867, JAMES FISKE—(*Finance*)—Born May 2, 1845, Springfield, Mass.; died June 28, 1918, Stafford Springs, Conn.

MERRILL, 1865, PAYSON, LL.B., M.A.—(*Law*)—Born Dec. 7, 1842, Stratham, N.H.; died Oct. 15, 1933, New Canaan, Conn. A founder of Yale Alumni Univ. Fund Assn., and chmn., '00-'02. Mbr., Yale Corp., '05-'22. Served in Union Army, Civil War.

MERRITT, 1912, HENRY NEWTON—(*Law*)—Born April 17, 1888, New York City; died Dec. 13, 1956, Phila., Pa.; Deputy Attny. Gen. of Pa., '31-'35.

MESICK, 1848, RICHARD SMITH—(*Law*)—Born July 8, 1824, Montgomery City, N.Y.; died May 26, 1893, San Francisco, Calif. Mbr., Calif. State Senate; Distr. judge and judge of the Supreme Court, Nev.

MESSIMER, 1931, ROBERT L., JR.—(*Business*)—Born Sept. 5, 1909, New York, N.Y.; died Oct. 4, 1982. Office Mgr., Twombley, Hall & Hirson.

METCALF, 1904, HAROLD GRANT—(*Industrial*)—Born Aug. 15, 1882, Springfield, Mass.; died May 19, 1971, Auburn, N.Y.; Hon. Chmn. Bd., Columbian Rope Co., Auburn, N.Y. ; Columbian Rope Co.: in mill, '04, Asst. Treas., '05-'21, V.P., '21-'28, Pres., '28-'41, V. Chmn., '41-'48, Chmn. Bd., '48-'52.

METCALFE, 1849, HENRY LAURENS—(*Business*)—Born Sept. 21, 1829, Natchez, Miss.; died April 3, 1912, Natchez. Served in Confederate Army, Civil War.

METCALFE, 1845, ORRICK, M.D.—(*Medicine*)—Born July 17, 1824

near Natchez, Miss.; died Mar. 2, 1898, Natchez. Prof. of languages, Jefferson Coll., 1845-1847; Surgeon, Confederate Army, Civil War.

MIDDLEBROOK, 1915, LOUIS SHELTON, LL.B.—(*Industrial*)—Born Dec. 15, 1892, Bridgeport, Conn.; died Mar. 10, 1927, New York City, 1st Lieut., F.A., World War I (AEF).

MILES, 1849, JAMES BROWNING, D.D.—(*Ministry*)—Born Aug. 18, 1823, Rutland, Mass.; died Nov. 13, 1875, Worcester, Mass.

MILLER, 1864, ALANSON DOUGLAS—(*Ministry*)—Born Dec. 13, 1842, Rochester, N.Y.; died Dec. 17, 1929, Glen Ridge, N.J.

MILLER, 1943, DUDLEY LIVINGSTON, LL.B., J.S.D.—(*Law*)—Born April 28, 1921, New York, N.Y.; died Jan. 11, 1969; Sr. Ptnr., Miller, Montgomery & Spalding, N.Y.C., branch offices in Tokyo, Taipei; 2d Lieut., Med. Adminis., AUS, W.W. II; Pres., Yale Glee Club Associates, '58-'63; Alumni Fund Agt. and Dir.; Mayor, Village of Laurel Hollow, N.Y., '51-'59; Prof. Ethics Com., Assn. of Bar of City of N.Y., '61-'64; Sec., Dir., Boys Harbor, Inc.

MILLER, 1842, FRANCIS WILLIAM—(*Law*)—Born May 7, 1820, Cincinnati, Ohio; died Feb. 4, 1883, Cincinnati.

MILLER, 1870, GEORGE DOUGLAS—(*Industrial*)—Born Nov. 5, 1847, Rochester, N.Y.; died Feb. 9, 1932, Richmond, Va.

MILLER, 1904, JAMES ELY—(*Finance*)—Born Mar. 24, 1883, New York City; died Mar. 9, 1918, Corbeny, France. Capt. Air Service, World War I (AEF).

MILLER, 1833, PHINEAS TIMOTHY, M.D.—(*Medicine*)—Born May 3, 1810, Middletown, Conn., died Feb. 21, 1850, on shipboard.

MILLS, 1847, ALFRED—(*Law*)—Born July 24, 1827, Morristown, N.J.; died Dec. 13, 1913, Morristown.

MILLS, 1835, ETHELBERT SMITH, M.A.—(*Law*)—Born July 27, 1816, New York City; drowned July 15, 1872, Coney Island, N.Y.

MITCHELL, 1841, DONALD GRANT, LL.D.—(*Literary work*)—Born April 12, 1822, Norwich, Conn.; died Dec. 15, 1908, New Haven, Conn. U.S. counsel, Venice, 1854.

MITCHELL, 1861, JOHN HANSON, M.A.—(*Law*)—Born June 25, 1842, Linden, Md.; died Nov. 12, 1901, La Plata, Md.

MONTGOMERY, 1898, GRENVILLE DODGE—(*Finance*)—Born Jan. 22, 1876, Council Bluffs, Iowa; died Aug. 29, 1961; Cadet, USN, Spanish-American War; Officer Candidate, F.A., W.W. I.

MOODY, 1843, THOMAS HUDSON—(*Business*)—Born May 12, 1822, Marion, Ga.; died 1856.

MOORE, 1883, ELIAKIM HASTINGS, Ph.D., Math.D., Sc.D., LL.D.—(*Education*)—Born Jan. 26, 1862, Marietta, Ohio; died Dec. 30, 1932,

Chicago, Ill. Asst. Prof. of mathematics, Northwestern Univ., 1889-1891, and Assoc. Prof., 1891-1892; Prof. of mathematics, Univ. of Chicago, 1892-1931.

MOORE, 1903, FRANK WOOD, D.D.—(*Ministry*)—Born Aug. 12, 1881, Brooklyn, N.Y.; died June 17, 1947, Auburn, N.Y. Asst. Prof. of homiletics, Auburn Theological Seminary, 1917-1930, and Prof. Emeritus, 1930-1947. Candidate, Chaplain's Corps, World War I.

MOORE, 1872, GEORGE FOOT, M.A., D.H.L., D.H. Litt., Litt.D., D.D., LL.D.—(*Education*)—Born Oct. 15, 1851, West Chester, Pa.; died May 16, 1931, Cambridge, Mass. Prof. of Hebrew, Andover Theological Seminary, 1883-1902, and Pres., 1899-1901; Prof. of Theology, Harvard Univ., '02-'04, Frothingham Prof. of history of religion, '04-'28, and Prof. emeritus, '28-'31.

MOORE, 1847, WILLIAM EVES, M.A., D.D., LL.D.—(*Ministry*)—Born April 1, 1823, Strasburg, Pa.; died June 5, 1899, Columbus, Ohio. 2d Lieut. Union Army, Civil War.

MOORHEAD, 1906, WILLIAM SINGER, LL.B.—(*Law*)—Born Aug. 2, 1886, Greensburg, Pa.; died Feb. 12, 1952, Pittsburgh, Pa.; Pres., Pgh. Tuberculosis League; Chmn., U.S. Tax Simplification Bd., '22-'24; 1st Vice-Chmn., Yale Alumni Bd., '33-'34, Chmn., '34-'37; Mbr., Com. on Honorary Degrees; Candidate for Alumni Fellow; Trustee, Yale Scholarship Trust Fund of Pgh.

MORISON, 1888, DAVID WHIPPLE—(*Transportation*)—Born Dec. 19, 1864, St. Paul, Minn.; died Nov. 11, 1941, St. Paul, Minn.

MORISON, 1891, SAMUEL BEMJAMIN—(*Business*)—Born Nov. 25, 1867, St. Paul, Minn.; died June 13, 1920, Redlands, Calif.

MORISON, 1892, STANFORD NEWEL—(*Farming*)—Born Dec. 31, 1869, St. Paul, Minn.; died Aug. 2, 1947, Yjalon, Chiapas, Mexico.

MORRIS, 1849, EDWARD DAFYDD, M.A., D.D., LL.D.—(*Ministry*)—Born Oct. 31, 1825, Utica, N.Y.; died Nov. 21, 1915, Columbus, Ohio. Prof. of ecclesiastical history, Lane Theological Seminary, 1868-1898.

MORRIS, 1854, LUZON, BURRIT, M.A.—(*Law*)—Born April 16, 1827, Newtown, Conn.; died Aug. 22, 1895, New Haven, Conn. Mbr.,Conn. State Legislature, 1855, 1856, 1870, 1876, 1880, and 1881, and of Conn. State Senate, 1874. Governor of Conn., 1892-1894.

MORRIS, 1901, RAY, M.A.—(*Finance*)—Born June 4, 1878, New Haven, Conn.; died May 18, 1961; Pres. Investment Bankers' Assn. of America, '25-'26; W.W. I: Treas. Dept., Chmn. Western Counties, N.Y. State, Liberty Loan Campaign, N.Y. State, Treasury Certif. of Indebtedness.

MORSE, 1907, SAMUEL FINLEY BROWN, LL.D.—(*Business*)—Born July 18, 1885, Newton, Mass.; died May 10, 1969; Chmn. Bd., Del Monte Properties Co., Pebble Beach, Calif.; Pres., S.F.B. Morse Development Co., '08-'10; Mgr. Crocker Huffman Land & Water Co., '10-'15; Mgr., Pacific Improvement Co., '15-'62; Pres., Del Monte Properties Co., '19-'68;

MORSE, 1890, SIDNEY NELSON—(*Education*)—Born Nov. 29, 1857, North Woodstock, Conn.; died Mar. 7, 1935, Easthampton, Mass.

MULFORD, 1846, DAVID HUMPHREY—(*Business*)—Born Aug. 3, 1823, Steuben, N.Y.; died Jan. 6, 1890.

MULFORD, 1855, ELISHA, M.A., LL.D.,—(*Ministry and literary work*)—Born Nov. 19, 1833, Montrose, Pa.; died Dec. 9, 1885, Cambridge, Mass.

MULLINS, 1912, FREDERIC PARSONS—(*Finance*)—Born June 5, 1890, Salem, Ohio; died Nov. 3, 1964; Ptnr., A. E. Masten & Co., Pittsburgh, Pa.; Mbr. Public Utilities Comm., Salem; 1st Lieut., F.A., AEF, W.W. I.

MUNN, 1847, JOHN—(*Law*)—Born May 30, 1822, Monson, Mass.; died Jan. 30, 1850, Springfield, Mass.

MUNROE, 1874, GEORGE EDMUND, M.D.—(*Medicine*)—Born Dec. 9, 1851, on board the "Mandarin" in the Indian Ocean; died April 3, 1932, New York City.

MURPHY, 1910, FREDERICK JAMES—(*Insurance*)—Born Feb. 4, 1886, Southville, Mass.; died Dec. 17, 1956, Miami, Fla.

MURPHY, 1912, GERALD CLERY—(*Business*)—Born Mar. 25, 1888, Boston, Mass.; died Oct. 17, 1964; Pres., Mark Cross Co., New York, N.Y.; 2d Lieut., Air Service, W.W. I.

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NEALE, 1896, JAMES BROWN—(*Mining*)—Born Oct. 4, 1872, Kittanning, Pa.; died Feb. 11, 1943, Buck Run, Pa. Anthracite adviser, U.S. Fuel Adm., World War I.

NELSON, 1846, RENSSELAER RUSSELL—(*Law*)—Born May 12, 1826, Cooperstown, N.Y.; died Oct. 15, 1904, St. Paul, Minn. Associate justice, Supreme Court, Territory of Minn., 1857-1858, judge, U.S. District Court, Minn., 1858-1896.

NETTLETON, 1856, EDWARD PAYSON—(*Law*)—Born Nov. 7, 1834,

Chicopee, Mass.; died April 17, 1889, Boston, Mass. Asst. U.S. Distr. Attny., Boston, 1869-1873. Col., Union Army, Civil War.

NEVINS, 1846, WILLIAM RUSSELL—(*Law*)—Born April 24, 1826, Baltimore, Md.; died April 19, 1881, Rochester, N.Y.

NEWEL, 1861, STANFORD LL.B., M.A.—(*Law*)—Born June 7, 1839, Providence, R.I.; died April 6, 1907, St. Paul, Minn. U.S. Minister to the Netherlands, 1897-1905.

NICHOLS, 1880, ALFRED BULL, B.D.—(*Education*)—Born July 7, 1852, Lebanon, Conn.; died Sept. 9, 1913, Concord, Mass. Prof. of German, Simmons College, 1903-1911.

NICKERSON, 1845, SERENO DWIGHT, LL.B., M.A.—(*Finance*)—Born Oct. 16, 1823, Boston, Mass.; died Nov. 6, 1909, Cambridge, Mass.

NORRIS, 1839, WILLIAM HERBERT, M.A.—(*Ministry*)—Born Nov. 4, 1814; died Feb. 18, 1880, Philadelphia, Pa.

NORTHROP, 1857, CYRUS, LL.B., LL.D.—(*Education*)—Born Sept. 30, 1834, Ridgefield, Conn.; died April 3, 1922, Minneapolis, Minn. Prof. of English rhetoric and literature, Yale Univ., 1863-1884. Pres., Univ. of Minnesota, 1884-1911; Pres. emeritus, '11-'22.

NORTON, 1923, GEORGE WASHINGTON, JR., LL.B.—(*Television*)—Born Feb. 7, 1902, Louisville, Ky.; died Feb. 13, 1964; Pres., Station WAVE, Louisville, Ky.; Maj. USAAF, W.W. II.

O

O'BRIEN, 1906, FRANK—(*Education*)—Born July 20, 1883, Plattsburgh, N.Y.; died Jan. 14, 1960.

OLER, 1916, WESLEY M.—(*Business*)—Born Dec. 15, 1891, Baltimore, Md.; died Apr. 5, 1980; Dir. of Public Relations, Overseas Operations Div., General Motors Corp.; V.P., American Ice Co., '17-'29; Mbr., New York Stock Exchange, '29-'42, Ptnr., Pershing & Co.; General Motors Corp., Overseas Div., '42-'65; 1st Lieut., Army Aviation, Test Pilot, '17-'18.

OLMSTEAD, 1847, JOHN HULL, M.D.—(*Literary work*)—Born Sept. 21, 1825, Hartford, Conn.; died Nov. 24, 1857, Nice, Italy.

OLSEN, 1917, ALBERT WILLIAM—(*Finance*)—Born Aug. 17, 1891, Chicago, Ill.; died April 10, 1976; formerly V.P., N.Y. Trust Co.; Class Agt., Al. Fund; 1st Lieut., F.A., U.S. Army, '18.

O'NEILL, 1932, EUGENE GLADSTONE, JR., Ph.D.—(*Education and liter-*

ary work)—Born May 5, 1910, New York City; died Sept. 25, 1950, Woodstock, N.Y.; Mbr., Faculty, Yale Univ., '36-'47; Fellow, Jonathan Edwards Coll.

ORD, 1873, JOSEPH PACIFICUS, LL.B.—(*Finance*)—Born April 30, 1852, Monterey, Calif.; died Jan. 9, 1913, New York City.

ORDWAY, 1880, HENRY CHOATE, LL.B.—(*Finance*)—Born Aug. 8, 1856, Hampstead, N.H.; died Oct. 31, 1926, Winchester, Mass.

OSBORN, 1914, RICHARD—(*Finance*)—Born July 22, 1891, Fall River, Mass.; died Oct. 23, 1950, Chestnut Hill, Mass.; Service Sanitaire, 5th French Army and 1st Lieut. Coast Artillery Res. Corps.

OSBORNE, 1882, ARTHUR SHERWOOD, LL.B.—(*Law*)—Born Jan. 11, 1861, New Haven, Conn.; died Nov. 4, 1924, New Haven.

OSBORNE, 1881, THOMAS Burr, Ph.D., Sc.D.—(*Science*)—Born Aug. 5, 1859, New Haven, Conn.; died Jan. 29, 1929, New Haven.

OTIS, 1919, JAMES SANFORD—(*Finance*)—Born Aug. 20, 1896, Chicago, Ill.; died April 20, 1975, Libertyville, Ill.; Lieut. Naval Aviation, April '17-Feb. '19.

OVERTON, 1917, JOHN WILLIAMS—(*Student*)—Born Oct. 10, 1894, Nashville, Tenn.; died July 19, 1918, Vierzy, France; 1st Lieut., Marine Corps., World War I (AEF).

OWEN, 1837, ALLEN FERDINAND—(*Law*)—Born Oct., 1816, Wilkes Cty., N.C.; died April 7, 1865, Talbotton, Ga. Mbr., Ga. State Legislature, 1843-1847. Mbr. of Congress, 1848-1852. U.S. consul, Havana.

OWEN, 1860, CHARLES HUNTER, LL.B., M.A.—(*Literary work*)—Born Mar. 15, 1838, Hartford, Conn.; died April 21, 1922, Hartford. Mbr., Conn. State Legislature, 1882. Capt. Heavy Artillery, Union Army, Civil War.

OWEN, 1872, EDWARD THOMAS, Ph.D.—(*Education*)—Born Mar. 4, 1850, Hartford, Conn.; died Nov. 9, 1931, Madison, Wis. Prof. of French, Univ. of Wisconsin, 1879-1915, and Prof. emeritus,'15-'31.

OWEN, 1864, HENRY ELIJAH, M.D.—(*Medicine*)—Born May 28, 1843, Hartford, Conn.; died Oct. 12, 1912, New York City.

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PACKARD, 1856, LEWIS RICHARD, M.A., Ph.D.—(*Education*)—Born Aug. 22, 1836, Philadelphia, Pa.; died Oct. 26, 1884, New Haven, Conn. Asst. Prof. of Greek, Yale Univ., 1863-1867, and Hillhouse Prof. of Greek, 1867-1884.

PADDOCK, 1900, Brace Whitman, M.D.—(*Medicine*)—Born Aug. 14, 1878, Pittsfield, Mass.; died May 22, 1935, Pittsfield, Mass.

PAGE, 1922, Robert Guthrie, LL.B.—(*Business*)—Born July 7, 1901, Columbus, Ohio; died Dec. 25, 1970; Chmn., Exec. Com. (formerly Pres. and Bd. Chmn.), Phelps Dodge Corp., New York; Sec. to Justice Louis D. Brandeis, '26-'27; Reg. Adminis., Securities & Exchange Comm., '35; Spec. Asst. to Under Sec. of Navy.

PAINE, 1856, Levi Leonard, M.A., D.D.—(*Ministry*)—Born Oct. 10, 1832, East Randolph (now Holbrook), Mass.; died May 10, 1902, Bangor, Me. Prof. of Ch. history, Bangor Theological Seminary, 1870-1902; also dean of faculty.

PAINE, 1894, Ralph Delahaye, M.A.—(*Literary work*)—Born Aug. 28, 1871, Lemont, Ill.; died April 29, 1925, Concord, N.H. Mbr. N.H. State Legislature, '18-20. Mbr., Fed. Fuel Comm., 1918. War correspondent, Cuba, Spanish-Am. War, and in China, Boxer Rebellion. With Bureau of Public Information and Navy Dept., World War I (Fgn. service).

PAINTER, 1884, Henry McMahon, Ph.B., M.D.—(*Medicine*)—Born July 12, 1863, West Haven, Conn.; died Mar. 11, 1934, New York City. Prof. of Obstetrics, Coll. of Physicians and Surgeons, Columbia Univ., '06-'20.

PALMER, 1945, Charles Edgar—(*Business*)—Born Aug. 10, 1923, Cleveland, Ohio; died June 3, 1970; Marketing V.P., A. S. Harrison Co., South Norwalk, Conn.; 2d Lieut., USAAF, W.W. II.

PALMER, 1883, Harry Herbert—(*Literary work*)—Born April 8, 1860, Pittsford, Vt.; died May 1, 1942, Middletown, Conn.

PALMER, 1864, William Henry, M.D.—(*Medicine*)—Born Aug. 17, 1840, Stonington, Conn.; died June 19, 1871, Hartford, Conn.

PARIS, 1915, Irving—(*Finance*)—Born April 29, 1893, New York, N.Y.; died Mar. 28, 1964; Lieut. (s.g.), Naval Aviation, W.W. I.

PARK, 1861, William Edwards, M.A., D.D.—(*Ministry*)—Born July 1, 1837, Andover, Mass.; died May 19, 1910, Oberlin, Ohio.

PARKER, 1898, Grenville—(*Finance*)—Born Dec. 22, 1873, New York City; died July 18, 1924, New York City. Officer Candidate, F.A., World War I.

PARKER, 1880, Wilbur—(*Business*)—Born May 28, 1858, Titusville, Pa.; died Dec. 2, 1938, Tucson, Ariz. Mbr. Ohio State Legislature, 1890-1891, and of Ohio State Senate, 1892, 1893.

PARKER, 1893, William White Wilson—(*Law and finance*)—Born April 18, 1868, Mifflintown, Pa.; died Sept. 6, 1956, Mifflintown; engaged in war work, U.S. Govt., '16.

PARKIN, 1874, WILLIAM, LL.B.—(*Law*)—Born Sept. 3, 1854, New London, Conn.; died Dec. 24, 1943, New York City.

PARROTT, 1883, JOSEPH ROBINSON, LL.B.—(*Law and transportation*)—Born Oct. 30, 1858, Oxford, Me.; died Oct. 13, 1913, Lake Thompson, Me.

PARSONS, 1893, FRANCIS, LL.B., M.A.—(*Finance and law*)—Born Jan. 13, 1871, Hartford, Conn.; died Dec. 30, 1937, Hartford, Conn. Mbr., Yale Corporation, '25-'37; Trustee, Peabody Museum of Natural History, '36-'37. Capt., American Red Cross, World War I (Fgn. service).

PARSONS, 1921, LANGDON, M.D.—(*Medicine*)—Born Dec. 13, 1899, Milton, Mass.; died June 21, 1980; Prof. of Obstetrics & Gynecology, Chief of Dept., Boston Univ. School of Medicine, '49-'63; Harvard: Clinical Prof. Obstetrics & Gynecology, '63-'66, Dir., Alumni Relations, '63-'71, Prof. Emeritus, '71; Lieut. Col., M.C., AUS, '42-'45; Legion of Merit.

PARTRIDGE, 1880, SIDNEY CATLIN, D.D.—(*Ministry*)—Born Sept. 1, 1857, New York City; died June 22, 1930, Kansas City, Mo. Prot. Epis. Bishop of Kyoto, Japan, '00-'11, and of West Mo., '11-'30.

PATTERSON, 1914, GEORGE WASHINGTON, JR.—(*Advertising*)—Born Jan. 19, 1893, Ann Arbor, Mich.; died in Feb. 1925. Aspirant, Artillery, French Army, World War I.

PATTERSON, 1920, MOREHEAD, LL.B., L.H.D.—(*Industrial*)—Born Oct. 9, 1897, Durham, N.C.; died Aug. 5, 1962; with American Machine & Foundry Co., N.Y.C.; Deputy U.S. Representative on U.N. Disarmament Comm.; London, '54; U.S. Rep. for Internatl. Atomic Agency Negotiations, '54-'55; 2d Lieut., F.A., W.W. I.

PATTERSON, 1927, THOMAS CLEVELAND—(*Literary work*)—Born Aug. 3, 1905, Vivian, W. Va.; died Oct. 24, 1932, Huntington, W. Va.

PATTON, 1875, JOHN, LL.B.—(*Law*)—Born Oct. 30, 1850, Curwensville, Pa.; died May 24, 1907, Grand Rapids, Mich. Mbr., U.S. Senate, 1894-1895.

PAUL, 1912, CHARLES HENRY—(*Law*)—Born June 18, 1890, Los Angeles, Calif.; died July 8, 1976.

PAYSON, 1872, HENRY SILAS, LL.B.—(*Farming*)—Born Dec. 23, 1849, Chicago, Ill.; died Jan. 23, 1922, Peoria Township, Ill.

PECK, 1861, TRACY, M.A., LL.D.—(*Education*)—Born May 24, 1838, Bristol, Conn.; died Nov. 24, 1921, Rome, Italy. Prof. of the Latin language and literature, Cornell Univ., 1871-1879, and at Yale Univ., 1880-1908; Prof. emeritus, '08-'21.

PERCY, 1877, FREDERICK BOSWORTH, M.D.—(*Medicine*)—Born July

23, 1856, Bath, Me.; died June 15, 1928, Brookline, Mass. Assoc. Prof. of materia medica, Boston Univ. Medical School, 1891-1898, and Prof., 1898-1909; Prof. of clinical medicine, '08-'15, and Prof. emeritus, '15-'28.

PERKINS, 1840, JOHN, LL.B.—(*Law*)—Born July 1, 1819, Natchez, Miss.; died Nov. 28, 1885, Baltimore, Md. Mbr. of Congress, 1853-1857. Sec. of the Navy, Confederate States, Civil War.

PERKINS, 1842, NATHANIEL SHAW—(*Business*)—Born April 19, 1822, New London, Conn.; died Feb. 8, 1905, New London.

PERKINS, 1858, THOMAS ALBERT—(*Finance*)—Born Jan. 17, 1839, Brooklyn, N.Y.; died Jan. 1, 1909, Brooklyn; Sgt., Union Army, Civil War.

PERKINS, 1840, WILLIAM, LL.B.—(*Law*)—Born April 26, 1821, Grand Gulf, Miss.; drowned Sept. 27, 1854 in the Atlantic Ocean.

PERRIN, 1869, BERNADOTTE, Ph.D., LL.D.—(*Education*)—Born Sept. 15, 1847, Goshen, Conn.; died Aug. 31, 1920, Saratoga Springs, N.Y. Prof. of Greek, Western Reserve Coll., 1881-1893; Prof. of Greek, Yale Univ., 1893-1909, and Prof. emeritus, '09-'20.

PERRIN, 1879, JOHN—(*Finance*)—Born Jan. 17, 1857, Rossville, Ind.; died Dec. 27, 1931, Washington, D.C.

PERRIN, 1909, JOHN BATES—(*Finance*)—Born Jan. 16, 1887, Lafayette, Ind.; died Oct. 29, 1913, Pasadena, Calif.

PERRIN, 1906, LEE JAMES, LL.B.—(*Law*)—Born Dec. 27, 1884, Cleveland, Ohio, died Sept. 14, 1946, New York City. Officer candidate, F.A., World War I.

PERRIN, 1908, LESTER WILLIAM, M.C.E.—(*Finance*)—Born Oct. 29, 1886, Lakewood, N.J.; died Jan. 6, 1973, Far Hills, N.J.; formerly Ptnr., Lazard Freres et Cie., N.Y.C.; Mayor, Bernardsville, N.J., '40-'44; Capt., Inf., May '17-June '19.

PERRY, 1863, DAVID BRAINARD, B.D., M.A., D.D.—(*Education*)—Born Mar. 7, 1839, Worcester, Mass.; died May 21, 1912, Battle Creek, Mich. Prof. of Greek and Latin, Doane Coll., 1873-1881, and Pres. 1881-1912.

PERRY, 1870, JOHN HOYT, LL.B., M.A.—(*Law*)—Born July 26, 1848, Southport, Conn.; died Sept. 2, 1928, Averill, Vt. Mbr., Conn. State Legislature, 1877, 1878, 1881, and Spkr. 1889; Mbr., Conn. State Senate, 1913-1915. Pres. Bd. of Commissioners of Conn. State Police, '10-'21.

PERRY, 1871, WILBERT WARREN, LL.B.—(*Law*)—Born Dec. 20, 1851, Canton, Conn.; died Feb. 12, 1895, Hartford, Conn. Asst. state's attny., Conn. 1877-1881. Mbr., Conn. State Legislature, 1883.

PERSHING, 1966, Richard Warren—Born Oct. 25, 1942; died Feb. 17, 1968, in Vietnam; Lieut., 101st Airborne Div.

PETERS, 1886, Frank George—(*Law*)—Born Aug. 18, 1863, Syracuse, N.Y.; died May 13, 1893, West Superior, Wis.

PETERS, 1842, John Andrew, LL.D.—(*Law*)—Born Oct. 9, 1822, Ellsworth, Me.; died April 21, 1904, Bangor, Me. Mbr., Maine State Senate, 1862-1863 and of Maine State Legislature, 1864. Attny. Gen. of Maine, 1864-1866. Mbr. of Congress, 1866-1873. Associate justice, Maine Supreme Court, 1873-1883, and chief justice, 1883-1900.

PETERS, 1880, William Allison—(*Law*)—Born Mar. 8, 1858, Atlanta. Ga.; died Oct. 26, 1929, Seattle, Wash.

PHELPS, 1886, Edward Johnson, M.A.—(*Finance*)—Born April 18, 1863, Andover, Mass.; died Aug. 9, 1938, New Monterey, Calif. Mbr., Yale Alumni Bd. '10-'16.

PHELPS, 1886, Sheffield—(*Literary work*)—Born July 24, 1864, New Haven, Conn.; died Dec. 1902, Aiken, S.C.

PHELPS, 1860, William Walter, LL.B., M.A., LL.D.—(*Law and government*)—Born Aug. 24, 1839, New York City; died June 17, 1894, Englewood, N.J. Mbr. of Congress, 1873-1875, and 1883-1889. U.S. Minister to Austria, 1881-1882, and to Germany, 1889-1893. Judge N.J. Court of Errors and Appeals 1893-1894. Mbr., Yale Corporation, 1872-1892.

PHELPS, 1895, Ziba Bennett—(*Insurance*)—Born Dec. 7, 1871, Wilkes-Barre, Pa.; died Nov. 2, 1961; V.P., Security Mutual Life Ins. Co., Binghamton, N.Y.; Bd. Pres., Binghamton City Hosp. 20 yrs.; Lieut., Amer. Red Cross, W.W. I.

PHILBIN, 1913, Jesse Holladay, LL.B.—(*Law, Business*)—Born Oct. 27, 1890, New York, N.Y.; died Mar. 14, 1969; Asst. Gen. Counsel and Sec., '27, Fed. Res. Bank of N.Y.; 2d Lieut., and Aide to Gen. Hatch (AEF), W.W. I; State Department, W.W. II.

PHILBIN, 1910, Stephen H., LL.B.—died Nov. 13, 1973, Old Lyme, Conn.

PHINNEY, 1846, Elihu, M.A.—(*Industrial*)—Born June 20, 1823, Cooperstown, N.Y.; drowned Sept. 20, 1892, Cooperstown.

PIERCE, 1904, Frederick Erastus, M.A., Ph.D.—(*Education*)—Born Mar. 11, 1878, South Britain, Conn.; died Mar. 26, 1935, New Haven, Conn. Asst. Prof. of English, Yale Univ., '10-'26; Assoc. Prof., '26-'35.

PIERSON, 1886, Charles Wheeler, M.A.—(*Law*)—Born May 3, 1864, Florida, N.Y.; died May 4, 1934, New York City.

PIERSON, 1836, William Seward, M.A.—(*Law*)—Born Mar. 28,

1815, Durham, Conn.; died April 18, 1879, Keene, N.H. Brig. Gen. Union Army, Civil War.

PILLSBURY, 1936, EDMUND PENNINGTON—(*Business*)—Born Dec. 22, 1913, Minneapolis, Minn.; died Feb. 22, 1951, Sutherland, Nebr.; Flight Inst. Army cadets, Word War II; Mbr. Exec. Com., Yale Alumni Assn. of the Northwest.

PINCHOT, 1897, AMOS RICHARDS ENO—(*Law*)—Born Dec. 6, 1873, Paris, France; died Feb. 18, 1944, New York City. Priv., Cav., Spanish-American War. A founder, 1917, American Civil Liberties Union, Inc. and an organizer of American Com. on War Finance, 1917.

PINCHOT, 1889, GIFFORD, M.A., Sc.D., LL.D.—(*Government*)—Born Aug. 11, 1865, Simsbury, Conn.; died Oct. 4, 1946, New York City. U.S. Forester and Chief of Division of Forestry, 1898-1910. Prof. of Forestry, Yale Univ., '03-'36 and Prof. emeritus, '36-'46. Commissioner of Forestry, State of Pennsylvania, '20-'23. Governor, State of Pennsylvania, '23-'27 and '31-'35. Mbr., U.S. Food Administration, World War I.

PINCKARD, 1848, THOMAS CICERO, M.A.—(*Education*)—Born Aug. 23, 1826, Forsyth, Ga.; died Oct. 16, 1904, Opelika, Ala.

PLATT, 1882, HENRY BARSTOW—(*Insurance and transportation*)—Born Feb. 2, 1860, Owego, N.Y.; died Oct. 20, 1938, New York City. Dir., Bureau of Personnel, Overseas Service, Atlantic Div., Am. Red Cross, World War I.

PLATT, 1879, LEWIS ALFRED—(*Industrial*)—Born May 31, 1854, Waterbury, Conn.; died Jan. 21, 1919, Miami, Fla. Mbr. Conn. State Senate, '10-'12.

POLLOCK, 1878, GEORGE EDWARD—(*Industrial*)—Born Aug. 30, 1856, Pittsfield, Mass.; died Aug. 2, 1918, New York City.

POLLOCK, 1882, WILLIAM—(*Transportation*)—Born April 2, 1859, Pittsfield, Mass.; died Nov. 1, 1916, New York City.

POMEROY, 1887, JOHN NORTON, LL.B., M.A.—(*Education*)—Born May 7, 1866, South Orange, N.J.; died May 31, 1924, Urbana, Ill. Asst. Prof. of Law. University of Illinois, 1910-1911, and Prof., '11-'24.

POOLE, 1891, WILLIAM FREDERICK, LL.B—(*Law*)—Born Jan. 14, 1868, Melrose, Mass.; died Sept. 19, 1926, Canton, Mass.

POORE, 1926, CHARLES GRAYDON—(*Literary work*)—Born Aug. 20, 1902, Monterey, Mexico; died July 26, 1971; Writer; Mbr., Univ. Council and Publications Com.; formerly Book Critic *New York*

Times, and Chief Book Critic, *Harper's Magazine* in '50's; retired to write, "Extravagant Victory," on Mexican War, 1846-48; Major, G.S.C., U.S. Army, June '42-April '45; *Croix de Guerre*, 3 battle stars.

PORTER, 1858, EDWARD CLARKE, M.A.— (*Ministry*)—Born Dec. 3, 1836, Old Hadley, Mass.; died Jan. 8, 1876, Racine, Wis.

PORTER, 1916, GILBERT EDWIN, 3D.—(*Finance*)—Born July 19, 1892, Chicago, Ill.; died April 10, 1939, Chicago, Ill. 1st Lieut. F.A., World War I.

POST, 1927, RUSSELL LEE, LL.B.—(*Law*)—Born Aug. 22, 1904, West Hartford, Conn.; died April 1, 1948, New York City. Lt. Col., USAAF, World War II.

POTTER, 1902, RODERICK—(*Business*)—Born Sept. 13, 1879, Buffalo, N.Y.; died Mar. 4, 1959, Athens, Greece.

POTWIN, 1854, LEMUEL STOUGHTON, M.A., D.D.—(*Education*)—Born Feb. 4, 1832, South Windsor, Conn.; died Jan. 9, 1907, Cleveland, Ohio. Prof. of Latin, Western Reserve Univ., 1871-1892, and of English, 1892-1906; Prof. emeritus, '06-'07.

PRATT, 1857, GEORGE—(*Law*)—Born Oct. 12, 1832, East Weymouth, Mass.; died June 4, 1875, Norwich, Conn. Mbr., Conn. State Legislature, 1860, 1864, 1865, and 1869.

PRATT, 1842, JULIUS HOWARD, M.A.—(*Business*)—Born Aug. 1, 1821, Meriden, Conn.; died Oct. 14, 1909, Montclair, N.J.

PRATT, 1864, WILLIAM HALL BRACE, M.D.—(*Medicine*)—Born Oct. 16, 1842, Brooklyn, N.Y.; died Aug. 27, 1916, Brooklyn.

PRENTICE, 1928, JOHN ROCKEFELLER, LL.B.—(*Business, Law*)—Born Dec. 17, 1902, New York, N.Y.; died June 3, 1972, Phoenix, Az.; Owner, American Breeders Service, Inc., '41-'67; Law, '31-'41; Major, F.A., '41-'46; Bronze Star.

PRENTICE, 1873, SAMUEL OSCAR, LL.B., M.A., LL.D.—(*Law*)—Born Aug. 8. 1850, North Stonington, Conn.; died Nov. 2, 1924, Hartford, Conn. Judge, Conn. Supreme Court, '01-'20 (chief justice, '13-'20). Prof. of pleading, Yale Law School, '01-'16.

PRESTON, 1836, HENRY KIRK—(*Law*)—Born Jan. 30, 1814, Northbridge, Mass.; died Oct. 21, 1854, Savannah, Ga.

PRESTON, 1899, ORD—(*Finance*)—Born Aug. 15, 1874, St. Helena, Calif.; died Feb. 7, 1949, La Jolla, Calif. Major, Air Service, World War I.

PRICE, 1892, FRANK JULIAN, LL.B.—(*Law*)—Born Feb. 3, 1870, Brooklyn, N.Y.; died Feb. 4, 1950, New York City; Mbr., N.Y. State Legislature, '00-'01; Asst. Corp. Counsel, New York City, '11-'18.

PUGSLEY, 1864, ISAAC PLATT, M.A.—(*Law*)—Born June 5, 1843, Go-

shen, N.Y.; died June 3, 1915, Toledo, Ohio. Judge, Court of Common Pleas, 1883-1903. Asst. Paymaster, U.S. Navy, Civil War.

PUMPELLY, 1915, HAROLD ARMSTRONG—(*Mining*)—Born Aug. 7, 1890, Owego, N.Y.; died Feb. 25, 1954, Owego; Lieut., Naval Air Service, World War I.

PURNELL, 1854, CHARLES THOMAS—(*Law*)—Born April 16, 1833, Denton, Md.; died Sept. 26, 1866, McNutt, Miss.

PUTNAM, 1839, JAMES OSBORNE, M.A.—(*Law*)—Born July 4, 1818, Attica, N.Y.; died April 24, 1903, Buffalo, N.Y. Mbr., N.Y. State Senate, 1854-1855. U.S. consul, Havre, France, 1861-1866. U.S. Minister to Belgium, 1880-1882, Chancellor, Univ. of Buffalo.

PUTNAM, 1916, PHELPS—(*Literary work*)—Born July 9, 1894, Allston, Mass.; died July 3, 1948, Jamaica Plain, Mass.

R

RAFFERTY, 1835, JOHN CHANDLER—(*Law*)—Born Dec. 29, 1816, Woodbury, N.J.; died Dec. 31, 1880, Flemington, N.J. Mbr., Pa. State Senate.

RAMSDELL, 1872, CHARLES BENJAMIN, D.D.—(*Ministry*)—Born June 12, 1843, New York City; died June 4, 1906, Washington, D.C. Acting Pres., New Windsor Coll. Served in Union Army, Civil War.

RAND, 1909, STUART CRAIG, LL.B.—(*Law*)—Born June 9, 1888, Newton Center, Mass.; died Oct. 7, 1956, Boston, Mass.; Mbr., Mass. State Legislature, '43-'46; Capt., Air Service, World War I; former Mbr., Yale Alumni Bd.

RANDOLPH, 1911, FRANCIS FITZ, M.A., J.D.—(*Finance*)—Born Feb. 24, 1889, Elmira, N.Y.; died Oct. 12, 1973, New York, N.Y.; Sr. Ptnr., J & W Seligman & Co.; Chmn., Exec. Comm., Tricontinental Investment Cos.; Chmn. Fin. Com., Vassar Coll., '46-'65; Treas., RTA, '42-'55; Treas., Metropolitan Opera Guild, '46-'48; Dir., Metropolitan Opera Assn.; Chief, Paris Bur. for Armenia and Rumania, Amer. Relief Adminis., '19; Mbr., War Loan Staff, U.S. Treasury, '19-'20; Capt., U.S. Army, Cavalry and F.A., '16-'19; Cited twice Gen. Orders, 1st Div., AEF; Silver Star, Medal, Battle of Soissons, Victory Medal with clasps for 5 major operations, Army of Occupation, Germany Medal, Fourragere of *Croix de Guerre*, Conspicuous Service Medal, N.Y. State.

RANKIN, 1845, ROBERT—(*Law*)—Born April 23, 1823, Brooklyn, N.Y.; died Oct. 7, 1859, San Francisco, Calif.

RATHBORNE, 1931, JOSEPH CORNELIUS—(*Industrial*)—Born June 17, 1909, Harvey, Jefferson Parish, La.; died July 21, 1954, Boston, Mass.; Maj., USAAF, World War II; V.P. and Pres., Yale Alumni Assn. of La.; Pres., Yale Polo Assn.

RAYMOND, 1949, GEORGE T.P.—(*Business*)—Born June 18, 1921, Oxnard, Calif.; died March 13, 1980; formerly Sales Dir., Cabot Corp.; Lieut. Cmdr., USNR, '41-'46.

RAYMOND, 1841, HENRY HUNTER, LL.B., M.A.—(*Law*)—Born July 2, 1822, Charleston, S.C.; died May 31, 1876, Charleston. Maj., Confederate Army, Civil War.

RAYMOND, 1869, HENRY WARREN, LL.B., M.A.—(*Literary work*)—Born Sept. 10, 1847, New York City; died Feb. 18, 1925, Germantown, Pa.

READ, 1945, RICHARD ROLLINS—(*Insurance*)—Born July 30, 1922, Boston, Mass.; died April 23, 1967; Lieut. (j.g.), Navy Aviation, W.W. II.

REED, 1889, HARRY LATHROP, D.D., S.T.D.—(*Education*)—Born Dec. 15, 1867, Port Byron, N.Y.; died May 23, 1964; Pres., Auburn Theological Seminary; Trustee, Wells Coll. '14-'49.

REED, 1904, LANSING PARMELEE, LL.B.—(*Law*)—Born April 2, 1882, New York City; died Dec. 2, 1937, New York City. Trustee, Union Theological Seminary, '29-'37. Chmn., Yale Univ. Fund Assoc., '30-'32.

REILLY, 1915, JOHN SYLVESTER—(*Industrial*)—Born Feb. 24, 1891, Brockton, Mass.; died May 9, 1980; formerly Pres., Gordon & Dilworth, Inc., and Diplomat Products, Inc.; Capt. Ordnance, '17-'19.

REPONEN, 1954, ROBERT GORDON—(*Finance*)—Born May 19, 1932, Gardner, Mass.; died Nov. 16, 1982; General Mgr., Banco de Jerez, London, England; Sec./Treas., Yale Club of London, '69-'70; First Natl. City Bank, '56-'75; Capt., AUS, '54-'57.

RIBEIRO, 1838, CARLOS FERNANDO, M.A., M.D.—(*Farming*)—Born 1816, Alcantara, Maranham, Brazil; died in 1889, Alcantara, Brazil.

RICH, 1838, CHARLES, M.A.—(*Business*)—Born Sept. 12, 1809, Boston, Mass.; died Oct. 31, 1862, Beardstown, Ill.

RICHARDS, 1885, EUGENE LAMB—(*Law*)—Born June 14, 1863, New Haven, Conn.; died Sept. 17, 1927, Woodbridge, Conn. Deputy Attny. Gen., N.Y. 1896-1898.

RICHARDS, 1840, GEORGE, M.A.—(*Ministry*)—Born Nov. 2, 1816,

New London, Conn.; died Oct. 20, 1870, Bridgeport, Conn. Mbr., Yale Corp., 1868-1870.

RICHARDSON, 1901, ALLAN HARVEY—(*Insurance*)—Born Oct. 19, 1872, Montville, Mass.; died Nov. 27, 1955, Virginia Beach, Va.; Treas., Puerto Rico, '12-'15; former Class Agt.

RICHARDSON, 1905, GARDNER—(*Government*)—Born Feb. 8, 1884, Hanover, N.H.; died June 22, 1972, Woodstock, Conn. Commercial Attaché, Dept. of Commerce, '26-'38; First Sec., Dept. of State, '38-'47; Comm. for Relief, Belgium, '15-'17; Chief of America Relief Adminis., Hungary, '19-'20, Austria, '20-'23; Exec. Asst. to Dir. Gen., Internatl. Refugee Organization, '48-; Capt. Cav., AEF, W.W. I; Chmn. '05 Class Com.

RICHARDSON, 1869, RUFUS BYAM, B.D., Ph.D.—(*Education*)—Born April 18, 1845, Westford, Mass.; died Mar. 10, 1914, Clifton Springs, N.Y. Prof., Indiana Univ., 1880-1882, and at Dartmouth 1882-1893. Dir. Am. School of Classical Studies at Athens, 1893-1903. Corp., Inf., Union Army, Civil War.

RICHARDSON, 1849, WALKER—(*Farming*)—Born Oct. 1, 1825, Elbert County, Ga.; died Jan. 20, 1875, Glenville, Ala. Served in Confederate Army, Civil War.

RIGGS, 1865, BENJAMIN CLAPP, M.D.—(*Medicine*)—Born Feb. 16, 1845, St. Louis, Mo.; died April 18, 1883, Saranac Lake, N.Y.

RIPLEY, 1862, GEORGE COIT, M.A.—(*Law*)—Born Aug. 24, 1839, Norwich, Conn.; died Jan. 19, 1909, Minneapolis, Minn. 1st Lieut., Inf., Union Army, Civil War.

RITCHIE, 1927, WALLACE PARKS—(*Medicine*)—Born Feb. 20, 1905, St. Paul, Minn.; died Jan. 22, 1969; Clinical Prof. of Neurosurgery, Univ. of Minnesota; Pres., Ramsey County Medical Soc., '40-'41, St. Paul Surgical Soc., '50-'51; Minnesota Soc. Neurological Sciences, '66-'67, Minnesota Academy of Medicine, '67-'68; Major, M.C., Army, '41-'44.

ROBB, 1844, JAMES MADISON—(*Law*)—Born Oct. 1823, Philadelphia, Pa.; died July 1, 1899, Philadelphia.

ROBB, 1843, JOHN HUNTER—(*Law*)—Born Feb. 12, 1822, Philadelphia, Pa.; died Oct. 7, 1864, Philadelphia.

ROBBINS, 1874, EDWARD DENMORE, LL.B.—(*Law*)—Born Oct. 20, 1853, Wethersfield, Conn.; died Oct. 7, 1932, New Haven, Conn. Prof. of general and medical jurisprudence, Yale Univ., 1899-1903. Mbr., Conn. State Legislature, 1882-1883, and of Conn. State Bd. of Education, 1884-1919. Trustee, Conn. Coll. for Women, '11-'22.

ROBBINS, 1927, WILLIAM WELLS, LL.B.—(*Law*)—Born June 18, 1902, Norwich, Kans.; died Feb. 11, 1945, New York City. With Lend-Lease Administration, Cairo, 1943.

ROBERTS, 1916, CHARLES HOLMES, JR.—(*Finance*)—Born Jan. 31, 1894, Brooklyn, N.Y.; died Oct. 22, 1941, Framingham, Mass. Rep. in Massachusetts General Court, '39-'41. Lieut., Naval Air Service, World War I (Fgn. service).

ROBERTS, 1850, ELLIS HENRY, M.A., LL.D.—(*Finance*)—Born Sept. 30, 1827, Utica, N.Y.; died Jan. 8, 1918, Utica. Mbr., N.Y. State Legislature, 1867. Mbr. of Congress, 1871-1875. Asst. Treas. of the U.S., 1889-1893, and Treas., 1899-1903.

ROBERTSON, 1859, CHARLES FRANKLIN, M.A., D.D., LL.D.—(*Ministry*)—Born Mar. 2, 1835, New York City; died May 1, 1886, St. Louis, Mo. Prot. Episc. Bishop of Missouri, 1868-1886.

ROBERTSON, 1833, ROBERT—(*Literary work*)—Born Feb. 3, 1813, Norfolk, Va.; died Aug. 4, 1845, Norfolk.

ROBESON, 1837, ABEL BELLOWS, M.D.—(*Medicine*)—Born April 10, 1817, Fitzwilliam, N.H.; died Mar. 22, 1853, New York City.

ROBINSON, 1927, FREDERICK FLOWER—(*Industrial*)—Born October 21, 1904, Watertown, N.Y.; died July 8, 1977; bus., National Aviation & Technology Corp.; Yale Alumni Fund; Asst. to Pres., Libby-Owens-Ford, '37-'38; Pres., National Aviation Corp., '42-'76; Asst. Administrator to NRA, '33-'34; Vice Chmn., Flight Safety Found., '50-'65.

ROBINSON, 1856, GEORGE CHESTER—(*Ministry*)—Born Aug. 9, 1833, Hartwick, N.Y.; died Sept. 21, 1863, Wellsboro, Pa.

ROBINSON, 1889, HENRY SEYMOUR—(*Insurance*)—Born April 16, 1868, Hartford, Conn.; died Mar. 3, 1926, Nassau, Bahama Islands, B.W.I.

ROBINSON, 1893, JOHN TRUMBULL—(*Law*)—Born April 25, 1871, Hartford, Conn.; died Nov. 27, 1937, Hartford, Conn. U.S. Attny., Distr. of Conn. '08-'12.

ROBINSON, 1937, JOHN TRUMBULL—(*Education*)—Born March 20, 1915, Hartford, Conn.; died Nov. 17, 1977; formerly Teacher, Coach, Watkinson School, Hartford, Conn.; Alumni Bd., Chicago, '57-'58; V.P., Yale Club of Chicago, '57-'58, Dir., 3 yrs., Chmn., Com. on Enrollment & Scholarships, '52-'56; Yale Scholarship Trust of Ill., '52-'57; Class Agt., Alumni Fund; Dir., Hartford Amateur Hockey Assn.; Lieut., USN, '43-'45; Air Medal.

ROBINSON, 1843, LUCIUS FRANKLIN, LL.B., M.A.—(*Law*)—Born Feb. 1, 1824, Hartford, Conn.; died Mar. 11, 1861, Hartford.

ROBINSON, 1885, LUCIUS FRANKLIN, LL.D.—(*Law*)—Born June 12, 1863, Hartford, Conn.; died June 11, 1941, Hartford, Conn. Pres., Hartford Common Council, 1890-1891. Pres., Connecticut Constitutional Convention, 1933, and Chmn., State Park and Forest Commission, '17-'38.

ROBY, 1893, JOSEPH, M.D.—(*Medicine*)—Born Aug. 19, 1871, Rochester, N.Y.; died July 15, 1954, Rochester.

ROBY, 1888, SAMUEL SIDNEY BRESE—(*Business*)—Born Mar. 10, 1866, Rochester, N.Y.; died April 23, 1931, Rochester.

ROCKEFELLER, 1900, PERCY AVERY—(*Finance*)—Born Feb. 27, 1878, New York City; died Sept. 25, 1934, New York City.

ROCKWELL, 1906, FOSTER HARRY—(*Finance*)—Born Aug. 15, 1880, in Vermont; died Jan. 26, 1942, Phoenix, Ariz. Major, American Red Cross, World War I (Fgn. service).

ROCKWELL, 1849, JOHN, M.A.—(*Finance*)—Born April 26, 1829, Savannah, Ga.; died Oct. 23, 1909, Santa Barbara, Calif.

RODMAN, 1879, ROBERT SIMPSON—(*Farming and mining*)—Born Feb. 1, 1855, Pittsburgh, Pa.; died Sept. 23, 1928, near Lakeport, Calif.

ROGERS, 1898, DAVID FRANCIS—(*Finance*)—Born April 5, 1876, New York City; died April 9, 1943, New Canaan, Conn.

ROGERS, 1893, DERBY—(*Law*)—Born Dec. 15, 1871, New York City; died Mar. 20, 1955, New Canaan, Conn.; Supply Sgt., New Canaan Co., Conn. State Guard, '18.

ROGERS, 1905, EDMUND PENDLETON—(*Finance*)—Born July 28, 1882, Hyde Park, N.Y.; died Sept. 15, 1966; Officer Candidate, F.A., W.W. I.

ROGERS, 1914, HERMAN LIVINGSTON, B.S.—(*Engineering*)—Born Sept. 27, 1891, Hyde Park, N.Y.; died Oct. 21, 1957, Cannes, France; Maj., F.A., World War I (AEF); Chief French Section, NBC, World War II.

ROGERS, 1887, JOHN, Ph.B., M.D.—(*Medicine*)—Born Feb. 19, 1866, New York City; died Nov. 19, 1939, New York City. Prof. of clinical surgery, Cornell Univ. Medical Coll., '10-'26, and Prof. emeritus, '26-'39.

ROOT, 1861, ALEXANDER PORTER—(*Finance*)—Born June 21, 1840, Wilmington, Del.; died Feb. 18, 1908, Houston, Texas. Major, Cav., Confederate Army, Civil War.

ROSS, 1852, WILLIAM BALDWIN, LL.B., M.A.—(*Law*)—Born Nov. 13, 1831, New York City; died Jan. 14, 1904, New York City. Served in Union Army, Civil War.

ROWLAND, 1911, JOHN T.—(*Literary work*)—Born March 5, 1888, Greenwich, Conn.; died January 3, 1980; Author; Cmdr., USN, Destroyer, Anti-submarine & Convoy Duty, European waters, '17-'20.

ROWLAND, 1836, WILLIAM SHERMAN—(*Law*)—Born Oct. 23, 1817, Windsor, Conn.; died May 5, 1856, New York City.

RUMSEY, 1902, BRONSON CASE—(*Education, Farming*)—Born Jan. 11, 1879, Buffalo, N.Y.; died Oct. 6, 1967; State Senator, '32-'40, Wyoming; Capt. American Field Service, W.W. II.

RUNNALLS, 1937, JOHN FELCH BERTRAM—(*Theological student*)—Born April 6, 1915, Corvallis, Ore.; died Sept. 7, 1945, Washington, D.C. Major, AUS (Military Intelligence), World War II.

RUSSELL, 1926, FRANK FORD—(*Industrial*)—Born Aug. 9, 1904; died Mar. 22, 1969; National Aviation Corp.; V.P., '29, Sec., '32, Dir., '37, Pres., '39, Chmn., Exec. Com., '54-'68; Cerro Corp: Dir., '43, Pres., '44, Chmn. Bd., '50-'67; formerly Dir.: Chase Manhattan Bank, Otis Elevator Co., Worthington Corp.; Gen. Mgr., National Aircraft War Production Council, '43-'44; Alumni Fund Bequest Chmn., Class of '26, Jan. '57-; Yale's Program for Arts & Sciences, '60-'62; Mbr. Exec. Com., Class of '26.

RUSSELL, 1876, PHILIP GRAY, LL.B.—(*Law*)—Born Feb. 14, 1854, New Haven, Conn.; died July 21, 1900, Washington, D.C.

RUSSELL, 1833, WILLIAM HUNTINGTON, M.A., M.D.—(*Education*)—Born Aug. 12, 1809, Middletown, Conn.; died May 19, 1885, New Haven, Conn. Mbr., Conn. State Legislature 1846-1847. Founder of Collegiate and Commercial Institute, New Haven; Major-Gen., Conn. N.G., 1862-1870.

RYLE, 1892, ERNEST—Born April 3, 1871, Paterson, N.J.; died Nov. 6, 1921, New York City. Canteen worker, World War I (French Army).

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SAFFORD, 1852, GEORGE BLAGDEN, M.A., D.D.—(*Ministry*)—Born Jan. 6, 1832, Boston, Mass.; died Oct. 24, 1895, Brooklyn, N.Y.

SAFFORD, 1920, THEODORE LEE, B.D.—(*Ministry*)—Born Feb. 22, 1898, New Rochelle, N.Y.; died April 10, 1924, Holyoke, Mass. 2d Lieut., F.A., World War I.

SAGE, 1897, DEAN, LL.B., M.A., LL.D.—(*Law*)—Born Dec. 13, 1876,

Brooklyn, N.Y.; died July 1, 1943, at Wyer's Brook, Restigouche Cty., New Brunswick; Deputy Asst. Distr. Attny., N.Y. County, '02. Mayor, Borough of Mendham, N.J., '17-'22. Chmn., Bd. of trustees, Atlanta Univ., '29-'43. Civilian, Army Transport Service, World War I.

SAGE, 1890, Henry Manning—(*Real Estate*)—Born May 18, 1868, Menands, N.Y.; died Sept. 25, 1933, Menands, N.Y. Mbr., N.Y. State Legislature, 1898-1899, and of N.Y. State Senate, '11-'21. Chmn., Hudson River Regulating Bd., '22-'32. Trustee, Cornell Univ., '00-'04. Mbr., N.Y. State Hospital Development Comm., '14-'20.

SANDERSON, 1909, Benjamin Blethen, LL.B.—(*Law*)—Born Oct. 22, 1885, Lynn, Mass.; died Jan. 30, 1974, Portland, Me.; Chmn., Portland Chap., Red Cross, '40-'44; Pres., Hospital Council of Portland, '46-'48, Corporator of Maine Medical Center; Pres., Maine YMCA, '53-'54, Dir., '50-'62; Pres., Portland YMCA, '50-'52.

SANFORD, 1847, Charles Frederick, M.A.—(*Law*)—Born Mar. 22, 1827, New Haven, Conn.; died Oct. 21, 1881, New York City.

SARGENT, 1920, Joseph Weir—(*Insurance*)—Born Dec. 29, 1897, New Haven, Conn.; died Jan. 19, 1970; 2d Lieut., F.A., '17-'18.

SARGENT, 1905, Murray—(*Industrial*)—Born Aug. 30, 1884, New Haven, Conn.; died Oct. 19, 1974, New York, N.Y.; formerly Pres. and Bd. Chmn., Sargent & Co., New Haven; '05 Class Sec., '05-'08, '60-; Al. Fund Agt., '62-; Administrator, N.Y. Hosp., 14 yrs.; Pres., Knickerbocker Hosp., 14 yrs.; Blood Transfusions Assn., N.Y. Hosp. Assn.; W.W. I: Dir., Hardware and Hand Tool Section, War Industries Bd.

SAVAGE, 1932, Boutelle—(*Business*)—Born Jan. 13, 1910, Bangor, Me.; died Nov. 21, 1970; Chmn. Bd., Hannaford Bros. Co., Portland, Me.; Pres.-Treas., T. R. Savage Co., Bangor, '33-; Dir., Merrill Trust Co., Bangor, '55-; Pres., Higher Education Assistance Found., '66-'68; Pres., Bangor Chmbr. Commerce, '52-'54; Bangor Zoning Bd., '44-'46, City Council, '46-'49, School Bd., '53-'57.

SAVAGE, 1846, Josiah—(*Law*)—Born Oct. 5, 1824, Cromwell, Conn.; died Nov. 1, 1849, Trinity River, Calif.

SAWYER, 1913, Homer Eugene, Jr.—(*Industrial*)—Born April 18, 1892, Malden, Mass.; died Nov. 12, 1968; Capt., AEF, W.W. I.

SCARBOROUGH, 1837, William Smith, M.A.—(*Law*)—Born Aug. 2, 1814, Brooklyn, Conn.; died Nov. 27, 1900, New York City. Mbr., Conn. State Senate 1846.

SCHERMERHORN, 1920, Alfred Coster—(*Finance*)—Born Jan. 3, 1898, New York City; died May 2, 1956, Washington, D.C.; 2d

Lieut., F.A., World War I; Lt. Col. USAAF, World War II; Class Agt.

SCHERMERHORN, 1938, AMOS EGMONT—(*Finance*)—Born Feb. 17, 1915, New York, N.Y.; died Aug. 18, 1966; Stock Broker, White, Weld & Co., San Francisco; Cmdr., USNR, W.W. II.

SCHUYLER, 1859, EUGENE, LL.B., Ph.D., LL.D.—(*Government*)—Born Feb. 26, 1840, Ithaca, N.Y.; died July 16, 1890, Venice, Italy. Served in U.S. Diplomatic Service as Sec., Consul, and Minister to Russia, Turkey, England, Italy, Greece, Rumania, Serbia, and Egypt, 1867-1890.

SCHWAB, 1886, JOHN CHRISTOPHER, M.A., Ph.D., LL.D.—(*Education*)—Born April 1, 1865, New York City; died Jan. 12, 1916, New Haven, Conn. Asst. Prof. of political economy, Yale Univ., 1893-1898, and Prof., 1898-1905; librarian of the Univ., '05-'16. Trustee, Mt. Holyoke Coll.

SCHWAB, 1913, LAURENCE VONPOST—(*Business*)—Born May 1, 1891, New York City; died May 14, 1923, Amiens, France. 2d Lieut., Air Service, World War I.

SCOTT, 1858, EBEN GREENOUGH, M.A.—(*Law*)—Born June 15, 1836, Wilkes Barre, Pa.; died July 5, 1919, Wilkes Barre. 1st Lieut., Union Army, Civil War.

SCOTT, 1925, HENRY CLARKSON—(*Business*)—Born Nov. 26, 1901, St. Louis, Mo.; died April 11, 1979; Asst. Mgr., Dorado Beach Development, '70-'73; General Mgr., Pan Am Hotel Development, '60-'67; V.P., West Indies Sugar Co., '55-'60; Pres., Caldwell & Scott, Inc., '54; V.P., Iglehart, Caldwell & Scott, '38-'55; Asst. Supt., Thompson-Starrett Construction Co., '25-'38.

SCOTT, 1928, STEWART PATTERSON—(*Finance*)—Born Jan. 15, 1907, Scranton, Pa.; died Oct. 22, 1965; Installment Credit Banking, Denver United States Natl. Bank, Denver; 1st Lieut. USAAF, W.W. II; Asst. Football Coach, Yale, '28-'35.

SCUDDER, 1880, DOREMUS, M.D., D.D.—(*Ministry*)—Born Dec. 15, 1858, New York City; died July 23, 1942, Puente, Calif. Maj., Am. Red Cross, World War I (Fgn. service).

SEABURY, 1909, MORTIMER ASHMEAD—(*Finance*)—Born July 26, 1886, Dedham, Mass.; died Sept. 8, 1968; formerly Investment Counselor; Yale Alumni Board; Pres., Boston Yale Club, '26-'27; Capt., AUS, Ordnance, W.W. I.

SEARS, 1877, JOSHUA MONTGOMERY—(*Finance and farming*)—Born Dec. 25, 1854, Yarmouth Port, Mass.; died June 2, 1905, Southboro, Mass.

SEELEY, 1835, JOHN EDWARD, M.A.—(*Law*)—Born Aug. 1, 1810,

Ovid, N.Y.; died Mar. 30, 1875, Ovid. Mbr. of Congress, 1870-1871.

SEELY, 1878, EDWARD HOWARD, JR., LL.B.—(*Literary work*)—Born Oct. 25, 1856, New York City; died June 22, 1894, Brooklyn, N.Y.

SEELY, 1860, JOHN FRANK, LL.B.—(*Law*)—Born Oct. 1, 1836, Ludlow, Ohio; died Oct. 21, 1865, Des Moines, Iowa.

SEELY, 1862, WILLIAM WALLACE, M.A., M.D.—(*Education*)—Born Aug. 17, 1838, Ludlow, Ohio; died Nov. 7, 1903, Cincinnati, Ohio. Prof. of ophthalmology and otology, Medical Coll. of Ohio (now Univ. of Cincinnati), 1866-1900; also dean of the faculty, 1881-1900.

SELDEN, 1870, EDWARD GRIFFIN, D.D.—(*Ministry*)—Born June 9, 1847, Hadlyme, Conn.; died June 3, 1904, Saratoga Springs, N.Y.

SEWARD, 1888, WILLIAM HENRY—(*Law and Finance*)—Born Nov. 10, 1864, Auburn, N.Y.; died Feb. 16, 1951, Auburn.

SEYMOUR, 1908, CHARLES, M.A., Ph.D., Litt.D., L.H.D., LL.D.—(*Education*)—Born Jan. 1, 1885, New Haven, Conn.; died Aug. 11, 1963; Pres. Emeritus, Yale Univ.; Curator of Edward M. House Collection, Yale Univ.; Provost, '27-'37; Master, Berkeley Coll., '33-'37; Prof. History, '18-'37; Pres., Yale Univ., '37-'50; Trustee, Carnegie Found., Archaeological Institute; American Comm. to Negotiate Peace, '18-'19; U.S. Delegate, Czechoslovak and Rumanian Commissions, '19; Chmn., Conn. Post-War Planning Comm., '43-'45; Dept. of State, W.W. I.

SEYMOUR, 1935, CHARLES JR., Ph.D.—(*Education*)—Born Feb. 26, 1912, New Haven, Conn.; died Apr. 7, 1977; Prof., Yale University, History of Art Dept., Faculty, Yale Univ., '38-'39, '49-; RTA, Pres., '65-'67, Dir.

SEYMOUR, 1867, HORATIO, M.A.—(*Engineering*)—Born Jan. 8, 1844, Utica, N.Y.; died Feb. 21, 1907, Utica.

SEYMOUR, 1835, JOHN FORMAN, M.A.—(*Business*)—Born Sept. 21, 1814, Pompey Hill, N.Y.; died Feb. 22, 1890, Utica, N.Y.

SEYMOUR, 1875, JOHN SAMMIS, LL.B.—(*Law*)—Born Sept. 28, 1848, Whitney Point, N.Y.; died June 16, 1931, Binghamton, N.Y. Mbr., Conn. State Senate, 1891-1892. U.S. Commissioner of patents, 1893-1897.

SEYMOUR, 1857, STORRS OZIAS, M.A., D.D.—(*Ministry*)—Born Jan. 24, 1836, Litchfield, Conn.; died Sept. 8, 1918, Litchfield. Mbr., Conn. State Bd. of Education, 1880-1884. Trustee, Berkeley Divinity School.

SHACKELFORD, 1958, ROBERT CAMPBELL—(*Education*)—Born Dec. 1, 1935, Pittsburgh, Pa.; died Feb. 23, 1963; Instr., Economics Dept., Univ. of Illinois, Urbana, Ill.

SHATTUCK, 1870, JOHN WALDON—(*Business*)—Born Aug. 18, 1846, Colerain, Mass.; died Sept. 18, 1926, Menands, N.Y.

SHEARER, 1861, SEXTUS—(*Theological student*)—Born Oct. 14, 1838, Buffalo, N.Y.; died Mar. 5, 1869, San Diego, Calif.

SHEDDEN, 1915, WILLIAM MARTINDALE, M.D.—(*Medicine*)—Born Oct. 25, 1892; died Aug. 28, 1970; Instr., Anatomy, Harvard Sch.; Instr., Surgery, Tufts University Medical Sch.; Chief Surgeon, Veterans Adminis. Hosp., Lake City, Fla.; Cmdr., USN, M.C., '42-'45.

SHEFFEY, 1835, HUGH WHITE, LL.D.—(*Law*)—Born April 12, 1815, Wythe Cty., Va.; died April 8, 1889, Staunton, Va. Mbr., Va. State Legislature, 1846; Spkr., 1861-1865. Judge, Superior Court, 1865-1869.

SHEFFIELD, 1863, GEORGE ST. JOHN, M.A.—(*Finance*)—Born April 2, 1842, New Haven, Conn.; died Dec. 14, 1924, Providence, R.I.

SHELDEN, 1913, ALLAN—(*Finance*)—Born Oct. 8, 1890, Detroit, Mich.; died Mar. 28, 1935, New York City. Lt., USNRF, World War I.

SHEPARD, 1936, BLAKE—(*Insurance*)—Born Nov. 21, 1913, St. Paul, Minn.; died Jan. 8, 1972, Sun Valley; Pres., W. A. Lang Co., Lieut., USNR, '42-'46.

SHEPARD, 1916, DONALD CARRINGTON—(*Industrial*)—Born Oct. 8, 1891, Buffalo, N.Y.; died Oct. 25, 1967. 1st Lieut., F.A., World War I.

SHEPARD, 1917, FRANK PARSONS—(*Finance*)—Born May 16, 1895, St. Paul, Minn.; died Apr. 29, 1982; formerly V.P., Bankers Trust Co., N.Y.C.; 1st Lieut., F.A., May '18-Dec. '19.

SHEPARD, 1914, LORRIN ANDREWS, M.D.—(*Medicine*)—Born March 24, 1890, Gaziantep, Turkey; died July 16, 1983; Asst. to Sec. Reuben Holden, in charge of foreign visitors to Yale, '59-'62; Medical Dir. & Surgeon, American Hosp. of Istanbul, '27-'57; Dir., International House, '57-'58; Med. Dir., Mission Hosp., Gaziantep, '19-'25; Chevalier of French Legion of Honor, granted in recognition of services to French Military personnel, '20-'21.

SHEPARD, 1908, ROGER BULKLEY—(*Finance*)—Born Sept. 14, 1885, St. Paul, Minn.; died June 12, 1972, St. Paul, Minn.; formerly Chmn., Bd. Dirs., Federal Reserve Bank of Minneapolis; Ensign, USN, '17-'18.

SHEPLEY, 1895, ARTHUR BEHN, LL.B.—(*Law*)—Born Mar. 25, 1873, St. Louis, Mo.; died Dec. 30, 1918, St. Louis. Madill Prof. of equity, Washington Univ. Law School, '10-'13. Served in Spanish-American War.

SHEPPARD, 1887, WALTER BRADLEY—(*Literary work*)—Born Nov. 22, 1865, Penn Yan, N.Y.; died Oct. 2, 1949, Denver, Colo.

SHERMAN, 1836, FREDERICK ROGER, M.A.—(*Law*)—Born Mar. 31, 1815, New Haven, Conn.; died Jan. 10, 1892, New York City.

SHEVLIN, 1921, EDWIN LEONARD—(*Business*)—Born Oct. 29, 1898, Crookston, Minn.; died Oct. 13, 1950, Boston, Mass.; 2d Lieut., F.A., World War I; V.P., Yale Alumni Assn. of the Northwest, '46-'47, Pres., '47-'48.

SHIPMAN, 1886, ARTHUR LEFFINGWELL, LL.B.—(*Law*)—Born Nov. 19, 1864, Hartford, Conn.; died Oct. 16, 1937, Hartford, Conn. Corp. Counsel of Hartford, '04-'08 and '10-'12. Mbr., Hartford Common Council, 1892; of State Comm. on Sculpture, and Chmn. Hartford Com. of State Council of Defense, 1917.

SHIRLEY, 1869, ARTHUR, B.D., M.A.—(*Ministry and education*)—Born Nov. 19, 1845, Portland, Me.; died Feb. 5, 1927, Stratford, Conn.

SHUGART, 1955, THORNE MARTIN—died March 6, 1972, El Paso, Tx.

SILL, 1861, EDWARD ROWLAND—(*Literary work*)—Born April 29, 1841, Windsor, Conn.; died Feb. 27, 1887, Cleveland, Ohio. Prof. of English, Univ. of California, 1874-1882.

SILL, 1852, GEORGE GRISWOLD, M.A.—(*Law*)—Born Oct. 26, 1829, Windsor, Conn.; died May 19, 1907, Hartford, Conn. Lieut. Gov., Conn., 1873-1877. Mbr., Conn. State Legislature, 1882-1883. U.S. Distr. Attny., Conn. 1888-1892. Mbr., Yale Corp., 1873-1877.

SILLIMAN, 1837, BENJAMIN, M.A., M.D., LL.D.—(*Education*)—Born Dec. 4, 1816, New Haven, Conn.; died Jan. 14, 1885, New Haven. Prof. of chemistry, Yale Univ., 1846-1849 and 1854-1885; Prof. of medical chemistry and toxicology, Univ. of Louisville, 1849-1854.

SIMMONS, 1898, FRANK HUNTER—(*Industrial*)—Born Jan. 1, 1874, Brooklyn, N.Y.; died April 11, 1937, New York City.

SIMMONS, 1890, WALLACE DELAFIELD—(*Industrial*)—Born Nov. 24, 1867, St. Louis, Mo.; died Dec. 7, 1929, St. Louis. Mbr., Conservation Div., War Industries Bd., World War I.

SIMMS, 1891, WILLIAM ERSKINE—(*Farming*)—Born Aug. 1, 1869, Paris, Ky.; died Dec. 31, 1956, New Orleans, La.

SIMPSON, 1817, KENNETH FARRAND, LL.B.—(*Law*)—Born May 4, 1895, New York City; died Jan. 25, 1941, New York City. U.S. Attny., Southern Distr. of New York '25-'27. Spec. Asst. to Attny. Gen. of U.S., '26; Mbr., Repub. Natl. Com., '37-'40, and Mbr., U.S. House of Representatives, '40-'41. Capt., F.A., World War I (AEF).

SINCERBEAUX, 1902, FRANK HUESTIS, LL.B.—(*Law*)—Born July 12, 1874, Kelloggsville, N.Y.; died May 10, 1969.

SLADE, 1954, Francis Henry—(*Business*)—Born Sept. 9, 1833, Boston, Mass.; died Mar. 2, 1890, Orange, N.J.

SLADE, 1851, John Milton, M.A.—(*Business*)—Born in July 1831, Boston, Mass.; died Aug. 13, 1890, White Lake, N.Y.

SLOANE, 1866, Henry Thompson, M.A.—(*Business*)—Born Dec. 1, 1845, New York City; died Sept. 18, 1937, Southampton, N.Y.

SLOANE, 1905, John—(*Business*)—Born April 20, 1883, New York, N.Y.; died Aug. 3, 1971, Bennington, Vt.; formerly Chmn. Bd., W. & J. Sloane; Class Agt., '10-'21; Class Sec., 4 yrs.; W.W. I; Mil. Intell. Div., Combat Sec., General Staff, Washington, D.C., '18; commissioned as 1st Lieut., M.I.D., 11/10/18, but as war had ended declined commission; Intell. Officer, N.Y. State Guard; retired as Col.

SLOANE, 1868, Thomas Chalmers, M.A.—(*Business*)—Born Oct. 21, 1847, New York City; died June 17, 1890, Lenox, Mass. Mbr., Yale Corp., 1889-1890.

SLOANE, 1895, William—(*Business*)—Born Feb. 18, 1873, New York City; died Aug. 11, 1922, Southampton, Long Island. Trustee, Robert Coll. (Istanbul). Chmn. Natl. War Work Council, Y.M.C.A., World War I.

SLOCUM, 1915, Edwin Lyon—(*Finance*)—Born Jan. 17, 1892, Homestead, Pa.; died Dec. 26, 1980; formerly Broker, Francis I. Dupont & Co., New York; Asst. Treas., Class of 1915; Exec. Com., Class of 1915; Capt., 306th Inf., Apr. '17-'19.

SMITH, 1906, Bruce Donald—(*Finance*)—Born Aug. 13, 1885, Lake Forest, Ill.; died May 29, 1952, Lansford, Pa.; Assoc., Emergency Unemployment Relief Comm. of N.Y.C., '32-'33; Red Cross work, '34-'41; Assoc. Administrator, N.Y., State Section, U.S. War Bonds; Spec. Asst. to Chmn. of War Manpower Comm.; Consultant to Gen. Mgr., Atomic Energy Comm., '48; Mbr., Personnel Security Review Bd., '49; Capt., Chemical Warfare Service, World War I (AEF).

SMITH, 1865, Charles Edgar—(*Law*)—Born Dec. 25, 1839, Machias, Me.; died Dec. 18, 1896, Brooklyn, N.Y. Priv., Union Army, Civil War.

SMITH, 1875, Edward Curtis, LL.B., LL.D.—(*Transportation*)—Born Jan. 5, 1854, St. Albans, Vt.; died April 6, 1935, St. Albans, Vt. Mbr., Vermont State Legislature, 1890 and Gov. of Vermont, 1898-1900.

SMITH, 1859, Eugene, LL.B.—(*Law*)—Born April 24, 1839, New York City; died April 5, 1928, New York City.

SMITH, 1889, Herbert Augustine, Ph.D.—(*Forestry*)—Born Dec. 6,

1866, Southampton, Mass.; died July 21, 1944, South Salem, N.Y. Instr. in English, Yale Univ., 1892-1898. With U.S. Forest Service, 1901-1937.

SMITH, 1942, HOWARD FREEMAN, JR.—(*Industrial*)—Born Feb. 4, 1920, Bay City, Mich.; died Jan. 3, 1980; Pres., Lasalle Building Corp., Detroit, Mich.; 1st Lieut., USMC '42-'46; D.F.C., 4 Air Medals.

SMITH, 1912, J. GREGORY—(*Industrial*)—Born July 16, 1889, St. Albans, Vt.; died July 26, 1982; Pres., Equities, Inc.

SMITH, 1847, JOHN DONNELL—(*Science*)—Born June 5, 1829, Baltimore, Md.; died Dec. 2, 1928, Baltimore. Capt., Light Artillery, Confederate Army, Civil War.

SMITH, 1876, RUFUS BIGGS, LL.B.—(*Law*)—Born Oct. 20, 1854, Cincinnati, Ohio; died Dec. 18, 1923, Cincinnati. Prof. of law and chmn., bd. of trustees, Cincinnati Law School, 1896-1900.

SMITH, 1860, WILLIAM THAYER, M.A., M.D., LL.D.—(*Medicine*)—Born Mar. 30, 1839, New York City; died Sept. 17, 1909, Hanover, N.H. Assoc. Prof. of physiology, Dartmouth Medical School, 1883-1885, and Prof., 1885-1907; Prof of surgery, '07-'09; also dean, 1896-1909.

SMITH, 1896, WINTHROP DAVENPORT—(*Business*)—Born Sept. 12, 1874, New York City; died May 5, 1922, New York City.

SMYTH, 1897, NATHAN AYER, LL.B., M.A.—(*Law*)—Born May 29, 1876, Quincy, Ill.; died Dec. 7, 1956, New York City; Asst. Dist. Attny., N.Y. Cty., '02-'10; Asst. Dir. Gen., U.S. Employment Service, '17-'18; Asst. Gen. Counsel, U.S. Shipping Bd., '21; Gen. Counsel, U.S. Shipping Bd. Emergency Fleet Corp., '22-'25; Class Sec.

SNELL, 1918, RAYMOND FRANKLIN—(*Finance*)—Born June 26, 1894, Brocton, Mass.; died Nov. 15, 1982; formerly engaged in financial management; 2d Lieut., F.A., May '17-Jan. '19.

SOLLEY, 1888, FRED PALMER, Ph.B., M.D.—(*Medicine*)—Born Oct. 10, 1866, Newark, N.J.; died Sept. 7, 1950, New York City.

SOPER, 1904, WILLARD BURR, M.D.—(*Medicine*)—Born Dec. 28, 1882, Bloomington, Ill.; died Oct. 30, 1939, New Haven, Conn. Assoc. Clin. Prof. of Medicine, Yale Univ., '27-'31; and Assoc. Prof. of medicine and tuberculosis consultant, Dept. of Univ. Health, '31-'39. Maj., Med. Corps, World War I (AEF).

SOULE, 1911, LESLIE—(*Industrial*)—Born April 29, 1889, Flushing, N.Y.; died July 18, 1971, Dover, Mass.; formerly Treas., Masoneilan Div., Worthington Corp.; Lieut. (j.g.), USN, April '17-'18.

SOUTHGATE, 1866, CHARLES MCCLELLAN—(*Ministry*)—Born Nov. 18, 1845, Monroe, Mich.; died June 5, 1912, Gloucester, Mass. Trustee, Hartford Theological Seminary, 1894-1912.

SOUTHMAYD, 1834, SAMUEL GRAY, M.D.—(*Industrial*)—Born Oct. 30, 1811, Middletown, Conn.; died Oct. 9, 1877, Hartford, Conn.

SOUTHWORTH, 1875, EDWARD WELLS, LL.B., LL.M.—(*Law*)—Born Jan. 14, 1854, West Springfield, Mass.; died April 20, 1902, New York City.

SOUTHWORTH, 1863, GEORGE CHAMPLIN SHEPARD, LL.B., M.A., L.H.D.—(*Education*)—Born Dec. 13, 1842, West Springfield, Mass.; died Feb. 19, 1918, Springfield. Prof. of belles-lettres, Kenyon Coll., 1881-1888; Prof. of sacred theology, Bexley Theological Seminary, 1885-1888; Prof. of the English language and literature, Case School of Applied Science, 1889-1900.

SPALDING, 1838, EBENEZER, M.A.—(*Law*)—Born Oct. 21, 1816, Brooklyn, Conn.; died Aug. 17, 1866, St. Louis, Mo.

SPALDING, 1872, GEORGE ATHERTON, M.D.—(*Medicine*)—Born Jan. 14, 1849, Greenup Court House, Ky.; died Oct. 2, 1906, New York City.

SPAULDING, 1945, JOSIAH AUGUSTUS, LL.B.—(*Law*)—Born Dec. 21, 1922, Worcester, Mass.; died Mar. 25, 1983; Ptnr., Bingham, Dana & Gould, Boston; Capt., USMC, '42-'45, '51-'53; D.F.C., 4 Air Medals.

SPENCER, 1878, CHARLES LANGFORD—(*Welfare*)—Born Feb. 10, 1855, Utica, N.Y.; died Sept. 24, 1941, St. Paul, Minn. Clerk, U.S. District Court of Minn., 1892-1921, and U.S. Commissioner, 1895-1921.

SPENCER, 1880, EDWARD CURRAN, M.D.—(*Medicine*)—Born Dec. 8, 1858, St. Paul, Minn.; died Dec. 26, 1891, Coronado Beach, San Diego, Calif.

SPENCER, 1834, GEORGE GILMAN, M.A.—(*Business*)—Born Sept. 13, 1812, Hartford, Conn.; died Oct. 15, 1885, Brooklyn, N.Y.

SPENCER, 1867, JAMES MAGOFFIN, LL.B., M.A.—Born April 9, 1839, Brooklyn, N.Y.; died May 13, 1920, Burlington, N.Y. Prof. of mathematics, Gallaudet Coll., Washington, D.C., 1867-1873.

SPERRY, 1871, WATSON ROBERTSON—(*Literary work*)—Born June 25, 1842, Sauquoit, N.Y.; died Feb. 13, 1926, Hartford, Conn. U.S. Minister to Persia, 1892-1894.

SPRING, 1855, ANDREW JACKSON—(*Education*)—Born July 29, 1832, Meadville, Miss.; died April 11, 1865, Mobile, Ala. Sgt. Major, Artillery, Confederate Army, Civil War.

STACKPOLE, 1915, EDWARD JAMES—(*Publishing*)—Born June 21,

1894, Harrisburg, Pa.; died Oct. 1, 1967; Dir. and Pres., Soldiers Orphans' School, Scotland, Pa.; Dir., Harrisburg Hosp.; Commanding Gen., Pennsylvania Natl. Guard, '46-'47; Capt., Inf., Cavalry, W.W. I; Alumni Bd., '51-'59; Yale Development Corp., '57; Pres., Yale Alumni Assn. of Central Pa., '51-'59.

STAGG, 1888, AMOS ALONZO, LL.D., L.H.D., M.A., M.P.E., Ped.D., D.P. Sv.—(*Education*)—Born Aug. 16, 1862, Orange, N.J.; died Mar. 17, 1965; Adv. Football Coach, Susquehanna Univ., '47-'52; Adv. Coach, Stockton Coll., '53-.

STANLEY, 1908, HAROLD—(*Finance*)—Born Oct. 2, 1885, Great Barrington, Mass.; died May 14, 1963; Ptnr., Morgan Stanley & Co., N.Y.C.

STANLEY, 1852, WILLIAM, M.A.—(*Law*)—Born Aug. 9, 1830, Goshen, Conn.; died June 28, 1893, Great Barrington, Mass.

STAPLER, 1874, HENRY BEIDLEMAN BASCOM, LL.B.—(*Law*)—Born Feb. 24, 1853, Mobile, Ala.; died Dec. 1, 1906, Pelham Manor, N.Y. Asst. Distr. Attny., N.Y. City and Cty., 1891-1893.

STEARNS, 1870, EDWIN RUSSELL, M.A.—(*Industrial*)—Born Jan. 10, 1847, Cincinnati, Ohio; died Oct. 24, 1914, Wyoming, Ohio.

STEBBINS, 1902, EDWIN ALLEN—(*Finance*)—Born May 30, 1879, Oswego, N.Y.; died June 6, 1954, Rochester, N.Y.; Dir., Rochester Chmbr. of Comm., and Bureau Municipal Research.

STEBBINS, 1862, HENRY HAMILTON, D.D.—(*Ministry*)—Born June 3, 1839, New York City; died Aug. 19, 1917, Rochester, N.Y.

STEELE, 1846, HENRY THORNTON, M.A.—(*Law*)—Born July 8, 1821, East Bloomfield, N.Y.; died Nov. 10, 1890, Chicago, Ill.

STERLING, 1864, JOHN WILLIAM, LL.B., M.A., LL.D.—(*Law*)—Born May 12, 1844, Stratford, Conn.; died July 5, 1918, Grand Metis, Que., Canada.

STEVENS, 1858, FREDERIC WILLIAM, LL.B.—(*Law and Finance*)—Born Sept. 19, 1839, New York City; died Jan. 20, 1928, New York City.

STEVENS, 1843, HENRY, M.A.—(*Literary work*)—Born Aug. 24, 1819, Barnet, Vt.; died Feb. 28, 1886, London, England.

STEVENS, 1925, MARVIN A., M.D., B.S., D.M.S.—(*Medicine*)—Born April 14, 1900, Stockton, Kans.; died Dec. 6, 1979; Orthopedic Surgeon.

STEVENSON, 1888, FREDERIC AUGUSTUS—(*Communications*)—Born April 27, 1867, New York City; died Dec. 17, 1937, Plainfield, N.J. Mbr., Yale Alumni Bd., '16-'36.

STEWART, 1916, DONALD OGDEN—(*Literary work*)—Born Nov. 30,

1894, Columbus, Ohio; died Aug. 2, 1980; author, playwright, screen writer.

STEWART, 1931, JAMES ROSS, LL.B.—(*Law*)—Born Mar. 4, 1909, Cleveland, Ohio; died Mar. 3, 1970; Ptnr., Arter & Hadden, Cleveland; Trustee, Hathaway Brown School for Girls, '47-(Pres. til '69); Col., AUS, Gen. Staff Corps, June '42-Dec. '45; Legion of Merit, Officer British Empire, Chevalier-Legionne d'Honeur; Exec. Com., Yale Law Sch. Assn., '37-'66; Yale Alumni Scholarship Com. of Chicago, '36-'65; V.Chmn., Alumni Bd.

STEWART, 1921, JOHN—(*Finance*)—Born Nov. 15, 1898, Baltimore, Md.; died Nov. 1, 1980; Investment Counsel (formerly V.P.), Cooke & Bieler, Inc.; Class Exec. Com., Class Alumni Fund Agt., '61-; 2d Lieut., F.A., U.S. Army, Sept.-Dec., '18.

STEWART, 1890, PERCY HAMILTON, LL.B.—(*Law*)—Born Jan. 10, 1867, Plainfield, N.J.; died June 30, 1951, Plainfield; Mayor of Plainfield, '12-'13; Mbr., N.J. State Bd. of Education, '19-'21, and of N.J. State Highway Comm., '23-'29; Mbr., Congress, '31-'32; Civilian Aide to the Adj. Gen., World War I.

STEWART, 1928, PETER HELLWEGE—(*Finance*)—Born Nov. 14, 1906, New Orleans, La.; died June 25, 1942, New Orleans.

STEWART, 1886, PHILIP BATTEL, M.A., LL.D.—(*Finance*)—Born Jan. 27, 1865, Middlebury, Vt.; died July 22, 1957, Colorado Springs, Colo.

STEWART, 1894, WALTER EUGENE, JR., LL.B.—(*Law*)—Born Nov. 7, 1872, Plainfield, N.J.; died Mar. 5, 1901, San Francisco, Calif. 2d Lieut., Inf., Spanish-American War.

STILES, 1846, JOSEPH, M.A.—Born Jan. 14, 1826, Savannah, Ga.; died Aug. 17, 1851, Cass County, Ga.

STILES, 1959, WILLIAM AUGUSTUS—(*Literary work*)—Born Mar. 9, 1837, Deckertown, N.J.; died Oct. 5, 1897, Jersey City Heights, N.J.

STILLE, 1839, CHARLES JANEWAY, M.A., LL.D.—(*Literary work*)—Born Sept. 23, 1819, Philadelphia, Pa.; died Aug. 11, 1899, Atlantic City, N.J. Prof. of belles-lettres, Univ. of Pennsylvania, 1866-1868; provost, 1868-1882. Mbr., U.S. Sanitary Comm., Civil War.

STILLMAN, 1935, GEORGE SCHLEY, M.A., B.Arch.—(*Museum work*)—Born Nov. 2, 1912, New York, N.Y.; died Sept. 7, 1964; Sec. Museum of Modern Art, N.Y.C.; Lieut. Cmdr., USNR, W.W. II.

STILLMAN, 1894, LELAND STANFORD, LL.B.—(*Law and finance*)—Born Sept. 8, 1870, San Francisco, Calif.; died July 5, 1933, Redlands, Calif. Priv., Cav., Spanish-American War.

STIMSON, 1865, HENRY ALBERT, B.D., M.A., D.D., S.T.D., Litt.D.—(*Ministry*)—Born Sept. 28, 1842, New York City; died July 18, 1936, New York City. Lecturer, Oberlin Theological Seminary, 1891, Andover, 1900-1904, Chicago, '02-'03, and Yale, '04-'05. Acting Prof. of Homiletics, Hartford Theological Seminary, '16-'17, Trustee, Carleton Coll., 1870-1880, Drury, 1886-1893, Mount Holyoke, 1894-1936, and Hartford Theological Seminary '03-'19; director, Chicago Theological Seminary, 1874-1879; Mbr., Bd. of Visitors, Wellesley Coll., 1882-1886, and Andover Theological Seminary, '08-'12.

STIMSON, 1888, HENRY LEWIS, M.A., LL.B., LL.D.—(*Law*)—Born Sept. 21, 1867, New York City; died Oct. 20, 1950, Huntington, L.I., N.Y.; Attny. southern dist. of N.Y., '06-'09; Sec. of War, '11-'13; Gov.-Gen. of Philippines, '28-'29; Sec. of State, '29-'33; Sec. of War, '40-'45; Chmn., Am. Delegation to London Naval Conferences, '30, and of Am. Delegation to Disarmament Conferences, '32; Col., F.A., World War I (AEF); Assoc. Fellow, Timothy Dwight Coll., Yale Univ.

STOKES, 1896, ANSON PHELPS, B.D., M.A., D.D., LL.D., S.T.D.—(*Ministry and Education*)—Born April 13, 1874, New Brighton, N.Y.; died Aug. 13, 1958, Lenox, Mass.; Founder and Trustee, Am. Univ. Union in Europe, '17-33; Trustee, Rockefeller Foundation, Gen. Education Bd., Internatl. Education Bd.; Dir. Education Dept., Y.M.C.A., World War I (AEF); Sec., Yale Univ., 1899-1921.

STOKES, 1909, HAROLD PHELPS—(*Journalism*)—Born Jan. 10, 1887, New York, N.Y.; died June 8, 1970; Sec. to Herbert Hoover (Sec. of Commerce), '24-'25; 1st Lieut., F.A., AEF, W.W. I; Class Sec., '09-'21.

STOKES, 1889, HORACE SHELDON, M.D.—(*Medicine*)—Born Aug. 18, 1867, Detroit, Mich.; died Dec. 19, 1924, New York City.

STONE, 1878, CHARLES MARTIN—(*Law and industrial*)—Born Feb. 6, 1856, Binghamton, N.Y.; died July 2, 1929, Binghamton.

STONE, 1902, HAROLD, LL.B.—(*Finance*)—Born Oct. 19, 1878, Syracuse, N.Y.; died Feb. 22, 1958; with U.S. Public Service Res., U.S. Employment Service, Dept. of Labor, World War I.

STONE, 1937, LOUIS TALCOTT, LL.B.—(*Law*)—Born July 22, 1914, Bronxville, N.Y.; died Jan. 2, 1958, New York City; Maj., AUS, World War II (Military Intelligence, War Dept.).

STONE, 1865, WILLIAM—(*Art*)—Born Jan. 31, 1842, Brooklyn, N.Y.; died Oct. 27, 1913, South Yarmouth, Mass.

STORRS, 1850, CORDIAL—(*Law*)—Born Sept. 1, 1823, Martinsburg, N.Y.; died April 9, 1891, Washington, D.C.

STREET, 1912, Henry Abbott—(*Business*)—Born Aug. 12, 1889, Pawtucket, R.I.; died Mar. 16, 1956, Bristol, R.I.; Capt., Ord. Dept., World War I (AEF).

STRICKLER, 1848, Samuel Alexander—(*Finance*)—Born May 2, 1826, Shelbyville, Tenn.; died May 1, 1872, Indianapolis, Ind.

STRONG, 1835, Caleb, M.A.—(*Ministry*)—Born Jan. 31, 1816, Northampton, Mass.; died Jan. 4, 1947, Montreal, Que., Canada.

STRONG, 1870, Charles Hall, M.A., D.D.—(*Ministry*)—Born Dec. 29, 1850, New Orleans, La.; died Jan. 21, 1914, Milledgeville, Ga.

STRONG, 1871, George Arthur—(*Law*)—Born Oct. 21, 1848, Port Gibson, Miss.; died May 25, 1926, Plainfield, N.J.

STRONG, 1922, Henry Barnard—(*Government*)—Born Oct. 5, 1899, Hartford, Conn.; died Nov. 25, 1973; Rep., Gen. Assembly, from Salisbury, Conn., '43; State Central Com., '43-'47; Exec. Sec. for Govs. Baldwin and McConaughy, '43-'47; Public Utilities Commission, State of Conn., '47-'65; Navy, W.W. I.

STROUT, 1912, Edwin Augustus, Jr.—(*Finance*)—Born June 30, 1890, Seattle, Wash.; died Mar. 8, 1945, Seattle, Wash. Capt., F.A., World War I (AEF), Lt. Col., G.S.C., AUS, World War II.

STUBBS, 1835, Alfred, M.A., D.D.—(*Ministry*)—Born May 12, 1815, Turk's Island, West Indies; died Dec. 12, 1882, Princeton, N.J.

STUCKY, 1940, William McDowell—(*Journalism*)—Born Dec. 12, 1916; Lexington, Ky.; died Jan. 1, 1961; Assoc. Dir., American Press Institute, Columbia Univ., New York, N.Y.; Lieut. Cmdr., USNR, W.W. II.

STURGES, 1841, Hezekiah—(*Law*)—Born Nov. 3, 1819, Gilbertsville, N.Y.; died Dec. 4, 1884, Cooperstown, N.Y.

STURGES, 1835, Thomas Benedict—(*Ministry*)—Born in 1810, Bridgeport, Conn.; died May 8, 1877, Greenfield Hill, Conn.

SULLIVAN, 1900, Corliss Esmonde—(*Finance*)—Born Dec. 19, 1876, Shreve, Ohio; died Feb. 14, 1939, Hunting Valley, Ohio. Mbr., Advisory Council, Fed. Res. Bd., '21-'24.

SUMNER, 1897, Graham, LL.B.—(*Law*)—Born Oct. 25, 1876, New Haven, Conn.; died Nov. 16, 1946, Greenwich, Conn.

SUMNER, 1863, William Graham, LL.D.—(*Education*)—Born Oct. 30, 1840, Paterson, N.J.; died April 12, 1910, Englewood, N.J. Prof. of political and social science, Yale Univ., 1872-1885; Pelatiah Perit Prof. 1885-1909, and Prof. emeritus, '09-'10.

SUTHERLAND, 1931, Richard Orlin, M.S., Ph.D.—(*Education*)—Born May 5, 1909, Chicago, Ill.; died July 17, 1963; Dept. of Chemical Engineering, Missouri School of Mines & Metallurgy.

SUTPHIN, 1903, STUART BRUEN—(*Business*)—Born Nov. 26, 1882, Cincinnati, Ohio; died Mar. 10, 1951, Cincinnati; Capt. Q.M.C., World War I; Mbr., Yale Alumni Bd. '29-'35.

SWAN, 1902, JOSEPH ROCKWELL—(*Finance*)—Born Oct. 21, 1878, Utica, N.Y.; died Nov. 9, 1965; bus. Smith, Barney & Co., N.Y.C.; Pres. N.Y. Botanical Gardens, '38-'46, Chmn. Bd., '46-; Major, Amer. Red Cross, W.W. I.

SWEET, 1899, CARROLL FULLER—(*Industrial*)—Born June 24, 1877, Grand Rapids, Mich.; died Sept. 26, 1955, Suburban Chicago, Ill.

SWEET, 1871, EDWIN FORREST, LL.B.—(*Law*)—Born Nov. 21, 1847, Dansville, N.Y.; died April 2, 1935, Ojai, Calif. Mayor of Grand Rapids, Mich., '04-'06. Mbr. of Congress, '11-'13; Asst. Sec., Dept. of Commerce, '13-'21. Mbr., War Industries Bd., World War I.

SWIFT, 1836, JOHN MORTON—(*Farming*)—Born Sept. 18, 1816, Washington, Dutchess County, N.Y.; died April 3, 1887, Jacksonville, Fla.

SWIFT, 1915, WALKER ELY, M.D.—(*Medicine*)—Born Jan. 7, 1894, New York City; died Dec. 21, 1953, Sarasota, Fla.

SWINBURNE, 1879, LOUIS JUDSON—(*Literary work*)—Born Aug. 24, 1855, Albany, N.Y.; died Dec. 9, 1887, Colorado Springs, Colo.

SWOOPE, 1931, WALTER MOORE, LL.B.—(*Law*)—Born April 17, 1908, Madera, Pa.; died March 17, 1975; Attny., Ptnr., Bell Silberblatt Swoope, Clearfield, Pa., Philipsburg, Pa. T/Sgt., Army, Sept. '43-Oct. '45.

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TAFT, 1833, ALPHONSO, M.A., LL.D.—(*Law*)—Born Nov. 5, 1810, Townshend, Vt.; died May 21, 1891, San Diego, Calif. Sec. of War, U.S., 1876; Attny. Gen., U.S., 1876-1877, U.S. Minister to Austria, 1882-1884, and to Russia, 1884-1885. Mbr., Yale Corp., 1872-1882.

TAFT, 1918, CHARLES PHELPS, LL.B., LL.D.—(*Law, Government*)—Born Sept. 20, 1897, Cincinnati, Ohio; deceased June 24, 1983; City Councilman, Broadcaster; University Council, '47-'54; Prosecuting Attny., Hamilton Cty., Ohio, '27-'28; Mbr., Cincinnati City Council, '38-'42, '48-'51, '55-; Mayor, Cincinnati, '55-'57; 1st Lieut., F.A., AEF (France), '17-'18; Capt., Army Reserves, '19-'39.

TAFT, 1880, HENRY WATERS, M.A.—(*Law*)—Born May 27, 1859, Cincinnati, Ohio; died Aug. 11, 1945, New York City. Spec. Asst. to

Attny.-Gen. of U.S., '05-'07; Mbr., com. on reorganization of N.Y. State Government, '25-'26, and of N.Y. State com. on cost of public education, '33. Trustee, Coll. of the City of N.Y., '03-'05.

TAFT, 1883, HORACE DUTTON, M.A., L.H.D., LL.D.—(*Education*)—Born Dec. 28, 1861, Cincinnati, Ohio; died Jan. 28, 1943, Watertown, Conn. Founded the Taft School, 1890. Headmaster 1890-1936; headmaster emeritus, '36-'43; trustee, '26-'43 and Pres. of the Bd., '26-'36.

TAFT, 1900, HULBERT, Litt.D., LL.D.—(*Journalism*)—Born Sept. 21, 1877, Cincinnati, Ohio; died Jan. 19, 1959, Indian Hill, Cincinnati; Mbr., Cincinnati Home Guard, World War I.

TAFT, 1867, PETER RAWSON, M.A.—(*Law*)—Born May 10, 1846, Cincinnati, Ohio; died June 3, 1889, Cincinnati.

TAFT, 1910, ROBERT ALPHONSO, M.A., LL.B., LL.D., D.C.L.—(*Law*)—Born Sept. 8, 1889, Cincinnati, Ohio; died July 31, 1953, New York City; Asst. Counsel, U.S. Food Admin., '17-'18; Counsel, Am. Relief Admin., '18-'19; Mbr., Ohio House of Representatives, '21-'26 (Spkr., '26), and Ohio Senate, '31-'32. U.S. Senator from Ohio, '38-'53; Mbr., Yale Corp., '36-'53.

TAFT, 1878, WILLIAM HOWARD, LL.B., D.C.L., LL.D.—(*Law*)—Born Sept. 15, 1857, Cincinnati, Ohio; died Mar. 8, 1930, Washington, D.C. Solicitor-Gen. of the U.S., 1890-1892. Judge, U.S. Circuit Court, 1890-1892. Gov., Philippine Islands, 1901-1904. Sec. of War, '04-'08. Pres. of the U.S., '08-'12. Chief Justice of the U.S., '21-'30. Prof. of law (also dean), Cincinnati Law School, 1896-1900; Kent Prof. of law, Yale Coll., and Prof. of constitutional law, Yale Law School, '13-'21. Mbr., Yale Corp., '06-'13 and '22-'25. Trustee, Carnegie Institution.

TALCOTT, 1838, THOMAS GROSVENOR, M.A.—(*Law*)—Born Dec. 22, 1819, New Hartford, N.Y.; died Mar. 7, 1870, Hartford, Conn.

TARBELL, 1873, FRANK BIGELOW, Ph.D.—(*Education*)—Born Jan. 1, 1853, West Groton, Mass.; died Dec. 4, 1920, New Haven, Conn. Asst. Prof. of Greek, Yale Univ., 1882-1887; Dir., Am. School of Classical Studies, Athens, 1888-1889 and 1892-1893; Assoc. Prof. of Greek, Univ. of Chicago, 1893-1894, and Prof. of classical archaeology, 1894-1918.

TAYLOR, 1902, ALAN McLEAN, B.D.—(*Welfare*)—Born Mar. 1, 1878, Sidney, Ohio; died Aug. 30, 1947, Adrian, Mich.

TAYLOR, 1859, ALFRED JUDD, LL.B., M.A.—(*Law*)—Born April 4, 1883, Huntington, Mass.; died July 12, 1901, Huntington.

TAYLOR, 1862, JOHN PHELPS, M.A., D.D.—(*Ministry*)—Born April 6,

1841, Andover, Mass.; died Sept. 13, 1915, Andover. Taylor Prof. of Biblical theology, Andover Theological Seminary, 1883-1899.

TAYLOR, 1845, RICHARD—(*Farming*)—Born Jan. 27, 1826, New Orleans, La.; died April 12, 1870, New York City. Mbr., La. State Senate, 1856-1860. Served in Mexican War. Lieut.-Gen., Confederate Army, Civil War.

TENER, 1912, ALEXANDER CAMPBELL, LL.B.—(*Law*)—Born Oct. 13, 1888, Newcastle, Pa.; died Nov. 4, 1965; Judge Orphans Court, Allegheny Cty., Pa., '43-'45; Chmn. Renegotiation Bd., Pittsburgh Office, Army Ordnance, '42-'43.

TENER, 1916, KINLEY JOHN, LL.B.—(*Law*)—Born Oct. 6, 1893, Pittsburgh, Pa.; died May 10, 1947, Pittsburgh, Pa. Capt., F.A., World War I (AEF).

TERRY, 1885, WYLLYS—(*Insurance*)—Born Dec. 6, 1865, Brooklyn, N.Y.; died April 21, 1949, New York City.

THACHER, 1868, JAMES KINGSLEY, M.D.—(*Medicine*)—Born Oct. 19, 1847, New Haven, Conn.; died April 20, 1891, New Haven. Prof. of physiology, Yale Medical School, 1879-1891 (also of clinical medicine, 1887-1891).

THACHER, 1877, JOHN SEYMOUR, M.D.—(*Medicine*)—Born June 10, 1856, New Haven, Conn.; died Oct. 28, 1922, New York City. Prof. of clinical medicine, Columbia Univ., 1903-1922.

THACHER, 1883, SHERMAN DAY, LL.B., M.A.—(*Education*)—Born Nov. 6, 1861, New Haven, Conn.; died Aug. 5, 1931, Santa Barbara, Calif. Founded Thacher School, 1889. Chmn. Ventura Cty. (Calif.) Exemption Bd. (rank of Major), World War I.

THACHER, 1871, THOMAS, LL.B., M.A., LL.D.—(*Law*)—Born May 3, 1850, New Haven, Conn.; died July 30, 1919, Watch Hill, R.I.

THACHER, 1835, THOMAS ANTHONY, M.A., LL.D.—(*Education*)—Born Jan. 11, 1815, Hartford, Conn.; died April 7, 1886, New Haven, Conn. Prof. of Latin, Yale Coll., 1842-1886. Mbr., Conn. State Bd. of Education, 1856-1877.

THACHER, 1904, THOMAS DAY, LL.D.—(*Law*)—Born Sept. 10, 1881, Tenafly, N.J.; died Nov. 12, 1950, New York City; Asst. U.S. Attny., Southern Distr. of N.Y., '07-'08; Judge, U.S. Distr. Court, Southern Distr. of N.Y., '25-'30; Solicitor Gen. of U.S., '30-'33; Corp. Counsel, City of N.Y., '43; Chmn., N.Y.C. Charter Comm.; Judge, N.Y. Court of Appeals, '43-'48; Maj., Am. Red Cross, World War I (Fgn. Service); Alumni Fellow, Yale Corp., '31-'49 (Mbr., Prudential, Educational Policy, Honorary Degrees, and Finance coms.); Agt. Class

Fund, '04-'17; Assoc. Fellow, Branford Coll.; Pres., Yale Law School Assn., '33-'36.

THACHER, 1887, William Larned—(*Education*)—Born Oct. 9, 1866, New Haven, Conn.; died Nov. 2, 1953, Sierra Madre, Calif.

THOMAS, 1873, Charles Henry, M.D.—(*Business*)—Born Jan. 6, 1851, Pomeroy, Ohio; died Oct. 29, 1904, Baltimore, Md.

THOMAS, 1922, John Allen Miner—(*Literary work*)—Born Jan. 10, 1900, New York City; died Mar. 12, 1932, New York City.

THOMPSON, 1903, Donald, LL.B.—(*Law*)—Born Oct. 27, 1882, Allegheny, Pa.; died Jan. 28, 1948, Pittsburgh, Pa. Officer candidate, C.A.C., World War I.

THOMPSON, 1938, John R., LL.B.—(*Law, Government*)—Born Apr. 16, 1917, New York, N.Y.; died Mar. 19, 1979; 1st Deputy Comptroller, State of New York, Dept. of Audit & Control, Albany, N.Y.; Faculty, Yale Law School, '49-'56; Law Clerk to Chief Justice, U.S. Supreme Court, '47; New York City: Asst. Corporation Counsel, '66-'72, 1st Asst. Corporation Counsel, '72-'75; Lieut. Col., AUS, '41-'46; Bronze Star.

THOMPSON, 1838, Joseph Parrish, M.A., D.D., LL.D.—(*Ministry*)—Born Aug. 7, 1819, Philadelphia, Pa.; died Sept. 20, 1879, Berlin, Germany.

THOMPSON, 1881, Norman Frederick—(*Finance*)—Born June 27, 1856, Perry, Ga.; died Mar. 3, 1931, Colebrook, Conn.

THOMPSON, 1879, Oliver David—(*Law*)—Born Sept. 24, 1854, Butler, Pa.; died June 10, 1925, Edgeworth, Pa.

THOMSON, 1891, Samuel Clifton, E.M.—(*Engineering*)—Born May 7, 1869, Pottsville, Pa.; died July 13, 1940, New York City. Trade Advisor, Export Div., War Trade Bd., '17-'18.

THORNE, 1940, Peter Brinckerhoff—Born Oct. 2, 1917, Rye, N.Y.; died Nov. 30, 1939, New Haven, Conn.

THORNE, 1896, Samuel, LL.B.—(*Law*)—Born June 30, 1874, Saugatuck, Conn.; died Oct. 3, 1963; Deputy Asst. Distr. Attny. N.Y.C., '01-'05; Pvt., Home Guard, W.W. I.

THORNE, 1896, Samuel Brinckerhoff—(*Business*)—Born Sept. 19, 1873, New York City; died June 3, 1930, New York City. Served on a comm. sent abroad by Fed. Fuel Admin., World War I.

THORNTON, 1908, James Carlton—(*Finance*)—Born July 11, 1884, Ford, Ky.; died Mar. 29, 1949, Greenwich, Conn. Capt., F.A., World War I (AEF).

TIFFANY, 1840, William Henry—(*Business*)—Born Feb. 10, 1819, Killingly, Conn.; died Dec. 23, 1880, Stamford, Conn.

TIGHE, 1879, AMBROSE, M.A.—(*Law*)—Born May 8, 1859, Brooklyn, N.Y.; died Nov. 11, 1928, St. Paul, Minn. Mbr., Minn. State Legislature, '03 and '07. Special Asst. Attny. Gen., Minn., '17-'19.

TIGHE, 1916, LAURENCE GOTZIAN, M.A.—(*Finance*)—Born Mar. 19, 1894, St. Paul, Minn.; died Dec. 3, 1954, New Haven, Conn. Capt., F.A., World War I; Assoc. Treas., Yale Univ., '38-'42, Treas., '42-'53; Treas. Yale Alumni Fund, Yale Athletic Assn., Yale Library Associates; Trustee, Yale-in-China.

TIGHE, 1923, RICHARD LODGE, LL.B.—(*Law*)—Born Jan. 13, 1902, St. Paul, Minn.; died April 30, 1938, Wayzata, Minn.

TILLINGHAST, 1875, CHARLES, M.A., M.D.—(*Medicine*)—Born Oct. 5, 1853, Cincinnatus, N.Y.; died Dec. 26, 1886, Cortland, N.Y.

TILNEY, 1905, ROBERT FINGLAND, 2D—(*Engineering*)—Born Feb. 22, 1882, Plainfield, N.J.; died Dec. 19, 1934, Bound Brook, N.J.

TILNEY, 1870, THOMAS JOSEPH, LL.B.—(*Industrial*)—Born Feb. 28, 1845, Paris, Ont., Canada; died Dec. 19, 1893, Brooklyn, N.Y.

TINKER, 1868, ANSON PHELPS—(*Ministry*)—Born Oct. 15, 1844, Old Lyme, Conn.; died Nov. 25, 1886, Denver, Colo.

TOMPKINS, 1884, RAY—(*Finance*)—Born Jan. 28, 1861, Lawrenceville, Pa.; died June 30, 1918, Elmira, N.Y.

TOWNSEND, 1922, FREDERIC DEPEYSTER, JR., LL.B.—(*Law*)—Born April 23, 1900, Cambridge, Mass.; died Feb. 20, 1961.

TOWNSEND, 1908, GEORGE HENRY—(*Industrial*)—Born July 22, 1884, New Haven, Conn.; died Feb. 18, 1957, Fort Lauderdale, Fla.; Industrial War Service, World Wars I and II.

TOWNSEND, 1874, JAMES MULFORD, LL.B.—(*Law*)—Born Aug. 26, 1852, New Haven, Conn.; died Oct. 31, 1913, Mill Neck, Long Island. Trustee, N.Y. Law School, '04-'13, and Pres., '12-'13.

TOWNSEND, 1908, JAMES MULFORD—(*Business*)—Born June 20, 1886, Pelham Manor, N.Y.; died June 23, 1950, West Windsor Township, N.J. Lieut., Inf., World War I.

TOWNSEND, 1891, JOHN BARNES—(*Finance*)—Born Feb. 9, 1867, Memphis, Tenn.; died Dec. 24, 1947, Radnor, Pa.

TOWNSEND, 1871, WILLIAM KNEELAND, LL.B., LL.M., D.C.L.—(*Law*)—Born June 12, 1848, New Haven, Conn.; died June 2, 1907, New Haven. Judge, U.S. Distr. Court, Conn., 1892-1902, and of U.S. Circuit Court of Appeals, 2d Circuit, '02-'07. Prof., Yale Law School, 1881-1907.

TRACY, 1890, EVARTS—(*Architecture*)—Born May 23, 1868, New York City; died Jan. 31, 1922, Neuilly, France. Lieut. Col., Eng. Corps, World War I (AEF).

TRASK, 1846, CHARLES HOOPER, M.A.—(*Business*)—Born Sept. 4, 1824, Manchester, Mass.; died Dec. 11, 1905, Lincoln, Mass.

TREADWAY, 1896, RALPH BISHOP—(*Law*)—Born April 10, 1874, Sioux City, Iowa; died Aug. 5, 1939, Elmhurst, Ill.

TROTTER, 1839, SILAS FLOURNOY—(*Business*)—Born Mar. 4, 1820, Courtland, Ala.; died prior to 1860, Panama.

TROWBRIDGE, 1902, MASON, LL.B.—(*Law*)—Born Nov. 8, 1877, Chicago, Ill.; died Mar. 10, 1962; Deputy Asst. Distr. Attny., N.Y.C., '06, '09; Asst., English Dept., Yale Coll., '04-'05; Asst. Prof., Yale Law School, '15-'16.

TRUDEAU, 1896, EDWARD LIVINGSTON, JR., M.D.—(*Medicine*)—Born May 18, 1873, New York City; died May 2, 1904, New York City.

TRUESDALE, 1907, CALVIN—(*Business*)—Born June 29, 1885, Minneapolis, Minn.; died July 11, 1958, New York City; Lieut., F.A., Res. Corps, World War I.

TUCKER, 1944, CARLL, JR.—(*Journalism*)—Born Aug. 26, 1921, West End., N.J.; died Feb. 6, 1968; Newspaper Publisher, Patent Trader, Mt. Kisco; Pres., Financial Management, Inc., Mt. Kisco; Sec., Trustee, Chatham Hall, Va., '57; Trustee Northern Westchester Hosp., '56-, Bedford-Rippowam School, '53-; Dir., 1st Lieut., USAAF, W.W. II; Yale Univ. Council, Com. on Publications; Yale Press Adv..

TUFTS, 1935, BOWEN CHARLTON—(*Theatre*)—Born July 16, 1911, Arlington, Mass.; died June 4, 1970; address unknown.

TURNER, 1905, HAROLD MCLEOD—(*Business*)—Born April 27, 1882, Brooklyn, N.Y.; died May 5, 1947, New York City. Lt., N.Y. Natl. Guard, World War I.

TURNER, 1906, SPENCER—(*Business*)—Born Mar. 16, 1884, Brooklyn, N.Y.; died Oct. 18, 1928, New York City. Exec. Dir., cotton goods section, War Industries Bd., World War I.

TUTTLE, 1907, GEORGE COOLIDGE, LL.B.—(*Law and Manufacturing*)—Born Dec. 30, 1884, Minneapolis, Minn.; died Apr. 28, 1966.

TUTTLE, 1877, GEORGE MONTGOMERY, B.D.—(*Medicine*)—Born Oct. 2, 1856, Rochester, N.Y.; died Oct. 29, 1912, New York City. Prof. of gynecology. Coll. of Physicians and Surgeons, Columbia Univ., 1885-1903.

TWEEDY, 1891, HENRY HALLAM, M.A., D.D.—(*Education*)—Born Aug. 5, 1868, Binghamton, N.Y.; died Sept. 11, 1953, Brattleboro, Vt.; Prof., Practical Theology, Yale Div. School, '09-'37.

TWEEDY, 1834, JOHN HUBBARD—(*Transportation*)—Born Nov. 14, 1814, Danbury, Conn.; died Nov. 12, 1891, Milwaukee, Wis. Mbr. of Congress, 1847-1848 and of Wis. State Legislature, 1853.

TWEEDY, 1868, SAMUEL—(*Law*)—Born April 21, 1846, Danbury, Conn.; died Oct. 6, 1910, South Norwalk, Conn.

TWOMBLY, 1854, ALEXANDER STEVENSON, M.A., D.D.—(*Ministry*)—Born Mar. 14, 1832, Boston, Mass.; died Nov. 19, 1907, Newton, Mass.

TWOMBLY, 1912, EDWARD BANCROFT, LL.B., LL.D.—(*Law*)—Born Feb. 25, 1891, Summit, N.J.; died June 7, 1969; Sr. Ptnr., Putney, Twombly, Hall & Skidmore, N.Y.C.; Mbr., Common Council, Summit, '22-'25, Pres., '26-'28, Mayor, '29-'31; Pres., Summit Republican Club, '32-'38, Union County Republican Club, '36-'38; Chmn., Defense Council, W.W. II; Chmn., 1912 Reunion Com., '37-; Lieut. Col., Cavalry, Inf., 1916, Mexican Border; W.W. I: Capt. Co. B, 304th M.G. Bn., overseas, Mar. '18-May '19; Major, 77th Staff, '18; Silver Star; Lieut. Col., '21; Lieut. Col. (ret.).

TWOMBLY, 1884, HENRY BANCROFT—(*Law*)—Born Nov. 10, 1862, Albany, N.Y.; died Feb. 28, 1955, Summit, N.J., former Asst. Corp. Counsel, City of N.Y.; Yale Class Sec., '49-'55.

TYLER, 1855, CHARLES MELLEN, M.A., D.D.—(*Education*)—Born Jan. 18, 1832, Limington, Me.; died May 15, 1918, Scranton, Pa. Mbr. Mass. State Legislature, 1862. Sage Prof. of hist. and philosophy of religion, Cornell Univ., 1891-1903, and Prof. emeritus, '03-'18. Trustee, Cornell Univ., 1886-1892 and '07-'18. Chaplain (Capt.), Union Army, Civil War.

TYLER, 1836, GEORGE PALMER, D.D.—(*Ministry*)—Born Dec. 10, 1810, Brattleboro, Vt.; died Jan. 18, 1896, Lansingburgh, N.Y.

TYLER, 1857, MOSES COIT, M.A., L.H.D., LL.D.—(*Education*)—Born Aug. 2, 1835, Griswold, Conn.; died Dec. 28, 1900, Ithaca, N.Y. Prof. of rhetoric and English literature, Univ. of Michigan, 1867-1873; and of English language and literature, 1873-1881; Prof. of American history, Cornell Univ., 1881-1900.

TYTUS, 1868, EDWARD JEFFERSON—(*Business*)—Born Aug. 22, 1847, Middletown, Ohio; died May 19, 1881, Saranac Lake, N.Y.

V

VANANTWERP, 1958E, WILLIAM MEADON, JR.—(*Armed services*)—Born Feb. 27, 1937, Albany, N.Y.; died Sept. 15, 1967, near Danang, South Vietnam; Capt., USMC.

VAN DEGRAAFF, 1881, ADRIAN SEBASTIAN, LL.B.—(*Law*)—Born May 12, 1859, Gainesville, Ala.; died May 18, 1922, Tuscaloosa, Ala. Prof. of statutory and common law, Univ. of Alabama Law School, 1891-1897. Judge, 6th Ala. Distr., 1915-1922. Mbr., Ala. State Legislature, '18-'22.

VANDERBILT, 1899, ALFRED GWYNNE—(*Finance*)—Born Oct. 20, 1877, New York City; died May 7, 1915, at sea.

VAN NAME, 1858, ADDISON, M.A.—(*Library work*)—Born Nov. 15, 1835, Chenango, N.Y.; died Sept. 29, 1922, New Haven, Conn. Librarian, Yale Univ., 1865-1905; librarian emeritus, '05-'22.

VAN REYPEN, 1905, WILLIAM KNICKERBOCKER, JR.—(*Law student*)—Born May 4, 1883, Brooklyn, N.Y.; died Jan. 27, 1906, New York City.

VAN SINDEREN, 1911, HENRY BRINSMADE—(*Business*)—Born June 19, 1889, Brooklyn, N.Y.; died Jan. 15, 1968; Bd. Chmn., C. Tennant Sons & Co., N.Y.C.; Dir., Bureau of Exports War Trade Bd., '17-'18, Washington, D.C.; Chmn., Planning Comm., Washington, Conn., '55-; Sec. Washington (Conn.) Redevelopment Agency; Capt., AUS, W.W. I; Yale Alumni Bd., '52-'57; Class Sec., '51-.

VARNUM, 1838, JOSEPH BRADLEY, M.A.—(*Law*)—Born April 4, 1818, Washington, D.C.; died Dec. 31, 1874, Astoria, Long Island. Mbr., N.Y. State Legislature, 1849, 1850, 1857, and Spkr., 1851.

VERNON, 1881, FREDERICK RICHARDSON—(*Industrial*)—Born Oct. 31, 1858, Brooklyn, N.Y.; died Feb. 22, 1927, Freeport, N.Y.

VORYS, 1918, JOHN MARTIN, J.D., LL.D.—(*Law*)—Born June 16, 1896, Lancaster, Ohio; died Aug. 25, 1968; Lawyer, Columbus; Pres., Columbus Bar Assn., '38; Distr. Delegate, Ohio State Bar Assn., '59-'60; Chmn., Com. on Status of Legal Profession, Ohio State Bar Assn., '61-'62; Dir., Columbus Chamber of Commerce, '26-'28. Pres., Columbus Yale Club, '20-'24; Rep., Ohio General Assembly '23-'25; Ohio State Senate, '25-'27; Dir. of Aeronautics, Ohio, '29-'31; Mbr. Congress, 12th Ohio Distr., '39-'59.

VOSE, 1851, JAMES GARDINER, M.A., D.D.—(*Ministry*)—Born Mar. 3, 1830, Boston, Mass.; died Mar. 13, 1908, Providence, R.I. Prof. of rhetoric, Amherst Coll., 1856-1864. Trustee, Andover Theological Seminary, 1886-1908.

W

WACK, 1929, DAMON DEBLOIS—(*Finance*)—Born April 23, 1907, New York City; died Feb. 1, 1944, St. Louis, Mo.

WADE, 1866, LEVI CLIFFORD—(*Law and transportation*)—Born Jan. 16, 1843, Allegheny City, Pa.; died Mar. 21, 1891, Newton, Mass. Mbr., Mass. State Legislature, 1876-1878 and Spkr., 1879.

WADSWORTH, 1898, JAMES WOLCOTT, JR., LL.D.—(*Government*)—Born Aug. 12, 1877, Geneseo, N.Y.; died June 21, 1952, Washington, D.C.; Spkr., N.Y. State Legislature, '06-'10; U.S. Senate, '15-'27; Mbr., House of Representatives, '32-'50; Chmn., Natl. Security Training Comm., '50; Pvt., Spanish-American War.

WAITE, 1888, MORISON R., LL.B.—(*Law*)—Born Dec. 13, 1866, Toledo, Ohio; died Mar. 6, 1962; Trustee, Cincinnati Public Library, '29-'38.

WAITE, 1837, MORRISON REMICK, M.A., LL.D.—(*Law*)—Born Nov. 29, 1816, Lyme, Conn.; died Mar. 23, 1888, Washington, D.C. Mbr., Ohio State Legislature, 1849. Chief Justice of the U.S., 1874-1888, Mbr., Yale Corp. 1882-1888.

WALCOTT, 1891, FREDERIC COLLIN, M.A., Sc.D.—(*Government*)—Born Feb. 19, 1869, New York Mills, N.Y.; died April 27, 1949, Stamford, Conn. Chmn., Conn. State Bd. of Fisheries and Game and of State Water Comm., '21-'29. Mbr., Conn. State Senate, '25-'29, and of U.S. Senate, '29-'49. Served with U.S. Food Admin., World War I.

WALCOTT, 1894, WILLIAM STUART—(*Business and Farming*)—Born June 28, 1871, New York City; died Nov. 6, 1952, Daytona Beach, Fla.; Former Class Treas.

WALDEN, 1881, HOWARD TALBOTT, LL.B.—(*Law*)—Born Aug. 19, 1859, Brooklyn, N.Y.; died Sept. 11, 1957, Rye, N.Y. Former Chmn., Yale Alumni Fund; Class Sec., '31-'57.

WALDEN, 1874, RUSSELL, LL.B.—(*Law*)—Born Dec. 8, 1851, Brooklyn, N.Y.; died Feb. 17, 1921, Brooklyn.

WALES, 1845, LEONARD EUGENE—(*Law*)—Born Nov. 26, 1823, Wilmington. Del.; died Feb. 8, 1897, Wilmington. Judge, U.S. Distr. Court, Del., 1884-1897. Served in Union Army, Civil War.

WALKER, 1916, CHARLES RUMFORD—(*Librarian*)—Born July 31, 1893, Concord, N.H.; died Nov. 26, 1974, Wellfleet, Mass. Curator, Yale Technology and Society Collection, Sterling Memorial Library,

Yale Univ., New Haven, Conn.; Asst. Sec., Yale, '42-'45; Dir., Technology Project, '45-'62; Sr. Research Fellow '55-'62; Univ. Library, '62-; 1st Lieut., Heavy Artillery, Feb. '18-May '19.

WALKER, 1927, GEORGE HERBERT, JR., M.A. (Hon.)—(*Finance*)—Born Nov. 24, 1905, St. Louis, Mo.; died Nov. 29, 1977; Dir., White Weld & Co., Inc.; Chmn., Yale Alumni Fund, '50-'51; Alumni Trustee of Corporation, '52-'58; Mbr., Yale Development Bd. from formation to present; Dir.: City Investing Corp., Norlin Corp., State Natl. Bank of Conn.; Trustee, Natl. Found.—March of Dimes; Maj., USAF, '42-'46; Legion of Merit; RTA: Dir., Treas.

WALKER, 1919, GEORGE NESMITH—(*Industrial*)—Born Jan. 18, 1895, Washington, D.C.; died Jan. 27, 1975, Greenwich, Conn. Formerly with Mobil Oil Corp.; Capt., F.A., 1st Div., AEF, March '17-'18; Citation from Major Gen. Summerall, Toul Sector, '17.

WALKER, 1889, HORACE FLETCHER—(*Education*)—Born July 11, 1868, Detroit, Mich.; died Jan. 9, 1894, Honolulu, Hawaii.

WALKER, 1942, JOHN S., J.D.—(*Law*)—Born June 22, 1920, Cincinnati, Ohio; died June 28, 1982; Ptnr., Jones, Day, Reavis & Pogue, Washington, D.C. Com. on Atomic Energy, '51-'53; Bd. of Trustees: Experiment in Internatl. Living, '60-'75; 1st Lieut., Army Air Force, '42-'46.

WALKER, 1844, JOSEPH BURBEEN, M.A.—(*Farming and business*)—Born June 12, 1822, Concord, N.H.; died Jan. 8, 1913, Concord. Mbr., N.H. State Legislature, 1866-1867, and of N.H. State Senate, 1893. Mbr., N.H. State Forestry Comm., 1885, and Pres., 1889-1893; Mbr., N.H. Bd. of Agriculture. Trustee, N.H. Coll. of Agriculture and Mechanic Arts.

WALKER, 1888, SAMUEL JOHNSON, M.D.—(*Medicine*)—Born Nov. 19, 1867, Covington, Ky.; died Aug. 19, 1924, Lake Forest, Ill. Asst. Prof. of neurology, Chicago Polyclinic Post-Graduate School, '00-'08, and Prof. of pediatrics, '08-'19; also Clinical Prof., Rush Medical Coll., '08-'19. Major, American Red Cross, World War I (Fgn. service).

WALKER, 1928, STOUGHTON—(*Business*)—Born Jan. 24, 1904, St. Joseph, Mo.; died Nov. 12, 1967; Industrial Consultant; Dir., Fifth Ave. Assn., N.Y., '41-'42; Head, Home Furnishing Div. of Retailers' Drive for Defense Bonds, '41; Lieut. Col., Ordnance Dept., Gen. Staff Corps, W.W. II.

WALLACE, 1903, HENRY MITCHELL—(*Industrial*)—Born Jan. 12, 1881, Ansonia, Conn.; died Jan. 2, 1965; V.P., American Brass Co.

WALLIS, 1893, ALEXANDER HAMILTON, LL.B.—Born Mar. 29, 1872,

Jersey City, N.J.; died July 25, 1959, Town of Chesterfield, Keesport, N.Y.; Cprl., Colchester Co., Conn. Home Guard, '17.

WALSH, 1835, Hugh, M.A., M.D.—(*Medicine*)—Born Jan. 7, 1816, New York City; died Dec. 1, 1859, New York City.

WARD, 1862, John Abbott—(*Student*)—Born Jan. 7, 1840, Palmer, Mass.; died Mar. 4, 1862, Palmer.

WARING, 1903, Antonio Johnston, M.D.—(*Medicine*)—Born Nov. 27, 1881, Savannah, Ga.; died Oct. 8, 1951, Savannah. Capt., Medical Corps, World War I.

WARREN, 1865, Henry Waterman—(*Industrial*)—Born Mar. 18, 1838, Auburn, Mass.; died Feb. 21, 1919, Holden, Mass. Mbr., Miss. State Legislature, 1870-1875, and of Mass. State Legislature, 1882 and 1885.

WARREN, 1927, John Davock—(*Finance*)—Born June 11, 1904, Buffalo, N.Y.; died Oct. 26, 1975, New York, N.Y. Ptnr., G. H. Walker & Co.; Bd. of Athletic Control, Yale.

WARREN, 1914, William Candee, Jr., LL.B.—(*Law*)—Born Jan. 31, 1892, Buffalo, N.Y.; died Sept. 8, 1965; with Magavern, Magavern, Lowe & Beilewech, Buffalo; Trustee, Sec., Counsel, Buffalo Gen. Hosp.; Pres., '52-; Erie City Defense Council, '43; Chmn., Erie Rationing Bd., '42-'43; Mbr., Yale Alumni Bd., Yale Assn. of Western N.Y.; Chmn., Scholarship Com., '56-'59; Capt., F.A., AEF, W.W. I; Renegotiation Bd., Rochester Ordnance Dept., '43-'46.

WASHBURN, 1844, William Barrett, LL.D.—(*Industrial and Finance*)—Born Jan. 31, 1820, Winchendon, Mass.; died Oct. 5, 1887, Springfield, Mass. Mbr., Mass. State Senate, 1850, and of Mass. State Legislature, 1853 and 1854. Mbr. of Congress, 1862-1872. Gov. of Mass., 1872-1874. Mbr. U.S. Senate, 1874-1875. Mbr., Yale Corp., 1872-1881.

WASHINGTON, 1839, George—(*Industrial*)—Born July 3, 1818, Kingston, N.C.; died Jan. 17, 1894, Savannah, Ga.

WASHINGTON, 1834, William Henry, M.A.—(*Law*)—Born Feb. 7, 1813, Wayne Cty., N.C.; died Aug. 12, 1860, Newbern, N.C. Mbr., N.C. State Legislature. Mbr. of Congress, 1841-1843.

WATERS, 1913, William Otis—(*Finance*)—Born Mar. 8, 1889, Orchard Lake, Mich.; died May 1, 1940, Garden City, N.Y. 2d Lieut, Inf., World War I (AEF).

WATKINS, 1908, Charles Law—(*Education*)—Born Feb. 11, 1886, Peckville, Pa.; died Mar. 2, 1945, New Haven, Conn. Organizer and dir., Phillips Gallery Art School, '29-'45; adjunct Prof. of social art,

American Univ., '43-'45; lecturer and consultant in fine arts, Hood Coll., '37-'45. Aspirant, Artillery, French Army, World War I.

WATSON, 1927, CHARLES III—(*Business*)—Born Feb. 12, 1904, Philadelphia, Pa.; died June 13, 1977; Alumni Fund Class Agt.; 1927 Class Sec.; 25th Reunion Chmn.; Managing Dir., Yale Alumni Fund, '49-'66; Ptnr., Cassatt & Co., Investment Banking, '27-'37; Pres., Dry-Pack Corp., '37-'48.

WATSON, 1839, JOHN MARSH—(*Law*)—Born May 23, 1819, Hartford, Conn.; died April 13, 1849, Wethersfield, Conn.

WEAVER, 1945, HOWARD SAYRE—(*Education*)—Born Aug. 30, 1924, Dunkirk, N.Y.; died Apr. 23, 1982; Dir., Yale Univ. Media Design Studio, Yale University; Asst. Dir., Yale Univ. Press, '59-'63; Acting Sec. of Univ., '63-'64; Asst. to President, '64-'68; School of Art & Architecture, Acting Dean, '68-'69, Dean, '69-'75; 1st Lieut., USAAF, '43-'45; Sec., RTA, '60-'67.

WEEKS, 1862, ROBERT KELLEY, LL.B.—(*Literary work*)—Born Sept. 21, 1840, New York City; died April 13, 1876, New York City.

WELCH, 1901, GEORGE ARNOLD, LL.B.—(*Law*)—Born May 29, 1879, Cleveland, Ohio; died Dec. 15, 1916, Cleveland.

WELCH, 1870, WILLIAM HENRY, M.D., L.H.D, Sc.D., LL.D.—(*Medicine*)—Born April 8, 1850, Norfolk, Conn.; died April 30, 1934, Baltimore, Md. Prof. of pathological anatomy, Bellevue Hosp. Medical Coll., 1879-1884; Baxley Prof. of anatomy, Johns Hopkins Univ., 1884-1916 (also dean of the medical faculty, 1893-1898); dir. of the School of Hygiene and Public Health, 1916-1926; Prof. of the hist. of medicine, '26-'31, and Prof. emeritus, '31-'34; Pres., Bd. of Dir., Rockefeller Institute of Med Research, '10-'34; trustee, Carnegie Institution, '06-'34; Assoc. fellow, Trumbull Coll., Yale Univ.; Col., Med. Corps, World War I.

WELLES, 1899, CHARLES HOPKINS, JR.—(*Law*)—Born Aug. 6, 1876, Scranton, Pa.; died July 29, 1962; Ptnr., Welles & Mackie, Scranton; Chmn., N.E. Pennsylvania Military Training Camps Assn., W.W. I.

WELLS, 1929, GEORGE II—(*Business*)—Born Aug. 24, 1907, Quincy, Ill.; died Sept. 29, 1975, Lincoln, Mass. Exec. V.P., Sexton Can Co., Everett, Mass.; Treas., Richards, Sexton & Wells, Inc.; Town Clerk, Lincoln, Mass.; Pres., Yale Club of Boston; Alumni Bd.; Class Sec. '64-; Trustee, DeCordova Museum, '54-'61; Trustee, Concord Academy, Treas. Bd., '54-'61, Pres. Bd., '61-'64; Trustee, Philips Exeter Academy, '64-'69.

WELLS, 1907, HAROLD SHERMAN—(*Industrial*)—Born Jan. 12, 1884,

Scranton, Pa.; died Mar. 12, 1937, Stamford, Conn. Capt. Am. Red Cross, World War I (Fgn. service).

WELLS, 1851, HENRY DORRANCE, M.A.—(*Business*)—Born Aug. 30, 1829, Charleston, S.C.; died May 30, 1870, Charleston.

WELLS, 1889, HUBERT WETMORE—(*Ministry*)—Born Dec. 29, 1866, Madison, Wis.; died Aug. 19, 1949, Chevy Chase, Md. Assoc. Natl. Dir., U.S. Boys' Working. Res.; Instr., Army Educational Corps, World War I (Fgn. service).

WELLS, 1882, JOHN LEWIS—(*Law*)—Born Dec. 26, 1860, Fayetteville, N.Y.; died May 31, 1953.

WELLS, 1857, NATHAN DANA—(*Law*)—Born June 17, 1831, Northfield, N.H.; died Oct. 30, 1902 in Haverhill, Mass.

WESSON, 1863, CHARLES HOLLAND, LL.B.—(*Law*)—Born Jan. 14, 1840, Brooklyn, N.Y.; died Nov. 21, 1873, Mexico City, Mexico.

WETHERELL, 1844, JOHN WALCOTT, LL.B., M.A.—(*Law*)—Born July 16, 1820, Oxford, Mass.; died Oct. 2, 1897, Worcester, Mass. Col., Union Army, Civil War.

WETMORE, 1867, GEORGE PEABODY, LL.B., M.A.—(*Law*)—Born Aug. 2, 1846, London, England; died Sept. 11, 1921, Boston, Mass. Gov. of R.I., 1885-1887. Mbr., U.S. Senate, 1895-1913.

WEYERHAEUSER, 1896, FREDERICK EDWARD—(*Industrial*)—Born Nov. 4, 1872, Rock Island, Ill.; died Oct. 18, 1945, St. Paul, Minn.

WHEELER, 1923, ALFRED NEWTON—(*Finance*)—Born July 30, 1899, Milford, Conn.; died July 23, 1970; Formerly V.P., Marine Midland Grace Trust Co., of N.Y.; W.W. I: Pvt., '17-'18; served with Norton Harjes Ambulance Corps in France, then Amer. Red Cross Ambulance Corps in Italy; Italian War Cross.

WHEELER, 1911, LAWRENCE RAYMOND—(*Industrial*)—Born July 19, 1888, Portville, N.Y; died June 21, 1938, Portland, Oregon. Senior editor, U.S. Forest Service, '35-'38.

WHEELER, 1855, WILLIAM, LL.B., M.A.—(*Law*)—Born Aug. 14, 1836, New York City; died June 22, 1864, near Marietta, Ga. Capt. Light Artillery, Union Army, Civil War.

WHEELWRIGHT, 1897, JOSEPH STORER, M.D.—(*Medicine*)—Born Nov. 23, 1875, Bangor, Me.; died Oct. 9, 1941, Long Point, Ontario. Major, Med. Corps World War I (AEF).

WHITE, 1853, ANDREW DICKSON, M.A., Ph.D., D.C.L., L.H.D., LL.D.—(*Education*)—Born Nov. 7, 1832, Homer, N.Y.; died Nov. 4, 1918, Ithaca, N.Y. Prof. of Hist. and English literature, Univ. of

Michigan, 1857-1866; Pres., Cornell Univ., 1866-1885, also Prof. of Hist., 1866-1885. U.S. Minister to Germany, 1879-1881 and 1897-1902, and to Russia, 1892-1894. Trustee, Carnegie Institute and Carnegie Endowment for Peace.

WHITE, 1854, Charles Atwood, M.A.—(*Law*)—Born Nov. 11, 1833, New Haven, Conn.; died June 18, 1909, New Haven.

WHITE, 1848, George, LL.B., M.A.—(*Law*)—Born Nov. 9, 1821, Quincy, Mass.; died Aug. 29, 1899, Wellesley, Mass.

WHITE, 1866, George Edward, M.A.—(*Industrial*)—Born Mar. 17, 1845, New Haven, Conn.; died Dec. 19, 1908, New York City.

WHITE, 1881, Henry Charles, LL.B., LL.M.—(*Law*)—Born Sept. 1, 1856, Utica, N.Y.; died Feb. 7, 1914, New Haven, Conn.

WHITE, 1851, Henry Dyer, M.A.—(*Law*)—Born Sept. 24, 1830, New Haven, Conn.; died May 4, 1905, New Haven.

WHITE, 1903, John Richards—(*Education*)—Born Nov. 24, 1880, Providence, R.I.; died June 16, 1911, Providence.

WHITE, 1864, Oliver Sherman, LL.B., M.A.—(*Law*)—Born Nov. 2, 1842, New Haven, Conn.; died Mar. 30, 1917, New Haven.

WHITE, 1902, Percy Gardiner—(*Welfare*)—Born Sept. 16, 1878, Gardiner, Me.; died Feb. 22, 1906, Jamaica Plain, Mass.

WHITE, 1859, Roger Sherman, LL.B., M.A.—(*Law*)—Born Dec. 26, 1837, New Haven, Conn.; died July 9, 1924, New Haven.

WHITE, 1941, Warren Benton, LL.B.—(*Industrial*)—Born Nov. 8, 1918, Denver, Colo.; died Nov. 26, 1972, Oklahoma City, Ok. Pres. and Owner, Trend Petroleum, Inc.; Reg. Al. Fd. Chmn., '52-'59; Lieut., USN, '41-'45.

WHITE, 1942, William Gardner—Born Feb. 25, 1918, St. Paul, Minn.; missing in action, Sept. 2, 1944, near Chichi Jima, Bonin Islands, Asiatic Area; presumptive date of death, Sept. 3, 1945. Lt. (j.g.), USNR (Aviation), World War II.

WHITEHOUSE, 1905, Edwin Sheldon—(*Government*)—Born Feb. 5, 1883, New York, N.Y.; died Aug. 5, 1965; Minister to Guatemala, '30-'33; Minister to Colombia, '33-'34.

WHITEHOUSE, 1899, William Fitzhugh—(*Finance*)—Born Sept. 6, 1877, Elmhurst, Ill.; died May 27, 1955, Newport, R.I. Mbr., R.I. State Senate, '24 and '26; Maj., Inf. World War I (AEF).

WHITNEY, 1878, Edward Baldwin—(*Law*)—Born Aug. 16, 1857, New Haven, Conn.; died Jan. 5, 1911, Cornwall, Conn. Asst. Attny. Gen. of the U.S., 1893-1897. Justice, New York Supreme Court, 1909-1911.

WHITNEY, 1854, EDWARD PAYSON, M.A.—(*Medical student*)—Born May 22, 1833, Northampton, Mass.; disappeared in 1858.

WHITNEY, 1851, EMERSON COGSWELL—(*Education*)—Born Nov. 8, 1822, Winchendon, Mass.; died Dec. 1, 1851, Middletown, N.Y.

WHITNEY, 1894, HARRY PAYNE—(*Finance*)—Born April 29, 1872, New York City; died Oct. 26, 1930, New York City.

WHITNEY, 1856, JAMES LYMAN, M.A.—(*Library work*)—Born Nov. 28, 1830, Northampton, Mass.; died Sept. 25, 1910, Cambridge, Mass.

WHITNEY, 1882, JOSEPH ERNEST, M.A.—(*Education*)—Born Feb. 27, 1858, Cornwall, Conn.; died Feb. 25, 1893, Colorado Springs, Colo.

WHITNEY, 1898, PAYNE, LL.B.—(*Finance*)—Born Mar. 20, 1876, New York City; died May 25, 1927, Manhasset, N.Y.

WHITNEY, 1863, WILLIAM COLLINS, LL.B., M.A., LL.D.—(*Law*)—Born July 5, 1841, Conway, Mass.; died Feb. 2, 1904, New York City. Sec. of the Navy of the U.S. 1885-1889.

WHITON, 1853, JAMES MORRIS, Ph.D.—(*Ministry and literary work*)—Born April 11, 1833, Boston, Mass.; died Jan. 25, 1920, New York City. Prof. of ethics and economics, Meadville Theological School, 1893-1894.

WICKES, 1898, FORSYTH—(*Law*)—Born Oct. 26, 1876, New York, N.Y.; died Dec. 20, 1964; Sr. Ptnr., Wickes, Riddell, Bloomer, Jacobi & McGuire, N.Y.C.; Founder and Bd. Chmn., The French Lycee in City of N.Y.; Major, Inf., AEF, W.W. I.

WICKES, 1874, THOMAS PARMELEE, LL.B.—(*Law*)—Born April 15, 1853, Albany, N.Y.; died Jan. 18, 1933, Los Angeles, Calif.

WICKWIRE, 1949E, WINTHROP ROSS—(*Business*)—Born Sept. 18, 1923, Cortland, N.Y.; died Mar. 8, 1969; V.P., operations, Wickwire Bros., Inc.; 1st Lieut., AAF, Feb. '43-Mar. '46; Air Medal.

WIGGIN, 1904, FREDERICK HOLME, LL.B.—(*Law*)—Born Mar. 16, 1882, Litchfield, Conn.; died May 22, 1963; Capt., F.A.R.E. Artillery, W.W. I.

WILCOX, 1859, ASHER HENRY—(*Ministry*)—Born Nov. 16, 1837, Norwich, Conn.; died Feb. 25, 1915, Norwich.

WILDER, 1884, AMOS PARKER, Ph.D.—(*Literary work*)—Born Feb. 15, 1862, Calais, Me.; died July 2, 1936, New Haven, Conn. U.S. Consul Gen., Hong Kong, '06-'09, and Shanghai, '09-'14.

WILHELMI, 1903, FREDERICK WILLIAM—(*Industrial*)—Born Sept. 7, 1879, Utica, N.Y.; died July 20, 1959; Intelligence Branch, U.S. Army, World War I.

WILHELMI, 1939, FREDERICK WILLIAM, M.A.—(*Business*)—Born Aug. 28, 1915, Cloquet, Minn.; died Sept. 16, 1973, Katonah, N.Y. Antique Dealer, The Eagle Eye; 1st Lieut., Inf., '42-'46; Combat Inf. Badge, 4 Bronze Stars.

WILLARD, 1853, ANDREW JACKSON, M.D.—(*Medicine*)—Born Mar. 19, 1832, Harvard, Mass.; died Mar. 5, 1907, Swanton, Vt.

WILLCOX, 1848, GILES BUCKINGHAM, D.D.—(*Education*)—Born Aug. 7, 1826, New York City; died July 22, 1922, Chicago, Ill. Stone Prof. of pastoral theology and Ch. history, Chicago Theological Seminary, 1879-1900, and Prof. emeritus, '00-'22.

WILLIAMS, 1837, HENRY—(*Law*)—Born Sept. 12, 1818, Elizabethtown, N.J.; died July 11, 1878, Savannah, Ga. Lieut., Confederate Army, Civil War.

WILLIAMS, 1908, JAMES WILLARD—(*Education*)—Born Aug. 6, 1885, Glastonbury, Conn.; died Mar. 4, 1970.

WILLIAMS, 1897, NORMAN ALTON—(*Industrial*)—Born Feb. 17, 1873, Utica, N.Y.; died Nov. 4, 1910, Clayville, N.Y.

WILLIAMS, 1861, RALPH OLMSTED—(*Literary work*)—Born May 12, 1838, Palmyra, N.Y.; died July 17, 1908, New Haven, Conn. Served in Union Army, Civil War.

WILLIAMS, 1838, THOMAS SCOTT, M.A.—(*Law*)—Born Nov. 20, 1818, Wethersfield, Conn.; drowned Sept. 17, 1842, Hartford, Conn.

WILLIAMS, 1839, WILLIAM PERKINS—(*Student*)—Born Aug. 17, 1819, New London, Conn.; died Mar. 9, 1841, Ventnor, Isle of Wight, England.

WILLIS, 1841, RICHARD STORRS—(*Music and literary work*)—Born Feb. 10, 1819, Boston, Mass.; died May 7, 1900, Detroit, Mich.

WILSON, 1844, ARCHELAUS, M.A.—(*Law*)—Born May 18, 1817, Nelson, N.H.; died Feb. 26, 1862, New Britain, Conn.

WILSON; 1906, HUGH ROBERT, LL.D.—(*Government*)—Born Jan. 29, 1886, Evanston, Ill.; died Dec. 29, 1946, Old Bennington, Vt. In U.S. diplomatic service, '12-'41; Sec. at Lisbon, Guatemala, Buenos Aires, Berlin, Berne and Washington, '11-'21; counselor at Tokyo, Mexico, and Washington, '24-'27; minister, Berne, Switzerland, '27-'37; Asst. Sec. of State, '37-'38; ambassador to Germany, '38; Spec. Asst. to Sec. of State, '39-'41; attached to Office of Strategic Services, '41-'45. Sec. Gen., Three Power Naval Arms Limitation Conf., Geneva, '27; Del., Preparatory Disarmament Comm., Geneva, '30; adviser, Naval Conf., London, '30; Mbr., Am. delegation to 54 nation disarmament parley, Geneva, '32-'37, and represented U.S. on Advisory Comm.

on Manchuria, '33. Assoc. fellow, Timothy Dwight College, Yale University, '41-'46.

WILSON, 1847, JOHN—(*Law*)—Born June 15, 1827, Huntsville, Mo.; died Dec. 2, 1867, St. Joseph, Mo.

WINSTON, 1886, DUDLEY—(*Finance*)—Born June 10, 1865, Chicago, Ill.; died April 11, 1898, en route from Lakewood, N.J., to Chicago.

WINSTON, 1877, FREDERICK SEYMOUR—(*Law*)—Born Oct. 27, 1856, Melrose, Ky.; died Mar. 7, 1909, Pasadena, Calif.

WINTER, 1920, DANIEL R.—(*Business*)—Born July 12, 1897, St. Paul, Minn.; died Feb. 25, 1981; formerly with Gulf Oil Corp.

WINTER, 1921, EDWIN WHEELER II—(*Finance*)—Born Feb. 12, 1899, St. Paul, Minn.; died Jan. 9, 1961; 2d Lieut., F.A., W.W. I.

WITHERBEE, 1874, FRANK SPENCER—(*Industrial*)—Born May 12, 1852, Port Henry, N.Y.; died April 13, 1917, New York City.

WITHERBEE, 1880, WALTER CRAFTS—(*Mining*)—Born July 1, 1856, Port Henry, N.Y.; died Sept. 28, 1922, Port Henry. Secret service work for Dept. of Justice, World War I.

WITTER, 1944, DEAN, JR.—(*Finance*)—Born May 19, 1922, San Francisco, Calif.; died July 13, 1976, Naples, Fla. Yale Development Bd.; formerly Exec. V.P. & Dir., Dean Witter & Co.; Lieut. (j.g.), USNR, '43-'46.

WODELL, 1910, RUTHVEN ADRIANCE, LL.B.—(*Law*)—Born Jan. 2, 1888, Poughkeepsie, N.Y.; died Jan. 27, 1945, Millburn, N.J. Chief Yeoman, USNRF, World War I.

WOLCOTT, 1839, ELIZUR—(*Industrial*)—Born Aug. 7, 1817, South Windsor, Conn.; died Mar. 13, 1901, Berkeley, Calif.

WOOD, 1833, GEORGE INGERSOLL—(*Ministry*)—Born May 20, 1814, Stamford, Conn.; died Jan. 9, 1899, Washington, D.C.

WOOD, 1874, JOHN SEYMOUR, LL.B.—(*Law*)—Born Oct. 1, 1853, Utica, N.Y.; died June 15, 1934, New York City.

WOOD, 1868, WILLIAM CURTIS, M.A.—(*Education*)—Born April 20, 1849, Mahableshwur, India; died July 15, 1875, New Haven, Conn.

WOODFORD, 1850, OSWALD LANGDON, M.A.—(*Ministry and farming*)—Born Oct. 31, 1827, West Avon, Conn.; died Oct. 21, 1870, West Avon. Mbr., Conn. State Legislature, 1865.

WOODRUFF, 1864, FRANCIS EBEN—(*Government*)—Born April 24, 1844, New York City; died June 3, 1914, Morristown, N.J. Served in Customs Service of China, 1865-1897.

WOODRUFF, 1889, GEORGE WASHINGTON, LL.B.—(*Law*)—Born Feb. 22, 1864, Dimock, Pa.; died Mar. 23, 1934, Harrisburg, Pa. Asst.

Attny. Gen. of the U.S., '07-'09; acting Sec. of the Interior, '07; Fed. judge, Hawaii, '09-'10; Attny. Gen. Pa., '23-'27; Public Service commissioner, Pa., '31-'33.

WOODRUFF, 1879, TIMOTHY LESTER, M.A.—(*Business and finance*)—Born Aug. 4, 1858, New Haven, Conn.; died Oct. 12, 1913, New York City. Lieut.-Gov., N.Y. 1897-1903.

WOODWARD, 1883, JOHN BUTLER—(*Law*)—Born April 3, 1861, Wilkes Barre, Pa.; died Sept. 6, 1925, Glen Summit, Pa. Judge, Court of Common Pleas, 11th judicial Distr. of Pa., '13-'25.

WOODWARD, 1867, RICHARD WILLIAM—(*Science*)—Born Dec. 8, 1846, Franklin, Conn.; died May 15, 1931, New Haven, Conn.

WOODWARD, 1855, STANLEY—(*Law*)—Born Aug. 29, 1833, Wilkes Barre, Pa.; died Mar. 29, 1906, Wilkes Barre. Capt., Union Army, Civil War.

WOODWARD, 1858, WILLIAM HERRICK—(*Industrial*)—Born May 19, 1838, Millbury, Mass.; died Sept. 27, 1893, Woodstock, Vt.

WOOLFOLK, 1841, WILLIAM GREY—(*Farming*)—Born July 11, 1822, Augusta, Ga.; died Oct. 2, 1903, Wynnton, Ga. Served in Confederate Army, Civil War.

WOOLLEY, 1918, JOHN ELIOT—(*Publishing*)—Born Mar. 1, 1897, Brooklyn, N.Y.; died June 26, 1966; 2d Lieut., F.A., W.W. I; Lieut. Col. USAAF, W.W. II; Alumni Fund Agt.

WOOLSEY, 1907, HEATHCOTE MURISON—(*Architecture*)—Born June 5, 1884, Leominster, Mass.; died Feb. 7, 1957, Beaufort, S.C. Officer's Training School, Coast Artillery, World War I; Mbr., Kent, Conn. Rehabilitation Com.

WOOLSEY, 1872, THEODORE SALISBURY, LL.B., M.A., LL.D.—(*Education*)—Born Oct. 22, 1852, New Haven, Conn.; died April 24, 1929, New Haven. Prof. of international law, Yale Univ., 1878-1911, and Prof. emeritus, '11-'29.

WORCESTER, 1876, EDWIN DEAN, LL.B.—(*Law*)—Born Feb. 25, 1856, Albany, N.Y.; died May 21, 1929, New York City.

WORCESTER, 1882, FRANKLIN ELDRED, Ph.B., M.E.—(*Transportation*)—Born Sept. 12, 1860, Albany, N.Y.; died Mar. 3, 1891, Helena, Mont.

WORCESTER, 1885, WILFRED JAMES—(*Finance*)—Born July 28, 1864, Albany, N.Y.; died Jan. 10, 1953.

WORD, 1894, CHARLES FRANCIS—(*Law*)—Born April 3, 1871, Virginia City, Mont.; died June 10, 1911, Helena, Mont. Mbr., Mont. State Legislature, '03-'04.

WRAY, 1836, James McAlpin, M.A.—(*Law*)—Born Nov. 1, 1817, New Orleans, La.; died April 8, 1850, New Orleans.

WRIGHT, 1901, Alfred Parks—(*Student*)—Born Jan. 5, 1880, New Haven, Conn.; died May 20, 1901, New Haven.

WRIGHT, 1898, Henry Burt, Ph.D.—(*Education*)—Born Jan. 29, 1877, New Haven, Conn.; died Dec. 27, 1923, Oakham, Mass. Asst. Prof. of Roman Hist. and Latin Literature, Yale Univ., '07-'11, Asst. Prof. of Hist., '11-'14, and Stephen Merrell Clement Prof. of Christian methods, '14-'23; also acting Sec. of the Univ., 1899-1900. Y.M.C.A. work, World War I.

WRIGHT, 1868, Henry Park, M.A., Ph.D., LL.D.—(*Education*)—Born Nov. 30, 1839, Winchester, N.H.; died Mar. 17, 1918, New Haven, Conn. Asst. Prof. of Latin, Yale Univ., 1871-1876, Dunham Prof. of Latin, 1876-1909, and Prof. emeritus, '09-'18; also dean of Yale Coll., 1884-1909. Trustee, Connecticut Coll. for Women. Sgt., Inf., Spanish-American War.

Y

YARDLEY, 1855, Henry Albert, M.A.—(*Education*)—Born Dec. 20, 1834, Philadelphia, Pa.; died April 3, 1882, Middletown, Conn. Prof. of homiletics and Christian evidences, Berkeley Divinity School, 1867-1882.

YARNALL, 1841, Thomas Coffin, M.A., D.D.—(*Ministry*)—Born Dec. 10, 1815, Philadelphia, Pa.; died Nov. 28, 1911, West Philadelphia.

YERKES, 1837, Stephen, M.A., D.D.—(*Education*)—Born June 27, 1817, Bucks County, Pa.; died Mar. 28, 1896, Danville, Ky. Prof. of ancient languages, Transylvania Univ., 1852-1857; Pres., Danville (Ky.) Theological Seminary (also Prof. of Biblical and Oriental literature, 1857-1866 and 1867-1896); acting Prof. of Greek, Centre Coll., Danville, 1866-1867.

YOUNG, 1848, Benham Daniel—(*Education*)—Born Oct. 16, 1822, Christian Cty., Ky.; died May 12, 1895, Huntsville, Ky.

YALE CLASSES

1833
- *Bates, S. H.
- *Beach, J. C.
- *Bishop, N.
- *Crump, J.
- *Davis, B. F.
- *Hart, R. E.
- *Lewis, A. H.
- *Marshall, S. D.
- *Mather, F. E.
- *Miller, P. T.
- — —
- *Robertson, R.
- *Russell, W. H.
- *Taft, A.
- *Wood, G. I.

1834
- *Beaumont, G. A. O.
- *Burr, W. S.
- *Coffing, C.
- *Emerson, A.
- *Foster, E. K.
- *Gordon, A. B.
- *Hall, D. E.
- *Houston, J. W.
- *Kendall, J. N.
- *Kingsley, H. C.
- *Lea, J. N.
- *Southmayd, S. G.
- *Spencer, G. G.
- *Tweedy, J. H.
- *Washington, W. H.

1835
- *Anderson, E A.
- *Davis, J.
- *Howard, O. R.
- *Johnston, F.
- *McLellan, W.
- *Mills, E. S.
- *Rafferty, J. C.
- *Seeley, J. E.
- *Seymour, J. F.
- *Sheffey, H. W.
- *Strong, C.
- *Stubbs, A.
- *Sturges, T. B.
- *Thacher, T. A.
- *Walsh, H.

1836
- *Darling, T.
- *Deming, H. C.
- *Dent, H. H.
- *Dunwody, J. B.
- *Harris, H. R.
- *Hurd, J. C.
- *Martin, J. G.
- *Marvin, G. L.
- *Pierson, W. S.
- *Preston, H. K.
- *Rowland, W. S.
- *Sherman, F. R.
- *Swift, J. M.
- *Tyler, G. P.
- *Wray, J. M.

1837
- *Carter, E. O.
- *Coit, W.
- *Day, T. M.
- *Evarts, W. M.
- *Hatch, W. T.
- *Hyatt, R. U.
- *Law, W. F.
- *Lyman, C. S.
- *Owen, A. F.
- *Robeson, A. B.
- *Scarborough, W. S.
- *Silliman, B.
- *Waite, M. R.
- *Williams, H.
- *Yerkes, S.

1838
- *Bartlett, J. K.
- *Cooper, W. F.
- *Dodd, A.
- *Fleming, W. S.
- *Jones, S. A.
- *Key, T. M.
- *Law, W. L.
- *Lynde, C. J.
- *Ribeiro, C. F.
- *Rich, C.
- *Spalding, E.
- *Talcott, T. G.
- *Thompson, J. P.
- *Varnum, J. B.
- *Williams, T. S.

1839
- *Beach, J. S.
- *Biddle, T. B.
- *Chandler, W. H.
- *Eldredge, C. St.J.
- *Faulkner, E.
- *Hubbard, R. D.
- *Jackson, H. R.
- *Norris, W. H.
- *Putnam, J. O.
- *Stille, C. J.
- *Trotter, S. F.
- *Washington, G.
- *Watson, J. M.
- *Williams, W. P.
- *Wolcott, E.

1840
- *Beirne, C. J.
- *Benedict, T. H.
- *Burnham, C. F.
- *Chauvenet, W.
- *Fisk, S. W.
- *Hoppin, J. M.
- *Hoyt, J. G.
- *Hudson, W. W.
- *Jesup, J. R.
- *McCall, H.
- *March, D.
- *Perkins, J.
- *Perkins, W.
- *Richards, G.
- *Tiffany, W. H.

1841
- *Barry, W. T. S.
- *deSa, P. A.
- *Emerson, J.
- *Eustis, W. T.
- *Field, D. I.
- *Gillett, A. C.
- *Helfenstein, C. P.
- *Leaf, E.
- *Learned, W. L.
- *Mitchell, D. G.
- *Raymond, H. H.
- *Sturges, H.
- *Willis, R. S.
- *Woolfolk, W. G.
- *Yarnall, T. C.

*Indicates deceased members.

1842

- •Benton, J. A.
- •Brown, J. V.
- •Buttles, A. B.
- •Edwards, N.
- •Gready, W. P.
- •Halsey, J.
- •Hennen, W. D.
- •Huggins, W. S.
- •Lewis, H.
- •MacWhorter, A.
- •Mathews, A.
- •Miller, F. W.
- •Perkins, N. S.
- •Peters, J. A.
- •Pratt, J. H.

1843

- •Baratte, J. A.
- •Chambers, W. L.
- •Eames, B. T.
- •Gachet, C. N.
- •Grammar, C.
- •Granger, G.
- •Hart, R.
- •Havens, D. W.
- •Lambert, A.
- •Lane, W. G.
- •Lent, J. A.
- •Moody, T. H.
- •Robb, J. H.
- •Robinson, L. F.
- •Stevens, H.

1844

- •Bell, R. D. S.
- •Breed, E. A.
- •Elliott, W. H.
- •Felder, J. H.
- •Ferry, O. S.
- •FewSmith, W.
- •Fish, S. A.
- •Foote, T.
- •Lanier, A. C.
- •Lovell, J.
- •Robb, J. M.
- •Walker, J. B.
- •Washburn, W. B.
- •Wetherell, J. W.
- •Wilson, A.

1845

- •Brickell, J. N.
- •Conner, L. P.
- •Conner, W. G.
- •Cushman, I. L.
- •Esty, C. C.
- •Gould, J. G.
- •Harding, J. W.
- •Hill, G. C.
- •Hyde, A. P.
- •Kennedy, T.
- •Metcalfe, O.
- •Nickerson, S. D.
- •Rankin, R.
- •Taylor, R.
- •Wales, L. E.

1846

- •Backus, J. W.
- •Brisbin, J. B.
- •Eakin,W. S.
- •Harrison, H. B.
- •Hawley, D.
- •Kellogg, S. W.
- •Linton, S. D.
- •Mulford, D. H.
- •Nelson, R. R.
- •Nevins, W. R.
- •Phinney, E.
- •Savage, J.
- •Steele, H. T.
- •Stiles, J.
- •Trask, C. H.

1847

- •Allison, S. P.
- •Baldwin, R. S.
- •Bayne, T. L.
- •Coon, J.
- •Fitch, J.
- •Haight, D. C.
- •Hayden, W. H.
- •McLallen, P. F.
- •Mills, A.
- •Moore, W. E.
- •Munn, J.
- •Olmsted, J. H.
- •Sanford, C. F.
- •Smith, J. D.
- •Wilson, J.

1848

- •Abbe, F. R.
- •Aitchison, W.
- •Blake, H. T.
- •Colton, H. M.
- •Condit, C.
- •Emerson, S.
- •Foster, D.
- •Hitchcock, H.
- •Kinne, W.
- •Mesick, R. S.
- •Pinckard, T. C.
- •Strickler, S. A.
- •White, G.
- •Willcox, G. B.
- •Young, B. D.

1849

- •Brandegee, A.
- •Came, C. G.
- •Campbell, J.
- •Clarke, W. B.
- •Dwight, T.
- •Finch, F. M.
- •Fisk, F. W.
- •Hough, E. C.
- •Hurlbut, J.
- •Kirby, J. B.
- •Metcalfe, H. L.
- •Miles, J. B.
- •Morris, E. D.
- •Richardson, W.
- •Rockwell, J.

1850

- •Bentley, E. W.
- •Bliss, R.
- •Bliss, W. R.
- •Camp, C.
- •Chase, H.
- •Colton, W. S.
- •Condit, A. P.
- •Converse, G. S.
- •Dechert, H. M.
- •Foote, J. F.
- •Ludden, W.
- •Manross, N. S.
- •Roberts, E. H.
- •Storrs, C.
- •Woodford, O. L.

1851

•Alexander, W. F.
•Beman, H. DeW.
•Brinsmade, H. W.
•Crampton, R. C.
•Dana, W. B.
•Evans, E. W.
•Halderman, R. J.
•Hebard, A.
•Little, R.
•Manice, W. DeF.
•Slade, J. M.
•Vose, J. G.
•Wells, H. D.
•White, H. D.
•Whitney, E. C.

1852

•Bigelow, A.
•Blakeslee, H. C.
•Bliss, C. M.
•Cooper, J.
•Crapo, W. W.
•Gilman, D. C.
•Helmer, C. D.
•Houghton, E.
•Johnston, W. P.
•McCormick, H.
•Marmaduke, V.
•Ross, W. B.
•Safford, G. B.
•Sill, C. C.
•Stanley, W.

1853

•Aiken, W. P.
•Babcock, H. H.
•Baldwin, C. W.
•Capron, S. M.
•Coit, J.
•Davies, T. F.
•Gleason, W. H.
•Grout, A.
•Heard, A. F.
•Jack, T. M.
•Johnson, G. A.
•Kent, A. E.
•White, A. D.
•Whiton, J. M.
•Willard, A. J.

1854

•Blackman, S. C.
•Cutler, C.
•Denny, T.
•Fenn, W. H.
•Hooker, J. W.
•Lambert, E. W.
•Lombard, J. K.
•Lord, G. DeF.
•Morris, L. B.
•Potwin, L. S.
•Purnell, C. T.
•Slade, F. H.
•Twombly, A. S.
•White, C. A.
•Whitney, E. P.

1855

•Alexander, W. D.
•Barnes, W. H. L.
•Bumstead, N. W.
°Child, L. M.
•Cobb, H. N.
•Granger, J. A.
•Johnson, C. F.
•Kittredge, C. A.
•Lampson, G.
•Mulford, E.
•Spring, A. J.
•Tyler, C. M.
•Wheeler, W.
•Woodward, S.
•Yardley, H. A.

1856

•Arnot, M. H.
•Barker, C. P.
•Brown, J. M.
•Campbell, W. H. W.
•Condit, S.
•Depew, C. M.
•Dickinson,
•Eakin, E. A.
•Fisher, L. C.
•Magruder, B. D.
•Nettleton, E. P.
•Packard, L. R.
•Paine, L. L.
•Robinson, G. C.
•Whitney, J. L.

1857

•Blackman, C. S.
•Blake, E. W.
•Buckland, J. P.
•Butler, F. E.
•Croxton, J. T.
•Day, J. C.
•Edwards, A. L.
•Green, J. P.
•Holmes, J. M.
•Jackson, J. C.
•Northrop, C.
•Pratt, G.
•Seymour, S. O.
•Tyler, M. C.
•Wells, N. D.

1858

•Blake, E. F.
•Eichelberger, M. S.
•Grant, E. D.
•Haskell, R. C.
•Heermance, E. L.
•Hollister, A. N.
•Kimball, J. E.
•Lee, S. H.
•MacLellan, G. B.
•Perkins, T. A.
•Porter, E. C.
•Scott, E. G.
•Stevens, F. W.
•VanName, A.
•Woodward, W. H.

1859

•Bristol, I. H.
•Brodhead, H.
•Carpenter, R.
•Clay, C.
•Dunham, C. E.
•Hall, W. K.
°Hannahs, D. C.
•Harrison, B. N.
°Robertson, C. F.
•Schuyler, E.
•Smith, E.
•Stiles, W. A.
•Taylor, A. J.
•White, R. S.
•Wilcox, A. H.

1860
- *Beckley, J. W.
- *Boies, C. A.
- *Boltwood, E.
- *Daniels, J. L.
- *Davis, L. H.
- *Davis, R. S.
- *Fowler, W.
- *Furbish, E. B.
- *Hebard, D.
- *Johnston, W. C.
- *Jones, L. M.
- *Owen, C. H.
- *Phelps, W. W.
- *Seely, J. F.
- *Smith, W. T.

1861
- *Baldwin, S. E.
- *Brown, H. S.
- *Chamberlain, R. L.
- *Dexter, F. B.
- *Fuller, W. H.
- *Higgins, A.
- *Kernochan, F. E.
- *Mitchell, J. H.
- *Newell, S.
- *Park, W. E.
- *Peck, T.
- *Root, A. P.
- *Shearer, S.
- *Sill, E. R.
- *Williams, R. O.

1862
- *Adams, F.
- *Chamberlain, D. H.
- *Coe, E. B.
- *Day, M. C.
- *Eaton, S. B.
- *Johnston, H. P.
- *Kitchel, C. L.
- *Lampson, W.
- *MacVeagh, F.
- *Ripley, G. C.
- *Seely, W. W.
- *Stebbins, H. H.
- *Taylor, J. P.
- *Ward, J. A.
- *Weeks, R. K.

1863
- *Allen, W.
- *Arms, C. J.
- *Bingham, E. B.
- *Bull, C. W.
- *Butler, J. H.
- *Chamberlain, L. T.
- *Dimock, H. F.
- *Fowler, H. W.
- *Kernochan, J. F.
- *Perry, D. B.
- *Sheffield, G. St.J.
- *Southworth, G. C. S.
- *Sumner, W. G.
- *Wesson, C. H.
- *Whitney, W. C.

1864
- *Boltwood, T. K.
- *Borden, M. C. D.
- *Boyden, H. P.
- *Clark, A. B.
- *Hewitt, T. B.
- *MacLean, C. F.
- *Merriam, G. S.
- *Miller, A. D.
- *Owen, H. E.
- *Palmer, W. H.
- *Pratt, W. H. B.
- *Pugsley, I. P.
- *Sterling, J. W.
- *White, O. S.
- *Woodruff, F. E.

1865
- *Bent, J. A.
- *Brooks, J. E.
- *Brown, H. A.
- *Bulkley, T.
- *Bushnell, W. B.
- *Caskey, T. F.
- *Charnley, C. M.
- *Ewell, J. L.
- *Ford, G. T.
- *Merrill, P.
- *Riggs, B. C.
- *Smith, C. E.
- *Stimson, H. A.
- *Stone, W.
- *Warren, H. W.

1866
- *Adams, C. H.
- *Brand, J.
- *Coffin, E.
- *Cole, H.
- *Farnam, W. W.
- *Foote, H. W.
- *Hall, J. M.
- *Hincks, E. Y.
- *Holt, G. C.
- *Judson, F. N.
- *Lampman, L.
- *Sloane, H. T.
- *Southgate, C. M.
- *Wade, L. C.
- *White, G. E.

1867
- *Bissell, A. D.
- *Dexter, M.
- *DuBois, J. J.
- *Dunning, A. E.
- *Harding, W. B.
- *Hartshorn, J. W.
- *Hedge, T.
- *Lamb, A. E.
- *Libbey, F.
- *Merriam, J. F.
- *Seymour, H.
- *Spencer, J. M.
- *Taft, P. R.
- *Wetmore, G. P.
- *Woodward, R. W.

1868
- *Berry, C. D.
- *Brewster, C. B.
- *Coffin, J.
- *Colt, L. B.
- *Dixon, W. P.
- *Farnam, C. H.
- *Lewis, J.
- *McKinney, W. A.
- *Sloane, T. C.
- *Thacher, J. K.
- *Tinker, A. P.
- *Tweedy, S.
- *Tytus, E. J.
- *Wood, W. C.
- *Wright, H. P.

1869

- *Bannard, H. C.
- *Beers, H. A.
- *Bissell, W. S.
- *Brown, A. L.
- *Eno, J. C.
- *Foster, J. P. C.
- *Freeman, H. V.
- *Heaton, E.
- *Hooker, T.
- *Isham, J. B.
- *Lear, H.
- *Perrin, B.
- *Raymond, H. W.
- *Richardson, R. B.
- *Shirley, A.

1870

- *Andrews, J. W., Jr.
- *Gulliver, W. C.
- *Johnston, R.
- *Learned, D. W.
- *McClure, J. G. K.
- *McCutchen, S. St.J.
- *Mason, H. B.
- *Miller, G. D.
- *Perry, J. H.
- *Selden, E. G.
- *Shattuck, J. W.
- *Stearns, E. R.
- *Strong, C. H.
- *Tilney, J. J.
- *Welch, W. H.

1871

- *Clark, C. H.
- *Collin, F.
- *Elliott, H. R.
- *Hine, C. D.
- *Kinney, H. E.
- *Lea, R. B.
- *Mansfield, H.
- *Mason, A. B.
- *Mead, F.
- *Perry, W. W.
- *Sperry, W. R.
- *Strong, G. A.
- *Sweet, E. F.
- *Thacher, T.
- *Townsend, W. K.

1872

- *Coe, R. E.
- *Cushing, W. L.
- *Deming, C.
- *Deming, C. C.
- *Deming, H. C.
- *Dennis, F. S.
- *Hincks, J. H.
- *Hoppin, B.
- *Merriam, A. R.
- *Moore, G. F.
- *Owen, E. T.
- *Payson, H. S.
- *Ramsdell, C. B.
- *Spalding, G. A.
- *Woolsey, T. S.

1873

- *Alexander, E.
- *Allen, A. H.
- *Beebe, W.
- *Daniels, R. W.
- *Denslow, H. M.
- *Elder, S. J.
- *Flagg, W. W.
- *Grubb, C. R.
- *Johnes, E. R.
- *Judson, I. N.
- *Lathe, H. W.
- *Ord, J. P.
- *Prentice, S. O.
- *Tarbell, F. B.
- *Thomas, C. H.

1874

- *Aldis, O. F.
- *Barnes, P.
- *Bushnell, S. C.
- *Farnam, H. W.
- *Grover, T. W.
- *James, H. A.
- *Munroe, G. E.
- *Parkin, W.
- *Robbins, E. D.
- *Stapler, H. B. B.
- *Townsend, J. M.
- *Walden, R.
- *Wickes, T. P.
- *Witherbee, F. S.
- *Wood, J. S.

1875

- *Avery, C. H.
- *Brooks, J. W.
- *Chester, C. T.
- *Clarke, T. S.
- *Day, R. W.
- *Gulliver, H. S.
- *Hotchkiss, W. H.
- *Jenks, A. F.
- *Jones, D. A.
- *Jones, F. H.
- *Patton, J.
- *Seymour, J. S.
- *Smith, E. C.
- *Southworth, E. W.
- *Tillinghast, C. T.

1876

- *Allen, J. D. H.
- *Andrews, J. W.
- *Bannard, O. T.
- *Blaine, W.
- *Bottum, E. S.
- *Cook, R. J.
- *Dawes, C. M.
- *Fowler, C. N.
- *Hadley, A. T.
- *Howe, E. P.
- *Hyde, W. W.
- *Marvin, J. H.
- *Russell, P. G.
- *Smith, R. B.
- *Worcester, E. D.

1877

- *Barnum, W. M.
- *Bigelow, W. I.
- *Brooks, W.
- *Chapin, C. F.
- *Collin, W. W.
- *Cooke, E. C.
- *Eaton, S. L.
- *Gould, A.
- *Hoysradt, A.
- *Kimball, A. R.
- *Percy, F. B.
- *Sears, J. M.
- *Thacher, J. S.
- *Tuttle, G. M.
- *Winston, F. S.

1878

*Campbell, T.
*Carter, C. F.
*Curtis, G. L.
*Edwards, G. B.
*Foster, R.
*James, W. K.
*Jenks, T.
*Kelsey, C. H.
*Knott, G. T.
*Pollock, G. E.
*Seely, E. H.
*Spencer, C. L.
*Stone, C. M.
*Taft, W. H.
*Whitney, E. B.

1879

*Bowers, L. W.
*Burpee, L. F.
*Foster, G. F.
*Green, H. S.
*Hitchcock, H.
*Hyde, F. E.
*James, W. B.
*Livingston, H.
*Perrin, J.
*Platt, L. A.
*Rodman, R. S.
*Swinburne, L. J.
*Thompson, O. D.
*Tighe, A.
*Woodruff, T. L.

1880

*Allen, W. P.
*Amundson, J. A.
*Bentley, E. M.
*Camp, W.
*Green, E. F.
*Jennings, W.
*Nichols, A. B.
*Ordway, H. C.
*Parker, W.
*Partridge, S. C.
*Peters, W. A.
*Scudder, D.
*Spencer, E. C.
*Taft, H. W.
*Witherbee, W. C.

1881

*Aiken, E. E.
*Barney, D. N.
*Bartlett, P. G.
*Burrell, J. D.
*Coleman, J. C.
*Evarts, S.
*Fuller, P. C.
*Ives, H.
*Leighton, J.
*Osborne, T. B.
*Thompson, N. F.
*VandeGraff, A. S.
*Vernon, F. R.
*Walden, H. T.
*White, H. C.

1882

*Badger, W. I.
*Brewster, B.
*Campbell, J. A.
*Eno, W. P.
*French, A. P.
*Johnson, B.
*Knapp, H. H.
*Lyman, C. W.
*McBride, W.
*Osborne, A. S.
*Platt, H. B.
*Pollock, W.
*Wells, J. L.
*Whitney, J. E.
*Worcester, F. E.

1883

*Burpee, C. W.
*Deming, L. C.
*Folsom, H. T.
*Foote, C. S.
*Frost, E. B.
*Hillard, L. B.
*Hull, L. K.
*Kellogg, F. W.
*McLaughlin, E. T.
*Moore, E. H.
*Palmer, H. H.
*Parrott, J. R.
*Taft, H. D.
*Thacher, S. D.
*Woodward, J. B.

1884

*Blodgett, G. R.
*Booth, S. A.
*Booth, W. F.
*Evarts, M.
*Foster, R.
*Gruener, G.
*Jenks, P. E.
*Jones, F. S.
*Lambert, A.
*Lawrence, T. G.
*McMillan, W. C.
*Painter, H. M.
*Tompkins, R.
*Twombly, H. B.
*Wilder, A. P.

1885

*Arnot, J. H.
*Baldwin, H. deF.
*Bertron, S. R.
*Brandegee, F. B.
*Bridgman, J. C.
*Brooks, H. S.
*Flanders, H. R.
*Hidden, E.
*Hobbs, C. B.
*McHenry, J.
*Mallon, G. W.
*Richards, E. L.
*Robinson, L. F.
*Terry, W.
*Worcester, W. J.

1886

*Anthony, B. H.
*Brenner, S. K.
*Cowles, A.
*Crapo, S. T.
*Day, T. M.
*Knapp, W. P.
*Lewis, C. M.
*Peters, F. G.
*Phelps, E. J.
*Phelps, S.
*Pierson, C. W.
*Schwab, J. C.
*Shipman, A. L.
*Stewart, P. B.
*Winston, D.

1887

*Bennetto, J.
*Corwin, R. N.
*Cowles, W. H.
*Coxe, A. B.
*Douglass, W. R.
*Hare, C. L.
*Haven, G. G.
*Jennings, O. G.
*Kendall, W. B., Jr.
*Kent, W.
*Knight, S.
*Pomeroy, J. N.
*Rogers, J.
*Sheppard, W. B.
*Thacher, W. L.

1888

*Cooley, H. W.
*Fisher, I.
*Gill, G. M.
*Hurd, R. M.
*Isbell, O. S.
*McMillan, J. H.
*Morison, D. W.
*Roby, S. S. B.
*Seward, W. H.
*Solley, F. P.
*Stagg, A. A.
*Stevenson, F. A.
*Stimson, H. L.
*Waite, M. R.
*Walker, S. J.

1889

*Buchanan, T. W.
*Corbin, W. H.
*Donnelley, T. E.
*Fisher, S. H.
*Gil, C. O.
*Griggs, J. C.
*McQuaid, W. A.
*Pinchot, G.
*Reed, H. L.
*Robinson, H. S.
*Smith, H. A.
*Stokes, H. S.
*Walker, H. F.
*Wells, H. W.
*Woodruff, G. W.

1890

*Bayard, T. F.
*Corwith, J. W.
*Crosby, J.
*Day, A. P.
*Farnham, J. D.
*Harrison, F.
*Haslam, L. S.
*James, N.
*Kellogg, C. P.
*Kneeland, Y.
*Morse, S. N.
*Sage, H. M.
*Simmons, W. D.
*Stewart, P. H.
*Tracy, E.

1891

*Calhoun, G.
*Cox, J. J.
*Doane, J. W.
*Estill, J. G.
*Graves, W. P.
*Isham, E. S.
*Kenerson, V.
*McClintock, N.
*Morison, S. B.
*Poole, W. F.
*Simms, W. E.
*Thompson, S. C.
*Townsend, J. B.
*Tweedy, H. H.
*Walcott, F. C.

1892

*Bayne, H. A.
*Boltwood, E.
*Cheney, H.
*Cheney, K. D.
*Crosby, B. L., Jr.
*Day, C.
*Graves, H. S.
*Husted, J. W.
*Ingersoll, J. W. D.
*Jay, P.
*Kitchel, W. L.
*McClung, L.
*Morison, S. N.
*Price, F. J.
*Ryle, E.

1893

*Begg, W. R.
*Cooke, J. B.
*Dwight, W. E.
*Gallaudet, E. F.
*Hay, L.
*Ives, S. B.
*Jones, A. H.
*Lambert, A. V.
*Martin, G. C.
*Parker, W. W. W.
*Parsons, F.
*Robinson, J. T.
*Roby, J.
*Rogers, D.
*Wallis, A. H.

1894

*Case, G. B.
*Cochran, T.
*Davies, T. F.
*Hall, J. L.
*Hare, M.
*Holter, E. O.
*Howland, J.
*James, R. C.
*McMillan, P. H.
*Paine, R. D.
*Stewart, W. E., Jr.
*Stilman, L. S.
*Walcott, W. S.
*Whitney, H. P.
*Word, C. F.

1895

*Beard, A. M.
*Buckner, M. N.
*Butterworth, F. S.
*Cable, B. S.
*Carter, W. F.
*Clark, A. R.
*Cooke, W. E.
*Davis, B.
*Denison, L.
*Harrison, F. B.
*Hinkey, F. A.
*McKee, L.
*Phelps, Z. B.
*Shepley, A. B.
*Sloane, W.

1896

- •Beard, W. M.
- •Brown, A.
- •Cheney, W.
- •Cross, W. R.
- •deSibour, J. H.
- •Griggs, M. F.
- •McKee, McK. D.
- •Neale, J. B.
- •Smith, W. D.
- •Stokes, A. P.
- •Thorne, S.
- •Thorne, S. B.
- •Treadway, R. B.
- •Trudeau, E. L., Jr.
- •Weyerhaeuser, F. E.

1897

- •Bailey, P. H.
- •Brooke, G. C.
- •Coffin, H. S.
- •Fincke, C. M.
- •Garrison, E. E.
- •Gerard, S.
- •Gillette, C.
- •Kerr, A. B.
- •Kitchel, C. P.
- •Pinchot, A. R. E.
- •Sage, D.
- •Smyth, N. A.
- •Sumner, G.
- •Wheelwright, J. S.
- •Williams, N. A.

1898

- •Cheney, C. D.
- •Fearey, M. L.
- •Gallaudet, H. D.
- •Hale, E.
- •Hinsdale, F. G.
- •Kernochan, F.
- •Lord, F. A.
- •Montgomery, G. D.
- •Parker, G.
- •Rogers, D. F.
- •Simmons, F. H.
- •Wadsworth, J. W., Jr.
- •Whitney, P.
- •Wickes, F.
- •Wright, H. B.

1899

- •Adams, M. T.
- •Ames, S. D.
- •Bowles, H. T.
- •Brooke, F. H.
- •Brown, J.
- •Callahan, H. A.
- •Day, D. H.
- •Griswold, W. E. S.
- •Maffitt, T. S.
- •Magee, J. M.
- •Preston, O.
- •Sweet, C. F.
- •Vanderbilt, A. G.
- •Welles, C. H., Jr.
- •Whitehouse, W. F.

1900

- •Adams, F. B.
- •Allen, F. W.
- •Camp, S. B.
- •Cheney, F. D.
- •Coffin, W. S.
- •Cross, J. W.
- •Douglas, M.
- •Greenway, J. C.
- •Hopkins, J. M.
- •Leavitt, A. D.
- •Lyon, G. A.
- •Paddock, B. W.
- •Rockefeller, P. A.
- •Sullivan, C. A.
- •Taft, H.

1901

- •Allen, A. D.
- •Carlisle, J. M.
- •Cheney, P.
- •Cheney, T. L.
- •Christian, H. H.
- •Coy, S. L.
- •Edwards, R. H.
- •Eels, J. S.
- •Hixon, R.
- •Hoysradt, W. J.
- •Keppelman, J. A.
- •Morris, R.
- •Richardson, A. H.
- •Welsh, C. A.
- •Wright, A. P.

1902

- •Carpenter, G. B.
- •Cressler, A. M.
- •Cushing, C. C. S.
- •Day, W. E.
- •Ferguson, A. L.
- •Guernsey, R. G.
- •Potter, R.
- •Rumsey, B. C.
- •Sincerbeaux, F. H.
- •Stebbins, E. A.
- •Stone, H.
- •Swan, J. R.
- •Taylor, A. McL.
- •Trowbridge, M.
- •White, P. G.

1903

- •Chadwick, G. B.
- •Clark, H. T.
- •Corning, E.
- •Dreisbach, J. M.
- •Hamlin, C. J.
- •Hewitt, B.
- •Holt, H. C.
- •Lamb, A. R.
- •Moore, F. W.
- •Sutphin, S. B.
- •Thompson, D.
- •Wallace, H. M.
- •Waring, A. J.
- •White, J. R.
- •Wilhelmi, F. W.

1904

- •Adams, C. E.
- •Adams, G. W.
- •Cheney, R.
- •Crane, W. M., Jr.
- •Cross, W. S.
- •Dodge, F. T.
- •Jennings, P. H.
- •Kittle, J. C.
- •Metcalf, H. G.
- •Miller, J. E.
- •Pierce, F. E.
- •Reed, L. P.
- •Soper, W. B.
- •Thacher, T. D.
- •Wiggin, F. H.

1905
*Bradford, A. H.
*Ellsworth, J. S.
*Fish, S.
*Hogan, J. J.
*Hollister, B.
*Hughes, B.
*Lathrop, J. H.
*Richardson, G.
*Rogers, E. P.
*Sargent, M.
*Sloane, J.
*Tilney, R. F., 2d
*Turner, H. M.
*Van Reypen, W. K., Jr.
*Whitehouse, E. S.

1906
*Bruce, D.
*Dousman, L. deV.
*Ely, G.
*Flinn, A. R.
*Hoyt, L.
*McClure, J. K. G., Jr.
*McGee, D. A.
*Magee, J. G.
*Moorhead, W. S.
*O'Brien, F.
*Perrin, L. J.
*Rockwell, F. H.
*Smith, B. D.
*Turner, S.
*Wilson, H. R.

1907
*Barnes, W. D.
Blair, W. McC.
*Camp, A. G.
*Daniels, F. L.
*Danielson, R. E.
*Dixon, T. P.
*Dodge, P. L.
*Glaenzer, G. B.
*Knox, H. S.
*Little, M. S.
*Morse, S. F. B.
*Truesdale, C.
*Tuttle, G. C.
*Wells, H. S.
*Woolsey, H. M.

1908
*Biglow, L. H.
*Dahl, G.
*Davis, W. G.
*Dines, T.
*Foster, J. T.
*Griswold, D. T.
*Perrin, L. W.
*Seymour, C.
*Shepard, R. B.
*Stanley, H.
*Thornton, J. C.
*Townsend, G. H.
*Townsend, J. M.
*Watkins, C. L.
*Williams, J. W.

1909
*Bundy, H. H.
*Burch, R. B.
*Campbell, C. S.
*Clark, A. A.
*Dominick, G. G.
*Howard, J. M.
*Howe, H. A.
*Jefferson, E. F.
*Klots, A. T.
*Lippitt, H.
*Perrin, J. B.
*Rand, S. C.
*Sanderson, B. B.
*Seabury, M. A.
*Stokes, H. P.

1910
*Bayne-Jones, S.
*Coy, E. H.
*DeSilver, A.
*Franchot, C. P.
*French, R. D.
*Harrison, G. L.
*Heron, J.
*King, L. M.
*Knight, A.
*Logan, W. S.
*Lohmann, C. A.
*Murphy, F. J.
*Philbin, S. H.
*Taft, R. A.
*Wodell, R. A.

1911
*Badger, P. B.
*Corey, A. L.
*Daly, F. J.
*Davis, C. W.
*Day, S. S.
*Dempsey, J. B.
*Gammell, A. A.
*Hyde, F. W.
*Lombardi, C. E.
*McDonnell, J. V.
*Randolph, F. F.
*Rowland, J. T.
*Soule, L.
*Van Sinderen, H. B.
*Wheeler, L. R.

1912
*Boyd, F. T.
*Gardner, R. A.
Hartley, C.
*Howe, A.
Hyde, D. R.
*McClure, A.
*Merritt, H. N.
*Mullins, F. P.
*Murphy, G. C.
*Paul, C. H.
Smith, J. G.
*Street, H. A.
*Strout, E. A., Jr.
*Tener, A. C.
*Twombly, E. B.

1913
*Allen, C. D.
*Allen, C. E., Jr.
*Baker, R. W.
*Colgate, H. A.
*Cortelyou, G. B., Jr.
Cowles, A., 3d
*Harman, A.
Harriman, W. A.
*Lovett, S.
*McAndrew, A.
*Philbin, J. H.
*Sawyer, H. E., Jr.
*Schwab, L. vonP.
*Shelden, A.
*Waters, W. O., Jr.

1914

- •Avery, B. F.
- •Cornish, P. G., Jr.
- •Daniels, T. L.
- •Gile, C. M.
- •Hobson, H. W.
- •Jenks, A. F.
- •Jones, G. G.
- Ketcham, H. H.
- •King, S.
- •Lippincott, W. J.
- •Osborn, R.
- •Patterson, G. W., Jr.
- •Rogers, H. L.
- •Shepard, L. A.
- •Warren, W. C., Jr.

1915

- Burtt, E. A.
- •Carter, L.
- •Cornell, T. H.
- Davenport, S. R.
- •Denegre, T. B.
- Macdonald, R. H.
- •MacLeish, A.
- •Middlebrook, L. S.
- •Paris, I., 2d
- •Pumpelly, H. A.
- •Reilly, J. S.
- •Shedden, W. M.
- •Slocum, E. L.
- •Stackpole, E. J., Jr.
- •Swift, W. E.

1916

- •Darling, A. B.
- •Gaillard, S. G., Jr.
- •Hadley, M.
- •Johnstone, H. W.
- •Knapp, F.
- •Oler, W. M.
- •Porter, G. E., 3d
- •Putnam, P.
- •Roberts, C. H., Jr.
- •Shepard, D. C.
- •Stewart, D. O.
- •Tener, K. J.
- •Tighe, L. G.
- VonHolt, H. V.
- •Walker, C. R.

1917

- •Bellinger, A. R.
- •Bush, P. S.
- Cooper, H. S. F.
- •Cunningham, O. B.
- •Duryee, S. S.
- Harriman, E. R.
- •Isham, H. P.
- •James, E. S.
- •LeGore, H. W.
- Mallon, H. N.
- •Olsen, A. W.
- •Overton, J. W.
- •Shepard, F. P.
- •Simpson, K. F.
- Woolley, K.

1918

- •Ames, A. W.
- Baldrige, H. M.
- •Clay, C. M.
- •Davison, F. T.
- Deans, R. B.
- •Farrar, J. C.
- •Garfield, N.
- •Gates, A. L.
- •Gould, J.
- Lovett, R. A.
- •Snell, R. F.
- Stewart, C. J.
- Taft, C. P.
- •Vorys, J. M.
- •Woolley, J. E.

1919

- •Allen, P. B.
- •Baldwin, S.
- •Campbell, A. B.
- •Carter, F. D.
- •Depew, G. G.
- •Gaillard, E. M.
- •Hadley, H.
- •Haffner, C. C., Jr.
- •McCormick, A. A., Jr.
- McKee, E. M.
- Mallon, J. H.
- •Mead, W.
- •Otis, J. S.
- Smith, T.
- •Walker, G. N.

1920

- •Adams, L. G.
- •Davison, H. P.
- •Hadden, B.
- •Heffelfinger, F. P.
- •Hincks, J. M.
- •Hobson, F. T.
- Ingalls, D. S.
- •Luce, H. R.
- •McHenry, J.
- •Patterson, M.
- •Safford, T. L.
- •Sargent, J. W.
- •Schermerhorn, A. C.
- VanSlyck, DeF.
- •Winter, D. R.

1921

- •Acosta, J. S.
- •Bradley, C. H., Jr.
- Brewster, W. R.
- Bundy, F. McG.
- Cowles, W. S., Jr.
- •Hemingway, B. L.
- •Hord, S. Y.
- •Jenckes, M.
- •Litt, W. D.
- •Lunt, S. B.
- Neville, J. E.
- •Parsons, L.
- •Shevlin, E. L.
- •Stewart, J.
- •Winter, E. W., 2d

1922

- Aldrich, M. P.
- •Bush, J. S.
- •Cheney, W.
- •Crosby, A. H.
- •Frost, A. C., Jr.
- •Hilles, F. W.
- •Larner, R. J.
- Lord, W. G.
- •Page, R. G.
- Root, W.
- Solley, R. F.
- •Strong, H. B.
- •Thomas, J. A. M.
- •Townsend, F. deP., Jr.
- Woodward, S.

1923

Becket, G. C.
•Bulkley, J. O.
Cooper, J. S.
•Davenport, R. W.
•Day, H. T.
Foster, M. E.
•Hyde, L. K., Jr.
Jones, E. A.
•Jordan, R. E.
•Luckey, C. P.
•Matthiessen, F. O.
•Norton, G. W.
•Pelly, B. B.
•Tighe, R. L.
•Wheeler, A. N., Jr.

1924

Allen, H. E.
•Appel, G. F. B.
•Blair, E. F.
•Diller, J. C.
•Ewing, S.
Haines, T. F. D.
•Heffelfinger, G. W. P.
•Hilles, C. D., Jr.
•Houghton, W. E.
•Lusk, W. T.
McCallum, R.
•Mallory, W. N.
•Melton, W. D., Jr.
Spofford, C. M.
Thomson, C. S.

1925

Ardrey, R. L.
Ashburn, F. D.
Bench, E. C.
Bissell, W. T.
•Blair, J. G.
Gage, C. S.
•Ives, G. M.
•Jones, W. C.
Lovejoy, W. M.
•Lufkin, E. M.
•Luman, R. J.
Norton, W. B.
•Scott, H. C.
•Stevens, M. A.
Stevenson, D. D.

1926

•Allen, D.
•Bronson, J. D.
•Coke, H. C., Jr.
•Crosby, H. S.
Cutler, B. C.
Davenport, J.
Ferguson, A. L., Jr.
Hoysradt, J. McA.
Kingsbury, H. T.
Lord, O. B.
•Michel, A. L.
•Poore, C. G.
Root, R. D.
•Russell, F. F.
Willard, C. H.

1927

Bunnell, P. W.
•Look, A. M.
•McIntosh, H.
Noble, L. M.
•Patterson, T. C.
•Post, R. L.
•Ritchie, W. P.
•Robbins, W. W.
•Robinson, F. F.
Stokes, A. P., Jr.
•Wadsworth, J. J.
•Walker, G. H., Jr.
Wardwell, E. R.
•Warren, J. D.
•Watson, C., 3d

1928

Bartholomew, D. T.
•Berger, G. B., Jr.
Bingham, C. T.
•Fishwick, D. B.
•Griggs, H. S., Jr.
Haight, G. W.
Ives, C. B.
•Lapham, R. W.
Mallory, B. L., Jr.
•Prentice, J. R.
Robertson, A. C.
Ross, L. P.
•Scott, S. P.
•Stewart, P. H.
•Walker, S.

1929

•Ashforth, A. B.
Costikyan, G. K.
Crile, G., Jr.
•Decker, E. L., Jr.
•Dodge, W.
Eddy, M. H.
•Garvey, J. J.
Gillespie, K. S.
Grove, M. J.
Manville, H. E., Jr.
Merrill, H. R.
Paine, R. D., Jr.
Smith, L. H.
•Wack, D. deB.
•Wells, G., 2d

1930

•Allison, R. S., Jr.
•Ellis, H. M.
•Ellis, R. W.
•Erskine, A. DeW.
•Garnsey, W. W.
Greene, W. W.
•Gwin, S. L.
Hall, R. A.
Janeway, C. A.
Ladd, L. W., Jr.
Longstreth, G. B.
•Look, F. B.
Musser, J. M.
Palmer, A. E.
Prideaux, T.

1931

•Austen, D. E.
Donnelley, G.
Heinz, H. J., 2d
Lapham, L. A.
Loeser, F. W.
Lydgate, W. A.
•Messimer, R. L., Jr.
Peltz, W. L.
•Rathborne, J. C.
•Stewart, J. R.
•Sutherland, R. O.
•Swoope, W. M.
Tucker, L.
Vincent, F. T.
Walker, J. M.

1932

Adams, F. B., Jr.
Barres, H.
Bates, E. W.
Fitch, G. H.
Fulton, R. B.
Gillespie, S. H.
Hodges, W. V., Jr.
Laundon, M. H., Jr.
•Lindenberg, J. T.
McCrary, J. R., Jr.
Mills, J. P.
Ogden, A.
•O'Neill, E. G., Jr.
•Savage, B.
Williams, S. G.

1933

Caldwell, S. S., Jr.
Cooke, F. J.
Davis, R. M.
Fletcher, A. C.
Garnsey, W. S.
•Hall, F. B., Jr.
Jones, T. S.
Levering, W. B.
•Lindley, F. V.
McGauley, J. M.
Newton, J. Q., Jr.
Parker, R. B.
Parsons, M.
Stebbins, H. L.
Wilbur, J. S.

1934

Bradford, A. H.
Cunningham, H. T.
Gordon, G. A.
Hallett, J. F.
Hambleton, T. E.
•Harper, H. H., Jr.
Holmes, J. G.
•Jackson, J. H.
Kilcullen, J. M.
Kimball, W. S.
Mills, E. E.
Morse, J. B.
Nichols, E.
Ranney, G. A.
Stetson, E. W., Jr.

1935

Bowles, J. E.
•Collier, S. C.
Curtin, F. C.
Fuller, S. E.
Haas, F. P.
Johnson, J. H.
Kilborne, W. S.
Pillsbury, J. S., Jr.
Rodd, T.
•Seymour, C., Jr.
Shepard, R. B., Jr.
Spitzer, L., Jr.
•Stillman, G. S.
Terry, H. P. B.
•Tufts, B. C.

1936

Barr, R. J., Jr.
Bingham, J. B.
Cooke, R. B.
•Davis, H. W., 2d
Gill, B.
Hall, J. A.
Hersey, J.
Knapp, J. M.
Moore, R. A.
•Pillsbury, E. P.
Rankin, B. C.
•Shepard, B.
Train, R.
Walker, L.
Whitehead, M. K.

1937

Blake, D. B.
Brooke, F. H., Jr.
Burke, C. C., Jr.
Cross, R. J.
Draper, A. J.
Field, J. W.
Kelley, L. M.
•McLemore, B., Jr.
Miles, R. C.
Orrick, W. H., Jr.
•Robinson, J. T.
•Runnals, J. F. B.
Stewart, P.
•Stone, L. T., Jr.
Turner, H. M.

1938

Davenport, B. W.
Dempsey, J. H., Jr.
Dilworth, J. R.
•Dunham, L. B., Jr.
Ecklund, J. E.
Fox, J. C.
Frank, C. E.
•Gordon, McG.
Hessberg, A., 2d
•Schermerhorn, A. E.
Stevens, J. B., Jr.
•Thompson, J. R.
Weed, G. H.
Whitman, F. S., Jr.
Wilbur, R.

1939

Belin, G. deA.
Blanchard, J. G.
Bundy, W. P.
Chittenden, G. H.
Clucas, L. M.
Dyess, A. D., Jr.
•Gile, C. D.
Hoxton, A. R., Jr.
Kellogg, W. W.
Miller, A. O., Jr.
Miller, C. L., Jr.
Mitchell, H. H.
Shepard, L. M.
•Wilhelmi, F. W., Jr.
Williams, B.

1940

Bundy, McG.
Erickson, T. F.
Glover, C. C., 3d
Grayson, J. G.
Holden, R. A.
Howe, H., 2d
Orrick, A. D.
Rodd, D. B.
Stack, J. W., Jr.
Stevens, A. B.
Stillman, P. G. B.
•Stucky, W. McD.
Swenson, E. F., Jr.
•Thorne, P. B.
Watson, W. B., Jr.

1941

Cross, W. R., Jr.
Devor, D. S., Jr.
Ellis, F. H. Jr.
Hall, E. T.
Jackson, W. E.
Kiphuth, D.
Madden, J. B.
Pickett, L. K.
Price, C. B., Jr.
Solbert, P. O. A.
Stevenson, C. P.
Thomas, W. D.
Tighe, L. G.
•White, W. B.
Zorthian, B.

1942

•Aycrigg, W. A., 2d
Bartholemy, A. E.
Bell, W. T.
•Chouteau, R. A.
Ford, W.
Grayson, C. T.
Halsey, R. W., Jr.
Harrison, F. H.
Jessup, J. B.
Kemp, F. A.
Kirchwey, G. W.
•Smith, H. F., Jr.
Sprole, F. A.
•Walker, J. S.
•White, W. G.

1943

Acheson, D. C.
Caulkins, G. P., Jr.
Daniels, J. H.
Doolittle, D. H.
Drain, R. D.
Healy, H. H., Jr.
Hoagland, D. W.
Klots, A. T., Jr.
•Lilley, F. W., Jr.
•Maclean, J. H.
•Miller, D. L.
Moseley, S. D.
Stewart, Z.
Tabor, J. K.
Vogt, T.

1944

Brown, S. T. G.
Buckley, J. L.
Elebash, S. D.
Ellis, A., Jr.
Ferguson, J. L.
Goodenough, J. B.
•Grayson, W. C.
Holden, J. M.
Hoopes, T. W.
Kelly, W. C., 2d
•Lindsay, D. A.
Little, S. W.
Walker, J. P.
Whitmore, J. A., Jr.
•Witter, D., Jr.

1945

Allen, A. J., Jr.
•Blake, G. D., Jr.
Connick, L.
Dale, E. L., Jr.
Davison, E. P.
Early, H. E.
•Elwell, F. B., Jr.
Harman, A., Jr.
Lynch, R. V.
McElroy, B. T.
McGaughey, G. E., Jr.
Moorhead, W. S.
Seaman, I., Jr.
•Spaulding, J. A.
Sumner, W. S.

1945W

Brown, W. H.
Carey, J.
Finney, J. W.
Holmes, G. B.
Hurlbut, G. B., Jr.
•Mallon, T. R.
O'Brien, P., Jr.
Twichell, C. P.
Vose, E. E.
Warren, G. U.

1947

Alling, C. B., Jr.
Andrews, E. W., Jr.
Boulos, W. M. (formerly Bouliaratis)
Bronson, D. B.
Chafee, J. H.
Finley, J. G. G.
Goedecke, W. S.
Leavenworth, D. L.
Moore, J. I.
O'Brien, F., Jr.
•Palmer, C. E.
•Read, R. R.
Robinson, H. C., Jr.
•Tucker, C., Jr.
Whitehouse, C. S.

1948

Ashley, T. L.
Biglow, L. H., Jr.
Bush, G. H. W.
Caulkins, J. E.
Clark, W. J.
Connelly, W. J., Jr.
•Cook, G., 3d
Grimes, D. C.
Jenkins, R. E.
•Mack, R. G.
Moseley, T. W.
Pfau, G. H., Jr.
Walker, S. S., Jr.,
•Weaver, H. S.
Wilkie, V., Jr.

1949

Baribault, R. P.
Bassett, B. B., 2d
Coffin, W. S., Jr.
Davison, D. P.
Goodyear, R. M.
Hollister, J. B., Jr.
Lavelli, A., Jr.
Leiper, J. McC.
Lippincott, D. McC.
Lord, C. E.
Lufkin, P. W.
•Raymond, G. T. P.
Sherrill, F. G.
Van Dine, V.
•Wickwire, W. R.

1950

Breen, J. G.
Buckley, W. F., Jr.
Draper, W. H., III
Frank, V. H., Jr.
Galbraith, E. G.
Guinzburg, T. H.
Henningsen, V. W., Jr.
Kemp, P. S.
Lambert, P. C.
Lovett, S.
•Luckey, C. P., Jr.
MacLeish, W. H.
McLean, R., 3d
Pionzio, D. J.
Shepard, D. C., Jr.

1951

•Anderson, T. H.
Eden, J. W.
Ellis, G. C., Jr.
Ellis, G. McC.
Love, R. F.
Lufkin, C. F., Jr.
McNamara, T. P.
Mathews, C.
Mayer, C. T.
Price, R. K., Jr.
Reid, E. S., III
Ross, T. B.
Russell, R. W.
Ryan, J. M.
Shepard, C. R. S.

1952

Aberg, D. V., Jr.
Buckley, F. R.
Claude, A., Jr.
Connick, A. J.
Cruikshank, P. F., Jr.
Eisler, C. T.
Finney, G. S.
Haight, C. S., Jr.
Hincks, J. W.
Kittredge, F. D.
Roberts, G. B., Jr.
Senay, E. C.
Spears, R. S.
Steadman, J. M.
Vorys, M. W.

1953

•Bulkley, J. D.
Bush, J. J.
Donaldson, W. H.
Durham, E. A.
Emerson, C. P.
Lufkin, D. W.
•Marshall, J. B.
McLane, J. P.
Menton, J. D.
Mitinger, J. B.
Noble, L. M., Jr.
Novkov, D. A.
Walker, G. H., III
Weber, J. W.
Woodsum, H. E., Jr.

1954

Benninghoff, H. B.
Evans, T. B.
Fortunato, S. J.
Giesen, A. R., Jr.
Gifford, R. C.
Hiers, R. H.
Kilrea, W. C.
Meyer, R. W., Jr.
Morton, T. B., Jr.
Polich, R. F.
Price, R. E.
•Reponen, R. G.
Ryan, A. A., III
Schnaitter, S. J.
Thornton, E. B.

1955

Bryan, L. T., Jr.
DeForest, S. E.
Fehr, G. F.
Gow, R. H.
•Green, C. C.
Guidotti, H. G., Jr.
Hansen, R. A.
Hudson, F. D.
Johanson, S. M.
McCullough, D. G.
Mathias, P. H.
Searles, P. D.
•Shugart, T. M.
Steadman, R. C.
Walker, R. C.

1956

Banks, H. D.
Boasbserg, E., III
D'Avanzo, L. A.
Dempsey, A. S.
Durfee, C. G., Jr.
Esselstyn, C. B., Jr.
Gaines, M. J.
Ingalls, D. S., Jr.
Jamieson, T. C., Jr.
McGregor, J. E.
Malloy, T. R.
•Menton, J. P.
Orr, A. A.
Speed, J. B.
Traphagen, P. A.

1957

Ackerman, S. H.
•Bowman, R. D.
Carlsen, R. A.
Clark, R. I., Jr.
Cushman, C. W.
Dunn, G. J.
Fritzsche, P. B.
Loucks, V. R., Jr.
Loughran, A. H.
Lumpkin, R. A.
Oberlin, J. P. (formerly Owseichik)
Palmer, L. G., II
Ritchie, W. P.
Somerville, J. W.
Williams, W. B.

1958

Allen, C. E.
Blue, L. S.
Cassel, J. A.
Cheney, R. L.
Cushman, R. E., Jr.
Embersits, J. F.
Howe, C. W.
Morey, R. W., Jr.
Pendexter, J. F.
Phelan, H. T.
Post, R. L., Jr.
Preston, J. L.
•Shackleford, R. C.
•Van Antwerp, W. M., Jr.
Wheeler, T. B.

1959

Adams, S.
Bodman, W. C.
Connors, J. J., III
Cooke, J. P.
Ercklentz, A. T.
Esselstyn, E. C.
Hemphill, J. T., Jr.
Holbrook, J., Jr.
Kingsley, C. C.
Lightfoot, R. B.
Lord, W.
Mayor, M. B.
Sheffield, J. R.
Thorson, P. A.
Tyler, C.

1960

Ball, D. G.
Beane, F. E., Jr.
Capron, P.
Dominick, D. D.
Ernst, F. V.
Garnsey, W. H.
Giegengack, R. F., Jr.
Holbrook, D. D.
Lindgren, R. H.
Lusk, P. A.
McCarthy, C. E., Jr.
Meek, J. B., Jr.
Northrup, R. S.
Scott, E. L.
Smith, B. D., III

1961

Bissell, G. T.
Bockrath, R. C., Jr.
•Bowles, W. C., Jr.
Clark, T. W.
Cogswell, J. M.
de Neufville, J. P.
Hamlin, C.
Lindsay, D. A., Jr.
MacLean, K., Jr.
Pyle, M. J.
Seeley, G. W.
Singleton, T. H.
Stewart, J. C.
Waddell, G. H.
Walsh, J. J., Jr.

1962

Back, S. H.
Brandt, J. H.
Brewster, J. H., IV
Brooks, T. A.
Burr, C. B.
Childs, H. C.
Chimenti, N. V.
Hamilton, W.
Holland, H. T.
LeFevre, R. E.
Ligon, T. B.
Peck, A. J., Jr.
Spitz, R. W.
Terry, W., III
Zucker, B.

1963

Ahlbrandt, R. S.
Becket, P. L.
Boren, D. L.
Clay, J. L.
Frank, C. A., III
Gill, M. G.
Gwin, S. L., Jr.
Hewitt, H. H.
Jones, T. S.
Marsh, L.
Moser, R. E.
Nordhaus, W. D.
O'Connell, T. J.
Rose, J. C.
Rulon-Miller, P.

1964

Best, G. D. C.
Cirie, J. A.
Clay, A. S., IV
Francis, S. H.
Gillette, H. F., Jr.
Kaminsky, R. I.
Lynch, D. P.
McBride, J. E.
Prindle, T. H.
Pulaski, C. A., Jr.
Rowe, T. D.
Straw, R. L., Jr.
Van Loan, E. M.
Wilbur, J. S., Jr.
Wolfe, S. H.

1965

Ali, M. R.
Benoit, C. E., Jr.
Clark, G. H.
Clark, S. E.
Clay, T. J.
Coombs, O. M.
Corey, A. L., III
DesJardins, P. E.
Fetner, P. J.
Lagercrantz, M. B.
Pinney, J. M.
Pond, J. C.
Quarles, J. P.
Shattuck, J. H. F., III
Zallinger, P. F.

1966

Bockstoce, J. R.
Bradford, T. M.
Brown, G. C.
Cross, A. W.
Dalby, M. T.
Howard, J. E.
Kerry, J. F.
Laidley, F. D.
•Pershing, R. W.
Rumsey, D. M.
Singer, R. L.
Smith, F. W.
Stanberry, W. B., Jr.
Thorne, D. H.
Vargish, T.

1967

Afoeju, B. I.
Ashe, V. H., II
Bush, D. G.
Foster, D. J.
Garnsey, W. W., Jr.
Lilley, R. M.
Miller, J. W.
Mitchell, H. C.
Neigher, G. M.
Preston, J. M.
Richards, D. A.
Saxon, J. M.
Snell, B. C.
Swil, R. A.
Thompson, S. E., Jr.

1968

Austin, R. I.
Birge, R. R.
Brown, C. W.
Bush, G. W.
Cohen, K. S.
Cowdry, R. W.
Etra, D.
Gallico, G. G., III
Guthrie, R. K.
Kolar, B. W.
McCallum, R. D., Jr.
Saleh, M. A.
Schmidt, T. C.
Schollander, D. A.
Thorne, B. S.

1969

Arras, R. E., Jr.
Bouscaren, M. F.
Buck, C. H., III
Cosgrove, T. F., Jr.
Demaree, F. E.
Dowling, B.
Fuller, H. W.
Livingston, R. H. B.
Madden, B. P.
Miller, W. E.
O'Leary, J. J.
Schwarzman, S. A.
Selander, D.
Thompson, W. M., Jr.
Woodlock, D. P.

1970

Brown, W. S.
Case, P. B., Jr.
Downing, E. S.
Eyre, L. L.
Friedland, J. D.
Greenberg, S. D.
Hodes, D. M.
Jackson, T. J.
Miller, T. C.
Morgan, R. M.
Ohene-Frempong, K.
Peters, D. J.
Scattergood, T. B.
Thompson, J. P.
Trower, C. C.

1971

Babst, J. A.
Bryan, J. T., III
Ekfelt, R. H.
Feinerman, J. V.
Fortgang, J.
Galvin, M. G.
Halpin, T. M.
Hernandez, C. A.
Inman, R. D.
Johnson, W. J., Jr.
Kosturko, W. T.
Levin, C. H.
Morgan, J. W.
Noyes, E. M., III
Taft, T. P.

1972

Cangelosi, R. J.
Clark, D. W.
Csar, M. F.
Evans, P. S.
Fisher, S. B.
Lewis, M. S.
Lutz, K. E.
MacDonald, R. J.
McLaren, M. G.
Moyer, D. R.
Ritterbush, S. G., Jr.
Sauber, R. A.
Walden, R. S.
Wilson, Z. V.
Ziegler, S. W.

1973

Barasch, A. S.
Bellis, T. L.
Finney, C. R.
Green, B. P.
Highfill, P. H.
Huey, M. C.
Karageorge, J. L.
Liles, C. R.
Lonsdorf, D. B.
MacDonald, S. J.
McPhee, S. J.
Mattlin, F. W.
Moore, D. C.
Scott, W. I.
Sulzer, J. S.

1974

Ayeroff, F. C.
Barge, R. M.
Bellis, J. M.
Bisaro, L. R.
Cohen, R. L.
Connors, D. M.
Diamond, P. C.
Doyle, T. J.
Eisenberg, B. A.
Gonzalez, T. F.
Kelly, B. C.
Lewis, G. E.
Murchison, B. C.
Spear, W. J., III
Thorne, C. H. M.

1975

Ashenfelter, A. T.
Bender, K. A.
Buckley, C. T.
Burke, J. E.
English, W. D., V
Gaines, E. F.
Green, R. H.
Kanehl, P. E.
MacKenzie, K. M.
Reigeluth, D. S.
Saffen, D. W.
Struzzi, T. A.
Wald, S. G.
Zorthian, G. J.

1976

Blattner, R. W.
Brubaker, J. K.
Capozzalo, D. D.
Casscells, C. D.
Childs, S. W., II
Davies, P.
Fort, D. K.
Gates, E. R.
Gibson, R. C.
Hart, D.
Leverett, M. W., III
Mehta, A. S.
Morgenstern, M. J.
Oler, C. K., Jr.
Williams, D.

1977

Blakely, M.
Brubaker, J. R.
Cooper, C.
Fredericks, J. R.
Goldberg, R. J.
Grayson, W. C., Jr.
Kee, C. A.
Lalley, P. W.
Lawler, Q. J.
Newman, T. M.
Perry, D. B.
Rimar, S., III
Schlesinger, D. A.
Scott, L. G.
Tom, C. B., III

1978

Albritton, P. B.
Baran, M. R.
Bassi, K. A.
Clark, J. B.
Gile, L. M.
Holmes, P. S.
Hook, N.
Karp, B. C.
Marinelli, D. L.
Owens, S. L.
Piel, G. D.
Rizzo, R. J.
Roy, J. M.
Sullivan, C. S.
Turner, E. L.

1979

Brown, R. N.
Edozien, A. O.
Fore, J. A.
Holmboe, J. A.
Lorenson, D. H.
McNally, E. E., II
Moses, J. T.
Nondorf, K. D.
O'Brien, D. P.
Peters, E. B.
Skrovan, S. T.
Stevenson, C.
Westerfield, R. H.
Wilson, D. R.
Yent, J. B., Jr.

1980

Austin, S. M., III
Chibundu, M. O.
Davenport, G. L.
DeVore, M. S.
Dilworth, G. T.
Fleming, A. T.
Hatem, J. J.
Kagan, R. W.
Lawrence, G. M.
Mulhern, D. K.
Peters, E. R.
Stevens, E. E.
Teig, J. B.
Tumpane, T. M.
Zigerelli, L. J.

1981

Bullock, S. B.
Campbell, K. C.
Carlsson, M. E.
Choa, C. J.
Conway, J. L., Jr.
Grandine, T. A.
Novosel, D. G.
O'Keefe, R. J.
Peters, K. G.
Peterson, P. C.
Russell, R. G.
Staven, K. E.
Stratton, D. J.
Tingey, D. S.
Troy, A.

1982

Bass, J. E.
Breslau, J.
Campbell, G. E.
Devlin, M. W.
Leone, F. A.
McAfee, W. A.
Meyers, B. F.
Murchison, R. E.
Rachlin, D. I.
Reid, J.
Salzman, M. J.
Santiago, E.
Towers, J. D.
Wright, W. H., II
Yang, J. T.-Y.

1983

Abrams, P. M.
Brooks, P. M.
Burkus, G. J.
Cerveris, M. E.
Franklin, R. D.
Gale, F. S.
Kafoglis, C. N.
Kaushal, S.
Montesano, M. J.
Nichols, W. A.
Noel, C.
Pinela, C.
Sharp, J. D.
Sheffield, J. Van L.
Wagner, V. E.

1984

Andrie, P. J.
Coggins, D. S.
Crawley, B. S.
Davison, H. P., II
Graves, E. G., Jr.
Henston, D. R.
Herskovits, D. N.
Jung, M. D.
Kahle, J. L.
Lampert, E. S.
Litt, D. G.
Skibell, S. A.
Urquijo, G.
Weinstein, A.
Wiseman, D. B.

CATALOGUE

MAY 1977

The following abbreviations are used in this Catalogue:

Admin. Administration
Agt. Agent
Am. American
Assn. Association
Assoc. Associate
Asst. Assistant
Attny. Attorney
A.U.S. United States Army
Bd. Board
Ch. Church
Chmn. Chairman
Chmbr. Chamber
Cmdr. Commander
Co. Company
Col. Colonel
Coll. College
Com. Committee
Comm. Commission, Commerce
Cong. Congregational
Corp. Corporation
Cprl. Corporal
Cty. County
d. daughter, daughters
Del. Delegate
Dir. Director
Distr. District
Div. Division
Episc. Episcopal
Exec. Executive
F.A. Field Artillery
Fed. Federal
Fgn. Foreign
Found. Foundation
Gen. General
Grtr. Greater
Hosp. Hospital
Inf. Infantry
Ins. Insurance
Instr. Instructor
Lieut. Lieutenant
m. Married
Maj. Major
Mbr. Member
Med. Medical
Mfg. Manufacturing
Mgr. Manager
Natl. National
Pgh. Pittsburgh
Pres. President
Presb. Presbyterian
Priv. Private
Prof. Professor
Ptnr. Partner
Rep. Representative
Repub. Republican
res. Residence
Res. Reserve
s. son, sons
sd. step-daughter
Sec. Secretary
Sgt. Sergeant
Soc. Society
Spkr. Speaker
ss. step-son
Treas. Treasurer
Univ. University
V.P. Vice-President

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*Indicates deceased members.

Please send any corrections or changes of address to:

The Secretary

RTA Incorporated

Box 2138 Yale Station

New Haven, Conn. 06520

A

*ABBE, 1848, FREDERIC RANDOLPH—(*Ministry*)—Born Oct. 28, 1827, Litchfield, Conn.; died Mar. 31, 1889, Dorchester, Mass.

ABERG, 1952, DONLAN VINCENT, JR.—(*Business*)—Born Nov. 18, 1928, Cleveland, O.; V.P. marketing, Chromalloy American Corporation, 10100 Santa Monica Boulevard, Los Angeles, Calif. 90067; res. 1583 Tobin Way, Sherman Oaks, Calif. 91403; Republican Committeeman, New York, 1964-1969; m. July 16, '55, Jean Helen Brose, s. Donlan Vincent III, Peter Christopher; d. Gretchen Marie.

ACHESON, 1943, DAVID CAMPION, LL.B.—(*Law*)—Born Nov. 4, 1921, Washington, D.C.; Ptnr. Jones, Day, Reavis & Pogue, 1100 Connecticut Ave., Washington, D.C. 20036; res. 3101 Garfield St., Washington, D.C. 20008; Assoc. '50-'58, & Ptnr. '58-'61, Covington & Burling; U.S. Attorney for Distr. of Columbia, '61-'65; Special Asst. to Sec. of Treasury, '65-'67; Senior V.P. & Gen. Counsel, Communications Satellite Corp., (COMSTAT), '67-'74; Lieut. U.S.N.R., '42-'46; Campaign Ribbons—Pacific Theatre, Southwest Pacific—2 battle stars; Philippines—2 battle stars; Chmn., Leadership Gifts, Campaign for Yale, Washington, D.C. Area; m. May 1, '43, Patricia James Castles; s. David C. Jr. ('72), Peter W. ('76); d. Eleanor Dean.

ACKERMAN, 1957, STEPHEN H., M.B.A.—(*Transportation*)—Born August 22, 1935, Rhinebeck, New York; Senior V.P. and Treasurer Transcon Lines, 101 Continental Boulevard, El Segundo, Calif. 90245; res. 3761 Whitespeak Drive, Sherman Oaks, Calif. 91403; Major, USMCR Sept. '57-Dec. '60; m. July 8, '60, Kaye Tamblin; d. Lani Marlene Ackerman.

*ACOSTA, 1921, JOHN SIDNEY—(*Insurance*)—Born. Dec. 13, 1898, Jacksonville, Fla.; died July 18, 1929, Waverly, Pa. 2d Lieut., F.A., World War I.

*ADAMS, 1904, CHARLES EDWARD—(*Industrial*)—Born Oct. 29, 1881, Toledo, Ohio; died Jan. 27, 1957, New York City; Chief, Iron and Steel Div., War Production Bd., World War II.

°ADAMS, 1866, Charles Hemmenway—(*Literary work*)—Born Sept. 26, 1845, Fairfield, Conn.; died Aug. 28, 1915, Derby, Conn.

°ADAMS, 1862, Frederic, LL.D.—(*Law*)—Born Oct. 9, 1840, Amherst, N.H.; died July 24, 1923; Hollywood, Calif. Judge, Circuit Court of Errors and Appeals of N.J., 1897-1903, and of Circuit Court of Essex County, N.J., '03-'19

°ADAMS, 1900, Frederick Baldwin—(*Transportation*)—Born Feb. 5, 1878, Toledo, Ohio; died Oct. 23, 1961; m. Sept. 28, '07, Ellen Waters Delano; s. F.B.A., Jr. ('32); d. Laura Delano (*Eastman*).

ADAMS, 1932, Frederick Baldwin, Jr., M.A., Litt.D., L.H.D., D.F.A.—(*Librarian retired*)—Born Mar. 28, 1910, Greenwich, Conn.; res. Chateau de Villard, 1814 La Tour de Peilz, Switzerland; Dir. Emeritus, Pierpont Morgan Library, N.Y., '48-'69; Class Sec., '31-'41; University Council, '49-'58; Governing Bd., Yale Univ. Press, '52-, Pres., '59-'71; Yale Corporation, '64-'71, successor Trustee; Pres., N.Y. Historical Soc., '63-'71; m. '33, Ruth Potter; m. '41, Betty Abbott; m. '69, Marie-Louise de Croy; d. Gillian, Anne Baldwin, Judith, Lauren.

°ADAMS, 1904, George Webster—(*Finance*)—Born May 21, 1881, Utica, N.Y.; died Oct. 12, 1955, New Haven, Conn.

ADAMS, 1920, Lewis G., DPLG—(*Architecture retired*)— Born Nov. 23, 1897, Lenox, Mass.; res. 544 E. 86th St., New York, N.Y. 10028; Pres. Architectural League of N.Y., '54-'55; Cmdr. USNRF, '17-'19, '42-'45; m. July 23, '21, Emeline W. Kellogg; s. Richard G; d. Lois Adams (*Goldstone*).

°ADAMS, 1899, Mason Tyler, M.E.—(*Industrial*)—Born May 18, 1977, New York City; died May 1, 1933, Waterbury, Conn.

ADAMS, 1959, Stephen, M.B.A.—(*Finance*)—Born Nov. 7, 1937, Minneapolis, Minn.; Pres. Associated Bankers Corp., 1945 Plymouth Road, Minnetonka, Minn. 55343; res. 2650 Marshland Rd., Wayzata, Minn. 55391; Treas. Young Presidents Organization, Twin Cities; m. Mar. 8, '68, Barbara Forster; s. Stephen, Mark, Kent, Scott.; ss. Nicholas, Forrest; sd. Louise.

AFOEJU, 1967, Bernard I., M.S.—(*Engineering*)—Exploitation Engineer; res. 1426 Pacific Ave., Apt. 6, Venice, Calif. 90291.

AHLBRANDT, 1963, Roger S., Jr., M.B.A., Ph.D.—(*Education*)—Born July 6, 1941, Pittsburgh, Penn.; Economist &

Assoc. Prof., School of Social Work, University of Pittsburgh, Pittsburgh, Penn. 15260; res. 1213 Resaca Place, Pittsburgh, Penn. 15212; Sgt., U.S.M.C.R., '65-'71; m. Apr., '74, Patricia Walbridge.

*AIKEN, 1881, EDWIN EDGERTON, B.D.—(*Ministry*)—Born Mar. 1, 1859, Newington, Conn.; died Jan. 5, 1951, New Haven, Conn.

*AIKEN, 1853, WILLIAM POPE, M.A.—(*Ministry*)—Born July 9, 1825, Fairhaven, Mass.; died Mar. 29, 1884, Rutland, Vt.

*AITCHISON, 1848, WILLIAM—(*Ministry*)—Born Jan. 4, 1826, Glasgow, Scotland; died Aug. 15, 1859, near Peking, China.

*ALDIS, 1874, OWEN FRANKLIN—(*Law*)—Born June 6, 1852, St. Albans, Vt.; died Aug. 5, 1925, Paris, France.

ALDRICH, 1922, MALCOLM PRATT, L.H.D.—(*Finance retired*) —Born Oct. 1, 1900, Fall River, Mass.; formerly Chmn., The Commonwealth Fund, New York, N.Y.; res. 66 James Lane, East Hampton, N.Y. 11937; Pres. University Council; mbr. Alumni Board; Capt. U.S.N., Mar. '42-Oct. '45; Commendation Ribbon; m. June 20, '25, Ella Buffington; s. Malcolm Jr., ('55); d. Joan A. (*Knowlton*), Shirley A. (*Daiger*).

*ALEXANDER, 1873, EBEN, Ph.D., LL.D.—(*Education*)—Born Mar. 9, 1851, Knoxville, Tenn.; died Mar. 11, 1910; Knoxville. Prof. of ancient languages, Univ. of Tennessee, 1877-1886; Prof. of Greek, Univ. of North Carolina, 1886-1893 and 1897-1910, U.S. Minister to Greece, 1893-1897.

*ALEXANDER, 1855, WILLIAM DEWITT, M.A., LL.D.—(*Government*)—Born April 2, 1833, Honolulu; died Feb. 21, 1913, Honolulu, Prof. of Greek, Oahu Colleg, 1858-1864; Pres., 1864-1871. Surveyor-general, Hawaii, 1871-1900.

*ALEXANDER, 1851, WILLIAM FELIX—(*Finance*)—Born May 7, 1832, Washington, Ga.; died Aug. 15, 1907, Atlanta, Ga. Served in Confederate Army, Civil War.

ALI, 1965, MEHDI RAZA, M.A.—(*Finance*)—Born Nov. 22, 1944, Lahore, Pakistan; Mgr., Finance & Foreign Exchange, General Motors Overseas Operations, General Motors Corp., 767 Fifth Ave., New York, N.Y.; res. 172 Tackora Trail, Ridgefield, Conn.; Morgan Guaranty Trust, Asst. Treas., '70-'72, Asst. V.P., '73, V.P., '74-'75; m. Sept. 19, '66, Raelene; s. Mehdi Raza, Hadi Raza.

ALLEN, 1945, ARCHIBALD J., JR., LL.B.—(*Writing*)—Born Oct. 30, 1923, Douglaston, N.Y.; Writer; bus. and res. 2244 Park

Ave., Cincinnati, Ohio 45206; Author of text, Yale Alumni Fund 75th Anniversary brochure, "Anything Is Possible"; Corresponding Sec., Class of '45, '68-'75; 25th Reunion Com.; Reunion Gift Steering Com.

*ALLEN, 1901, Arthur Dwight—(*Art*)—Born May 25, 1879, Pewee Valley, Ky., died Apr. 8, 1949, Louisville, Ky.

*ALLEN, 1873, Arthur Huntington—(*Ministry*)—Born Oct. 20, 1851, New York City; died April 20, 1923, New York City.

*ALLEN, 1913, Calvin Durand—(*Insurance*)—Born Nov. 24, 1890, Orange, N.J.; died Oct. 27, 1960; Conn. Mutual Life Ins. Co.; Bds., Winnetka Community Chest, '40, Duncan YMCA, Chicago, '19-; Capt., AUS, '17-'18, F.A., Major, Reserve; m. Aug. 21, '17, Frances Barton Marshall; s. C.D.A., Jr.; d. Jane Durand (*Meleney*), Susanna Marshall (*Trench*).

ALLEN, 1958, Charles E., J.D.—(*Law*)—Born Aug. 19, 1936, Miami, Fla.; Attny., Ptnr., Cox, Langford & Brown, 21 Dupont Circle N.W., Washington, D.C. 20036; res. 9009 Clewerwall Drive, Bethesda, Md. 20034; Chmn., Savings Institutions Law Com., Federal Bar Assn., '74-; General Counsel, Federal Home Loan Bank Bd., '72-'76; m. May 22, '65, Gloria Frances Seaman; s. Charles Edward III, Christopher S.; d. Jennifer S.

*ALLEN, 1913, Clarence Emir, Jr.—(*Law*)—Born Nov. 18, 1891, Salt Lake City, Utah; died July 15, 1918, Chateau-Thierry, France. 1st Lieut., Inf., World War I (A.E.F.).

*ALLEN, 1926, Daniel—(*Insurance*)—Born May 24, 1904, Andover, Mass.; died April 14, 1970; Mayor of Larkspur, Calif. '58-'60; Mbr., Larkspur City Council, '56-'63; Library Bd., '67-; m. March 15, '30, Madeline Frick; s. Craig Winthrop; d. Coralie.

*ALLEN, 1900, Frederic Winthrop—(*Finance*)—Born May 26, 1877, Walpole, Mass.; died Nov. 25, 1933, New York City. Trustee, Barnard College, '28-'33 and Johns Hopkins University, '31-'33. Mbr., Yale Alumni Board, '23-'27. Mbr. Raw Materials Committee, Washington, '17; director of War Savings for Greater New York, '18.

ALLEN, 1924, Henry Elisha, M.A., Ph.D.—(*Education retired*)—Born June 13, 1902, Orange, N.J.; res. 1917 James Ave. S, Minneapolis, Minn. 55403; Prof. of Humanities & Co-ordinator of Students' Religious Activities, Univ. of Minnesota, '47-'70; Master, English, The Hill School, '24-'26; Faculty of Religion, Lafayette College, Easton, Penn., '30-'41; Pres. Keuka College,

Jones-Harrison Home
3700 Lake ave Minneapolis
Minn 55416

Keuka Park, N.Y., '41-'46; Assoc. Dir. for Program, Natl. Planned Parenthood Assn., N.Y., '46-'47; Minn. Governor's Advisory Council on Children & Youth, '53-'61; Governor's Human Rights Comm., '50-'67, Vice Chmn. '56-61; m. June 18, '27, Helen E. Davis; d. Lenore Elizabeth (*Robertson*), Carolyn Ruth (*Wiester*).

*ALLEN, 1876, JOHN DEWITT HAMILTON—(*Business*)—Born Aug. 28, 1853, Peekskill, N.Y.; died Nov. 8, 1902, Riverdale-on-Hudson, N.Y.

ALLEN, 1919, PARKER BREESE—(*Industrial*)—Born. Oct. 31, 1895, Meriden, Conn.; Chmn. Meriden Gravure Co., Box 747, Meriden, Conn. 06450; res. 51 Hillcrest Terrace, Meriden, Conn. 06450; A.Y.A. '76; F.A., '17-'19, Lieut. Col. A.F., '42-'45; Bronze Star, O.B.E.; m. June 13, '25, Elizabeth Weeks; s. Gordon Ferguson, m. '49; d. Mary.

*ALLEN, 1863, WALTER, M.A.—(*Literary work*)—Born Mar. 21, 1840, Boston, Mass.; died Feb. 7, 1907, Newton Highlands, Mass. Acting Asst. Paymaster, U.S. Navy Civil War.

*ALLEN, 1880, WILLIAM PALMER—(*Literary work*)—Born Mar. 12, 1857, Auburn, N.Y.; died Mar. 20, 1904, Auburn.

ALLING, 1947, CHARLES BOOTH, JR.—(*Finance*)—Born July 7, 1921, Montclair, N.J.; Ptnr. William H. Clark Associates, Inc., Executive Recruiting Firm, 292 Madison Ave., New York, N.Y. 10017; res. 322 Darlington Rd., Mt. Kisco, N.Y. 10549; Yale Alumni Fund Agent '47-'72, Mbr. Class Executive Com.; Dir. Freedom Fund, Dir. N.Y. Federation-Planned Parenthood, Dir. McBurney Y.M.C.A.; Founder Independent Party, Bedford, N.Y.; Capt. A.F., Feb. '43-Sept. '45, D.F.C., Air Medal with 4 clusters; m. Aug. 23, '52, Abigail Parsons McMaster; d. Charlotte Parsons, Elizabeth Dwight, Abigail Kingsley.

ALLISON, 1930, ROBERT SEAMAN, JR.—(*Business retired*)—Born July 7, 1907, Utah; res. 376 Crestline Circle, Salt Lake City, Utah 84103; Sec., Treas. & Advertising Dir., Colorizer Associates, world wide manufacturers of colorants for paint & paint bases; Pres., Civic Music Assn., '50-'52, Dir., '53-'75; Founding V.P., Ballet West, '64-'68; Trustee, Art Center, '47-'75; Lieut. (j.g.), U.S. Maritime Service, '43-'46.

*ALLISON, 1847, SAMUEL PERKINS—(*Law*)—Born Sept. 28, 1927, Williamson County, Tenn.; died April 1, 1858, Nashville, Tenn.

•AMES, 1918, ALLAN WALLACE—(*Finance*)—Born May 9, 1893, St. Paul, Minn.; died Jan. 16, 1966; Marine Midland Trust Co., N.Y.C.; W.W. I: Lieut., U.S. Naval Air Service; W.W. II: Capt., U.S. Naval Air Service; m. April 25, '42, Catherine Egan.

•AMES, 1899, SULLIVAN DORR—(*Law student*)—Born Jan. 5, 1878, Boston, Mass.; died Feb. 22, 1903, Cromwell, Conn.

•AMUNDSON, 1880, JOHN ARNOLD—(*Law*)—Born April 2, 1856, Madison, Wis.; died Aug. 9, 1909, Paris, France.

•ANDERSON, 1835, EDWIN ALEXANDER, M.A., M.D.,—(*Medicine*)—Born June 17, 1816, Wilmington, N.C.; died Mar. 11, 1894, Wilmington. Surgeon, Confederate Army, Civil War

•ANDERSON, 1951, THOMAS HILL—Born Jan. 13, 1929, Spokane, Wash.; in second yr. Med. School at time of death; died May 28, 1953, Bucyrus, Ohio.

ANDREWS, 1945W, EDWARD W., JR.—(*Business*)—Born Nov. 3, 1923, Seattle, Wash.; Controller & Dir., Skinner Corp., 709 Skinner Bldg., Seattle, Wash. 98177; res. Cherry Loop, The Highlands, Seattle, Wash. 98177; m. May 12, '51, Alison Hale Smith; s. Edward W., Sidney Smith; d. Patricia Hale.

•ANDREWS, 1870, JOHN WALLINGFORD, JR., LL.B.—(*Law*)—Born May 4, 1849, Columbus, Ohio; died May 8, 1880, Helena, Mont. U.S. district attorney, Mont., 1879-1880.

•ANDREWS, 1876, JOHN WOLCOTT—(*Industrial*)—Born June 10, 1853, Steubenville, Ohio; died Dec. 30, 1887, San Antonio, Texas.

•ANTHONY, 1886, BENJAMIN HARRIS—(*Industrial*)—Born Aug. 1, 1863, New Bedford, Mass.; died Oct. 16, 1932, New Bedford.

Jan. 6, 1903, Lancaster, Pa.; died Mar. 12, 1970; Ptnr.,

•APPEL, 1924, GEORGE FREDERICK BAER, LL.B.—(*Law*)—Born Townsend, Elliott & Munson, Philadelphia, Pa. 19107; Chmn., Local Govt. Sec., Amer. Bar Assn., '56-'58; Mbr., House of Delegates, Amer. Bar Assn., '58-'62; Penn State Bd. of Law Examiners, Chmn., '61-; Lend Lease Adminis., '42-'44; Foreign Econ. Adminis., '44-'45; m. June 22, '28, Elizabeth Thomas; s. G.F.B., Jr., ('51), William N., ('58); d. Mrs. Lawrence A. Brown, Jr., Mrs. Robert Ritchie, Mrs. Thomas Halsted, Mrs. Robert A. Gibbon, Jr.

ARDREY, 1925, RUSHTON L.—(*Finance retired*)—Born May 16, 1904, Dallas, Texas; res. 4816 St. John's Dr., Dallas, Texas 75205: Formerly Sr. V.P. Republic National Bank,

Dallas, Texas, V.P. & Treas. American Liberty Oil Co., Dallas, m. June 26, '31, Elizabeth Johnson Wolfe; s:. R. Leigh Jr. ('59), James S.; d. Alice Guion (*Wirth*), Elizabeth A. (*Wilson*).

•ARMS, 1863, CHARLES JESUP, M.A.—(*Law*)—Born June 9, 1841, Norwich, Conn.; died March 9, 1901, Providence, R.I. Mbr., R.I. State Senate, 1894-1895. Capt., Union Army, Civil War.

•ARNOT, 1885, JOHN HULETT—(*Finance*)—Born July 7, 1860, Elmira, N.Y.; died May 25, 1899, Elmira.

•ARNOT, 1856, MATTHIAS HOLLENBACK—(*Finance*)—Born Nov. 10, 1833. Elmira, N.Y.; died Feb. 15, 1910, Elmira.

ARRAS, 1969, ROBERT E., JR.—(*Writing*)—Born Feb. 22, 1947, Orange, N.J.; Writer; bus. & res. Apartado 10-356, Panama 4, Republic of Panama; m. Apr. 24, '71, Karen Ann Koehler.

ASHBURN, 1925, FRANK DAVIS, M.A., L.H.D.—(*Education retired*)—Born Feb. 2, 1903, Batavia, O.; res. R.F.D. 5, Plymouth, Mass. 02360; Headmaster Brooks School, North Andover, Mass., '27-'73; University Council, Chmn. Com. on Humanities, V.P. '48-'51, Pres. '52-'54, Corporation, A.Y.A. '73-'75, Bd. of Governors; Pres. New England Assoc. Schools & Colleges, '49; Pres. Headmasters Assoc. '55; Chmn. Natl. Council of Independent Schools '54; Chmn. Coll. Entrance Exam Bd. '60-62; Executive Com. Educ. Testing Service; Chmn. North Andover Public School Com.; m. June 12, '26, Phyllis Batcheller (dec.), m. June 24, '65, Jean Lane; d. Phyllis (*Kissel*), Nancy (*Whitaker*) (divorced).

ASHE, 1967, VICTOR HENDERSON, J.D.—(*Government*)—Born Jan. 1, 1945, Knoxville, Tenn., bus. Box 1382, Knoxville, Tenn., 37901; res. 3709 Kingston Pike, Knoxville, Tenn., 37919; Pres. Yale Club, Knoxville, '69-'73; Chmn, East Tenn. Heart Fund, '69-'72; Mbr. Tenn. House of Representatives, '68-'74; Mbr. Tenn. State Senate, '75-; Cprl. USMAR, '67-'73.

ASHENFELTER, 1975, ALAN THOMPSON—(*Student*)—Born Mar. 26, 1953, Glen Ridge, N.J.; res. 100 Hawthorne Ave., Glen Ridge, N.J. 07028; Medical School, Univ. of Cincinnati, fall '76, tentatively.

•ASHFORTH, 1929, ALBERT BLACKHURST—(*Business*)—Born Feb. 22, 1905, New York City; died Jan. 3, 1958, New York City; Lt. Cmdr., U.S.N.R., World War II.

ASHLEY, 1945W, THOMAS LUDLOW, LL.B.—(*Government*)—Born Jan. 11, 1923, Toledo, O.; bus. 2406 Rayburn Building, Washington, D.C. 20515; Mbr. U.S. House of Representatives,

9th Distr., Ohio, '54-; Cprl., Army, Pacific theater, '43-'45; m. Aug. 26, '67, Kathleen Marie Lucey; s. William Meredith Ludlow, Mark Michael.

AUSTEN, 1931, DAVID E., LL.B.—Born Oct. 21, 1909, Charlottesville, Va.; res. Box 254, Stonington, Conn. 06378; m. March 18, '38, Helen T. Hope; s. David E., Jr.; d. Florence Hope, Linda.

AUSTIN, 1968, ROY LESLIE, M.A., Ph.D.—(*Education*)—Born Dec. 13, 1939, St. Vincent, West Indies; Asst. Prof., The Pennsylvania State University, 206 Liberal Arts Tower, The Pennsylvania State University, University Park, Penn. 16802; res. 538 Easterly Parkway, State College, Penn 16801; m. Dec. 16, '67, Glynis Sutherland; s. Roy Leslie II.

*AVERY, 1914, BENJAMIN F., M.F.—(*Industrial*)—Born Oct. 21, 1890 Aurora, N.Y.; died Nov. 9, 1965; Pres., Canadian Soc. of Forest Engineers, '27-'29; 2d Lieut., Inf., AUS, '18; m. March 30, '21, Mary Adelaide Stone; s. Daniel Dudley, Frederick Stone; d. Deborah, Mary Taylor.

*AVERY, 1875, CHARLES HAMMOND, LL.B.—(*Law*)—Born April 8, 1954, Cincinnati, Ohio; died Jan. 3, 1927, Clearwater, Fla.

*AYCRIGG, 1942, WILLIAM ANDERSON—Born Aug. 22, 1919, Stamford, Conn.; missing in action Jan. 25, 1944, in the Pacific area, presumptive date of death, Jan. 26, 1945. 1st Lieut., U.S. Marine Corps Reserve, World War II.

AYEROFF, 1974, FREDERICK CHARLES—(*Student*)—Born Jan. 31, 1953, Los Angeles, Calif.; res. 10501 Eastborne Ave., Los Angeles, Calif. 90024; T/A English Lit. Univ. of Iowa, attending Writers' Workshop, Univ. of Iowa.

B

*BABCOCK, 1853, HENRY HARPER—(*Industrial*)—Born July 24, 1833, New Haven, Conn.; died Dec. 2, 1901, New Haven.

BABST, 1971, JAMES ANTHONY, J.D.—(*Law*)—Born March 31, 1949, New Orleans, La.; Attny., Assoc: Chaffe, McCall, Phillips, Toler & Sarpy, 1500 First National Bank of Commerce Bldg., New Orleans, La. 70112; res. 325 Calhoun St., New Orleans, La. 70118; m. Nov. 17, '73, Cynthia Anne Wegmann.

BACK, 1962, SAMUEL H., M.A., M.Ed.—(*Education*)—Born Sept. 30, 1940, Cleveland, Ohio; Dir. of Career Plans & Placement, State Univ. of New York at Binghamton, Binghamton, N.Y. 13905; res. 304 Riverside Drive, Binghamton, N.Y. 13905; m. Aug. 24, '63, Sarah Norcross Allen; m. June 15, '68; Jane Scotland Maddock; d. Amanda G.

*BACKUS, 1846, JOSEPH WILLES, M.A., D.D.—(*Ministry*)—Born Feb. 19, 1823, Franklin, Conn.; died July 4, 1901, Farmington, Conn. Member, Yale Corp., 1875-1899.

*BADGER, 1911, PAUL BRADFORD—(*Industrial*)—Born July 29, 1888, Winchester, Mass.; died Jan. 15, 1969; Socony Vacuum Oil Co.; m. Sept. 19, '14, Margaret Mills; s. Daniel Bradford, ('37), Paul Bradford, ('40), Carlton M., ('45).

*BADGER, 1882, WALTER IRVING, LL.B.—(*Law*)—Born Jan. 15, 1859, Boston, Mass.; died March 17, 1926, Cambridge, Mass.

*BAILEY, 1897, PHILIP HORTON—(*Business*)—Born Aug. 24, 1873, Windsor Locks, Conn.; died Feb. 6, 1957, Walpole, Mass.; 2d Lieut., Regular Army, Spanish-American War.

*BAKER, 1913, RICHARD WHEELER, LL.B.(*Law*)—Born Oct. 7, 1891, Cincinnati, Ohio; died Feb. 8, 1937, Princeton, N.J. 2d Lieut., Air Service, World War I.

BALDRIGE, 1918, HOWARD MALCOLM, LL.B.—(*Law retired*)—Born June 23, 1896, Omaha, Nebr.; res. Washington, Conn. 06793; Mbr., U.S. Congress, from Omaha, Nebr.; Capt., F.A., WWI; Col., U.S.A.F., WW II; Bronze Star, Legion of Merit, Crown of Italy-Commondatore; m. Nov. 23, '21, Jean Connell; s. Malcolm ('44), Robert ('46W).

*BALDWIN, 1853, GEORGE WILLIAM—(*Law*)—Born April 24, 1832, New Haven, Conn.; died Jan. 23, 1930, Vevey, Switzerland. Asst. Adj.-Gen. of Volunteers, Spanish-American War.

*BALDWIN, 1885, HENRY DEFOREST, LL.B.—(*Law*)—Born Nov. 7, 1862, Clinton, Iowa; died May 18, 1847, New York City. Chmn., N.Y. City Charter Comm., 1922-1923.

*BALDWIN, 1847, ROGER SHERMAN, M.A.—(*Law*)—Born July 4, 1826, New Haven, Conn.; died Nov. 11, 1856, Baker's Ranch, Calif.

*BALDWIN, 1919, SHERMAN, LL.B.—(*Law*)—Born July 13, 1897, Bellport, N.Y.; died Jan. 21, 1969; Mbr., Lord, Day & Lord, N.Y.C., '27; res. Poverty Hollow, Valley Rd., Redding Ridge, Conn. 06876; Alumni Bd., '35-'50; Class Sec., '20-

'59; Trustee, Pomfret School, '30-'48, Brearley School, '34-'54, Pres., '44-'54, Vassar College, '51-'61, '62-'65; Mbr., School Bd. and Chmn., Bd. Finance, Redding, '47-'53; Mbr., Bd. Mgrs. and Exec. Com., N.Y. Botanical Garden, '47-; Trustee, Metropolitan Museum of Art, '63-'67; Trustee, Sec., Exec. Com., American Academy, Rome, '45-'69; V.P., Bar Assn. of City of N.Y., '55-'56; 2d Lieut., F.A., May '17-Dec. '18; m. Sept. 13, '30, Harriet C. Rantoul; s. Henry deForest, ('53); d. Lois (*Bishop*).

*BALDWIN, 1861, SIMEON EBEN, M.A., L.L.D—(*Law*)—Born Feb. 5, 1840, New Haven, Conn.; died Jan. 30, 1927, New Haven. Prof. at Yale Law School, 1872-1919, and Prof. emeritus, 1919-1927. Assoc. justice, Conn. Supreme Court of Errors, 1893-1907, and chief justice, 1907-1910. Gov. of Conn., '11-'14. Mbr., Yale Corp., "11-'14.

BALL, 1960, DAVID GEORGE, J.D.—(*Law*)—Born Nov. 16, 1936, Gloucester, England; Sec. & Senior Attny. Amax, Inc., Amax Center, Greenwich, Conn. 06830; res. 15 Orchard Hill Lane, Greenwich, Conn. 06830; Advisory Bd., Dwight Hall; Mbr. American & N.Y. State Bar Assn., Mbr. American Soc. of Corporate Secretaries; Mbr. Mayor's Task Force on Tax Policy, N.Y. City, '67, Mbr. Vestry, St. Barnabas Church, Greenwich; Bd. Mbr. Natl. Audubon Soc. of Greenwich; former Pres., Treas., Sec., & Dir. of Deer Island Club Corp; m. July 28, '73, Carol Knight Gore; s. David G. Jr., Christopher; d. Deborah.

BANKS, 1956, HOWARD D., M.B.A.—(*Finance*)—Born June 20, 1934, Colombo, Ceylon; 1st V.P., Blyth Eastman Dillon & Co., 555 California St., San Francisco, Calif.; res. 233 S. Ridgewood Rd., Kentfield, Calif. 94904; served as Asst. Sec.-Treas., Sec.-Treas., & Pres., Northern Calif. Alumni Assn.; m. Dec. 4, '62, Sandra Snyder; s. Thomas Henry; d. Pamela Andersen.

*BANNARD, 1869, HENRY CLAY—(*Industrial*)—Born Dec. 21, 1844, New York City; died April 15, 1929, Chicago, Ill.

*BANNARD, 1876, OTTO TREMONT, LL.B., M.A.—(*Law and finance*)—Born April 28, 1854, Brooklyn, N.Y.; died Jan. 15, 1929, at sea, en route from Seattle, Wash., to Manila, P. I. Mbr., Yale Corporation, 1910-1928.

BARASCH, 1973, ALAN SIDNEY—(*Medical Student*)—Born Nov. 27, 1951, New York, N.Y.; Box 1000, Mt. Sinai School of

Medicine, 5th Ave. & 100th St., New York, N.Y. 10029; res. 299 Riverside Dr., New York, N.Y. 10025.

*BARATTE, 1843, JULIUS ADOLPHUS—(*Law*)—Born July 9, 1825, St. Mary's, Ga.; died Nov. 2, 1859, St. Mary's.

BARGE, 1974, RICHMOND MASON—(*Law*)—Born March 3, 1949, Jacksonville, Fla.; Lawyer, 2500 Tower Place, Atlanta, Ga.; res. 1323 Briarcliff Rd., Atlanta, Ga. 30306 or 1566 Williams Drive, Winter Park, Fla. 32789; Summer Clerk, Lanier, Elliott & Price; Sgt. E-5, Army Intelligence, '67-'70; Joint Service Commendation Medal; m. 1968, Lynn Rosengarten (divorced).

BARIBAULT, 1949, RICHARD PFEIFER—(*Industrial*)—Born Feb. 11, 1924, New Haven, Conn.; Operation Mgr. Aluminum Co. of America, Box 150, Massena, N.Y. 13662; res. 32 Clarkson Ave., Massena, N.Y. 13662; Managing Dir. International Alloys, Ltd., Aylesbury, Bucks, England, '71-'74; Capt. U.S.A.F. '43-'46; ETO Medal, Air Medal; m. Aug. 23, '48, Jule Marie Jones; s. Richard Jones, Harry John; d. Kathleen Jane (*Bair*), Amy Ruth.

*BARKER, 1856, GEORGE PAYSON—(*Law*)—Born. Dec. 24, 1835, Norwich, Conn.; died Jan. 28, 1868, Norwich.

*BARNES, 1874, PEARCE, LL.B.—(*Law*)—Born Sept. 14, 1851, Mt. Sterling, Ky.; died Nov. 22, 1925, Kent, Conn.

*BARNES, 1907, WILLIAM DELUCE, B.D., S.T.M.—(*Ministry and public welfare*)—Born April 25, 1885, Brooklyn, N.Y.; died Jan. 23, 1957, Hartford, Conn.; Chmn. State Com. for Prevention of Crime and Delinquency; Pres., Conn. Probation and Parole Assn.; Exec. Sec., Conn. Prison Assn.; Mbr., Conn. State Legislature, '49-'51; Y.M.C.A. work, World War I.

*BARNES, 1855, WILLIAM HENRY LIENOW, M.A.—(*Law*)—Born Feb. 9, 1835, West Point, N.Y.; died July 21, 1902, San Francisco, Calif.

*BARNEY, 1881, DANFORD NEWTON—(*Business*)—Born Jan. 10, 1859, Berlin, Conn.; died Feb. 23, 1936, Farmington, Conn. Mbr. Conn. State Senate, 1905.

*BARNUM, 1877, WILLIAM MILO, LL.B.—(*Finance*)—Born Jan. 25, 1856, Lime Rock, Conn.; died Oct. 5, 1926, New York City.

BARR, 1936, RICHARD J., JR.—(*Art*)—Born June 16, 1913, Joliet, Ill.; res. 10516 Channel Drive, Dallas, Texas 75229.

BARRES, 1932, HERSTER, B.D., M. Div.—(*Ministry retired*)—Born Feb. 2, 1909, Bethlehem, Penn.; res. Rathelpie Cottage, St. Andrews, Fife, Scotland; Natl. Alumni Placement Service, '43-'48; Asst. Chaplain '47-'48; Freshman Football Coach, '33; Varsity End Coach, '44; Sec., RTA, '47-'48; Mbr. of the Royal & Ancient Golf Club of St. Andrews; m. Nov. 18, '32, Dorothy Marshall; s. Herster Jr., ('56), Peter, Jonathan; d. Carol, Linda, Dana.

*BARRY, 1841, WILLIAM TAYLOR SULLIVAN—(*Law*)—Born Dec. 12, 1821, Columbus, Miss.; died Jan. 29, 1868, Columbus. Mbr., Miss. State Legislature, 1849-1853. Mbr. of Congress, 1853-1855. Mbr. of Confederate Provisional Congress, 1861. Served in Confederate Army, Civil War.

BARTHOLEMY, 1942, ALAN EDMUND—(*Business*)—Born Jan. 26, 1920, Portland, Oregon; Self employed, Business Management Consultant; bus. & res. Bartholemy Associates, P.O. Box 1227, Mayaguez, P.R. 00708; Maj., U.S.M.C., May '42-May '46; m. Aug. 29, '42, Helen Duley; s. Alan E. Jr.; d. Jan.

BARTHOLOMEW, 1928, DANA TREAT—(*Finance retired*)—Born Sept. 27, 1906, Ansonia Conn. Conn.; res. Box 451, Old Lyme, Conn. 06371; Chief Financial Officer, Alcan Aluminium, Ltd., Montreal, '49-'70, Dir. Exec. Com., '38-'70; Asst. V.P. Tricontinental Corp., New York, N.Y., '29-'38; Vice Chmn. Alumni Bd. Council; Class Rep. Alumni Fund; Advisory Com. on Investor Responsibility; Campaign for Yale, S.E. Conn.; Dir. Alumni Fund, A.Y.A. '76-'77; Dir. & Treas. N.Y. Public Library, '51-'59; Dir. & Treas. Montreal Museum of Fine Arts, '60-'70; Pres. Public Library, Old Lyme, Conn., '74, '75; Chmn. Town Pension Com., Old Lyme, Conn., '75, '76; 2d Lieut., Canadian Grenadier Guards, Reserve Army, '42-'44; m. Nov. 21, '30, Adela S. Griswold; s. Dwight, ('54), Andrew, ('59); d. Adela S. (*Wilmerding*).

*BARTLETT, 1838, JOHN KNOWLTON, M.D.—(*Medicine*)—Born Feb. 28, 1816, Portsmouth, N.H.; died Nov. 26, 1889, Los Angeles, Calif.

*BARTLETT, 1881, PHILIP GOLDEN—(*Law*)—Born Nov. 25, 1859, Washington, D.C.; died Aug. 2, 1932, Southbury, Conn.

BASSETT, 1949, BARTON BRADLEY—(*Business*)—Born July 31, 1924, Rockford, Ill.; Circulation Dept., Town & Country Buyers' Guide, 4607 North Second Street, Rockford, Ill. 61111; res. 1827 Oxford St., Rockford, Ill. 61103; Capital Equipment

Engineer, Barber-Colman Co., Rockford, Ill. '56-'67; Dir. & Sec. Jaycees, '51-'57, Mbr. Cong. Ch. Choir, 6 years; P.F.C. A.U.S. Inf., June '43-Mar. '46; Bronze Star, Purple Heart, Pres. Unit Citation; m. Feb. 14, '53, Mary Sue Compton; s. David B., Edward S.; d. Elizabeth Ann.

BATES, 1932, EMMERT WARREN—(*Publishing retired*)—Born May 14, 1910, Detroit, Mich.; res. 8356 Davenport Rd., Woodland, Mich. 48897; winter res. 217 North Andrews, Delray Beach, Fla. 33444; formerly Sr. V.P. Litton Educational Publishing, Inc., New York; Alumni Bd., '34-'37; m. July 20, '35, Louise George; m. Dec. 12, '73; Ruth Ann Schweigert; s. Richard Emmert, ('61); d. Barbara (*Stevens*).

*BATES, 1833, SAMUEL HENSHAW—(*Farming*)—Born Jan. 10, 1814, Northampton, Mass.; died Jan. 3, 1879, Santa Rosa, Calif. Priv., Union Army, Civil War.

*BAYARD, 1890, THOMAS FRANCIS—(*Law*)—Born June 4, 1868; Wilmington, Del.; died July 12, 1942, Wilmington. City Solicitor of Wilmington, '17-'19; Mbr., U.S. Senate, '22-'29; Govt. Appeal Agent, Wilmington, World War I.

*BAYNE, 1892, HUGH AIKEN, LL.B., LL.D.—(*Law*)—Born Feb. 15, 1870, New Orleans, La.; died Dec. 25, 1954, New Haven, Conn.; Lt. Col., Judge Advocate Generals' Depts., World War I (A.E.F.); Counsel, Liquidation Com. of War Dept. (France), '19; Counsel, Reparation Com. (Paris), '20-'25.

*BAYNE, 1847, THOMAS LEVINGSTON—(*Law*)—Born Aug. 4, 1826, Clinton, Jones County, Ga.; died Dec. 11, 1891, New Orleans, La. Lieut. Col., Artillery, Confederate Army, Civil War.

*BAYNE-JONES, 1910, STANHOPE, M.D., M.A., M.S., Sc.D., LL.D.—(*Medicine retired*)—Born Nov. 6, 1888, New Orleans, La.; died Feb. 20, 1970; Consultant in Med., Res. to Surgeon Gen., U.S. Army; Assoc. Prof. Bacteriology, Johns Hopkins Univ. Sch. of Med., '19-'24; Prof. Bacteriology and Immunology, Univ. of Rochester, '24-'32; Prof. Bacteriology, Yale Med. Sch., '32-'47, Dean, '35-'40; Master, Trumbull Coll., '32-'38; Pres., Joint Adminis. Bd., N.Y. Hosp.-Cornell Univ. Med. Center, '47-'53; Chmn., Adv. Com., Med. Educa. and Res., U.S. Dept. H.E.W., '57-'58; Mbr., Yale Corp., '57-'58; W.W. I: April '17-July '19; W.W. II: Feb. '42-Sept. '46; Rank, Brig. Gen.; Military Cross (British), *Croix de Guerre*, Silver Star with 3 Oak Leaf Clusters; m. June 25, '21, Nannie Moore Smith.

*BEACH, 1833, JOHN CAMPBELL, M.A.—(*Law*)—Born May 19, 1813, Auburn, N.Y.; died July 27, 1856, New York City.

*BEACH, 1839, JOHN SHELDON, M.A., LL.D.—(*Law*)—Born July 23, 1819, New Haven, Conn.; died Sept. 12, 1887, New Haven.

BEANE, 1960, FRANK EASTMAN, JR.—(*Finance*)—Born Apr. 3, 1938, Greenwich, Conn.; Exec. V.P. John P. Maguire & Co., Inc., 1290 Ave. of the Americas, New York, N.Y. 10019; res. 180 Ridgefield Rd., Wilton, Conn. 06897; Lieut. U.S.N., '60-'65; m. Dec. 16, '61, Rosemary Baker; s. Jonathan Walker, Christopher Cameron; d. Alison Gorham.

*BEARD, 1895, ANSON MCCOOK, LL.B.—(*Law*)—Born Mar. 17, 1874, Richmond, Va.; died Nov. 9, 1929, Tuxedo Park, N.Y.

*BEARD, 1896, WILLIAM MOSSGROVE, LL.B.—(*Business*)—Born Mar. 8, 1876, St. Louis, Mo.; died Oct. 28, 1941, Glen Ridge, N.J. Member, N.J. State Legislature, '12.

*BEAUMONT, 1834, GEORGE ANSON OLIVER, M.A.—(*Law*)—Born April 7, 1812, Columbia, Conn.; died Dec. 18, 1845, Columbia.

BECKET, 1923, G. CAMPBELL, LL.B.—(*Law*)—Born May 17, 1901, East Orange, N.J.; Attny., Ptnr., Becket, Ford, Dooley & Bearns, bus. & res. Lakeville, Conn. 06039; Justice of the Peace, '40-'71, and Alternate Trial Justice, '42-'60, Town of Salisbury, Conn.; m. Oct. 7, '32; Elise Granbery; s. James, Peter L., ('63); d. Elise Barr (*Smith*).

BECKET, 1963, PETER LOGAN, M.B.A.—(*Finance*)—Born July 18, 1940, New York, N.Y.; Small Business Analyst, United States Trust Co. of New York, 45 Wall St., New York, N.Y. 10005; res. 11 Summit Ave., Bronxville, N.Y. 10708; U.S. Trust Co. of N.Y., '70-; Asst. Sec. '74; Capt. U.S.M.C.R., Oct. '63-Dec. '66; Unit Commendation Ribbon; m. Aug. 28, '65, Linda H. Young; s. Robert Campbell, William Morgan; d. Catharine Young.

*BECKLEY, 1860, JOHN WERLE—(*Business*)—Born Oct. 8, 1838, Shelbyville, Ky.; died Mar. 11, 1917, Louisville, Ky.

*BEEBE, 1873, WILLIAM, M.A.—(*Education*)—Born Sept. 4, 1851, Litchfield, Conn.; died Mar. 11, 1917, New Haven, Conn. Asst. Prof. of mathematics, Yale University, 1882-1887, and of mathematics and astronomy, 1887-1898; Prof. of mathematics, 1898-1917.

*BEERS, 1869, HENRY AUGUSTIN, M.A.—(*Education*)—Born July 2, 1847, Buffalo, N.Y.; died Sept. 7, 1926, New Haven, Conn. Asst. Prof. of English literature, Yale Univ., 1874-1880, Prof., 1880-1916, and Prof. emeritus '16-'26.

*BEGG, 1893, WILLIAM REYNOLDS, LL.B.—(*Law*)—Born Feb. 12, 1869, Spartanburg, S.C.; died Oct. 10, 1930, New York City.

*BEIRNE, 1840, CHRISTOPHER JAMES—(*Law*)—Born July 9, 1819, Union, W. Va.; died Oct. 22, 1868, near Union, Member, W. Va. State Legislature.

BELIN, 1939, GASPARD D'ANDELOT, LL.B.—(*Law*)—Born May 30, 1918, Scranton, Penn.; Ptnr., Choate, Hall & Stewart, 28 State St. Boston, Mass. 02109; res. 4 Willard St., Cambridge, Mass. 02138; Pres., University Council, '72-'76; V.P., Development Board, to date; Mbr. University Council Comm. on Medical Affairs; Yale Alumni Fund, Class of 1939 Bequest Chmn.; Chmn., Lawyers Com. for Civil Rights under Law of Boston Bar Assn.; V.P., Peter Bent Brigham Hosp.; Trustee, Affiliated Hospitals Center; Trustee, Museum of Science; Trustee, Boston Athenaeum; Trustee, Trustees of Donations to Protestant Episc. Church; General Counsel, U.S. Treasury Dept., '62-'65; City Councillor, City of Cambridge, '62; Capt., A.U.S., '42-'45; m. Oct. 11, '41, Harriet L. Bundy; s. Michard d'A. ('71); d. Lowell (*Winkelman*), Constance (*Gibb*), Margaretta L., Alletta d'A.

*BELL, 1844, RICHARD DOBBS SPAIGHT—(*Business*)—Born 1823 Newbern, N.C.; died Aug. 8, 1908, Nashville, Tenn.

BELL, 1942, WILLIAM TOMPKINS—(*Business*)—Born May 12, 1919, Hackensack, N.J.; Administrator, Assoc. Sec., Natl. Geographic Soc., Washington, D.C. 20036; res. 5527 Devon Rd., Bethesda, Md. 20014; Alumni Fund; Lieut. Cmdr., U.S.N., '42-'46; Silver Star; m. Nov. 3, '43, Billie Byrd West; s. William T., Jr., ('71).

BELLINGER, 1917, ALFRED R., Ph.D.—(*Education retired*)—Born July 24, 1893, Durham, Penn.; res. c/o Mrs. S. L. Miller, Washington, Conn. 06793; Prof. Emeritus, Yale University; Lampson Prof. of Latin, Yale Univ.; Acting Dean of Yale College, '53-'54; Visiting Scholar, '64; Editor, Volume X, "Yale Classical Studies"; Sec. and Pres. R.T.A. '68; m. June 20, '20, Charlotte Brinsmade (dec.); s. Peter Frederick, ('43), Rossiter Raymond, ('44) (dec.); d. Hilda C. (*Gewin*), Mary G. (*Davenport*), Elizabeth D. (*Miller*).

BELLIS, 1974, JON MICHAEL—(*Education*)—Born Aug. 9, 1952, Queens, N.Y.; Mbr. of Faculty, Hopkins Grammar School, 986 Forest Rd., New Haven, Conn. 06515; res. 1477 Chapel St., New Haven, Conn. 06511.

BELLIS, 1973, TEDRIC LAWRENCE—(*Student*)—Born Jan. 25, 1951, Woodside, N.Y.; bus. 1 E. 29th St., New York, N.Y. 10016; res. 1219 Tulip Lane, Wantagh, N.Y. 11793.

*BEMAN, 1851, HENRY DEWITT—(*Law*)—Born Mar. 28, 1830, Mt. Zion, Ga.; died July 17, 1891, Sparta, Ga. Served in Confederate Army, Civil War.

BENCH, 1925, EDWARD C.—(*Finance retired*)—Born Nov. 5, 1901, Galena, Ill.; Former Ptnr., Clark, Dodge & Co., 61 Wall St., New York, N.Y. 10005; res. Box 186, Water Mill, Long Island, N.Y. 11976; m. Nov. 23, '25, Mary E. Case; d. Mary Elizabeth, Barbara C., Brenda.

BENDER, 1975, KENNETH ARTHUR—(*Business*)—Born July 1, 1952, Hackensack, N.J.; Sales Trainee, Construction & Mining Equipment, Harnischfeger International Corp., P.O. Box 554, Milwaukee, Wisc. 53201; res. 1407 S. 124th St., New Berlin, Wisc. 53151.

*BENEDICT, 1840, THEODORE HUDSON, M.A.—(*Government*)—Born Mar. 13, 1821, New York City; died June 14, 1885, Tarrytown, N.Y. Mbr. N.Y. State Legislature, 1850.

*BENNETTO, 1887, JOHN, LL.B., M.A.—(*Law*)—Born Jan. 22, 1862, Poole, England; died Oct. 10, 1892, New York City.

BENNINGHOFF, 1954, HARRY BRYNER—(*Business*)—Born May 22, 1932, Willow Grove, Penn.; Distr. Sales Mgr., Procter & Gamble, 1 N. Charles St., Baltimore, Md. 21201; res. 1804 A. Circle Rd., Ruxton, Md. 21204; Pres., Yale Alumni Assn. of Maryland, '75-'76; Chmn., Glee Club Concert, Maryland Assn., '75; 1st Lieut. (Pilot), U.S.A.F. '55-'58; m. Apr. 14, '56, Nancy M. Shields; s. Brian S., Gary S.; d. Sara S.

BENOIT, 1965, CHARLES EDWARD, JR., M.A.—Born May 25, 1943, Springfield, Mass.; Asst. Program Officer, Ford Foundation, 320 E. 42nd St., New York, N.Y. 10017; res. 60 Birch Hill, Agawam, Mass. 01001; Ford Foundation, Officer in Charge, Saigon, '73-'75; Rand Corp., Saigon, '68-'69; Agency for International Development, Saigon, '66-'68; d. Tammy Van.

*BENT, 1865, JOSEPH APPLETON—(*Law*)—Born Feb. 22, 1843, Boston, Mass.; died Aug. 12, 1869, Nashua, N.H.

*BENTLEY, 1880, EDWARD MANROSS—(*Engineering*)—Born July 31, 1858, Ellenville, N.Y.; died April 30, 1936, Lawrence, N.Y.

*BENTLEY, 1850, EDWARD WARREN, D.D.—(*Ministry*)—Born July 23, 1826, Tyringham, Mass., died Oct. 23, 1886, Canton Center, Conn.

*BENTON, 1842, JOSEPH AUGUSTINE, M.A., D.D.—(*Education*)—Born May 7, 1818, Guilford, Conn.; died April 8, 1892, Oakland, Calif. Prof., Pacific Theological Seminary, 1869-1892.

*BERGER, 1928, GEORGE BART, JR.—(*Finance*)—Born Nov. 20, 1905, Denver, Colo.; died Dec. 2, 1957; Cmdr., U.S.N.R., World War II.

*BERRY, 1868, COBURN DEWEES, M.A.—(*Law*)—Born Oct. 7, 1844, Nashville, Tenn.; died Sept. 13, 1911, Fairfield, Conn.

*BERTRON, 1885, SAMUEL READING—(*Finance*)—Born Feb. 26, 1865, Port Gibson, Miss.; died, June 30, 1938, Oyster Bay Cove, N.Y.; Advisor, Excess Profits Tax Bd., Washington, D.C., '17-'21; Mbr., Excess Profits Tax Comm., '18; Mbr., U.S. Mission to Russia, '18; established French War Relief Bureau, World War I.

BEST, 1964, GEOFFRY D. C., LL.B.—(*Law*)—Born Feb. 22, 1943, Dayton, Ohio; Ptnr. LeBoeuf, Lamb, Leiby & MacRae, 140 Broadway, New York, N.Y. 10005; res. 2 Charlton St., New York, N.Y. 10014; English Instr., American University, Beirut, Lebanon '64-'66; m. Jan. 31, '70, Suzanne H. Micaud; s. Charles D.

*BIDDLE, 1839, THOMAS BRADISH—(*Law*)—Born Dec. 23, 1821, Philadelphia, Pa.; died Aug. 15, 1850, Sacramento, Calif.

*BIGELOW, 1852, ALBERT—(*Ministry*)—Born Oct. 11, 1827, Stafford, N.Y.; died June 27, 1892, Harrisburg, Pa.

*BIGELOW, 1877, WALTER IRVING—(*Finance*)—Born Oct. 7, 1855, Grafton, Mass.; died Jan. 8, 1936, Brookline, Mass.

*BIGLOW, 1908, LUCIUS HORATIO, LL.B.—(*Law*)—Born Feb. 28, 1885, Brooklyn, N.Y.; died July 9, 1961; Pres., Middlesex Cty. Bar Assn.; Conn. Legislature, '49; Capt. Inf., AUS, '17-'19; m. April 27, '18, Marian Chandler Yeaw; s. L.H.B., Jr. ('45).

BIGLOW, 1945W, LUCIUS HORATIO, JR., LL.B.—(*Law*)—Born Feb. 9, 1925, South Orange, N.J.; Ptnr., Law Firm; res. 2425 Evergreen Point Rd., Bellevue, Wash. 98004; Solicitor, Yale Alumni Fund; Mbr., Planning Comm., City of Medina, Wash., '56-'62, Chmn., '62; Technician, 4th Grade,

A.U.S., '43-'46; m. Apr. 25, '53, Nancy Wheatland; s. Lucius II, ('78), John R., ('80), Timothy P.; d. Anne S.

BINGHAM, 1928, CHARLES TIFFANY, M.D.—(*Medicine retired*)—Born Aug. 31, 1906, New London, Conn.; res. 5 Church St., Farmington, Conn. 06032; Clinical Instr., Yale Medical School, '48-'49; Assoc. Attending Physician, Hartford Hosp., '46-'60; Chief of Staff, State Veterans' Home & Hosp., Rocky Hill, Conn., '51-'52; Physician-in-Charge, Blue Hills Clinic, Conn. Hosp. for Alcoholics, '52; Cmdr. U.S.N., (MC), '42-'46, '50-'51; m. June 10, '29, Kathleen W. Howell; s. Charles Tiffany, Jr., ('56); d. Kathleen Farr (*DeVault*), Heidi Mitchell (*Fell*).

*BINGHAM, 1863, EGBERT BYRON—(*Ministry*)—Born Feb. 17, 1839, Scotland, Conn.; died June 11, 1891, Woodstock, Conn.

BINGHAM, 1936, JONATHAN BREWSTER, LL.B. (J.D.), L.H.D.—(*Government*)—Born April 24, 1914, New Haven, Conn.; Mbr. of Congress, 22nd Distr., New York, 2241 Rayburn House Office Bldg. Washington, D.C. 20515; res. 5000 Independence Ave., Bronx, N.Y. 10471; Yale Corp., '49-'51; Yale Law School Alumni Assn. Exec. Com., '43-'51; law practice, '39-'41, '46-'51, '53-'54, '59-'60, last as Ptnr., Goldwater & Flynn, New York City; Deputy & Acting Administrator, Technical Cooperation Administration (Point Four), '51-'53; Sec. to Gov., N.Y. State, '55-'58; Alternative Rep. to four General Assemblies, '61-'63; Minister, Rep. on U.N. Trusteeship Council, '61-'63, Pres., Council, '62; Ambassador, Rep. on U.N. Economic & Social Council, '63-'64; Congressman, '65-; Capt., A.U.S., '43-'45; War Dept. Staff Citation; m. Sept. 20, '39, June Rossbach; s. Timothy W., ('67, Yale Law School, '71); d. Sherrell (*Downes*), June Mitchell (*Esselstyn*), Claudia R. (*Gurunam Kaur Khalsa*).

BIRGE, 1968, ROBERT RICHARDS, Ph.D.—(*Education*)—Born Aug. 10, 1946, Washington, D.C.; Asst. Prof. Chemistry & Chemical Physics, Dept. of Chemistry, University of California, Riverside, Calif. 92502; res. 30165 Via de la Mesa, Temecula, Calif. 92390; National Institutes of Health Research Fellow, Harvard University, '74-76; Consultant in Atmospheric Spectroscopy, U.S.A.F. Air Pollution Research Div., Albuquerque, N.M., '74-; Mbr. Bice Comm., Scientific Consultants to U.S. Senate on Atmospheric Pollution, '73-'75; 1st Lieut. U.S.A.F., '73-'74; m. June 15, '68, Joanne Schwiebert; s. Jonathan Richards.

BISARO, 1974, LARRY R.—bus. Worker Compensation Board of British Columbia, 5255 Heather St., Vancouver, B.C. V5Z 3L8.

°BISHOP, 1833, NOAH, M.A.—(*Ministry*)—Born Jan. 12, 1806, Litchfield, Conn.; died Sept. 22, 1869, Ironton, Mo.

°BISSELL, 1867, ARTHUR DOUGLAS—(*Finance*)—Born Jan. 10, 1844, New London, N.Y.; died Nov. 13, 1926, Buffalo, N.Y.

BISSELL, 1961, GEORGE THOMAS,—(*Finance*)—Born Dec. 28, 1938, Buffalo, N.Y.; res. Route 1, Box 68A, Mt. Vernon, Maine 04352.

BISSELL, 1925, WILLIAM TRUESDALE—(*Writing retired*)—Born Dec. 27, 1902, Lake Forest, Ill.; res. 44 Old Canton Rd., Canton, Conn. 06019; formerly with N.Y. Herald Tribune, Harper & Bros., Newsweek, Hartford Fire Ins. Co., Hartford Natl. Bank & Trust; Canton, Conn. Bd. of Finance, School Building Com., & Zoning Comm., '68-'75; Office of Lend Lease Admin., Washington, Chief India-South East Asia Div. of Foreign Economic Admin., '43-'45; m. Aug. 21, '30, Elinor Latané; s. John L., ('52); d. Marie (*Prentice*).

°BISSELL, 1869, WILSON SHANNON, M.A. LL.D.—(*Law*)—Born Dec. 31, 1847, Rome, N.Y.; died Oct. 6, 1903, Buffalo, N.Y. Postmaster-General of the U.S. 1893-1895. Vice-chancellor, University of Buffalo, 1895-1902, and chancellor, '02-'03.

°BLACKMAN, 1857, CHARLES SEYMOUR—(*Business*)—Born Mar. 29, 1837, Seymour Conn.; died Dec. 20, 1906, Montreal, Que., Canada.

°BLACKMAN, 1854, SAMUEL CURTIS—(*Law*)—Born April 7 1833, Seymour, Conn.; died Aug. 20, 1864, New Haven, Conn.

°BLAINE, 1876, WALKER, LL.B.—(*Law*)—Born May 8, 1855, Augusta, Me.; died Jan. 15, 1890, Washington, D.C. 3d. Asst. Secretary of State, 1881-1882. Asst. attorney for the U.S. before Court of Commissioners of Alabama Claims, 1882-1885. Examiner of claims in State Department, 1889-1890.

°BLAIR, 1924, EDWIN FOSTER, LL.B., M.A., LL.D.—(*Law*)—Born Dec. 15, 1901, Weatherford, Texas; died Nov. 6, 1970; Ptnr., Hughes, Hubbard, Blair & Reed, N.Y.C.; Dir. N.Y. Heart Fund, '53-; Dir., Bridgeport Boys' Clubs, Inc., '59-; Pres., Fairfield Community Chest, '51-'53; Dir., Sister Kenny Found., '47-'49; Fellow, Yale Corp., '46-; Chmn., Alumni Fund. '42-'44; Chmn., Alumni Bd., '49-'52; Assoc. Fellow, Branford Coll., '44-; Pres., Yale Law School Assn., '55-'58; Chmn., Exec. Com., '58-

'60; '24 Exec. Com., '24-; Pres., Football "Y" Assn., '42-'46, Dir., '42; Pres., Yale Club of N.Y., '46-'48; Yale Medal recipient, '53; m. April 14, '25, Rosemary Kane; s. Roderic (died '28), Edwin James, ('59); d. Mary Kane, (M.A. '58), Kathleen (*Leisure*), Rosanne.

*BLAIR, 1925, JAMES GRANT—(*Industrial*)—Born Mar. 1, 1903, Weatherford, Texas; died Nov. 18, 1968; Pres., Hopi-Grants-Piñon-Shiprock Oil Companies, Box 293, Santa Fe, N. Mex. 87501.

BLAIR, 1907, WILLIAM McCORMICK LL.D., LITT.D.—(*Finance*)—Born May 2, 1884, Chicago, Ill.; Senior Ptnr., William Blair & Co., 135 South La Salle St., Chicago, Ill. 60603; res. 1416 Astor St., Chicago, Ill. 60610; summer res. Box 218, Lake Bluff, Ill. 60044; Nominating Com. to Yale Corp; Exec. Com. Alumni Bd.; Yale Athletic Com.; Past Pres. Yale Club of Chicago; Life Trustee, The Art Institute of Chicago; Field Museum of Natural History; University of Chicago; Pres. of Congregation & Trustee of Fourth Presb. Ch.; Past Pres., Art Institute of Chicago, '58-'66; Past Pres., Chicago Historical Soc.; Past Pres., The Commercial Club of Chicago; Past Pres., Bd. of Trustees of Fourth Presb. Ch.; Priv., OC, A.U.S., Sept.-Dec., '18; m. 1912, Helen Bowen (dec.); s. Edward McCormick, ('38), William McCormick, Jr., Bowen, ('40); d. Helen Bowen Jr. (dec.).

BLAKE, 1937, DEXTER B., M.D.—(*Medicine*)—Born Sept. 20, 1914, Yonkers, N.Y.; Attending Staff Anesthesiologist, Morristown Memorial Hosp., 100 Madison Ave., Morristown, N.J. 07960; res. 35 Old Farm Rd., Basking Ridge, N.J. 07920; Chmn. Dept. Anesthesiology, Morristown Memorial Hosp., '52-'62; Sec. Morris Cty. Medical Soc., '57-'61; Pres. Morris Cty. Medical Soc., '61-'62; Lieut. Cmdr. U.S.N., '42-'45; m. July 6, '40, Eleanor Rutledge; s. Dexter Barnes, Jr., Arthur Frederick; d. Elizabeth Dexter, Ann Rutledge, Carol Avery.

*BLAKE, 1858, EDWARD FOSTER, M.A.—(*Law student*)—Born Nov. 25, 1837, New Haven, Conn.; died Aug. 9, 1862, Cedar Mountain, Va. Maj., Inf., Union Army, Civil War.

*BLAKE, 1857, ELI WHITNEY, M.A., LL.D.—(*Education*)—Born April 20, 1836, New Haven, Conn.; died Oct. 1, 1895, Hampton, Conn. Prof. of physics and industrial mechanics, Cornell Univ., 1868-1870; Prof. of physics, Brown Univ, 1870-1895.

*BLAKE, 1945, GILMAN DORR, JR.,—(*Student*)—Born Feb. 22, 1923, New York City; died Jan. 20, 1945, England, 2d Lieut., U.S.A.A.F., World War II.

*BLAKE, 1848, HENRY TAYLOR—(*Law*) Born April 17, 1828, New Haven, Conn.; died April 6, 1922, New Haven.

BLAKELY, 1977, MARVIN—(*Student*)—res. 3737 Ivy Ave., Knoxville, Tenn. 37914.

*BLAKESLEE, 1852, HENRY CLAY, M.A.—(*Engineering*)—Born Jan. 21, 1831, New Haven, Conn.; died Aug. 19, 1857, Chicago, Ill.

BLANCHARD, 1939, JERRED GURLEY, LL.B.—(*Law*)—Born April 3, 1918, Chillicothe, Mo.; Ptnr., Rickey, Shankman, Blanchard, Agee & Harpster, 3500 100 N. Main Bldg., Memphis, Tenn. 38103; res. 4345 Wyntuck Place, Memphis, Tenn. 38117; Alumni Schools Com., '47-; Alumni Bd., '72-75; Bd. of Dir., Memphis & Shelby Cty. Bar Assn., '55-'58; Mbr., Shelby Cty. Election Comm., '60-'62; Chmn., Memphis Alcohol Licensing Comm., '63; Mbr., Memphis City Council, '68-'72, Chmn., '72; Col., A.U.S., U.S.A.F., '41-'46, '51-'53; m. June 19, '47, Eugenia Maude Armisted (dec.); s. Jerred Gurley, Jr., ('72); d. Maude Cayce, ('73), Elizabeth Armisted (dec.).

BLATTNER, 1976, ROBERT W.,—res. 212 Wilmar Drive, Pittsburgh, Penn. 15238.

*BLISS, 1852, CHARLES MILLER—(*Literary work*)—Born Jan. 1, 1827, Hartford, Conn.; died Dec. 21, 1905, Bennington, Vt. 2d Lieut., Inf., Union Army, Civil War.

*BLISS, 1850, ROBERT—(*Finance*)—Born Dec. 3, 1828, Jewett City, Conn.; died Sept. 12, 1905, New York City.

*BLISS, 1850, WILLIAM ROOT—(*Insurance*)—Born Oct. 20, 1825, Jewett City, Conn.; died April 8, 1906, Short Hills, N.J.

*BLODGETT, 1884, GEORGE REDDINGTON—(*Law*)—Born Sept. 19, 1862, Bangor, Me.; died Dec. 4, 1897, Schenectady, N.Y.

BLUE, 1958, LINDEN S.—Born June 14, 1936, Meeker, Colo.; res. 1541 Spring Drive, Wichita, Kansas 67208; Chmn., Denver Alumni Fund; m. Jan. 24, '70, Kathryn Whiteley; s. Austin James Neal; d. Virginia Neal.

BOASBERG, 1956, EMANUEL III, LL.B.—(*Law*)—Born Nov. 25, 1934, Buffalo, N.Y.; Attny., Boasberg, Hewes et al, 2101 L St., N.W., Washington, D.C. 20037; res. 3136 Newark St. N.W., Washington, D.C. 20008; Class Treas., '56-'66; Class

Exec. Com., '56-; U.S.O.E.O., '64-'68; A.U.S., '59-'60; m. June 26, '60, Sarah Szold; s. Jeb, Tom; d. Margaret, Melissa.

BOCKRATH, 1961, RICHARD C., JR., M.S., Ph.D.—(*Education*)—Asst. Prof., Microbiology, Indiana Medical Center; res. 5114 Grandview Drive, Indianapolis, Ind. 46208; m. June 20, '64, Tiina Kutti; s. Adam Richard.

BOCKSTOCE, 1966, JOHN R., B.Litt., Oxford—Born Aug. 10, 1944, Hartford, Conn.; res. c/o Mrs. Bonnie Hahn, Box 392, Nome, Alaska; m. Jan. 12, '73, Lady Romayne Grimston.

BODMAN, 1959, WILLIAM CAMP, M.B.A.—(*Business and Farming*)—Born Sept. 9, 1937, U.S.A.; Self employed, Farmer & Business Consultant, bus. & res. 3550 Via Los Colorados, Lafayette, Calif. 94549; m. July 31, '70, Louise Lyman (dec.); d. Serena Alison.

*BOIES, 1860, CHARLES ALFRED—(*Theological student*)—Born June 3, 1838, Boston, Mass.; died May 14, 1863, Keene, N.H.

*BOLTWOOD, 1860, EDWARD—(*Insurance*)—Born Sept. 4, 1839, Amherst, Mass.; died Feb. 6, 1878, Cairo, Egypt.

*BOLTWOOD, 1892, EDWARD, LL.B.—(*Literary work*)—Born Mar. 25 1870, Pittsfield, Mass.; died Sept. 6, 1924, New Lebanon, N.Y.

*BOLTWOOD, 1864, THOMAS KAST, LL.B.—(*Law*)—Born Feb. 15, 1844, Amherst, Mass.; died Dec. 25, 1872, Hartford, Conn.

*BOOTH, 1884, SAMUEL ALBERT—(*Law*)—Born Feb. 3, 1860, Litchfield, Conn.; died Dec. 3, 1898, Minneapolis, Minn.

*BOOTH, 1884, WILBUR FRANKLIN, LL.B.—(*Law*)—Born Aug. 22, 1861, Seymour, Conn.; died July 7, 1944, Minneapolis, Minn. State district judge, Hennepin County, Minn. '09-'14; U.S. district judge, Minn., '14-'25; U.S. circuit judge, 8th Circuit, '25-'44.

*BORDEN, 1864, MATTHEW, CHALONER DURFEE—(*Industrial*)—Born July 18, 1842, Fall River, Mass.; died May 27, 1912, Oceanic, N.J.

BOREN, 1963, DAVID LYLE, M.A., J.D.—(*Government*)—Born Apr. 21, 1941, Washington, D.C.; Governor, State of Oklahoma, Governor's Office, State Capitol Bldg., Oklahoma City, Okla. 73105; res. Governor's Mansion, Oklahoma City, Okla. 73105; Mbr., Yale Clubs of Oklahoma City & Tulsa; Attny. at Law, '68-'74; Prof. Political Science, Chmn. Social Services, Oklahoma Baptist University, '70-'74; Mbr., Oklahoma House of Representatives, '66-'74; Governor, State of Okla-

homa, '75-; Capt., Army National Guard, '67-'74; Distinguished Military Graduate, Yale R.O.T.C., '63; m. separated; s. David Daniel; d. Carrie Christine.

°BOTTUM, 1876, Elisha Slocum—(*Law*)—Born July 24, 1854, Norwich, Conn.; died Mar. 15, 1898, Chicago, Ill.

BOULOS, 1947, William M.—(*Finance*)—Born Oct. 13, 1927, Seattle, Wash.; V.P. National Accounts Division, Rainier National Bank, P.O. Box 3966, Seattle, Wash. 98124; res. 5145 Kenilworth Pl., N.E., Seattle, Wash. 98105; Treas., Yale Assn. of Western Washington, '61-; Alumni Schools Com., '60-'68; Yale Alumni Fund, '71-; Cprl, A.U.S., '50-'52; m. 1964, Barbara Davidson; m. 1973, Vivian Maxwell Dennistoun; ss. Alexander Dennistoun Knapp, Charles Evan Knapp; sd. Elyse Maxwell Knapp.

BOUSCAREN, 1969, Michael Frederic—(*Business*)—Born April 7, 1947, San Francisco, Calif.; Grain Merchandiser, Continental Grain Co., 277 Park Ave., New York, N.Y.; res. General Delivery, Bowdoinham, Maine 04008; 1969 Class Treas., '69-'74; Lieut. J.G., U.S.N.R.; Dir. RTA, '74-'75.

°BOWERS, 1879, Lloyd Wheaton, LL.B.—(*Law*)—Born Mar. 9, 1859, Springfield, Mass.; died Sept. 9, 1910, Boston, Mass. Solicitor-General of the U.S. '09-'10.

°BOWLES, 1899, Henry Thornton—(*Engineer retired*)—Born May 7, 1877, Springfield, Mass.; died Mar. 27, 1964; res. Old Ivy Rd., Charlottesville, Va.; m. '13, Ida Louise Hauckel.

BOWLES, 1935, John E.—(*Finance*)—Born Jan. 11, 1911, Montclair, N.J.; Asst. Sec., Chemical Corn Exchange Bank, 165 Broadway, New York, N.Y.; res. 103 Hoyt St., Darien, Conn.; m. Dec. 12, '45, Sheilah D. J. Donkin; s. John Eliot, Jr., Bryan Donkin; d. Jennifer Clapton.

°BOWLES, 1961, William Carter, Jr., LL.B.—(*Law*)—Born Oct. 1, 1938, Washington, D.C.; died July 10, 1973, Potomac, Washington, D.C.; Assoc. Lawyer, Covington & Burling, 888 16th St., N.W., Washington 20006; Assoc., Hawkins, Delafield & Wood, '65-'68; Asst. Campaign Mgr., Hon. Charles McC. Mathias, Jr. (R-Md.), '68; Treas., Deer Island Fund Drive, '66-'68; m. Aug. 28, '65, Mary Panninter Reynolds; d. Victoria Slagle.

BOWMAN, 1957, Ralph David

BOYD, 1912, Francis T.—(*Business retired*)—Born Dec. 28, 1888, Philadelphia Pa.; res. Nettleton Hollow Rd., Wash-

ington, Conn. 06793; 1st Asst. Sec., N.Y. Stock Exchange; V.P. Natl. Research Bureau; Capt., A.U.S., '16; m. Sydney Wilson.

°BOYDEN, 1864, HENRY PAINE—(*Literary work*)—Born Feb. 12, 1842, Machias, Me.; died April 1, 1908, Cincinnati, Ohio.

BRADFORD, 1934, AMORY HOWE, LL.B.—(*Gestalt Therapy*)—Born Oct. 1, 1912, Springfield, Mass.; bus. & res. Box 874, Manchester Center, Vt. 05255; Yale Univ. Council, '59-'64; Mbr. U.S. Environmental Protection Agency, '75, Dept. of Environmental Protection, State of Conn., '73-'74, President's Advisory Council on Executive Organization, '69-'70, Greater Jamaica Development Corp., Queens, N.Y., '68-'69, Economic Development Admin., U.S. Dept. of Commerce, '66, Regional Plan Assn., N.Y., '65, NATO Secretariat, London, '51-'52; Advisor on Grants, The Ford Found., '63-65; Asst. to Publisher, New York Times, '47-'54; The New York Times Co., Sec., '54-'57, Dir., '55-'63, V.P. & Business Mgr., '57-'60, V.P. & General Mgr., '60-'63; Attny., Davis, Polk, Wardwell, Gardiner & Reed, N.Y.C., '37-'47; Capt., A.U.S., Special Branch, Military Intelligence, '43-'45; m. Jan., '41, Carol Rothschild (divorced '65); m. Aug., '67, Virginia Fry (divorced Jan. '70); m. Feb., '70, Penelope Potter (Divorced '76); s. Peter Amory, ('64, Yale Law School, '68), David; d. Carola, Alison, Deborah.

°BRADFORD, 1905, ARTHUR HOWE, M.A., D.D., L.H.D.—(*Ministry*)—Born Nov. 19, 1883, Montclair, N.J.; died Aug. 29, 1973, Peterborough, N.H.; Asst. Minister, South Cong. Church, Springfield, Mass., '09-'12; Minister, Rutland (Vt.) Cong. Church, '13-'18, and Central Cong., Church, Providence, R.I., '18-'52; Yale Corporation, '25-'52; m. July 8, '11, Eugenia Price; s. Amory H., ('34, '37 Law), Ben, A.H.B., Jr., ('50, deceased '55), James Allyn, ('53 Div.); d. Jean P. (*Page*), Stella (*Scott*).

BRADFORD, 1966, TIMOTHY M., M.A.T.—(*Education*)—Born June 12, 1944, Muskogee, Okla.; res. 184 S. Buckhout St., Irvington, N.Y. 10533; Yale Lacrosse Assn.: Dir., '70, Bd. of Gov., '71.

°BRADLEY, 1921, CHARLES HARVEY, LL.B.—(*Business*)—Born April 20, 1899, Dubuque, Iowa; died Sept. 1, 1972; Pres., W. J. Holliday & Co., '24-'55, Monarch Steel Co., and Chmn. Bd., P. R. Mallory & Co., Inc., Indianapolis; Alumni Board, '46-

'50; Pvt., USMC, '17-'18; m. Jan. 14, '22, Carolyn Coffin; s. C.H.B., Jr ('45, '48 LL.B.); d. Barbara (*Walker*), Katherine (*Moseley*).

*BRAND, 1866, James, D.D.—(*Ministry*)—Born Feb. 26, 1834, Three Rivers, Que., Canada; died April 11, 1899; Oberlin, Ohio. Color Sgt., Union Army, Civil War.

*BRANDEGEE, 1849, Augustus—(*Law*)—Born June 15, 1828, New London, Conn.; died Nov. 10, 1904, New London. Mbr., Conn. State Legislature, 1854-1857, and Spkr., 1861. Mbr. of Congress, 1863-1867.

*BRANDEGEE, 1885, Frank Bosworth—(*Law*)—Born July 8, 1864, New London, Conn.; died Oct. 14, 1924, Washington, D.C. Mbr., Conn. State Legislature, 1888, and Spkr., 1899. Mbr. of Congress, 1902-05. Mbr., U.S. Senate, '05-'24.

BRANDT, 1962, John Henry, M.D.—(*Medicine*)—Born July 30, 1940, Cleveland, O.; Attending Psychiatrist, McLean Hosp. 115 Mill St., Belmont, Mass. 02178; Instr. in Psychiatry, Harvard Medical School; Priv. Practice, 412 Beacon St., Boston, Mass. 02116; res. 60 Pleasant St. 513, Arlington, Mass. 02174; Mellon Fellow, Clare Coll. Cambridge, England, '62-'64; Applicant Interviewer, Alumni Schools Com., Yale Club of Boston, '75-; Asst. to Dir., Harvard Center for Community Health, '69-'70; Clinical Fellow in Psychiatry, Harvard Medical School, '70-'73; Asst. Psychiatrist, McLean Hosp., Belmont, Mass. '73-'74; Dir., Waverley House, Belmont, Mass., '73-'74; m. July 30, '63, Jonny Ellison; d. Sylvia Ann, Lavra Ann.

*BREED, 1844, Edward Andrews—(*Business*)—Born Sept. 20, 1823; Lynn, Mass.; died Mar. 6, 1896, Capitola, Calif.

BREEN, 1950, J. Gerard—Add., 4 Franklin St., Delhi, N.Y.; m. Dec. 26, '58, Lillian Barbara Young.

*BREMMER, 1886, Samuel Kimball, M.D.—(*Medicine*)—Born July 28, 1864, Boxford, Mass.; died Dec. 10, 1919, Waverly, Mass.

*BREWSTER, 1882, Benjamin, B.D., D.D., L.H.D.—(*Ministry*)—Born Nov. 25, 1860, New Haven, Conn.; died Feb. 2, 1941, Portland, Me. Prot. Episc. Bishop of Maine, 1916-40.

*BREWSTER, 1868, Chauncey Bunce, M.A., D.D.—(*Ministry*)—Born Sept. 5, 1848, Windham, Conn.; died April 9, 1941, Hartford, Conn. Prot. Episc. Bishop of Conn., 1899-1928.

BREWSTER, 1962, JAMES HENRY IV—(*Business*)—Born Mar. 12, 1939, Cambridge, Mass.; Self employed, Owner, The Formsman, a business forms dealership, 900A South Miami Ave., Miami, Fla. 33130; res. 255 Ridgewood Rd., Key Biscayne, Fla. 33149; Yale Club Interview Com.; A.U.S., Aug. '57-Feb. '58, Specialist 4, Oct. '61-Aug. '62; m. Sept. 30, '68, Susan Mary Crowley; s. James Henry V; d. Jocelyn Hayes.

BREWSTER, 1921, WALTER RICE, LL.B.—(*Law*)—Born Jan. 27, 1899, Brooklyn, N.Y.; Ptnr. Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 580 Park Ave., New York 10021; Assoc. Govt. Appeal Agt., U.S. Selective Service, '41-'42; 2d Lieut., F.A., Officers Reserve Corps, W.W. I, '18-'23; Lieut, Cmdr., USNR, W.W. II, '42-'45; m. May 15, '30. Jean McIntosh; m. Nov. 7, '44, Dorothy Gatins; s. W.R.B., Jr., ('70); d. Ethel Dominick Stout (*Chapin*), Dorothy Hope Stout (*Connors*).

*BRICKELL, 1845, JAMES NOAILLE—(*Law*)—Born June 5, 1823, Columbia, S.C.; died Sept. 26, 1877, New Orleans, La. 1st Lieut., Ord., Confederate Army, Civil War.

*BRIDGMAN, 1885, JOHN CLOYSE—(*Industrial*)—Born Dec. 22, 1862, Andover, Mass.; died May 28, 1917, Wilkes Barre, Pa.

*BRINSMADE, 1851, HORATIO WALSH—(*Medical student*)—Born Oct. 25, 1831, Troy, N.Y.; died July 25, 1852, Troy.

*BRISBIN, 1846, JOHN BALL—(*Law*)—Born Jan. 10, 1826, Schuylerville, N.Y.; died Mar. 22, 1898, St. Paul, Minn. Mbr., Minn. State Legislature, 1858 and 1864.

*BRISTOL, 1859, LOUIS HENRY—(*Law*)—Born Mar. 2, 1839, New Haven, Conn.; died July 20, 1910, New Haven.

*BRODHEAD, 1859, HENRY, LL.B.—(*Law*)—Born July 2, 1837, Milford, Pa.; died Jan. 26, 1925, Churchtown, Pa.

BRONSON, 1944, DAVID B., S.T.B., S.T.M., Th.D.—(*Education*)—Born Jan. 25, 1922, Waterbury, Conn.; English Teacher, Lincoln-Sudbury Regional High School, Sudbury, Mass. 01776; res. 10 Kenway St., Cambridge, Mass. 02138; m. June 25, '49, Gloria L. Cocuzza; m. Aug. 15, '66, Marther Berger; s. John Lindley, Charles Bartlett, Henry Terry; d. Sarah Ladden.

BRONSON, 1926, James Davis—(*Industrial retired*)—Born Oct. 12, 1904, Stillwater, Minn.; bus. Box 51, c/o Boise Cascade Corp., Yakima, Wash. 98907; res. Route 2, Box 736, Yakima, Wash. 98908; Operator of orchards; Pres. Am. Forest Institute, '63-'65; Pres. Natl. Forest Products Assn., '68-'69; Pres., Bd.

of Trustees, Yakima Valley Memorial Hosp., '67-; m. Apr. 30, '30, Elsie Prins; m. Oct. 2, '57, Lucille Hutchings; m. Mar. 31, '68, Marjorie Turton; s. James Davis, Jr. ('53); d. (Mary) Eleanor (*Pyle*).

*BROOKE, 1899, FREDERICK HIESTER—(*Architecture*)—Born Oct. 9, 1876, Birdsboro, Pa.; died Dec. 24, 1960; Capt., Air Service, W.W. I; m. Jan. 1, '14, Mrs. Dunn McKee; s. F.H.B., Jr. ('37).

BROOKE, 1937, FREDERICK H., JR.—(*Industrial*)—Born Dec. 25, 1914, Washington, D.C.; International Staff, Raytheon Co., Lexington, Mass. 02173; res. Nonquitt, South Dartmouth, Mass. 02748; U.S.N. '41-'46; m. Aug. 31, '40, Carolyn Chaffee; s. Frederick H. III; d. Carolyn (*Close*), Gaelen (*Phyfe*).

*BROOKE, 1897, GEORGE CLYMER—(*Finance*)—Born June 5, 1875, Birdsboro, Pa.; died May 7, 1915, Ardmore, Pa.

*BROOKS, 1885, HENRY STANFORD, LL.B., M.A.—(*Business*)—Born Aug. 28, 1864, San Francisco, Calif.; died July 27, 1938, Woodstock, Vt., Chmn. Yale Alumni Fund, '16-'18.

*BROOKS, 1875, JAMES WILTON, LL.D.—(*Law and literary work*)—Born April 19, 1853, New York City; died July 6, 1916, Atlantic City, N.J. Mbr., N.Y. State Legislature, 1882-1884.

*BROOKS, 1865, JOHN EDWARD, LL.B.—(*Business*)—Born May 6, 1844, Rye, N.Y.; died Feb. 20, 1913, London, England.

BROOKS, 1962, TRISTAM ANTHONY—(*Finance*)—Born Sept. 16, 1939, Summit, N.J.; Ptnr., investment banking, Loeb, Rhoades & Co., 42 Wall St., New York, N.Y. 10005; res. Thistle Lane, Rye, N.Y. 10580; Investment Assn. of N.Y., V.P. '74, Pres. '75; Bd. of Governors, Apawamis Club, '75-; Treas., Bond Club of N.Y., '76; Lieut, (j.g.), U.S.N., June '62-June '64; Deer Island Club Corp., '70-'72; m. Nov. 28, '64, Linda Browning Leith; s. Charles Welles II, Rhys Scott; d. Leith Christina.

*BROOKS, 1877, WALTER—(*Business*)—Born Mar. 19, 1856, New York City; died Mar. 26, 1933, New York City.

*BROWN, 1896, ALEXANDER—Born Sept. 25, 1872, Torresdale, Pa.; died Oct. 24, 1916, Essington, Pa. Asst. Paymaster, U.S. Navy, Spanish-American War.

*BROWN, 1869, ALEXANDER LARDNER, M.A.—(*Business*)—Born June 21, 1847, Philadelphia, Pa.; died April 1, 1880, Burlington, N.J.

BROWN, 1968, CHRISTOPHER WALWORTH, M.A.—(*Education*)—Born Jan. 15, 1947, New York, N.Y.; English & Philosophy Teacher, Greens Farms Academy, Greens Farms, Conn. 06436; res. 26 Thomes St. Rowayton, Conn. 06853; Publishing work, Time, Inc., '68-'69; Latin Teacher, Taft School, Watertown, Conn., '71; m. Aug. 14, '71, Amy Forbes Clark.

BROWN, 1966, GEORGE CLIFFORD, M.D.—(*Medicine*)—Born Jan. 19, 1944, New Rochelle, N.Y.; Resident, Orthopedic Surgery, The Hosp. for Special Surgery, 535 E. 70th St., New York, N.Y. 10021; res. 310 E. 71st St., New York, N.Y. 10021; Maj., A.U.S., '72-'74; m. Sept. 18, '71, Kathrin Schwarzschild; d. Caitlin.

*BROWN, 1865, HENRY ARMITT, M.A.—(*Law*)—Born Dec. 1, 1844, Philadelphia, Pa.; died Aug. 21, 1878, Philadelphia, Pa.

*BROWN, 1861, HUBERT SANFORD—(*Business*)—Born Mar. 28, 1840, New Hartford, Conn.; died April 16, 1917, Beaulieu-sur-Mer, France. Lieut Col., Union Army, Civil War.

*BROWN, 1899, JAMOT—(*Business*)—Born May 18, 1877, Chicago, Ill.; died Sept. 30, 1941, Corpus Christi, Texas.

*BROWN, 1856, JOHN MASON—(*Law*)—Born April 26, 1837, Frankfort, Ky.; died Jan. 29, 1890, Louisville, Ky. Col., Cav., Union Army, Civil War.

*BROWN, 1842, JOSEPH VENEN—(*Business*)—Born Aug. 23, 1816, Conneaut, Ohio, died Jan. 22, 1893, Conneaut.

BROWN, 1944, SAMUEL TAYLOR GLOVER—(*Finance*)—Born Feb. 20, 1922, St. Louis, Mo.; V.P., Smith, Barney, Harris, Upham & Co., Inc., Mining Exchange Bldg., Colorado Springs, Colo. 80903; res. 14 Crossland Rd., Broadmoor, Colorado Springs, Colo. 80906; Davenport Coll. Class Agt. Alumni Fund, '72—; Dean Witter & Co., '47-'60; Kidder, Peabody & Co., '60-'67; Smith, Barney, Harris, Upham & Co. '67-; Lieut., U.S.N., June '43-June '46; m. Sept. 29, '62, Nancy R. Patton; s. Nicholas, Samuel Taylor Glover, Jr.; d. Anne Randolph.

BROWN, 1945W, WALTER HENDERSON—(*Finance*)—Born June 9, 1923, Philadelphia, Pa.; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 29 Crescent Rd., Madison, N.J. 07940; Vice Chmn., Exec. Com., Yale Alumni Bd.; Treas., Class '45W; Pres. Yale Club of Central N.J.; Lieut. (j.g.), U.S.N., July 1, '43-June 30, '46; m. June 3, '50, Catherine G. Barnett; s. Walter Henderson, Jr., Harold G.; d. Catherine G., Rebecca K.

BROWN, 1970, WILLIAM SCOTT, M.F.S.—(*Education*)—Born Sept. 25, 1948, Pittsburgh, Penn.; Asst. Dir. of Undergraduate Admissions, '72-, Office of Undergraduate Admissions, 1502A Yale Station, New Haven, Conn. 06520; res. Haddam Quarter Rd., Durham, Conn. 06422; m. June 23, '73, Lynda L. Lotz.

BRUBAKER, 1977, JAMES ROBERT—(*Student*)—Born Sept. 19, 1955, Hartford, Conn.; res. 18 Campsite Lane, E. Setauket, N.Y. 11733.

BRUBAKER, 1976, JOHN KIM—(*Business*)—Born Oct. 4, 1953; Hartford, Conn.; Organizational Field Mgr., Southern New England, Southwestern Co., P.O. Box 820, Nashville, Tenn. 37202; res. 18 Campsite Lane, Setauket, N.Y. 11785; to be married June '77, to Elizabeth B. Richter ('77).

*BRUCE, 1906, DONALD, M.F.—(*Forestry*)—Born July 23, 1884, Newtonville, Mass.; died Oct. 16, 1966; Ptnr., Mason, Bruce & Girard, Portland, Ore.; Capt., Eng. Corp. AEF, W.W. I; m. Oct. 4, '13, Beatrice de Bussy; s. David ('36 S., '37 F.), Roger I. ('41 S., '47 F.); d. Mary, Margaret.

BRYAN, 1971, JAMES TAYLOR—(*Student*)—Born Jan. 1, 1948, Glen Cove, N.Y.; res. 100 Shelton St., Carrboro, N.C. 27510; Law Student, North Carolina Central University; m. May 24, '75, Carroll Amanda Kyser.

BRYAN, 1955, L. THOMAS, JR., LL.B.—(*Finance*)—Born July 27, 1933, Palmerton, Penn.; V.P., First National Bank of Boston, 100 Federal St., Boston, Mass. 02110; res. 377 Main St., Concord, Mass. 01742; 1st Lieut., A.U.S., '59-'61; m. Aug. 11, '56, Janet E. Haenlein; s. Andrew T.; d. Caroline E., Amy E.

*BUCHANAN, 1889 THOMAS WALTER—(*Literary work*)—Born June 14, 1863, Albany, Vt.; died Feb. 24, 1892, West Glover, Vt.

BUCK, 1969, CHARLES HENRY, III, M.A., Ph.D.—(*Business*)—March 7, 1946, Cambridge, Mass.; Dir. of Research, Transamerica Relocation Service, 600 Montgomery St., San Francisco, Calif. 94111; res. 159 Hill Rd., Berkeley, Calif. 94708; m. Dec. 21, '70, Cheryl Lynn Ezell.

*BUCKLAND, 1857, JOSEPH PAYSON—(*Law and education*)—Born Oct. 7, 1835, Springfield, Mass.; died Oct. 25, 1879, Holyoke, Mass.

BUCKLEY, 1975, CHRISTOPHER TAYLOR—Born Sept. 28, 1952, New York, N.Y.; res. Wallack's Point, Stamford, Conn. 06902.

BUCKLEY, 1952, FERGUS REID—(*Writing*)—Born July 14, 1930, Paris, France; Novelist & Lecturer; bus. P.O. Box 702, Camden, S.C., 29020; res. Cottage #1, Kamschatka, Kirkwood Lane, Camden, S.C. 29020; 1st Lieut., U.S.A.A., '52-'54; m. 1951 Elizabeth Howell; m. 1972, Rosario (Tasa) Leguina; s. William Huntting, (x'74), Fergus Reid, Jr., Claude Langford, John Alois; d. Elizabeth Hanna; ss. Francisco de Borja Leguina, Santiago Leguina, Francisco Javier Leguina, Francisco dePaula Leguina; sd. Patricia Leguina.

BUCKLEY, 1944, JAMES LANE, LL.B., LL.D.—(*Government*)—Born March 9, 1923, New York, N.Y.; United States Senator, 304 Russell Senate Office Bldg., Washington, D.C. 20510; res. 60 Sutton Place South, New York, N.Y. 10025, and 5020 Glenbrook Rd. N.W., Washington, D.C. 20016; Assoc., Wiggin & Dana, New Haven, '49-'53; V.P., The Catawba Corp., New York City, '53-'70; Lieut. (j.g.), U.S.N.R., '43-'46; m. May 22, '53, Ann Frances Cooley; s. Peter P., James F. W., William F. II, David, L., Andrew T.; d. Priscilla L.

BUCKLEY, 1950, WILLIAM FRANK, L.H.D, LL.D., Litt.D., D.Sc.O.—(*Literary work*)—Born Nov. 24, 1925, New York, N.Y.; Pres., National Review, Inc., 150 E. 35th St., New York, N.Y. 10016; res. 73 E. 73rd St., New York, N.Y. 10021; Asst. Instr. Spanish, Yale, '47-'51; Assoc. Editor, American Mercury, '52; Editor-in-Chief, National Review, '55-; Syndicated Columnist, '63-; host TV show, "Firing Line", '66-; Chmn. of Bd., Starr Broadcasting Group, Inc.; author of several books; apptd. by Pres. Nixon to 5 member, USIA Advisory Com., '69; apptd. by the President Public Member of the U.S. delegation to 28th General Assembly of United Nations; 2d Lieut., A.U.S. Inf., '44-'46; m. Jul. 6, '50, Patricia Taylor, s. Christopher Taylor, ('76).

*BUCKNER, 1895, MORTIMER NORTON, M.A., LL.D.—(*Finance*)—Born Mar. 10, 1873, New Orleans, La.; died Feb. 25, 1942, New York City. Mbr., Yale Alumni Bd., '22-'28, and of Yale Corporation, '28-'40; Assoc. Fellow Calhoun College, '34-'42.

BULKLEY, 1953, JONATHAN D.—Add., 1154 Clement St., San Francisco, Calif. 94118.

*BULKLEY, 1923, JONATHAN OGDEN—(*Business*)—Born June 28, 1898, Bernardsville, N.J.; died Mar. 25, 1967; Pulp & Paper Distributor, N.Y.C.; Cprl. S.S.U., W.W. II m. June '36, Martha Lambert; d. Martha A., Elisabeth W.

*BULKLEY, 1865, TUZAR—(*Law student*)—Born April 27, 1840, Catskill, N.Y.; died Nov. 28, 1867, Catskill.

*BULL, 1863, CORNELIUS WADE, M.D.—(*Medicine*)—Born April 8, 1839, Tallahassee, Fla.; died May 19, 1876, Hartford, Conn. Acting Asst. Paymaster, U.S. Navy, Civil War.

*BUMSTEAD, 1855, NATHANIEL WILLIS, M.D.—(*Industrial*)—Born Mar. 19, 1834, Boston, Mass.; died Feb. 1, 1912, Boston, Mass. Capt., Inf., Union Army, Civil War.

BUNDY, 1921, FREDERICK MCGEORGE, M.B.A.—(*Finance retired*)—Born Jan. 4, 1900, Grand Rapids, Mich.; res. 102 Bridge St., Manchester, Mass. 01944; from Asst. Treas. to Chmn. of Bd., Gorton's of Gloucester, Mass., '23-'68; Pres. to Chmn. of Bd., Cape Ann Bank & Trust Co., Gloucester, Mass.; Pres. Yale Club of Boston, '44-'46; Alumni Bd., '56-'59; Pres., Natl. Fisheries Institute, '53-'54; Gloucester Chmbr. of Comm., '40-'44; Addison Gilbert Hosp., '50-52; Manchester, Mass., Housing Bd., '64-'75; 2d Lieut., A.U.S.F.A., '18; m. Nov. 10, '28, Anita Hollister; s. Frederick McGeorge, Jr. ('52), Samuel Swift, ('56), David Hollister, ('69); d. Patty Hollister (*Wray*).

*BUNDY, 1909, HARVEY HOLLISTER, LL.B.—(*Law*)—Born Mar. 30, 1888, Grand Rapids, Mich.; died Oct. 7, 1963; Ptnr., Choate, Hall & Stewart, Boston; Chmn. of Trustees, Carnegie Endowment for Internatl. Peace; Chmn., Boston Chap., Amer. Red Cross, '46-52, Asst. Sec. of State, '31-'33; Special Asst. to Sec. of War, '41-'45; Asst. Counsel, U.S. Food Adminis., '17-'19; Yale Alumni Bd., Fellow, Jonathan Edwards Coll.; Pres., Yale Club of Boston, '38-'41; m. April 17, '15, Katharine L. Putnam; s. H.H.B., Jr., ('38), William P., ('49), McGeorge, ('40); d. Harriet (*Belin*), Katharine L. (*Auchincloss*).

BUNDY, 1940, MCGEORGE, L.H.D., LL.D.—(*Finance*)—Born Mar. 30, 1919, Boston, Mass.; Pres., The Ford Foundation, 320 E. 43rd St., New York, N.Y. 10017; res. 133 E. 80th St., New York, N.Y. 10028; Lecturer, Harvard Univ., '49; Assoc. Prof., '51, Prof. of Government, '54, Dean of Faculty of Arts & Sciences, '53-'61, Harvard Univ.; Special Asst. for Natl. Security Affairs to Presidents Kennedy & Johnson, '61-'66; Pres., Ford Foundation, '66-; Capt. A.U.S., '42-'46; m. June 10, '50, Mary B. Lothrop; s. Stephen M., Andrew L., ('76), William L., James A.

BUNDY, 1939, WILLIAM PUTNAM, M.A. Hon., LL.B.—(*Journalism*)—Born Sept. 24, 1917, Washington, D.C.; Editor Foreign

Affairs (quarterly), 58 E. 68th St., New York, N.Y. 10021; res. 1087 Great Rd., Princeton, N.J. 08540; Yale Corp., '61-; Assoc., Covington & Burling, law firm, Washington, '47-'51; Vistng Prof. & Research Assoc., M.I.T., '69-'71; Columnist, Newsweek, '70-'72; Staff Dir. & Mbr. Bd. of Natl. Estimates, CIA, '51-'59; Staff Dir., President's Comm. on Natl. Goals, '60; Deputy Asst. Sec. of Defense, Internatl Security Affairs, '61-'63, Asst. Sec., '63-'64; Asst. Sec. of State for East Asian & Pacific Affairs, '64-'69; Maj., Army Signal Corps, Aug. '41-Feb. '46; Legion of Merit, British MBE; m. Jan. 30, '43, Mary Acheson; s. Michael, Christopher; d. Carol, ('80).

BUNNELL, 1927, PHIL W.—(*Finance*)—Born Sept. 15, 1903, Scranton, Penn.; bus. Harris Upham & Co., 120 Broadway, New York, N.Y.; res. East Middle Patent Rd., Greenwich, Conn. 06830; m. Dec. 29, '45, Margaret E. Nichols; s. Edward H., Phil Walls.

*BURCH, 1909, ROBERT BOYD, LL.B.—(*Law*)—Born Aug. 11, 1886, Cincinnati, Ohio; died Nov. 15, 1967; Judge, Superior Court, San Diego, County, Calif. '39-; Judge, Juvenile Court, '49-; Maj., Inf., W.W. I, AEF; m. 1911, Louise Whitaker (deceased); m. 1931, Beatrice Burnside Diffin; s. R.B.B., Jr. Richard W. (deceased); d. Frida Mary, Elizabeth B.

BURKE, 1937, CHARLES C., JR.,—(*Finance*)—Born Oct. 26, 1915, Plainfield, N.J.; bus. 2 World Trade Center, New York, N.Y. 10048; res. 26 Chapman Ave., Madison, Conn. 06443; m. Apr. 28, '39, Emily Josephine Schweizer; s. Charles Clinton; d. Mary Ellen, Nancy Earle, Sara Weller.

BURKE, 1975, JAMES E.—(*Student*)—Born Jan. 24, 1953, Cincinnati, Ohio; res. 4423 Erie Ave., Cincinnati, Ohio 45227; Law Clerk at firm of Lindhorst & Dreidame, '74-'76; Student, Univ. of Cincinnati Law School.

*BURNHAM, 1840, CURTIS FIELD, LL.B., M.A., LL.D.—(*Law*)—Born May 24, 1820, Richmond, Ky.; died Mar. 1909, Richmond. Mbr. Ky. State Legislature, 1851 and 1859-1863 (Spkr., 1863). Mbr., Ky State Senate, 1899 and 1903. Asst. Treasurer of the U.S., 1875-1876. Prof. of Law, Central University.

*BURPEE, 1883, CHARLES WINSLOW—(*Literary work*)—Born Nov. 13, 1859, Rockville, Conn.; died May 13, 1945, Hartford, Conn. Volunteer aide on Colonel's staff, 1st Conn. Inf., Spanish-American War. Col., Conn. State Guard, World War I.

*BURPEE, 1879, LUCIEN FRANCIS, LL.B.—(*Law*)—Born Oct. 12, 1855, Rockville, Conn.; died May 9, 1924, West Hartford Conn. Judge, Waterbury (Conn.). City Court, 1897-1909, and of Conn. Superior Court, '09-'21; justice, Conn. Supreme Court of Errors, '21-'24. Lieut. Col. and Judge Advocate, U.S. Vols., Spanish-American War. Pres., Military Emergency Board of Conn., and Major Gen., Conn. State Guard, World War I.

BURR, 1962, CHARLES B., II, LL.B.—(*Law*)—Born Mar. 21, 1940, Pittsburgh, Penn.; Ptnr., Obermayer, Rebman, Maxwell & Hippel, 14th Floor, Packard Bldg., Philadelphia, Penn. 19102; res. 425 Huston Rd., Radnor, Penn. 19087; Philadelphia Region Div. Chmn., Alumni Fund, '66-'69; Mbr. Admissions Com. Yale Club of Philadelphia, '67-'70; Asst. U.S. Attny., Eastern Distr. of Penn., '69-'71; Mbr., Bd. of Dir., Citizens Crime Comm. of Philadelphia, '76-; Solicitor, Radnor Township Zoning Hearing Bd., '75-; m. Aug. 28, '65, Mary Ray Peck; d. Julia Stuyvesant, Elizabeth Crawford.

*BURR, 1834, WILLIAM SHEDDEN, M.A.—(*Industrial*)—Born June 7, 1814, Richmond, Va.; died Dec. 17, 1858, Richmond.

*BURRELL, 1881, JOSEPH DUNN, M.A., D.D.—(*Ministry*)—Born Dec. 12, 1858; Freeport, Ill.; died April 13, 1930, Barcelona, Spain. Chaplain (Capt.), American Red Cross, World War I (Foreign Service).

BURTT, 1915, EDWIN ARTHUR, Ph.D., L.H.D.—(*Education retired*)—Born Oct. 11, 1892, Groton, Mass.; res. 227 Willard Way, Ithaca, N.Y. 14850; Philosophy Staff, Columbia, '21-23, Univ. of Chicago, '23-'32, Cornell, '32-'60, Sage Prof. of Philosophy at retirement in 1960; m. Sept. 20, '16, Mildred Caroline Camp; m. June 16, '51, Marjorie Frances Murray; d. Edith J., Dorothy N., Virginia H., Winifred (*Brinster*).

BUSH, 1967, DEREK G.—Born Oct. 15, 1943, Buenos Aires, Argentina, S.A.; m. June 15, '68, Emily Blair Chewning.

BUSH, 1948, GEORGE HERBERT WALKER, LL.D.—(*Government*)—Born June 12, 1924, Milton, Mass.; Dir., Central Intelligence Agency, (C.I.A.), Washington, D.C. 20505; res. 5161 Palisade Lane N.W., Washington, D.C. 20016; Pres. & Chmn., Zapata Off-Shore Co., '58-'66; Mbr., U.S. Congress, '67-'70; U.S. Permanent Rep. to United Nations (Ambassador) '71-'72; Chmn., Repub. Natl. Com., '73-'74; Chief U.S. Liaison Officer, Peking Peoples Republic of China, '74-'75; Lieut. (j.g.),

U.S.N., '42-'45; D.F.C., 3 Air Medals; m. Jan. 6, '45, Barbara Pierce; s. George W., ('68), John E., Neil M., Marvin P.; d. Dorothy W.

BUSH, 1968, George W.—Born July 6, 1946, New Haven, Conn.; res. 5521 Lincrest, Houston, Texas 77056.

BUSH, 1922, James S.—Born Apr. 11, 1901, Milwaukee, Wisc.; m. Aug. 14, '48, Janet Newbold; s. Samuel Prescott; d. Mary Livingstone, Caroline Patterson, Flora Sheldon.

BUSH, 1953, Jonathan J., M.B.A.—(*Investments*)— Born May 6, 1931, Greenwich, Conn.; Pres., J. Bush & Co., 76 Beaver St., New York, N.Y. 10005; res. 530 E. 86th St., New York, N.Y. 10028; Co-Chmn., 20th Reunion Special Gifts, Bd. of Dir. Y.A.F.; Dir., Russel Reynolds Associates; Trustee, Boys Club of New York; 1st Lieut, A.U.S., '53-'55; m. Dec. 2, '67, Josephine Bradley; s. Jonathan J., Jr., William Hall.

°BUSH, 1917, Prescott S., M.A. LL.D.—(*Finance*)—Born May 15, 1895, Columbus, Ohio.; died Oct. 8, 1972, New York, N.Y.; Greenwich Rep. Town Meeting, '32-'52 (Moderator, '35-'52); Yale Corporation, 44-'58; U.S. Senator (R. Conn.), '52-'63; formerly Ptnr., Brown Brothers Harriman & Co., N.Y.; m. Aug. 6, '21, Dorothy Walker; s. P.S.B., Jr. ('44), George, ('48), Jonathan, ('53), William T., ('60); d. Nancy (*Ellis*).

°BUSHNELL, 1874, Samuel Clarke, B.D.—(*Ministry*)—Born Mar. 8, 1852, New Haven, Conn.; died April 27, 1930, New Haven.

°BUSHNELL, 1865, William Benedict—(*Industrial*)—Born Mar. 4, 1845, Quincy, Ill.; died July 5, 1916, Manitowoc, Wis.

°BUTLER, 1857, Francis Eugene, M.A.—(*Ministry*)—Born Feb. 7, 1825, Suffield, Conn.; died May 4, 1863, Suffolk, Va., Chaplain, Inf., Union Army, Civil War.

°BUTLER, 1863, John Haskell—Born Aug. 31, 1841, Middleton, Mass.; died Sept. 8, 1917, East Somerville, Mass. Mbr., Mass. State Legislature, 1880-1881. Served in U.S. Navy, Civil War.

°BUTTERWORTH, 1895, Frank Seiler—(*Finance*)—Born Sept. 21, 1872, Maineville, Ohio; died Aug. 21, 1950, Mt. Carmel, Conn.; Conn. State Senator, '07-'09; 2d Lieut., Chemical Warfare Service, World War I (A.E.F.).

°BUTTLES, 1842, Albert Barnes, LL.B., M.A.—(*Law*)—Born April 25, 1822, Columbus, Ohio; died Jan. 27, 1872, Columbus.

C

°CABLE, 1895, BENJAMIN STICKNEY, LL.B.—(*Law*)—Born Sept. 24, 1872, Rock Island, Ill.; died Sept. 27, 1915, near Ipswich, Mass. Asst. Sec. of Commerce and Labor of the U.S., '09-'13.

CALDWELL, 1933, SAMUEL SMITH, JR., J.D.—(*Industrial*)—Born June 20, 1910, Omaha, Nebraska; Pres., W. R., Willett Lumber Co., Inc., 849 Starks Bldg., Louisville, Ky. 40202; res. 1510 Hobbs Park Rd., Anchorage, Ky., 40223; Louisville Enrollment Scholarship Com., '46-'76; 1933 Regional Class Agt.; Ky. Chmn., Campaign for Yale, '76; School Bd. Anchorage, Ky. Public Schools, 14 years; Mbr. of Bd. & Past Pres., Children's Agency of Louisville; Sgt., A.U.S. Inf., Sept. '43-Oct. '45; Bronze Star; m. Apr. 26, '41, Frances Cushing Bixby; s. Harold McMillan Bixby, Samuel Smith, III, ('66), Edgar Morsman, Henry Adams.

°CALHOUN, 1891, GOUVERNEUR—(*Business*)—Born Sept. 11, 1868, Chicago, Ill.; died May 15, 1916, St. Louis, Mo.

°CALLAHAN, 1899, HUGH ANDREW—(*Insurance*)—Born Jan. 24, 1877, Chicago, Ill.; died Jan. 16, 1935, Phoenix, Ariz. Chief Clerk, Ariz., House of Representatives, '17-'18; Sec. Bd. Directors of State Institutions, '18-'19; City Clerk and City Magistrate, Phoenix, '22-'27; Mbr., State House of Representatives, '30-'33.

°CAME, 1849, CHARLES GREEN—(*Literary work*)—Born Sept. 26, 1826, Buxton, Me.; died Jan. 16, 1879, Boston, Mass. Mbr., Maine State Legislature, 1852-1855.

°CAMP, 1907, ARTHUR GOODWIN—(*Insurance*)—Born Jan. 14, 1884, Winsted, Conn.; died Feb. 8, 1949, Litchfield, Conn.

°CAMP, 1850, CLINTON—(*Theological student*)—Born Dec. 19, 1829, Trumansburg, N.Y.; died May 17, 1853, Pisa, Italy.

°CAMP, 1900 STUART BROWN—(*Industrial*)—Born July 3, 1876, Winsted, Conn.; died Sept. 25, 1924, Winsted.

°CAMP, 1880, WALTER, M.A.—(*Industrial*)—Born April 7, 1859, New Britain, Conn.; died Mar. 14, 1925, New York City, Head advisory football coach at Yale, 1888-1912; Chmn., University Athletic Assn.; Chmn., Intercollegiate Football Rules Com.

many years. Chmn., Athletic Div., Navy Comm. on Training Camp Activities, and dir. of athletics, Naval Training Camps, World War I.

°CAMPBELL, 1919, ALLAN BARNETTE—(*Industrial*)—Born Sept. 2, 1897, New York City; died Jan. 28, 1921, Parkersburg, Pa. 2d Lieut., F.A., World War I.

°CAMPBELL, 1909, CHARLES SOUTTER, B.D.—(*Industrial*)—Born Aug. 2, 1887, Cedar Rapids, Iowa; died Sept. 21, 1954, New Haven, Conn.; Chmn. Advisory Bd., Yale Christian Assn.

°CAMPBELL, 1849, JAMES, LL.B.—(*Transportation*)—Born April 4, 1828, Mobile, Ala.; died at Houston, Texas.

°CAMPBELL, 1882, JAMES ALEXANDER, LL.B.—(*Law*)—Born Mar. 16, 1860, St. Louis, Mo.; died July 13, 1890, Paris, France.

°CAMPBELL, 1878, TREAT—(*Law*)—Born Jan. 23, 1855, Springfield, Ill.; died Feb. 12, 1908, New York City.

°CAMPBELL, 1856, WILLIAM HARVEY WILLSON—(*Literary work*)—Born Oct. 23, 1833, Boston, Mass.; died Dec. 9, 1892, New Haven, Conn.

CANGELOSI, 1972, RUSSELL JOSEPH—Born June 9, 1950, Chicago, Ill.; res. 529 South 6th Ave. Tucson, Ariz. 85701.

CAPOZZALO, 1976, DOUGLAS DANIEL—(*Theatre*)—Born Dec. 6, 1953, Wiltshire, England; Actor, The New Stage, 6 Deerfield Rd., Asheville, N.C. 28803; res. 26201 S.W. 122nd Court, Homestead, Fla. 33030: The New Stage, Summer, '76.

CAPRON, 1960, PAUL—(*Business*)—Born Jan. 5, 1938, Cincinnati, Ohio; Systems Engineer, IBM. Corp., 211 Montague St., Brooklyn, N.Y. 11201; res. 315 E. 65th St., Apt. 8L, New York, N.Y. 10021.

°CAPRON, 1853, SAMUEL MILLS, M.A.—(*Education*)—Born May 15, 1832, Uxbridge, Mass.; died Jan. 4, 1874, Hartford, Conn.

CAREY, 1945W, JOHN, LL.B., LL.M.—(*Law*)—Born June 11, 1924, Philadelphia, Penn.; Ptnr., Coudert Brothers, 200 Park Ave., New York, N.Y. 10017; res. 860 Forest Ave., Rye, N.Y. 10580; Adjunct Asst. Prof., N.Y.U. Law School, '68-'71; Asst. Distr. Attny., Philadelphia, '52-'54; City Councilman, Rye, '63-'67, '71-'73; Mayor, Rye, '73-; Lieut. (j.g.), U.S.N., '42-'46; m. Feb. 24, '51, Patricia F. Frank; s. Henry F., ('75), John Jr., ('78), Douglas; d. Jennifer P.

°CARLISLE, 1901, JAMES MANDEVILLE, LL.B.—(*Law and finance*)—Born July 30, 1879, Richmond, Va.; died Nov. 10, 1922, Washington, D.C., Maj., Adj.-General's Dept. World War I (A.E.F.)

CARLSEN, 1957, RAY A., M.D.—(*Medicine*)—Born Jan. 25, 1935, Denver, Colo.; Physician (Dermatologist), 1551 116th N.E., Bellevue, Wash. 98004; res. 12656 N.E. 5th, Bellevue, Wash. 98005; Little League Coach; Capt., U.S.AF., July '63-June '65; Airman's Medal; m. July 2, '63, Judith L. Claspy; s. Scott B., Jody E.

°CARPENTER, 1902, GEORGE BOONE—(*Farming*)—Born May 7, 1879, Chicago, Ill.; died Feb. 14, 1961; m. June 8, '08, Rhea Morrill.

°CARPENTER, 1859, ROBERT JOHN—(*Industrial*)—Born Oct. 13, 1837, Demorestville, Ont., Canada; died Feb. 2, 1879, Berlin, N.H.

°CARTER, 1878, CHARLES FRANCIS, D.D.—(*Ministry*)—Born June 14, 1856, Chicopee Falls, Mass.; died Feb. 26, 1928, Hartford, Conn. Mbr., Mass. State Council of Defense, World War I.

°CARTER, 1837, EDWIN OSGOOD, M.A.—(*Law*)—Born Oct. 30, 1815, Brimfield, Mass.; died Jan. 20, 1881, Chicopee Falls, Mass.

°CARTER, 1919, FREDERIC DEWHURST, LL.B.—(*Finance*)—Born April 10, 1897, Lexington, Mass.; died Aug. 24, 1959, Greensboro, Vt.; 1st Lieut., F.A., World War I; former Pres., Yale Westchester Alumni Assn., and Yale Glee Club Assn.; Mbr. Alumni Bd.

°CARTER, 1915, LYON—(*Finance*)—Born Feb. 21, 1892, Burlington, Vt., died Sept. 20, 1950, Hyannis, Mass.; 1st Lieut., C.A.C., World War I; V.P., Yale Club of Boston.

°CARTER, 1895, WALTER FREDERICK, LL.B.—(*Law*)—Born Dec. 10, 1873, Brooklyn, N.Y.; died Aug. 7, 1946, Brooklyn, N.Y.

°CASE, 1894, GEORGE BOWEN, LL.B.—(*Law*)—Born June 9, 1872, Kansas City, Mo.; died July 19, 1955, Englewood, N.J.; Mbr., Red Cross War Council, World War I.

CASE, 1970, PHILIP BENHAM, JR.,—(*Industrial*)—Born Jan. 10, 1948, Montgomery, West Va.; Independent Oil & Gas Producer, P.O. Box 47, Marietta Ohio 45750; res. 314 Sixth St., Marietta, O. 45750.

°CASKEY, 1865, Taliaferro Franklin, M.A., D.D.—(*Ministry*) —Born Aug. 29, 1838, near Fort Black, Drake County, Ohio; died Apr. 22, 1919, Southport, Conn.

CASSCELLS, 1976, Christopher Dyson—(*Student*)—Born Mar. 18, 1953, Wilmington, Del.; bus. Box 26, Montchanin, Del. 19170; res. 120 A Harmon St., Charlottesville, Va. 22901; Medical Student, Univ. of Virginia; A.Y.A., Class of 1975.

CASSEL, 1958, John A.—(*Business*)—Pres., Selfin Corp., Vineyard Haven, Mass.; res. (Oct.-May) R.F.D. #1, East Fairfield, Vt., (June-Sept.) Vineyard Haven, Mass.

CAULKINS, 1943, George Peck, Jr.—(*Business*)—Born Mar. 25, 1921, Grosse Pointe, Mich.; Chmn., Caulkins Indiantown Citrus Co., 2100 Colorado State Bank Bldg., 1600 Broadway, Denver, Colo. 80202; res. 435 Westwood Dr., Denver, Colo. 80206; Regional Chmn., Campaign for Yale; Lieut. U.S.N.R., '42-'45; m. Mar. 2, '62, Eleanor Newman; s. George Peck, III, John Newman, David Ingersoll, Maxwell Oliver Bruce; d. Mary Ingersoll.

CAULKINS, 1948, John Erwin—(*Finance*)—Born Aug. 5, 1923, Grosse Pointe, Mich.; Treas., H. J. Caulkins & Co., 505 Capitol Park Bldg., 1145 Griswold St., Detroit, Mich.; res. 33 Willow Lane, Grosse Pointe Farms, Mich. 48236; m. Dec. 28, '46, Patricia Margaret Wells; s. John W.

°CHADWICK, 1903, George Brewster—(*Education*)—Born June 11, 1880, Brooklyn, N.Y.; died Oct. 17, 1961; Capt. Chemical Warfare Service, W.W. I.

CHAFEE, 1947, John Hubbard, LL.B., LL.D.—(*Law*)—Born Oct. 22, 1922, Providence, R.I.; Attny., 2700 Hospital Trust Tower, Providence, R.I. 02903; res. Ives Rd., East Greenwich, R.I. 02818; Corporation, '72; R.I. House of Representatives, '57-63; Governor of R.I., '63-'69; Secretary of the Navy, '69-'72; U.S. Senator, R.I. '77-; Capt. USMC, '42-'45, '51-'52; m. Nov. 4, '50, Virginia B. Coates; s. Zechariah, Lincoln D., John H., Jr., Quentin G.; d. Trissie (dec.), Georgia deF.

°CHAMBERLAIN, 1862, Daniel Henry, LL.B., M.A., LL.D.—(*Law*)—Born June 23, 1835, West Brookfield, Mass.; died April 13, 1907, Charlottesville, Va. Attny. Gen., S.C., 1868-1872. Gov. of S.C., 1874-1876. 1st Lieut., Cav., Union Army, Civil War.

°CHAMBERLAIN, 1863, LEANDER TROWBRIDGE, M.A., D.D.—(*Ministry*)—Born Sept. 26, 1837, Brookfield, Mass.; died May 9, 1913, Pasadena, Calif. Judge Advocate, U.S. Navy, Civil War.

°CHAMBERLAIN, 1861, ROBERT LINTON, M.A.—(*Law*)—Born May 13, 1838, Johnstown, Pa.; died Aug. 11, 1888, Santa Barbara, Calif. Priv., Inf., Union Army, Civil War.

°CHAMBERS, 1843, WILLIAM LYON—(*Business*)—Born in Jan., 1823, Chambersburg, Pa.; died April 26, 1889, Chambersburg.

°CHANDLER, 1839, WILLIAM HENRY, M.A.—(*Farming*)—Born April 14, 1815, Providence, R.I.; died May 13, 1888, Thompson, Conn. Mbr., Conn. State Legislature, 1847, and Conn. State Senate, 1867-1871.

°CHAPIN, 1877, CHARLES FREDERICK—(*Literary work*)—Born Aug. 3, 1852, South Hadley Falls, Mass.; died Oct. 27, 1926, Waterbury, Conn.

°CHARNEY, 1865, CHARLES MEIGS—Born Oct. 20, 1845, Philadelphia, Pa.; died July, 1931, Gainesville, Ga.

°CHASE, 1850, HENRY—(*Law*)—Born Oct. 10, 1827, Lyndon, Vt.; died Feb. 12, 1904, Calais, Me. Mbr., Vt. State Legislature, 1865.

°CHAUVENET, 1840, WILLIAM, LL.D.—(*Education*)—Born May 24, 1820, Milford, Pa.; died Dec. 13, 1870, St. Paul, Minn. Prof. of astronomy and mathematics and dir. of the Observatory, U.S. Naval Academy, Annapolis, 1845-1859; Prof. of astronomy and mathematics, Washington Univ., St. Louis, 1859-1869; also chancellor, 1862-1869.

°CHENEY, 1898, CLIFFORD DUDLEY—(*Industrial*)—Born Jan. 3, 1877, South Manchester, Conn.; died Sept. 6, 1948, Noank, Conn. Capt. Cav., Mexican Border, 1916; Lieut. Col., Ord. Dept., World War I (A.E.F.)

°CHENEY, 1900, FRANK DEXTER—(*Industrial*)—Born Oct. 16, 1878, South Manchester, Conn.; died Nov. 20, 1955, Manchester, Conn.; Mbr., Conn. State Council of Defense, World War I.

°CHENEY, 1892, HOWELL, M.A.—(*Industrial*)—Born Jan. 1, 1870, South Manchester, Conn.; died Aug. 21, 1957, St. Petersburg, Fla.; Mbr., Com. on Consolidation of State Comms., '07, of State Bd. of Education, '09-'19, Conn. Unemployment Com.; Chmn., Comm. on State Prison Systems; Mbr., Yale Corp., '13-'38; Chmn. War Savings Com. for Conn., World War I.

°CHENEY, 1892, KNIGHT DEXTER, JR.—(*Industrial*)—Born June 1, 1870, South Manchester, Conn.; died Aug. 17, 1910, South Manchester.

°CHENEY, 1901, PHILIP—(*Industrial*)—Born May 8, 1878, South Manchester, Conn.; died Jan. 21, 1848, Hartford, Conn. Capt. Inf., World War I (A.E.F.).

CHENEY, 1958, RONALD LAWTON, LL.B.—(*Law*)—Born Apr. 27, 1936, Clinton, Mass.; Attny. 3230 Dirksen Bldg., Washington, D.C.; res. 143 11th St., N.E., Washington, D.C. 20002; Alumni Schools Com., Boston, '67-'69; Priv. Practice, '66-'69; Exec. Dir. Cambridge & Somerville, Mass., Legal Services, '69-'72; Securities & Exchange Comm., '72-'75; Congressional Fellow, Am. Political Science Assn., '75-'76; 1st Lieut., A.U.S. Jan. 1, '62-Mar. 16, '65; Good Conduct Medal; m. Mar. 1, '69, Beverly Sargent; s. Nicholas; d. Felicia, Rebecca.

°CHENEY, 1904, RUSSELL—(*Art*)—Born Oct. 16, 1881, Manchester, Conn.; died July 12, 1945, Portsmouth, N.H. Mbr., Conn. Academy of Arts and Sciences.

°CHENEY, 1901, THOMAS LANGDON—(*Industrial*)—Born Nov. 20, 1880, South Manchester, Conn.; died Oct. 23, 1916, Colorado Springs, Colo.

°CHENEY, 1896, WARD—(*Literary work*)—Born May 26, 1875, South Manchester, Conn.; died Jan. 7, 1900, Imus, Luzon. 1st Lieut., Inf., U.S. Army, Spanish-American War.

°CHENEY, 1922, WARD—(*Industrial*)—Born Nov. 3, 1899, South Manchester, Conn.; died Jan. 22, 1963; formerly Pres., Cheney Bros., Textile Mfrs.; Pvt., OTC, W.W. I; Cmdr., USN, W.W. II; Chmn., Com. for Dept. of Fine Arts at Yale; m. Jan. 1, '26 Frances Davison; d. Alessandra Appleby (dec.) Anne Von Ziegesar.

°CHESTER, 1875, CARL THURSTON, LL.B.—(*Law*)—Born Aug. 1, 1853, Norwich, Conn.; died Aug. 29, 1912, Buffalo, N.Y.

°CHILD, 1855, LINUS MASON, LL.B., M.A.—(*Law*)—Born Mar. 14, 1835, Southbridge, Mass., died Jan. 21, 1898, Boston, Mass. Mbr., Mass. State Legislature, 1868-1869.

CHILDS, 1962, HENRY C.—(*Writing*)—Born June 10, 1941, New York, N.Y.; Writer, bus. & res. Painter Ridge Rd., Washington, Conn. 06793; m. Oct. 18, '69, Charlotte Mary Pavek.

CHILDS, 1976, STARLING W.—Born Oct. 30, 1953, Winsted, Conn.; res. Windrow Rd., Norfolk, Conn. 06058.

CHIMENTI, 1962, NORMAN VICTOR, LL.B.—(*Law*)—Born Sept. 16, 1940, Chicago, Ill.; V.P. & General Counsel, Kroehler Mfg. Co., 222 E. Fifth Ave., Naperville, Ill. 60540; res. 439 N. Bruner St., Hinsdale, Ill. 60521; Chicago Bar Assn.; Labor Law Com., Illinois Manufacturers' Assn.; Sgt., U.S.M.C.R., Sept. '63-Sept. '68; American Spirit Honor Medal; m. Aug. 21, '65, Barbara Jean Morgan; s. Chad Morgan, Derek Dante.

CHITTENDEN, 1939, GEORGE HASTINGS—(*Finance*)—Born June 12, 1917, Pelham Manor, N.Y.; Senior Advisor on Internatl. Business, Merrill Lynch & Co., Inc., One Liberty Plaza, New York, N.Y. 10006; res. 322 Highland Rd., Rye, N.Y. 10580; Sec. of Class of '39, '48-'53; Mbr. Class Exec. Com.; Chmn., 10th & 25th Reunion Alumni Fund Campaigns; Morgan Bank & Morgan Guaranty Trust Co. of New York, '39-'76, (Senior V.P., '65-'76); Pres., Bankers Assn. for Foreign Trade, '62-'63; Dir.: Morgan Guaranty Internatl. Finance Corp., J. P. Morgan of Canada, Ltd., Toronto; past Pres., Forex Club of America; Trustee: United Hosp., Portchester, N.Y., '76-, Vassar Coll., '65-'73, Rye Country Day School, '56-'65; Chmn., Rye United Fund, '58-'59; Capt., U.S.A.F., '42-'46; Dir., RTA; m. March 20, '43, Laura J. Carey; s. George H. ('66), Paul W.; d. Carey (*Curtis*), Laura (*Brooks*).

•CHOUTEAU, 1942, RENE AUGUSTE—(*Student*)—Born July 7, 1921, St. Louis, Mo.; died Sept. 5, 1944, Pensacola, Fla.; 1st Lieut., U.S.M.C. (Aviation), World War II.

•CHRISTIAN, 1901, HENRY HALL—Born May 2, 1878, Minneapolis, Minn.; died July 8, 1905, Flagstaff, Ariz.

CIRIE, 1964, JOHN A., M.B.A.—(*Marine Corps*)—Born May 2, 1942, New Haven, Conn.; Maj., U.S. Marine Corps, Hqts. U.S. Marine Corps (Code MMOA), Washington, D.C., (mail address); res. 15 Highland St., Guilford, Conn. 06437; Maj., U.S.M.C., '64-; Silver Star, Bronze Star, Navy Commendation Medal; m. Oct. 17, '63, Ann Gawlak; d. Cybele Ann, Andrea Mary, Amanda Brooke.

•CLARK, 1864, ALBERT BARNES—(*Farming*)—Born Aug. 24, 1842, LaPorte, Ind.; died April 24, 1883, Orange, Calif. Asst. Paymaster, U.S. Navy, Civil War.

•CLARK, 1895, ALEXANDER RAY, LL.B.—(*Finance*)—Born Dec. 26, 1872, Cincinnati, Ohio; died Mar. 19, 1925, New York City.

CLARK, 1909, Avery Artison—(Industrial)*—Born Dec. 4, 1883, Middlebury, Conn. died June 22, 1969; formerly engaged in sugar mfg.; m. July 2, '52, Jean Anderson; ss. William R. Johnson, ('42).

*CLARK, 1871, Charles Hopkins, M.A., Litt.D.—(*Literary work*)—Born April 1, 1848, Hartford, Conn.; died Sept. 5, 1926, Hartford. Mbr., Yale Corp., 1910-1925.

CLARK, 1972, Douglas Wells, Ph.D.—(*Science*)—Born Oct. 26, 1950, Richland, Wash.; Mbr. Research Staff, Computer Sciences Laboratory, Xerox Palo Alto Research Center, 3333 Coyote Hill Rd., Palo Alto, Calif. 94304; res. 243 Seale Ave., Palo Alto, Calif. 94301.

CLARK, 1965, Gerald H.—(*Theater*)—Born Oct. 11, 1943, Dallas, Texas; Actor, Triplex Productions, 9000 Sunset Blvd., Los Angeles, Calif. 90069; res. 817 Westbourne, #19, Los Angeles, Calif. 90069.

*CLARK, 1903, Harold Terry, LL.B., LL.D., L.H.D., HH.D.—(*Law*)—Born Sept. 4, 1882, Derby, Conn.; died May 31, 1965; Asst. to Chmn., U.S. War Industries Bd., '18; Amer. Peace Comm., Paris, '19; Yale Class Fund Com.; Class Agt., '59-'60; m. Nov. 22, '11, Mary Sanders (dec.); m. April 6, '40, Marie Odenkirk; s. David Sanders, ('36), John Terry, ('41), William S.; d. Mary Ermina (*Schultz*), Annie Otis (*Reece*), Margaret Sanders (*Lester*).

CLARK, 1957, R. Inslee, Jr., M.S.S., M.A.—(*Education*)—Born June 8, 1935, Brooklyn, N.Y.; Headmaster, Horace Mann School, New York, N.Y.; res. 258 W. 246th St., Bronx, N.Y. 10471.

CLARK, 1965, Stephen E., J.D.—(*Law*)—Born June 17, 1943, Oakland, Calif.; Attny., Collette & Ziegler, Suite #4350, 555 California St., San Francisco, Calif. 94104; res. 29 Martling Rd., San Anselmo, Calif.; San Francisco Yale Club Bd. of Dir., '72-; San Francisco Yale Club Alumni Schools Com., '73-'75; Law Offices of Athearn, Chandler & Hoffman, San Francisco, '71-'74; 1st Lieut., A.U.S., '69-'71; m. Aug. 15, '65, Etta Inge Mueller; d. Nina Curtis, Nicki Marie Louise.

CLARK, 1961, Thomas W.—(*Industrial*)—Born Feb. 7, 1939, Buffalo, N.Y.; Sales Mgr., Moser Bag Co., Cleveland, Ohio; res. 174 S. Main St., Chagrin Falls, Ohio 44022; m. March 25, '61, Anne Buffington Fager; s. Thomas W., Jr.; d. Mary M.

CLARK, 1945W, WILLIAM JUDKINS—(*Business*)—Born July 20, 1924, Savannah, Ga.; Senior V.P., Plastics & Additives Div., Ciba-Geigy Corp., 444 Saw Mill River Rd., Ardsley, N.Y. 10502; res. 363 Rowayton Ave., Rowayton, Conn. 06853; Alumni Bd., '68-'72; Dir., Alumni Fund, '73-'78; Chmn., Hale & Yale Associates, '74-'76; Chmn., Class Council, Yale Class of 1945W, '75-; V.P., Owens-Corning Fiberglas Corp., '59-'63; Pres., Ciba Products Co., '66-'71; 1st Lieut., Pilot, U.S.A.F., '43-'46; Air Medal, Pacific Theater; Dir. Deer Island Club Corp., '57-'63; m. Sept. 4, '50, Mary DeMoville Thompson; s. William Judkins, Jr.; d. Catherine Judkins, Mary Hamilton.

*CLARKE, 1875, THOMAS SLIDELL, LL.B.—(*Law*)—Born Mar. 25, 1854, New Orleans, La.; died Aug. 10, 1883, St. Paul, Minn.

*CLARKE, 1849, WILLIAM BARKER, M.A.—(*Ministry*)—Born Dec. 27, 1829, Gibara, Cuba; died Spt. 18, 1905, Durham, Conn. College pastor and Chittenden Prof. of divinity, Yale University, 1863-1866.

CLAUDE, 1952, ABRAM, JR.—(*Finance*)—Born Dec. 14, 1927, Washington, D.C.; Investment Banker, Senior V.P., Dillon, Read & Co., Inc., 46 William St., New York, N.Y. 10005; res. Guard Hill Rd., Bedford, N.Y. 10506; Yale Development Bd., '67-'72; Treas., Yale Club of New York City, '64-'72; Com. for Nomination of Alumni Fellows, '69-'72, Chmn. '72; Dir., Mbr. of Exec. Com., National Aviation Corp.; Trustee, Westminster School, Chmn., '69-'74; Trustee, Lenox Hill Hosp.; Dir. & Pres., National Industries for the Blind; Trustee, Phipps Houses; Sgt., A.U.S., Sept. '46-Mar. '48; m. Dec. 29, '51, Mary Hanlon Dee (divorced '72); m. Sept. 30, '72, Elizabeth James Thorson; s. Abram, Andrews; d. Lisa; ss. Robert Thorson; sd. Carolyn, Martha, Virginia Thorson.

CLAY, 1964, ALEXANDER STEPHENS, LL.D.—(*Law*)—Born Oct. 23, 1942, Atlanta, Ga.; Attny., Ptnr. Kilpatrick, Cody, Rogers, McClatchey & Regenstein, 3100 The Equitable Bldg., Atlanta, Ga. 30303; res. 4650 Brook Hollow Rd., Atlanta, Ga. 30327; A.Y.A., '72-'76; m. Sept. 5, '64 Helen Harrison Straus; s. Alexander, Harrison; d. Andrea.

*CLAY, 1918, CASSIUS MARCELLUS, LL.B.—(*Farming, Law*)—Born Mar 2, 1895, Bourbon City, Ky.; died Nov. 26, 1959, Lexington, Ky.; Gen. Solicitor B.&O. R.R., '41-'45; Asst. Gen. Counsel, Reconstruction Finance Corp., Washington, D.C., '33-

'41; Ky. State Legislature, '53-'55; Ky. Senate, Pres., *pro tem*, '57; 1st Lieut., F.A., World War I; m. Nov. 20, '22, Emily Harvie Thomas; m. July 30, '35, Miriam Blossom Berle; s. C.M.C., Jr., Landon T., Harris, Rudolph Berle, ('60); d. Mary Augusta.

•CLAY, 1859, GREEN, LL.B., M.A.—(*Farming*)—Born Feb. 11, 1839, near Paris, Ky.; died Oct. 31, 1912, Mexico, Mo. Sec., U.S. Legation, Russia, 1861-1862, and Italy, 1862-1868. Mbr., Miss. State Legislature Mbr., Mo. State Senate, 1891, and Mo. State Legislature, 1902, Col., Union Army, Civil War.

CLAY, 1963, JESSE LORING—Born May 3, 1941, Honolulu, Hawaii; res. 1205 Ridgecrest Drive S.E., Albuquerque, New Mexico 87108.

CLAY, 1965, TIMOTHY J., J.D.—(*Law*)—Born Apr. 19, 1943, Los Angeles, Calif.; Lawyer Kevorkian & Caldwell, 46 Avenue D'Iena, 75116 Paris, France.

CLUCAS, 1939, LOWELL MELCHER—(*Finance*)—Born July 14, 1917, Bridgeport, Conn.; Principal, Harlan & Clucas, Inc., Investor Relations Consultants, 155 Montgomery St., San Francisco, Calif. 94104; res. 1794 Oakdell Drive, Menlo Park, Calif. 94025; Dir. of Corporate Communications, Crown Zellerbach Corp., San Francisco, '58-'72; Dir.: Calif. Life Corp., Los Angeles, '72-, KQED, Inc., Bay Area Public TV Station, '60-'72, San Francisco Planning & Urban Renewal Assn., '60-'72; Mbr. & Officer, San Francisco Chapter, Natl. Investor Relations Institute; Trustee, World Affairs Council of Northern Calif., '58-'72; Mbr., U.S. Delegation Staff, UN General Assembly, New York, '50-'51, & Paris, '51-'52; U.S. Public Affairs Officer for Bavaria, '52-'54; Office of War Information, '42-'45; m. March 29, '41, Margaret Hunter; s. Lowell M. III; d. Aileen.

•COBB, 1855, HENRY NITCHIE, M.A., D.D.—(*Ministry*)—Born Nov. 15, 1834, New York City; died April 17, 1910, East Orange, N.J.

•COCHRAN, 1894, THOMAS, LL.D., Litt.D.—(*Finance*)—Born Mar. 20, 1871, St. Paul, Minn.; died Oct. 29, 1936, Bedford, N.Y.

•COE, 1862, EDWARD BENTON, D.D., LL.D.—(*Ministry*)—Born June 11, 1842, Milford, Conn.; died Mar. 19, 1914, New York City. Street Prof. of modern languages, Yale University, 1864-1879.

°COE, 1872, ROBERT ELMER—(*Student*)—Born Dec. 13, 1850, New York City; died Nov. 12, 1872, New Haven, Conn.

°COFFIN, 1866, EDMUND, LL.B.—(*Law*)—Born Nov. 8, 1844, New York City; died Dec. 26, 1928, New York City.

°COFFIN, 1897, HENRY SLOANE, B.D., M.A., Litt.D., D.D., LL.D., D.J.L.—(*Ministry*)—Born Jan. 15, 1877, New York City; died Nov. 25, 1954, Lakeville, Conn.; Mbr., N.Y. City Comm. on Racial and Rel. Tolerance, '44-'46; N.Y. State Comm. on Birth Control Legislation; Moderator, Gen. Assembly of the Presb. Ch., '43-'44; Y.M.C.A. Chaplain, World War I (Fgn. Service); Mbr., Yale Corp., '21-'45; Lyman Beecher Lecturer, Yale Div. School, '17.

°COFFIN, 1868, JAMES, M.A.—(*Finance*)—Born Oct. 13, 1847, New York City; died Dec. 28, 1906, Ross, Calif.

°COFFIN, 1900, WILLIAM SLOANE, M.A.—(*Business*)—Born April 15, 1879, New York City; died Dec. 16, 1933, New York City. Pres. Metropolitan Museum of Art, '31-'33; Y.M.-C.A. work, World War I (Fgn. service).

COFFIN, 1949, WILLIAM SLOANE, JR., B.D., D.D.—(*Ministry*) Born June 1, 1924, New York, N.Y.; bus. 258 Yale Station, New Haven, Conn. 06520; Chaplain, Yale University '58-'75; m. Dec. 13, '56, Eva Anna Rubinstein; m. Aug. 23, '69, Harriet H. Gibney; s. Alexander, David; d. Amy; ss. Phillip Alexander Gibney; sd. Margot Gibney.

°COFFING, 1834, CHURCHILL, M.A.—(*Law*)—Born Nov. 13, 1813, Salisbury, Conn.; died May 17, 1873, Chicago, Ill.

COGSWELL, 1961, JOHN M., LL.B.—(*Law*)—Born Aug. 17, 1939, DelNorte, Colo.; Attny., John M. Cogswell Law Offices, 2510 Lincoln Center Bldg., 1660 Lincoln St., Denver, Colo. 80203; res. 12 Random Rd., Englewood, Colo. 80110; John H. Tippit, Esq., '67-'70; Capt., U.S.M.C., '64-'67; m. Nov. 23, '62, Brooke Hurley; s. John Hurley, Sydney; d. Jennifer Brooke, Abby.

COHEN, 1968, Kenneth Saul, D.D.S.—(*Dentistry*)—Born July 5, 1946, Trenton, N.J.; Dentist, private practice, 1447 Peachtree St. N.E., Atlanta, Ga. 30309; res. 1317 Talcott Pl., Decatur, Ga. 30033; Part-time Faculty, Emory Univ. School of Dentistry; m. Nov. 30, '68, Patricia Ann Albert; s. Jeffrey Howard; d. Brandy Lynne.

COHEN, 1974, ROBERT LEWIS—(*Films*)—Born Jan. 23, 1952, New York, N.Y.; Self Employed Film Maker, bus. & res. 131 W. 81st., #10, New York, N.Y. 10024; Writer, Producer, Designer, Tele-Tactics, Inc., Feb. '75- June '76.

*COIT, 1853, JOSHUA—(*Ministry*)—Born Feb. 4, 1832, New London, Conn.; died Dec. 14, 1907, Winchester, Mass.

*COIT, 1837, WILLIAM—(*Law*)—Born July 1, 1815, Griswold, Conn.; died Aug. 23, 1891, Elberon, N.J.

COKE, 1926, HENRY C., JR., LL.B.—(*Law*)—Born Aug. 24, 1903, Dallas, Tex.; Attny., Ptnr., Coke & Coke, First National Bank Bldg., Dallas, Tex. 75202; res. 4429 Bellclaire Ave., Dallas, Tex. 75205; Maj., U.S.A.F., Aug. '42-Sept. '45; D.F.C., Bronze Star, Air Medal; m. Nov. 29, '67, Kathleen Walker; s. Henry C., III, ('50), Alexander S.; d. Nancy Townsend.

*COLE, 1866, HAMILTON—(*Law*)—Born May 4, 1845, Claverack, N.Y.; died Oct. 27, 1889, New York City.

*COLEMAN, 1881, JOHN CALDWELL, LL.B.—(*Law*)—Born Aug. 25, 1858, New York City; died Feb. 17, 1917, New York City.

*COLGATE, 1913, HENRY AUCHINCLOSS—(*Finance*)—Born Sept. 29, 1890, West Orange, N.J.; died Oct. 16, 1957, New York City; former Pres., Harding Township Bd. of Education; Trustee, Natl. Soc. for Prevention of Blindness; 2d Lieut., Air Service, World War I.

*COLLIER, 1935, SAMUEL CARNES—(*Business*)—Born May 14, 1912, New York City; died Sept. 23, 1950, Mountour Falls, N.Y.; Lt. Cmdr., U.S.N.R., World War II.

*COLLIN, 1871, FREDERICK, M.A.—(*Law*)—Born Aug. 20, 1850. Township of Benton, N.Y.; died Nov. 26, 1939, Elmira, N.Y. Assoc. judge, N.Y. Court of Appeals, '10-'21; Mayor, Elmira, 1894-1898.

*COLLIN, 1877, WILLIAM WELCH—(*Business*)—Born Jan. 2, 1856, Benton Center, N.Y.; died Jan. 7, 1941, Northampton, Mass.

*COLT, 1868, LEBARON BRADFORD, LL.B., M.A., LL.D.—(*Law*)—Born June 25, 1846, Dedham, Mass.; died Aug. 18, 1924, Bristol, R.I. U.S. district judge for R.I., 1881-1884; U.S. circuit judge, 1884-1913. Mbr. U.S Senate, 1913-1924.

*COLTON, 1848, HENRY MARTYN, M.A.—(*Education*)—Born Nov. 5, 1826, Royalton, N.Y.; died June 2, 1872, Middletown, Conn.

*COLTON, 1850, Willis Strong, M.A.—(*Ministry*)—Born Jan. 25, 1828, Royalton, Niagara County, N.Y.; died Nov. 26, 1907, Toledo, Ohio.

*CONDIT, 1850, Albert Pierson, M.A.—(*Law*)—Born Dec. 10, 1829, Orange, N.J.; died Dec. 14, 1901, West Orange. Mbr., N.J. State Legislature, 1866, 1867, and Spkr., 1871.

*CONDIT, 1848, Charles M.A.—(*Law*)—Born Dec. 8, 1827, Orange, N.J.; died Oct. 19, 1876, Brooklyn, N.Y.

*CONDIT, 1856, Stephen—(*Law*)—Born Sept. 23, 1835, Orange, N.J.; died Oct. 6, 1897, Brooklyn, N.Y.

CONNELLY, 1945, William James, Jr.—(*Finance*)—Born Jan. 13, 1922, Pittsburgh, Pa.; Dir. of Advertising, Mellon Bank, N.A., Mellon Square, Pittsburgh, Pa. 15222; res. 1600 Anderson Rd., Glenshaw, Pa. 15116; A.Y.A., '70-'76; Treas., Class of 1945, '76-; Pres., Yale Club of Pittsburgh, '67-'69; Dir., Harvard-Yale-Princeton Club of Pittsburgh, '69-'72; Alumni Bd. Member-at-Large, '69-'74; Dir., Pittsburgh Advertising Club; Capt., Pilot, U.S.A.A.F., '42-'46; D.F.C., Air Medal with 5 Battle Stars; m. Apr. 18, '53, Jean Wykoff; s. William J. III; d. Kathleen Mary, Marcy Ann.

*CONNOR, 1845, Lemuel Parker—(*Law*)—Born Sept. 30, 1827, Adams County, Miss.; died Mar. 24, 1891, Woodland, Miss. Maj., Confederate Army, Civil War.

*CONNOR, 1845, William Gustine—(*Farming*)—Born April 5, 1826, Adams County, Miss.; died July 3, 1863, Gettysburg, Pa. Maj., Confederate Army, Civil War.

CONNICK, 1952, Andrew Jackson, LL.B.—(*Law*)—Born Oct. 1930, New York, N.Y.; Ptnr., Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 122 E. 82d St., New York, N.Y. 10028; 1st Lieut., U.S.A.F., '52-'54; m. Apr. 15, '55, Alice Lamm; s. Peter Lamm, David McGuire.

CONNICK, 1945, Louis, M.A., M.A.T.—(*Education*)—Born Mar. 30, 1923, New York, N.Y.; Dir. of Operation for Philippines, The American Kor-Asian Found., Inc., P.O. Box E.A. 444, Ermita, Manila, Philippines; Asst. Dir. of Yale Admissions, '54-'56; Teacher, Hotchkiss School, '47-'49, '51-'54; William Penn Charter, '56-'59; Fulbright Lecturer (Burma), '60-'61; Overseas Dir., The Asia Found., '62-'71; USAID, '71-'75; 1st Lieut., U.S.M.C.R., '42-'46; Presidential Citation, Purple Heart; m. Nov. 11, '63, Catharine Murphree.

CONNORS, 1974, DAVID MICHAEL—(*Ministry*)—Born Dec. 30, 1952, South Bend, Ind.; res. 654 Rolling Green Dr., Bethel Park, Pa. 15102; Missionary for Church of Latter Day Saints, stationed in Italy, June '74-June '76.

CONNORS, 1959, JAMES J,, M.B.A.,—(*Business*)—Born Dec. 15, 1937, Hartford, Conn.; V.P. Operations, Norlin-Keyboard Div. of Norlin Corp., 7373 North Cicero, Lincolnwood, Ill. 60645; res. 484 Orchard Lane, Winnetka, Ill. 60093; Coll. Agt., Yale Alumni Fund, '59-'70; Class Council, 1959, '75-; Lieut. (j.g.), U.S.N., '59-'62; m. Aug. 1, '59, Joy Heaton; s. James J. IV; d. Gayle E

*CONVERSE, 1850, GEORGE SHERMAN, M.A., D.D.—(*Ministry*)—Born Sept. 2, 1828, New York City; died Nov. 2, 1895, Boston, Mass.

*COOK, 1945, GEORGE III—(*Industrial*)—Born June 5, 1923, Baltimore, Md.; died May 31, 1970; Licensing Co-ordinator, Natl. Distillers & Chemical Corp., N.Y.C. Sec., Yale Club of Md., '49-'52; Co-Chmn., Class Council, '66-; Chmn., Alumni Schools Com.; Exec. Com., Alumni Bd., '66-; Grad. Track Com., '53-; Mgr., Internatl. Div., Ovens-Corning Fiberglas Corp, '55-'68; Gen. Mgr., Owens-Corning Fiberglas Europe, '63-'64; Dir., Bus. Council for Internatl. Understanding, '58-'64, Internatl. Center, N.Y., Inc., '66-, Darien Red Cross, '66-; 2d Lieut., Mountain Inf., '43-'46; Pres. Deer Island Club Corp., '56-'58; m. July 9, '49, Elizabeth Skinner Hubbard; s. William H., George B., David B.; d. Elizabeth S.

*COOK, 1876, ROBERT JOHNSTON—(*Industrial*)—Born Mar. 21, 1849, near Cookstown, Pa.; died Dec. 3, 1922, near Belle Vernon, Pa.

*COOKE, 1877, ELBRIDGE CLINTON—(*Finance*)—Born Oct. 31, 1854, Tiskilwa, Ill.; died Nov. 4, 1931, Minneapolis, Minn.

COOKE, 1933, FRANCIS JUDD, Mus.B., (Edinburgh) Mus.D.—(*Education retired Music*)—Born Dec. 28, 1910, Honolulu, Hawaii; Lecturer in Music; res. 2 Stratham Rd., Lexington, Mass. 02173; Assoc. Prof., Yale Music School, '59-'60; Teacher of Music, New England Conservatory, '39-70; Lecturer in Music, Wellesley Coll., '73-'77; m. Sept. 3, '38, Maymay Ludwig; s. Lindsay, Donald Francis, ('63), Brian Ludwig, Duncan Charles; d. Charlotte, Nym.

*COOKE, 1893, JAMES BARCLAY—(*Industrial*)—Born Dec. 13, 1871, Paterson, N.J.; died May 26, 1936, Wyckoff, N.J.

COOKE, 1959, JOHN PATRICK, M.S. (Spring '77)—(*Transportation*)—Born Apr. 9, 1927, Derby, Conn.; Corporate Mgr., Facilities, Emery Air Freight Corp., Executive Offices, Wilton, Conn. 06897; res. 290 Old Branchville Rd., Ridgefield, Conn. 06877; Pres., Yale Crew Assn., '74-; Chmn., Graduate Rowing Advisory Com., '75-; V.P., Bradley Facilities, Inc., '72-; Dir., International Construction, Inc., '71-; Chmn., Sr. High School Building Com., Ridgefield, '67-'74; Mbr., Ridgefield Town Charter Comm., '73-'74; Capt., U.S.M.C., Dec. '59-Dec. '64; m. May 11, '63, H. Torrey Matheson; s. J. Patrick, Jr.; d. Emily Pratt, Rachel Forsythe.

COOKE, 1936, ROBERT BARBOUR—(*Journalism*)—Born Feb. 24, 1914, Paterson, N.J.; Free Lance Sports Writer (magazines), bus. & res. 1181 N.E. 92d St., Miami Shores, Fla. 33138; Sports Editor, N.Y. Herald Tribune, '47-'59; Editor, Golf Magazine, '60; Dir. Public Relations, Schaefer Brewing Co., '60-'67; 2d Lieut., U.S.A.F., '42-'45; Air Medal, 5 clusters; m. Oct. 19, '40, Helen Creamer; m. Dec. 26, '65, Elizabeth Rappleye; s. Stuart, Michael.

*COOKE, 1895, WALTER EVANS, LL.B.—(*Industrial*)—Born May 3, 1874, Paterson, N.J.; died Oct. 9, 1939, New York City.

*COOLEY, 1888, HARLAN WARD—(*Law and Insurance*)—Born Jan. 29, 1866, Washington, D.C.; died June 21, 1938, Harbert, Michigan.

COOMBS, 1965, ORDE MUSGRAVE, M.A.—(*Literary work & Television*)—Born St. Vincent, West Indies; Co-host, WPIX TV "Conversations", Contributing Editor, New York Magazine, 755 2nd Ave., New York, N.Y. 10017; res. 311 E. 23rd St., New York, N.Y. 10010.

*COON, 1847, JOHN, M.A.—(*Industrial*)—Born July 28, 1822, Ballston Spa.; N.Y.; died Sept. 24, 1908, Lyons Mich. Paymaster, Union Army, Civil War.

COOPER, 1977, CARNELL—(*Student, Pre-med.*)—Born May 16, 1955, Dillon, S.C.; bus. 6219 Yale Station, Yale Univ., New Haven, Conn. 06520; res. 916 South 9th Ave., Dillon, S.C. 29536.

COOPER, 1917, HENRY SAGE FENIMORE, M.D.—(*Medicine*)—Born Mar 9, 1895, Albany, N.Y.; Physician, 955 Park Ave., New York, N.Y. 10028; res. 850 Park Ave., New York 10021; 2d Surgical Service, Bellevue Hosp., '26-'36; Attending Sur-

geon, Presby. Hosp., N.Y.C., '37-'60; Assoc. Clin. Prof. Surgery, Coll. of Physicians & Surgeons, '37-'60; Capt., F.A., '17-'19; Dir. RTA; m. Oct. 6, '17, Katherine Lemoine Guy; s. James Fenimore, ('51), Henry Spotswood Fenimore, ('56); d. Susan Sage Fenimore (*Weil*), Katherine Lemoine Fenimore (*Carey*).

°COOPER, 1852, JACOB, M.A., Ph.D., D.C.L., D.D., LL.D.—(*Education*)—Born Dec. 7, 1830, near Somerville, Ohio; died Jan. 31, 1904, New Brunswick, N.J. Prof. of Greek, Center College, 1855-1862 and 1863-1866; Prof. of Greek, Rutgers College, 1866-1893, and of logic and metaphysics, 1893-1904. Chaplain, Union Army, Civil War.

COOPER, 1923, JOHN SHERMAN, LL.D.—(*Government, Law*)—Born Aug. 23, 1901, Somerset, Ky.; U.S. Ambassador, German Democratic Republic, U.S. Embassy, Berlin, U.S.B.E.R., Box E, ADO, New York, N.Y. 09742; res. 2900 N. St. N.W., Washington, D.C. 20007, or Somerset, Ky.; Yale University Council; Mbr., Gardner, Morrison & Rogers, Washington, '49-'52; of Counsel, Covington & Burling, Washington, '73-'74; Mbr., U.S. Delegation to General Assembly, United Nations, '49, '50, '51, '68; Special Advisor to Sec. of State Acheson in NATO meetings, Europe, '50 & '51; House of Representatives, Ky. Gen. Assembly, '28-'30; Cty. Judge, Pulaski Cty., Ky., '30-'37, Circuit Judge, '45; Mbr., U.S. Senate, '47-'49, '53-'55, '57-'73; Ambassador to India & Nepal, '55-'56; Capt., A.U.S., Corps of Military Police, '42-'45 (assigned to Military Government, '44-'45); Bronze Star; m. Lorraine Rowan.

°COOPER, 1838, WILLIAM FRIERSON, LL.D.—(*Law*)—Born Mar. 11, 1820, Franklin, Tenn.; died May 7, 1909, New York City. Judge, Tenn. Supreme Court, 1861-1862 and 1878-1886. Chancellor, Nashville district, Tenn.

°CORBIN, 1889, WILLIAM HERBERT, M.A.—(*Business*)—Born July 20, 1864, Union, Conn.; died April 14, 1945, Hartford Conn. Tax Com'r., State of Conn., '07-'20; Pres., Hartford Pub. Library, '39-'45; Mbr., Yale Alumni Bd., '10-'30.

°COREY, 1911, ALAN LYLE—(*Finance*)—Born Aug. 6, 1889, Braddock, Pa.; died Feb. 21, 1970; Ensign, USNRF, W.W. I; m. July 5, '11, Marguerite Johnston; s. A.L.C., Jr. ('40); d. Carolyn Johnston(*Gilmore*).

COREY, 1965, ALAN LYLE, III—(*Finance*)—Born Mar. 30, 1942, New York, N.Y.; Assoc. Broker, New York Stock Exchange, Wertheim & Co., 1 Chase Manhattan Plaza, New York,

N.Y. 10005; res. Chicken Valley Rd., Locust Valley, N.Y. 11560; m. Oct. 2, '65, Christine Louise Benson; s. Alan Lyle IV, Robert William; d. Christine Margaret, Cynthia Elise.

°CORNELL, 1915 THOMAS HILARY—(*Business*)—Born Jan. 14, 1891, Pittsburgh, Pa.; died July 18, 1957, Bryn Mawr, Pa.; 1st Lieut., F.A., World War I (A.E.F.).

°CORNING, 1903, ERASTUS, M.D.—(*Medicine*)—Born Oct. 22, 1879, Albany, N.Y.; died Nov. 11, 1942, Albany. Lieut Col., Med. Corps, World War I (A.E.F.); Chief surgeon, Am. Exp. Force, Archangel, North Russia, 1919; Mbr., Yale Alumni Bd., 1928-1929.

°CORNISH, 1914, PERCY GILLETTE, JR., M.D.—(*Medicine*)—Born Jan. 10, 1892, Flagstaff, Ariz., died June 17, 1958, Albuquerque. N. Mex.; Priv., Medical Corps, '17-18.

°CORTELYOU, 1913, GEORGE BRUCE, JR.—(*Business*)—Born June 25, 1889, Roslyn, N.Y.; died March 31, 1973, Rumson, N.J.; formerly Asst. Treas., Central Trust Co. of Illinois; Pres. Distributors Group, N.Y.C., '30-'32; Asst. Treas., N.Y. Life Ins. Co., N.Y.C. (retired in '55); Sr. Consultant, James Talcott, Inc., N.Y.C.; Chmn., Financial Com., Oceanic Free Library, Rumson, '37-'43; Vestryman, All Saints Memorial Church, Navesink, N.J., '42-'44; Bd. of Mgrs., Jacob A. Riis Neighborhood Settlement, N.Y.C., many yrs.; Capt., 17th Engineers Railway, Apr. '17-'19; Order of Black Star of French Legion of Honor; m. April 18, '22, Irwin Fearn.

°CORWIN, 1887, ROBERT NELSON, M.A., Ph.D.—(*Education*)—Born Oct. 6, 1864, Baiting Hollow, N.Y.; died Oct. 14, 1944, New Haven, Conn. Asst. Prof. of German, Yale University, 1897-1899, and Prof., 1899-1944; Chmn. Bd. of Admissions, '19-'33; Assoc. fellow, Pierson College, '33-'44; Pres., N.E. Assoc. of Colleges and Secondary Schools, '29-30.

°CORWITH, 1890, JOHN WHITE—Born Feb. 20, 1868, Galena, Ill.; died Sept. 7, 1923, West Chester, Pa.

COSGROVE, 1969, THOMAS FRANCIS—(*Business*)—Born Dec. 8, 1946, Malden, Mass.; Dir. of Research, Filer Committee on the Structure of State Government, 151 Farmington Ave., Hartford, Conn. 05156; res. 26 Round Hill Rd., Bristol, Conn. 06010; Asst. Sec., Yale Club of Boston, '72-'73; Mbr. Yale Club of New York; Regional Planner, Metropolitan Area Planning Council, Boston, '69-'73; City Councillor, Malden, Mass., '72-

'73; Exec. Recruiter, Aetna Life & Casualty, '73-'75; Dem. Ward Chmn, Malden, Mass., '72-'73; m. May 30, '70, Wendy Hinton.

COSTIKYAN, 1929, GRANGER KENT—(*Finance*)—Born Mar. 29, 1907, Montclair, N.J.; Ptnr., Brown Brothers Harriman & Co., 1531 Walnut St., Philadelphia, Pa. 19102; res. 243 Abraham's Lane, Villanova, Pa. 19085; Alumni Bd., '52-'62; Chmn., Alumni Fund, '54-'56; University Council, '54-'56; Com., Nomination of Alumni Fellows to Yale Corp., '57-'60, Chmn., '60; Assn. of Yale Alumni, '72-'75; Bd. of Governors, '72-'74; Mbr. North Salem, N.Y. Bd. of Education, '56-'61, Pres. '58-'59; Trustee, Macalester Coll., '66-'72; Dir., Bush Found., St. Paul, '69-'73; Council Graduate School of Business, University of Chicago, '73-'75; m. Feb. 17, '40, Margaret Lawrence Taylor; d. Gail Lawrence, Joan Ransom (*Jarvis*), Nancy Hammond (*Johnson*), Wendy Warren.

COWDRY, 1968, REX WILLIAM, M.D., M.P.H.—(*Medicine*)—Born Feb. 12, 1947, Des Moines, Iowa; Staff Psychiatrist, National Institute of Mental Health, N.I.H. Clinical Center, 4S-239, Bldg. 10, 9000 Rockville Pike, Bethesda, Md. 20014; res. 1175 Dolley Madison Blvd., McLean, Va. 22101; Falk Fellow, American Psychiatric Assn., '74-'76; U.S. Public Health Service, June '76-.

•COWLES, 1886, ALFRED—(*Law*)—Born Jan. 5, 1865, Chicago, Ill.; died Jan. 15, 1939, Chicago.

COWLES, 1913, ALFRED—(*Finance*)—Born Sept. 15, 1891, Chicago, Ill.; Investment Counselor, 2215 Tribune Tower, 435 N. Michigan Ave., Chicago, Ill. 60611; res. 225 E. Onwentsia Rd. Lake Forest, Ill. 60045; m. 1925, Elizabeth I. Strong; m. Oct. 24, '49, Louise Lamb; s. Richard Livingston; d. Anne (*Walsh*).

•COWLES, 1887, WILLIAM HUTCHINSON, LL.B.—(*Journalism*)—Born Evanston, Ill.; died Jan. 15, 1946, Spokane, Wash.

COWLES, 1921, WILLIAM SHEFFIELD—(*Finance retired*)—Born Oct. 18, 1898, New York, N.Y.; res. Farmington, Conn. 06032; University Council, '48-'56; Ptnr., Wood, Walker & Co., Investment Bankers, '30-'69; Mbr. Conn. State Legislature, '49-'55; Spkr. of the House, '53-'55; Mayor, Farmington, Conn., '56-'60; 1st Lieut., U.S.M.C., '18-'20 (A.E.F.); Capt., U.S.N., '41-'46; m. 1921, Margaret Krech; s. William S., Jr., (45).

*COX, 1891, John Joughin—(*Law student*)—Born Sept. 28, 1869, Bedford, N.Y.; died Dec. 17, 1892, Cambridge, Mass.

*COXE, 1887, Alexander Brown—(*Farming*)—Born Sept. 9, 1865, Philadelphia, Pa.; died April 16, 1926, Philadelphia.

*COY, 1910, Edward Harris—(*Insurance*)—Born May 24, 1888, Andover, Mass.; died Sept. 8, 1935, New York City.

*COY, 1901, Sherman Lockwood—(*Industrial*)—Born Aug. 26, 1879, Andover, Mass.; died Feb. 15, 1946, Libertyville, Ill.

*CRAMPTON, 1851, Rufus Cowles, M.A., LL.D.—(*Education*)—Born 1828, Farmington, Conn.; died July 13, 1888, Jacksonville, Ill. Prof. of mathematics and astronomy, Illinois College, 1854-1888; also acting Pres., 1877-1881. Lieut. Col., Union Army, Civil War.

*CRANE, 1904, Winthrop Murray, Jr.—(*Industrial*)—Born Sept. 12, 1881, Dalton, Mass.; died Mar. 28, 1968; formerly Pres. Crane & Co., Inc., Dalton; Lieut. Col., Ord. Dept., W.W. I; Yale Alumni Bd.; m. Feb. 9, '05, Ethel G. Eaton; s. W.M.C. III, Arthur E.; d. Barbara (*Monaghan*).

*CRAPO, 1886, Stanford Tappan—(*Industrial*)—Born June 13, 1865, New Bedford, Mass.; died Jan. 26, 1939, Tryon, N.C.

*CRAPO, 1852, William Wallace, M.A., LL.D.—(*Law*)—Born May 16, 1830, Dartmouth, Mass.; died Feb. 28, 1926, New Bedford, Mass. Mbr., Mass. State Legislature, 1857. Mbr. of Congress, 1875-1883.

*CRESSLER, 1902, Alfred Miller, M.A.—(*Finance*)—Born Sept. 19, 1877, died Nov. 19, 1939, Cincinnati, Ohio.

CRILE, 1929, George, Jr., M.D.—(*Medicine*)—Born Nov. 3, 1907, Cleveland, Ohio; Consultant, Dept. of General Surgery, Cleveland Clinic, 9500 Euclid Ave., Cleveland, Ohio 44106; res. 2060 Kent Rd., Cleveland Heights, Ohio 44106; Head, Dept. of General Surgery, Cleveland Clinic, Emeritus; Cmdr., USN, '42-'44; m. Jane Halle, m. Helga Sandburg; s. George, III; d. Ann, Joan, Susan.

*CROSBY, 1922, Albert Hastings—(*Finance*)—Born Feb. 12, 1900, Minneapolis, Minn.; died Sept. 6, 1946, Ardmore, Pa. Mbr., Yale Alumni Bd., '38-'40. Priv., S.A.C.T., World War I.

*CROSBY, 1892, Benjamin Lewis, Jr.,—(*Law student*)—Born Mar. 22, 1868, Halcott Center, N.Y.; died Dec. 29, 1892, New York City.

°CROSBY, 1926, HENRY STETSON, B.S.—(*Engineering*)—Born May 29, 1904, Minneapolis, Minn.; died Mar. 3, 1953. Trumansburg, N.Y.; Maj., U.S.A.A.F., World War II.

°CROSBY, 1890, JOHN, M.A.—(*Law and Industrial*)—Born Aug. 23, 1867 Hampden, Me.; died Mar. 1, 1962; Pres., Washburn Crosby Co., Minneapolis; Trustee, Dunwoody Industrial Inst.; Mbr., Fed. Adv. Council, Washington, D.C., City Council, Minneapolis, 1894-1948; m. May 12, '97, Margaret Hastings; s. J.C., Jr., Henry Stetson, ('26), Albert Hastings; d. Margaret, Caroline (*Field*).

CROSS, 1966, ALAN W., M.D.—(*Medicine*)—Born July 11, 1944, New York, N.Y.; Lecturer, Dept. of Pediatrics, Faculty of Medicine, University of Nairobi, P.O. Box 30588, Nairobi, Kenya, (until May, 1977); res. 210 Elm Rd., Princeton, N.J. 08540; Capt., A.U.S., July '71-June '73; V.P., Deer Island Club Corp., '68-'73, Treas. '74; m. Aug. 31, '68, Marion Johnson; d. Julia Marion, Katherine Lee.

°CROSS, 1900, JOHN WALTER, A.D.G.—(*Architecture*)—Born Feb. 24, 1878, South Orange, N.J.; died July 25, 1951, Hot Springs, Va.; Mbr., Natl. Comm. of Fine Arts and N.Y. Art Comm.; Chief Architect, U.S. Housing Corp., '18.

CROSS, 1937, RICHARD JAMES, M.D., Med. Sc.D.—(*Medicine, Education*)—Born March 31, 1915, New York, N.Y.; Prof. & Chmn., Dept. of Community Medicine, CMDNJ—Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854; res. 210 Elm Rd., Princeton, N.J. 08540; Asst. Prof. of Medicine & Asst. Dean, Columbia Coll. of Physicians & Surgeons, '57-'59; Asst. Prof. of Medicine & Assoc. Dean, Univ. of Pittsburgh, '59-'63; Dean of Faculty of Medicine, Univ. of Ghana, '63; Asst. to Dir., Assn. of Am. Medical Colleges, '64-'65; Prof. of Medicine & Assoc. Dean, Rutgers Medical School, '65-'70; Mbr., Bd. of Education, Fair Lawn, N.J., '51-'54; Capt., M.C., AUS, Oct. '42-Jan. '46; Purple Heart, Bronze Star; m. June 28, '39, Margaret W. Lee; s. R. James, Jr., ('62), Alan W., ('64); d. M. Lee, Anne R., Jane R.

°CROSS, 1904, WALTER SNELL—(*Ministry*)—Born Mar. 5, 1881, Fitchburg, Mass.; died June 8, 1971 Brookline, Mass.; Christian Science Practitioner; Pres., The Mother Church, First Church of Christ, Scientist, Boston, '50-51; Lieut. Chaplain, Army, W.W. I; m. June 26, '20, Ruth Chadwick Crosby.

°CROSS, 1896, William Redmond—(*Finance*)—Born June 8, 1874, South Orange, N.J.; died Nov. 16, 1940, Princeton, N.J. Keeper of maps, Yale University library, '31-'39; Pres., N.Y. Zoological Soc., '37-'40.

CROSS, 1941, William R.—(*Finance*)—Born Apr. 26, 1917, New York, N.Y.; Exec. V.P., Morgan Guaranty Trust Co. of New York, 23 Wall St., New York, N.Y. 10015; res. R.D. #2, South Bedford Rd., Mt. Kisco, N.Y. 10549; Alumni Bd., '69-'71; Yale Medal Com., '70-'71; Yale Alumni Fund, '41 Class Agt., '76-; V.P., New York Trust Co., '46-'59; Dir., National Sugar Refining Co., ' 67-'69; AMAX, Inc., '74-; Crompton Co., Inc., '70-; New York Times Co., '73-; Trustee & V.P., Children's Aid Soc., '62-'75; Trustee & Vice Chmn., Citizens' Budget Comm., '68-; Dir., Caramoor, Inc., '75-; Mbr., N.Y. Chmbr. of Commerce, '68-; Lieut., U.S.N., '43-'46; m. June 14, '58, Sally Smith; s. William R. III, Frederic N.; d. Pauline C.

°CROXTON, 1857, John Thomas—(*Law*)—Born Nov. 20, 1837, near Paris, Ky., died April 16, 1874, La Paz Bolivia. U.S. Minister to Bolivia, 1873-1874. Brig-Gen., Inf., Union Army, Civil War.

CRUIKSHANK, 1952, Paul F.—(*Railroad Mgmt.*)—Born April 24, 1930, Washington, Conn.; V.P. Operations & Maintenance, The Milwaukee Road, 516 W. Jackson Blvd., Chicago, Ill. 60606; res. 710 Lincoln Ave., Winnetka, Ill., 60093; Alumni Fund Solicitor, Calhoun College, '52-'76; Operating Dept., Great Northern Railway, '52-'67; Asst. V.P. Market Planning, Burlington Northern, '67-'71; Pres., Fort Worth & Denver Ry. Co., '71-'74; V.P. Strategic Planning, USRA, '74-'76; Lieut., j.g., U.S.N., '52-'56; m. June 26, '54, Alice Wayland; s. Robert, Donald; d. Carol, Lynn.

°CRUMP, 1833, John—(*Medical Student*)—Born Sept. 3, 1814, New York City; died July 4, 1835, New London, Conn.

CSAR, 1972, Michael F., B.A. Kings College, Cambridge—(*Student*)—Born May 26, 1950, Chicago, Ill.; student, Yale Law School; res. 809 Whitney Ave., New Haven, Conn. 06511.

CUNNINGHAM, 1934, Hugh Terry, B.Litt., Ph.D., M.A. (Oxford)—(*Government retired*)—Born Apr. 2, 1913, Wagoner, Okla.; res. 305 Kentucky Ave., Alexandria, Va. 22305; Central Intelligence Agency, '47-'73; Exec. positions, Mbr. of Bd. of Natl. Estimates, '62-'69, Dir. of Training, '69-'73; Central In-

telligence Group, '45-'47; Unit (War Dept.), Instr. & Tutor, Harvard & Radcliffe, '39-'42; Maj. (Intelligence Officer), A.U.S. '42-'46; Intelligence Medal of Merit, Distinguished Intelligence Medal (from C.I.A.); m. Feb. 14, '48, Mary Jane Hawley; d. Susanna, Cynthia Ruth.

*CUNNINGHAM, 1917, OLIVER BATY—(*Student*)—Born Sept. 17, 1894, Chicago, Ill.; died Sept. 17, 1918, near Thiaucourt, France. Capt., F.A., World War I (A.E.F.).

CURTIN, 1935, F. CLARE, M.A.—(*Education*)—Born Oct. 15, 1911, North Abington, Mass.; Teacher, Needham High School, Needham, Mass. 02192; res. 331 Brookline St., Needham, Mass. 02192; Lieut., U.S.N.R., '43-'46; m. June 20, '38, Marion H. Beaulac; s. Robert E.

*CURTIS, 1878, GEORGE LOUIS, D.D.—(*Ministry*)—Born May 21, 1885, Adrian, Mich.; died July 11, 1917, Simsbury, Conn.

*CUSHING, 1902, CHARLES CYPRIAN STRONG—(*Literary work*)—Born Oct. 27, 1879, New Haven, Conn.; died Mar. 6, 1941, Boston, Mass. Y.M.C.A. Secretary, World War I (Fgn. service).

*CUSHING, 1872, WILLIAM LEE, M.A.—(*Education*)—Born July 24, 1849, Phippsburg, Me.; died Dec. 11, 1921, Simsbury, Conn.

CUSHMAN, 1957, Charles W., M.A.—(*Education*)—Born June 21, 1934, New Rochelle, N.Y.; res. c/o Mrs. Catherine Weldon, Fareham Farm, Hartland-Four-Corners, Vt. 05049.

*CUSHMAN, 1845, ISAAC LAFAYETTE—(*Education*)—Born Mar. 17, 1823, Burlington, N.Y.; died June 12, 1857, Quincy, Ill.

CUSHMAN, 1958, ROBERT E.—(*Finance*)—Born Sept. 22, 1935, New Rochelle, N.Y.; Banker, Managing Dir. of a joint venture merchant bank — Asia Pacific Capital Corp., Ltd., Citibank Tower 6F, 8 Queen's Rd. Central, Hong Kong; res. F-9 Grenville House, 1 Magazine Gap Rd., Hong Kong; E-2, A.U.S., Oct. '58-Apr. '59; m. Dec. 15, '62, Lee Sumner; s. Robert S., Bradford W.; d. Jessica Ranney.

CUTLER, 1926, BENJAMIN CRAWFORD—(*Music*)—Born July 19, 1904, Winchester, Mass; Musician & Singer; Owner Ben Cutler Orchestras, bus. & res. 21 Crows Nest Rd., Bronxville, N.Y. 10708; Pres., Natl. Assn. Orchestra Leaders, '63-'68; m. '40, Flora Campbell; m. June 17, '66, Eustacia Purves; s. Thomas McKeen, ('62), Creel Campbell.

°CUTLER, 1854, CARROLL, M.A., D.D.—(*Education*)—Born Jan. 31, 1829, Windham, N.H.; died Jan. 25, 1894, Talladega, Ala. Prof. of metaphysics and rhetoric, Western Reserve College (now Adelbert College, Western Reserve University), 1860-1889, and Pres., 1871-1886; Prof. of theology, Biddle University, 1889-1891.

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°DAHL, 1908, GEORGE, M.A., Ph.D.—(*Education*)—Born Jan. 11, 1881, Chicago, Ill.; died July 31, 1962; Holmes Prof. Hebrew, Yale Divinity School, '10-'49; W.W. I, YMCA, Educational; Yale Div. and Grad. Schools Coms.; m. '15, Elizabeth Eudora Curtis; s. Edward Curtis, Curtis, ('41).

DALBY, 1966, MICHAEL THOMAS, M.A., Ph.D.—(*Education*)—Born Oct. 11, 1945, St. Louis, Missouri; Asst. Prof., Chinese History, Dept. of Far Eastern Languages & Civilizations, University of Chicago, 5736 Woodlawn Ave., Chicago, Ill. 60637; res. 5412 East View Park, Chicago, Ill. 60615; Junior Fellow, Soc. of Fellows, Harvard Univ., '72-'75; m. Aug 5, '66, Linda Mitsuko Sato.

DALE, 1945, EDWIN LYON, JR.—(*Journalism*)—Born Sept. 7, 1923, Philadelphia, Pa.; Reporter, New York Times, Int'l. Press Center, 76 Shoe Lane, London E.C.4, England; res. 4526 Lowell St. N.W., Washington, D.C. 20016; Lieut. (j.g.), U.S.N., '44-'46; Commendation Ribbon; m. Mar. 11, '50, Mary Todd Hastings.

°DALY, 1911, FREDERICK JOSEPH—(*Education*)—Born Dec. 5, 1885, Cambridge, Mass.; died May 8, 1965; 1st Lieut., Motor Transport Corps, W.W. I, AEF; Major, AUS, W.W. II.

°DANA, 1851, WILLIAM BUCK, M.A.—(*Industrial*)—Born Aug. 26, 1829, Utica, N.Y.; died Oct. 10, 1910, New York City.

°DANIELS, 1907, FORREST LEONARD—Born Oct. 19, 1884, Piqua, Ohio; died Jan. 25, 1908, Saranac, N.Y.

DANIELS, 1943, JOHN H., A.M.P.—(*Business*)—Born Oct. 28, 1921, St. Paul, Minn.; Chmn., National City Bankcorporation, 75 South Fifth St., Minneapolis, Minn. 55402; res. Mulberry Plantation, Box 623, Camden, S.C. 29020; Trustee, Com. for

Economic Development, '63-'76; Mbr., The Business Council, '62-'76; Civilian Aide to Sec. of the Army, '66-'69; Capt., AUSFA, '43-'46; Bronze Star, Outstanding Civilian Service Medal; m. Dec. 23, '42, Martha Hill Williams; s. John H., Jr., Christopher W.; d. Martha (*Shull*), Jane P.

*DANIELS, 1860, JOSEPH LEONARD, B.D., M.A., D.D., LL.D.—(*Education*)—Born Aug. 1, 1833, East Medway (now Millis), Mass.; died Oct. 22, 1924, Tryon, N.C. Prof. of Greek, Olivet College, 1865-1906; also served as dean of the faculty, as acting pres., 1892-1893 and 1903-1904, and as college librarian, 1865-1872 and 1883-1908.

*DANIELS, 1873, RENSSELAER WILKINSON—(*Finance*)—Born Oct. 6, 1851, Lockport, N.Y.; died June 15, 1923, Arcadia, Calif.

DANIELS, 1914, THOMAS LEONARD, M.F.A. (Hon.)—(*Industrial retired*)—Born July 4, 1892, Piqua, Ohio; res. 7 Heather Place, St. Paul, Minn. 55102; Chmn. of Bd., Archer Daniels Midland Corp.; U.S. Diplomatic Service, '22-'29; War Prod. Bd. & War Food Admin., '42-'43; Mbr., Food Requir. Com. '42; Chmn., Minneapolis Soc. of Fine Arts; Bd. of Gov., Charles T. Miller Hosp., St. Paul, Minn.; Trustee, Carlton Coll., St. Paul; Capt., F.A. & Balloon Corps, '17-'19; m. '15, Frances Hancock (dec.); m. '69, June Herrmann; s. Thomas L. (dec.), Forrest (dec.), John H. ('43), David M.; d. Carol H.

*DANIELSON, 1907, RICHARD ELY, M.A.—(*Literary work*)—Born Nov. 7, 1885, Brooklyn, Conn.; died May 23, 1957, Groton, Mass.; Capt., Inf. World War I (A.E.F.); Lt. Col., G.S.C., World War II.

*DARLING, 1916, ARTHUR BURR, M.A., Ph.D.—(*Education, Writing*)—Born Dec. 28, 1892, Wichita, Kans.; died Nov. 27, 1971, Paris, France; engaged in research and writing on British-American Relations; Instr. to Assoc. Prof., Yale, '22-'33; Class Officer, Exec. Com. of Yale Coll., Class of '31; Current History Assoc., *N.Y. Times*, '24-'31; Chmn., History Dept., Phillips Academy, Andover, '33-'51; U.S. Govt.; Historian, '51-'54, Fulbright Sr. Fellow, Italy, '55-'56; Ensign, USNRF, '17-'19; m. June 24, '20, Susan Lambert Flahive; d. Susan Lambert, Sarah, Martha.

*DARLING, 1836, THOMAS, M.A.—(*Finance*)—Born April 13, 1816, New York City; died Sept. 23, 1899, New York City, Served in U.S. Navy, Civil War.

D'AVANZO, 1956, LOUIS A., M.D.—(*Medicine*)—Ophthalmologist, Kailua Professional Center, Suite 301, 30 Aulike St., Kailua, Hawaii 96734; res. 584 Uluhala St., Kailua, Hawaii 96734; m. June 22, '58, Carol Frances Rehman; s. Louis Frank; d. Carol Diana.

DAVENPORT, 1938, BRADFUTE WARWICK, LL.B.—(*Law*)—Born Aug. 18, 1916, Richmond, Va.; Ptnr., Hunton, Williams, Gay, Powell & Gibson, 1003 Electric Bldg., Richmond, Va.; res. 6118 St. Andrews Lane, Richmond, Va. 23226; m. July 11, '42, Martha Orr; s. Bradfute W., Jr., ('69).

DAVENPORT, 1926, JOHN A.—(*Journalism*)—Born Sept. 11, 1904, Philadelphia, Pa.; Journalist, bus. & res. Box 158, Middletown, N.J. 07748; Staff, Fortune Magazine, '37-'49; Editor, Barron's Magazine, '49-'54; Bd. of Editors & Asst. Managing Editor, Fortune Magazine, '54-'69; Harriman Comm. for Marshall Plan, '48; Hoover Comm., '49; m. 1940, Marie Van-Vechten Hayes; s. John; d. Ann, Gloriana, Susan, Amy, Sharon, Caroline.

°DAVENPORT, 1923, RUSSELL WHEELER, LL.D.—(*Literary work*)—Born July 12, 1899, South Bethlehem, Pa.; died April 19, 1954, New York City; Priv., Ambulance Service, World War I (A.E.F.)

DAVENPORT, 1915, STEPHEN RINTOUL—(*Industrial retired*)—Born Apr. 7, 1892, Staten Island, N.Y.; res. 37 Willowmere Circle, Riverside, Conn. 06878; Formerly V.P., Yardley of London, Inc.; Rep. Town Meeting, Greenwich, Conn., one term; Capt., CAC, A.E.F., May '17-Feb., '19; m. Oct. 13, '28, Mariana Bonnell; s. Henry B. ('51), Stephen R., Jr., Samuel C., John L.

DAVIES, 1976, PHILIP TURNER—Born Feb. 11, 1954, Cincinnati, Ohio; res. 750 Woodbine Ave., Cincinnati, Ohio 45246.

°DAVIES, 1853, THOMAS FREDERICK, M.A., D.D., LL.D.—(*Ministry*)—Born Aug. 31, 1831, Fairfield, Conn.; died Nov. 9, 1905, Detroit, Mich. Prof. of Hebrew, Berkeley Divinity School, 1862. Prot. Episc. Bishop of Mich., 1889-1905.

°DAVIES, 1894, THOMAS FREDERICK, B.D., M.A., D.D.—(*Ministry*)—Born July 20, 1872, Philadelphia, Pa.; died Aug. 25, 1936, Lenox, Mass. Prot. Episc. Bishop of Western Mass., 1911-1936; Representative, Y.M.C.A. War Work Council, World War I (Fgn. service).

°DAVIS, 1895, BENJAMIN—(*Law*)—Born Jan. 1, 1871, Chicago, Ill.; died Feb. 6, 1920, Chicago.

°DAVIS, 1833, BENJAMIN FRANKLIN, M.A.—(*Medicine*)—Born Dec. 23, 1812, Monticello, S.C.; died June 13, 1853, Yazoo City, Miss. Served in Seminole War.

°DAVIS, 1911, CLINTON WILDES—(*Industrial*)—Born June 2, 1888, Portland, Me.; died Oct. 15, 1958, Cape Elizabeth, Me.; Maj., F.A., World War I.

°DAVIS, 1936, HORACE WEBBER II—(*Finance*)—Born Sept. 9, 1912, Sharon, Pa.; died Sept. 9, 1965; Trust Officer, Union & New Haven Trust Co.; Treas. and Dir., Farnam Neighborhood House, Inc., '56-; Dir., Arthritis and Rheumatism Found., Conn. Chapter, '52-; Lieut. Cmdr., USNR, W.W. II; Class Treas., '48-'54; m. Sept. 6, '45, Jean Arnold; d. Stephenie J.

°DAVIS, 1835, JOHN—(*Law*)—Born Oct. 25, 1813, Trenton, Me.; died Sept. 20, 1844, Northboro, Mass.

°DAVIS, 1860, LOWNDES HENRY, LL.B.—(*Law*)—Born Dec. 14, 1836, Jackson, Mo.; died Feb. 5, 1920, Cape Girardeau, Mo. Circuit attny., 10th judicial district of Mo., 1865-1869. Mbr., Mo. State Legislature, 1876. Mbr. of Congress, 1879-1885.

DAVIS, 1933, RICHARD MARDEN—(*Law*)—Born May 26, 1912 Somerville, Mass.; Ptnr., Davis, Graham & Stubbs, 950 Seventeenth St., Denver, Colo. 80202; res. 860 Gaylord St., Denver, Colo. 80206; Mbr. Am. Judicature Soc.; Am. Bar Assn.; Past V.P., Colorado Bar Assn.; Past Pres., Denver Bar Assn.; Trustee: Denver Museum of Natural History, '47-; Univ. of Northern Colo., '73-; Past Pres., Denver Rotary Club; Denver Country Day School; Civilian Aide to Sec. of the Army, '50-'52; Mbr., Administrative Conf. of the U.S., '60-'62; Lieut. Col., U.S.A.F., Sept. '42-Oct. '45; Bronze Star; m. July 10, '35, Nancy Newton; s. Richard Marden, Jr.; d. Pamela (*Beardsley*)

°DAVIS, 1860, ROBERT STEWART—(*Industrial*)—Born April 23, 1838, Philadelphia, Pa.; died Mar. 17, 1911, Philadelphia.

°DAVIS, 1908, WALTER GOODWIN, LL.B.—(*Law, Finance*)—Born May 14, 1885, Portland, Me.; died June 11, 1966; Pres., Maine Historical Soc., Portland Community Chest, Maine Gen. Hosp. Corp.; House of Rep., Maine Legislature, '26; Capt., Inf., W.W. I, AEF Milit. Intelligence.

DAVISON, 1949, DANIEL POMEROY, J.D.—(*Finance*)—Born Jan. 30, 1925, New York, N.Y.; Senior V.P., Morgan Guaranty

Trust Co., 23 Wall St., New York, N.Y. 10015; res. P.O. Box 348, Locust Valley, N.Y. 11560; Alumni Fund; Campaign for Yale; Dir., Scovill Mfg. Co.; Northwestern States Portland Cement Co.; Trustee & V.P., Metropolitan Museum of Art; Trustee, Church Pension Fund; Groton School; 2d Lieut. U.S.A.F. '43-'45; m. June 27, '53, Catherine Cheremeteff; s. Daniel P., Jr., George P. ('79), Henry P.

DAVISON, 1945, ENDICOTT PEABODY, LL.B., M.A.—(*Law*)—Born June 15, 1923, New York, N.Y.; Ptnr., Winthrop, Stimson, Putnam & Roberts, 40 Wall St., New York, N.Y. 10005; res. 221 Benedict Hill Rd., New Canaan, Conn. 06840; Corporation Officer, July '71-June '76; Ptnr., Winthrop, Stimson, Putnam & Roberts, '59-'71, '76-; Ist Lieut. U.S.A.F., Feb. '43-Aug. '46; m. July 3, '48, Jane Ingalls; s. F. Trubee II (dec.), Endicott P., Jr. ('74), David I. ('78), Malcolm P.; d. Jane.

*DAVISON, 1918, FREDERICK TRUBEE, LL.B., M.A., LL.D.—(*Museum work*)—Born Feb. 7, 1896, New York, N.Y.; died Nov. 14, 1974, Locust Valley, N.Y.; Pres., Amer. Mus. Nat. History, '33-'53; State Legislature, '21-'26; Asst. Sec. War (Air), '26-'33; Yale Corporation, '31-'53; Lieut. (j.g.), Naval Air Serv., W.W. I; Brig. Gen., USAF, W.W. II; Navy Cross, Distinguished Service Medal; m. April 16, '20, Dorothy Peabody; s. F.T.D., Jr. (dec.), Endicott Peabody, ('45), Daniel Pomeroy, ('49), Gates, ('50).

*DAVISON, 1920, HARRY POMEROY—(*Finance*)—Born April 3, 1898, Englewood, N.J.; died July 2, 1961; Sr. V.P., J. P. Morgan & Co., N.Y.C.; W.W. I: Lieut., Naval Air Service; W.W. II: Cmdr., USN; m. Aug. 9, '46, Eleanor M. A. Sparks; s. H.P.D., Jr., John, ('52), James S.; d. Frances, Anne.

*DAWES, 1876, CHESTER MITCHELL—(*Law*)—Born July 14, 1855, North Adams, Mass.; died April 12, 1917, Chicago, Ill. Asst. U.S. attny., northern district of Ill., 1884-1886.

*DAY, ARTHUR POMEROY, LL.B.—(*Finance*)—Born Nov. 6, 1868, Hartford, Conn.; died Aug. 26, 1952, Greensboro, Vt.; Mbr. Hartford Redevelopment Com. and Conn. River Bridge and Highway Comm.; Class Treas.

*DAY, 1892, CLIVE, Ph.D.—(*Education*)—Born Feb. 11, 1871, Hartford, Conn.; died July 27, 1951, Greensboro, Vt.; Chmn., Balkan Div., U.S. Peace Comm., Paris, '18; Mbr. Conn. Unemployment Comm., '31-33; Asst. Prof. Economic History,

Yale University, '02-'07, and Prof., '07-'22; Prof., Political Economy '22-'38.

*DAY, 1899, Dwight Huntington—(*Finance*)—Born April 1, 1876, Chicago, Ill.; died Feb. 9, 1936, New York City. Y.M.-C.A. Sec. World War I.

DAY, 1923, Huntington T., LL.B.—(*Law*)—Born Apr. 21, 1901, St. Louis, Missouri; Ptnr., Wiggin & Dana, 195 Church St., New Haven, Conn. 06508 P.O. Box 1832; res. 100 Reservoir St., New Haven, Conn. 06511; Former Dir. RTA; m. May 3, '24, Cornelia A. Campbell; d. Molly Joan (*Scott*), Cornelia (*Bloomer*), Anne (*Schalet*).

*DAY, 1857, John Calvin, M.A.—(*Law*)—Born Nov. 3, 1835, Hartford, Conn.; died June 24, 1899, Dublin, N.H.

*DAY, 1862, Melville Cox—(*Law*)—Born June 2, 1839, Biddeford, Me.; died Dec. 29, 1913, Florence, Italy.

*DAY, 1875, Robert Webster—(*Real estate*)—Born Oct. 9, 1854, Philadelphia, Pa.; died July 11, 1932, Tallahassee, Fla.

*DAY, 1911, Sherwood Sunderland—(*Ministry*)—Born April 18, 1887, Catskill, N.Y.; died May 15, 1974, Amherst, Va., formerly Presbyterian minister; m. Oct. 11, '44, Margaret Webster; s. Sherwood S., Frederick B. Webster; d. Rosalie (*White*), Margaret (*Evans*), Anne Webster.

*DAY, 1837, Thomas Mills, M.A.—(*Literary work*)—Born Nov. 21, 1817, Hartford, Conn.; died Oct. 17, 1905, Hartford.

*DAY, 1886, Thomas Mills, LL.B.—(*Law*)—Born Aug. 13, 1864, Hartford, Conn.; died Dec. 27, 1947, Plainfield, N.J.

*DAY, 1902, William Edwards—(*Finance, Industry*)—Born Feb. 12, 1878, Indianapolis, Ind.; died July 17, 1964; m. Dec. 14, '12, Florence Hall; d. Mrs. Robert B. Chappell, Jr.

DEANS, 1918, Robert B.—(*Finance retired*)—Born July 14, 1896, Phoenixville, Pa.; res. Apt. 330, 4000 Massachusetts Ave. N.W., Washington, D.C. 20016; m. 1923, Dorothy Babbage; s. Robert B., Jr., ('48); d. Lucy P. (*Hanes*).

*DECHERT, 1850, Henry Martyn—(*Law*)—Born Mar. 11, 1832, Reading, Pa.; died May 27, 1918, Philadelphia, Pa., 1st Lieut., Inf., Union Army, Civil War.

*DECKER, 1929, Edmund Lockwood, Jr.—(*Industrial*)—Born Mar. 5, 1907, Montclair, N.J.; died July 30, 1967.

DeFOREST, 1955, Stephen Elliott, J.D.—(*Law*)—Born Sept. 16, 1933, Seattle, Wash.; Ptnr., Riddell, Williams, Ivie, Bullitt & Wolkinshaw, 4300 Seattle-First National Bank Bldg.,

Seattle, Wash. 98154; res. 11323 8th Ave. N.W., Seattle, Wash. 98177; Pres., Yale Assn. of Western Washington, '67-'68; Program Chmn., Yale Natl. Meeting, Seattle, '70; Yale Alumni Fund, Local Com., '68-; Bd. of Dir. & Exec. Comm., Seattle-King Cty. United Way, '75-; Bd. of Trustees, The Public Defender, Seattle, '75-; Legal Specialization Bd., Washington State Bar Assn., '75-; Lieut. U.S.N., June '55-June '57; m. June 14, '58, Sylvia Lynn Agathon; s. Christopher Elliott, John Andrew; d. Katherine Elizabeth.

DEMAREE, 1970, FRANK EDWARD—Born Feb. 4, 1947, Chicago, Ill.; res. 920 Forest Hill Rd., Lake Forest, Ill. 60045.

*DEMING, 1872, CHARLES CLERC, LL.B.—(*Law*)—Born May 22, 1852, Hartford, Conn.; died July 23, 1924, New York City.

*DEMING, 1872, CLARENCE—(*Literary work*)—Born Oct. 1, -1848, Litchfield, Conn.; died May 8, 1913, New Haven, Conn.

*DEMING, 1836, HENRY CHAMPION, LL.B., LL.D.—(*Law*)—Born May 23, 1815, Colchester, Conn.; died Oct. 9, 1872, Hartford, Conn. Mbr. Conn. State Legislature, 1849, 1850, 1859 and 1860. Mbr. of Congress. 1863-1867. Collector of internal revenue, 1869-1872. Col., Union Army, Civil War.

*DEMING, 1872, HENRY CHAMPION—(*Finance*)—Born Nov. 25, 1850, Hartford, Conn.; died Jan. 19, 1931, New York City.

*DEMING, 1883, LAURENT CLERC—(*Transportation*)—Born Nov. 21, 1860, Hartford, Conn.; died Oct. 12, 1945, New York City.

DEMPSEY, 1956, ANDREW SQUIRE, LL.B.—(*Law*)—Born Mar. 24, 1934, Cleveland, Ohio; Ptnr. Squire, Sanders & Dempsey, 1800 Union Commerce Bldg., Cleveland, Ohio 44115; res. 12819 Lake Shore Blvd., Cleveland, Ohio 44108; 1st Lieut., U.S.A.F., '56-'59; m. Aug. 22, '61, Hope Gibson; s. John Bourne III, Philip Johnson, David Gibson.

DEMPSEY, 1938, JAMES HOWARD, JR., LL.B.—(*Law*)Born Oct. 18, 1916, Cleveland, Ohio; Ptnr. Squire, Sanders & Dempsey, 1800 Union Commerce Bldg., Cleveland 44115; res. Chagrin Falls, Ohio. 44022; Mayor, Village of Hunting Valley, Ohio, '52-'58; Yale Alumni Bd., '57; Pres., Cleveland Yale Alumni Assn., '56, Yale Development Bd., '64; Trustee, Cleveland Mus. of Art, Home for Aged Women, Lake View Cemetery Assn., University Hospitals; Lieut. Cmdr., USN, '41-'45; m. Aug. 2, '42, Julia C. Bolton; d. Julia B. (*Cox*), Melissa H. (*Gerrity*), ('71).

*DEMPSEY, 1911, JOHN BOURNE, M.A., LL.B.—(*Law*)—Born Sept. 26, 1888, Cleveland, Ohio; died May 20, 1963; Ohio House of Representatives, '23-'27; Yale Univ. Council, '48-'55; Alumni Bd. Chmn., '40-'43; Capt. F.A., W.W. I; m. July 5, '28, Jeanette Johnson; s. Bourne P., ('52), Alfred S., ('54), Andrew S., ('56).

*DENEGRE, 1915, THOMAS BAYNE, LL.D.—(*Finance*)—Born Jan. 18, 1893, New Orleans, La.; died June 18, 1967; with First Natl. Bank of Biloxi, Miss.; 1st Lieut., F.A., W.W. I, AEF.

deNEUFVILLE, 1961, JOHN PHILIP, M.A., Ph.D.—(*Science*)—Born May 1, 1940, New York, N.Y.; Research Assoc. at Exxon Corporate Research Laboratory, P.O. Box 45, Linden, N.J. 07036; res. Thomas Rd., Mendham, N.J. 07945; Class Council, '61-; Yale Alumni Fund, Pierson Coll. Agt., '70-; 15th Reunion Gift Chmn., '75-'76; m. Aug. 1966, Suzanne Bayon; s. Peter Bayon, Thomas Pike, John Howard.

*DENISON, 1895, LINDSAY—(*Literary work*)—Born Mar. 23, 1873, Salem, Mass.; died Mar. 25, 1934, Thomaston, N.Y. Capt., QMC., World War I (A.E.F.).

*DENNIS, 1872, FREDERIC SHEPARD, M.D., F.R.C.S., F.A.C.S.—(*Medicine*)—Born April 17, 1850, Newark, N.J.; died Mar. 8, 1934, New York City. Prof. of surgery, Bellevue Hosp., Medical College, 1883-1893; Prof. of clinical surgery, Cornell University Medical College, 1898-1910, and Prof. emeritus, 1910-1934.

*DENNY, 1854, THOMAS—(*Finance*)—Born Aug. 22, 1833, Boston, Mass.; died July 29, 1906, Lake Meacham, Malone, N.Y.

*DENSLOW, 1873, HERBERT MCKENZIE, M.A., D.D.—(*Ministry*)—Born Aug. 20, 1852, Lynn, Mass.; died Sept. 7, 1944, Hartford, Conn. Instructor at General Russell's Collegiate and Commercial Institute, New Haven, 1873-1874; Prof. of pastoral theology, General Theological Seminary, 1902-1927; and Prof. emeritus, 1927-1944.

*DENT, 1836, HENRY HATCH, M.A.—(*Law*)—Born Feb. 11, 1815, Bryantown, Md.; died Nov. 19, 1872, Baltimore, Md.

*DEPEW, 1856, CHAUNCEY MITCHELL, LL.D.—(*Law*)—Born April 23, 1834, Peekskill, N.Y.; died April 5, 1928, New York City. Mbr. N.Y. State Legislature, 1861-1863. Sec. of State, N.Y., 1863-1865. Appointed U.S. Minister to Japan, 1866, but resigned. Mbr. U.S. Senate, 1899-1911. Regent, University of

the State of N.Y., 1874-1904. Mbr. Yale Corp., 1888-1906. Col. and Judge Advocate, N.Y. N.G., Civil War.

*DEPEW, 1919, GANSON GOODYEAR, LL.B.—(*Law*)—Born Nov. 2, 1895, Buffalo, N.Y.; died Mar. 31, 1924, Aiken, S.C. Asst. District Attny., western N.Y., 1922-1924. Lieut., Naval Air Service, World War I.

*deSA, 1841, POMPEO ASCENCO—(*Farming*)—Born April 20, 1818, Alcantara, Maranham, Brazil; died in 1879, Alcantara.

*deSIBOUR, 1896, JULES HENRI—(*Architecture*)—Born Dec. 23, 1872, Paris, France; died Nov. 4, 1938, Washington, D.C. Architect for the French embassy and the Canadian legation in Washington, D.C., and other public buildings.

*DeSILVER, 1910, ALBERT, LL.B.—(*Law*)—Born Aug. 27, 1888, Brooklyn, N.Y.; died Dec. 7, 1924, Rye, N.Y.

DESJARDINS, 1965, PETER EARL, M.S.—(*Business*)—Born Apr. 19, 1940, Miami, Fla.; Managing Dir., FMC International SA, Box 27, Marxergasse 10, 1033 Vienna, Austria; res. Baumgasse 17-19, 1033 Vienna, Austria; Management Consultant, McKinsey & Co., N.Y., '69-'71; Asst. to the Pres., & Dir., Corporate Development, Howmet Corp., Greenwich, Conn., '71-'72; Certificat d'Etudes Politiques, Universite de Paris, '62; 1st Lieut. A.U.S., '59-'61; GCM (Airborne, Ranger); m. Jan. 3, '67, Germaine A. Ranch (divorced '72).

DEVOR, 1941, DONALD S., JR., M.A.—(*Advertising*)—Born July 10, 1920, East Orange, N.J.; Area Marketing Specialist, Citibank, Bronx, Westchester, Mid Hudson Div., Citibank, Area Office, 4377 Bronx Blvd., Bronx N.Y. 10466; res. Siscowit Rd., Pound Ridge, N.Y. 10576; Lieut. (j.g.), U.S.N., '43-'46; m. Mar. 26, '55, Nancy Robinson; s. John H. ('68), James R.

*DEXTER, 1861, FRANKLIN BOWDITCH, M.A., Litt.D.—(*Education and library work*)—Born Sept. 11, 1842, Fairhaven, Mass.; died Aug. 13, 1920, New Haven, Conn. Asst. Librarian, Yale University, 1869-1912; also Sec. of the University 1869-1899, and Larned Prof. of American history, 1877-1888.

*DEXTER, 1867, MORTON, M.A.—(*Literary work*)—Born July 12, 1846, Manchester, N.H.; died Oct. 29, 1910, Edgartown, Mass.

DIAMOND, 1974, PETER C.—(*Television*)—Born May 27, 1950, New York, N.Y.; Olympics Researcher, ABC Television

Sports, Inc., 1330 Ave. of the Americas, New York, N.Y. 10019; res. 116 E. 68th St., New York, N.Y. 10021.

*DICKINSON, 1856, ARTHUR—(*Business*)—Born July 15, 1835, Hillsboro, N.C.; died Oct. 13, 1904, Baltimore, Md. Served in Commissary Dept., Confederate Army, Civil War.

DILLER, 1924, JOHN CABOT—(*Military retired*)—Born Sept. 20, 1895, Sterling, Ill.; res. 410 Watseka St., Park Forest, Ill. 60466; Assoc. Dir., Bureau of Appointments, '27-'32; Capt. AUS, Inf., '16-'19; Col., USAF, '42-'55; Bronze Star; Asst. Treas., RTA, '28-'42; m. Sept. 6, '27, Margaret O. Wells (dec.); m. June 22, '50, Helen E. Ketchin; s. John C., Jr., Richard T. (dec.), Robert M.; d. Lucia; sd. Janet E. Ketchin (*Stevens*).

DILWORTH, 1938, JOSEPH RICHARDSON, LL.B., M.A. (Hon.) —(*Finance*)—Born June 9, 1916, Hewlett, N.Y.; Senior Financial Advisor, Rockefeller Family & Associates, '58-, Room 5600, 30 Rockfeller Plaza, New York, N.Y. 10020; res. 141 Hodge Rd., Princeton, N.J. 08540; Yale Univ. Council, '58-'59; Alumni Fellow, '59-'62; Fellow, Yale Corp., '59-; Successor Trustee, Yale Corp., '62-; Buying Dept., Kuhn, Loeb & Co., '46-'51; Ptnr., Kuhn, Loeb & Co., '51-'58; Dir. & Chmn., Rockefeller Center, Inc., '58-; Dir., R.H. Macy & Co., Inc. '61-; Chase Manhattan Bank, '58-; Diamond Shamrock Corp., '69-'73; Chrysler Corp., '62-; Selected Risk Investments, '62-; International Basic Economy Corp., '59-; Omega Fund., Inc., '67-; Pickands Mather & Co., '66-'69; Rockwell Mfg. Co., '50-'66; Rockwell Standard Co., '56-'59; Rockwell Spring & Axle Co., '56-'59; Lieut. Cmdr., USN, '42-'45; m. June 15, '40, Elizabeth Cushing; s. Joseph R., Jr., ('64), Charles Dewees, ('78); d. Melissa Mckay (*Gold*), Alexandra Cushing.

*DIMOCK, 1863, HENRY FARNAM, M.A.—(*Business*)—Born Mar. 28, 1842, South Coventry, Conn.; died April 10, 1911, New York City. Mbr. Yale Corp., 1899-1911.

*DINES, 1908, TYSON, LL.B.—(*Law*)—Born Oct. 31, 1885, Brunswick, Mo.; died Nov. 17, 1965; s. T.D., Jr., ('41). Allen, ('43).

*DIXON, 1907, THEODORE POLHEMUS—(*Finance*)—Born June 27, 1883, Brooklyn, N.Y.; died July 28, 1959, Weekapaug, R.I.; Capt., Intelligence, World War I; former Class Treas. and Chmn., Class Exec. Com.

°DIXON, 1868, WILLIAM PALMER, LL.B., M.A.—(*Law*)—Born Mar. 19, 1847, New York City; died June 24, 1926, Lawrence, N.Y.

°DOANE, 1891, JOHN WESLEY—(*Finance*)—Born Mar. 22, 1869, Thompson, Conn.; died Sept. 25, 1933, New York City.

°DODD, 1838, ALBERT—(*Law*)—Born 1818; drowned June, 1844, near Bloomington, Ill.

°DODGE, 1904, FRANCIS TALMAGE—(*Business*)—Born Feb. 25, 1882, Brooklyn, N.Y.; died July 18, 1970; pres. Dodge & Olcott Co., '04-'52; Al. Fd. Agt., '45-; m. April 21, '09, Helen Partridge (dec.) m. Aug. 5, '32, Ellen Putnam Andrews (dec.); d. Virginia Mary.

°DODGE, 1907, PHILIP LYNDON—(*Finance*)—Born Nov. 28, 1885, Brooklyn, N.Y.; died June 17, 1974, New York, N.Y.; formerly Ptnr., Laird, Bissell & Meeds; Alumni Fund Agt. for Class, '07; Dir., Alumni Fund, one term; m. Aug. 26, '29, Ethel Forgan Booth.

°DODGE, 1929, WASHINGTON—(*Finance*)—Born Sept. 23, 1907, San Francisco, Calif.; died Dec. 1974; Stockbroker, V.P., Clark, Dodge & Co., Inc., 470 Park Ave., New York, N.Y. 10022; m. Aug. 10, '32, Helen Keep Hubbard; m. April 10, '40, Helen Manning Brown; s. Jonathan W., ('55), Kent H., Arthur P., ('64).

DOMINICK, 1960, DAVID DEWITT, J.D.—(*Law*)—Born Jan. 24, 1937, Philadelphia, Pa.; Lawyer; Ptnr., 2510 Lincoln Center Bldg., Denver, Colo. 80203; res. 300 Humboldt St., Denver, Colo. 80218; Commissioner, Federal Water Pollution Control Admin., U.S. Dept. of Interior, '69-'71; Asst, Administrator, U.S. Environmental Protection Agency, '71-Oct. '73; Capt., USMC, '60-'63; m. Sept. 8, '66, Mary Helen Stein; s. Christopher B., Andrew B., DeWitt S.

°DOMINICK, 1909, GAYER GARDNER—(*Finance*)—Born Mar. 16, 1887, New York, N.Y.; died Aug. 18, 1961; Limited Ptnr., Dominick & Dominick, N.Y.C.; Gov., Stock Exchange, 3 terms; Pres., Roosevelt Hosp., '48-'53; Trustee, Iolani School, Honolulu, '54; W.W. I: Lieut. (s.g.), Navy-Submarine, Lighter-than-Air; m. Nov. 20, '09, Cordelia Eleanor Hoyt; s. Bayard II, ('37); Peter Hoyt, ('37); d. Cordelia Lowry (dec.)

DONALDSON, 1953, WILLIAM HENRY, M.A., M.B.A.—(*Finance*)—Born June 2, 1931, Buffalo, N.Y.; Dean, Yale University School of Organization & Management, & Prof. of Public &

Private Management; bus. 200 Park Ave., Suite 3024, New York, N.Y. 10017; res. 895 Park Ave., New York, N.Y. 10021; Trustee, Yale Univ.; Founder, Chmn. of Bd. & Chief Exec. Officer, Donaldson, Lufkin & Jenrette, '59-'73; Trustee, Ford Foundation; Bowery Savings Bank; The German Marshall Fund; Nichols School; U.S. Undersecretary of State, '73-'74; Special Consultant & Advisor to V.P. Nelson Rockefeller; Organizational & Financial Advisor to Gov. Hugh Carey; 1st Lieut., USMC, '53-'55; m. Sept. 17, '60, Evan Burger; s. Matthew Evans; d. Kimberly Eames.

DONNELLEY, 1931, GAYLORD, LL.D.—(*Industrial*)—Born May 19, 1910, Chicago, Ill.; Chmn. of Exec. Com., R. R. Donnelley & Sons Company, 2223 Martin Luther King Drive, Chicago, Ill. 60616; res. Route 1, Box 197, Libertyville, Ill. 60048; Yale Univ. Council, '54-'59; Yale Univ. Press Bd. of Governors, to June '62; Yale Development Bd., '64-'71; Yale Univ. Campaign Advisory Com., from '74; Trustee, Yale Library Associates; Chmn. of Bd. of Trustees, Univ. of Chicago; Pres., Ducks Unlimited, Inc.; Trustee, Ducks Unlimited (Canada); Ducks Unlimited de Mexico, A.C.; Natl. Recreation & Parks Assn.; Life Trustee, Newberry Library; Mbr., Chicago Community Trust Exec. Com.; Chicago Merit Employment Com.; Advisory Bd., YMCA of Metropolitan Chicago; Business Advisory Council of Chicago Urban League; Bd. of Advisors, Council for Financial Aid to Education, Inc.; Dir., American Friends of Cambridge Univ., Research Found.; Pres., Community Fund of Chicago, '69-'71; Mbr., Ill. Nature Preserves Comm., '68-'74; Trustee, United Presb. Found., '63-'75; Trustee, Sarah Lawrence Coll., '65-'73; Honorary Trustee, '73-; Honorary Mbr., Mercy Hosp. Bd. of Consultors; Bd. of Dir., Dunn & Bradstreet; First Natl. Bank of Chicago; First Chicago Corp.; Borg-Warner Corp.; Trustee, Savings & Profit Sharing Funds, Sears Employees, '76-; Lieut. Cmdr., USNR '42-'45; Presidential Unit Citation with 1 Star; Purple Heart; m. May 4, '35, Dorothy Williams Ranney; s. Elliott Ranney, Strachan ('64); d. Laura (*Wheeler*).

•DONNELLEY, 1889, THOMAS ELLIOTT—(*Industrial*)—Born Aug. 18, 1867, Chicago, Ill.; died Feb. 6, 1955. Lake Forest, Ill.; Dir., Pulp and Paper Div., War Industries Bd., World War I; Chmn. Citizens' Com., Chicago, '22; Mbr., Council, Yale-in-China, '25-'32, and Com. for rebuilding plant, '47.

DOOLITTLE, 1942, Duncan Hunter—(*Industrial*)—Born Dec. 12, 1920, Providence, R.I.; V.P. & Gen. Mgr., Machine Tool Div., Brown & Sharpe Mfg. Co., Precision Park, North Kingston, R.I. 02852; res. 164 Old Post Rd., Wakefield, R.I. 02879; Trustee: Butler Hosp., '69-'75, Old Stone Bank, '61-'63; Councilman, South Kingston Town Council, '75-; Capt. A.U.S., F.A. Reserve, '43-'45; m. Oct. 21, '48, Ann Watson Lewis (divorced); m. Dec. 21, '67, Clare Southerland; s. William Shearman, Elisha Watson; d. Harriet Sprague, Abby Lippitt, Nichole Grahame.

*DOUGLAS, 1900, Malcolm, M.D.—(*Medicine*)—Born Sept. 5, 1876, Albany, N.Y.; died Feb. 12, 1939, Montecito, Calif. Maj., Med. Corps, World War I (AEF).

*DOUGLASS, 1887, Willard Robinson, LL.B.—(*Law*)—Born Dec. 22, 1865, Leavenworth, Kans., died Jan. 2, 1956, Kansas City, Mo.

*DOUSMAN, 1906, Louis deVierville—(*Insurance*)—Born Feb. 17, 1882, St. Louis, Mo.; died Aug. 11, 1955, Billings, Mont.; former Mbr. Billings City Park Bd., and Mont. State Park Bd.

DOWLING, 1969, Brian J.—(*Sports*)—Born Apr. 1, 1947, Cleveland, Ohio; res. 8 Lehan St., Canton, Mass. 02021; m. Dec. 4, '72, Betsy Lampert.

DOWNING, 1970, Earl S. III—Born Aug. 19, 1948, Palo Alto, Calif.; res. Friendsville, Pa. 18818.

DOYLE, 1974, Thomas J., Jr.,—(*Education*)—English Tutor, c/o New Asia College, C.U.H., Shatin New Territories, Hong Kong; res. 63 South Main Ave., Albany, N.Y. 12208

DRAIN, 1943, Richard Dale, LL.B., LL.M.—(*Finance*)—Born Aug. 16, 1920, Washington, D.C.; Foundation Administrator, Washington, Cathedral, Mt. St. Alban, Washington, D.C. 20016; res. 5120 Baltan Rd., Washington, D.C. 20016; Assoc., Drain & Weaver, '48-'51; C.I.A., '51-'73; Protestant Episc. Foundation, '73-; Staff, Special Asst. to U.S. Pres., '55; Special Asst. to Sec. of State, '57; Col., USAR, '43-; Silver & Bronze Stars; m. June 30, '48, Margenne Noland; s. William Whitley, Robert Dale ('79).

DRAPER, 1937, Arthur J., M.D.—(*Medicine*)—Born Sept. 3, 1914, Charlotte, N.C.; Physician, U.S. Naval Hosp., San Diego, Calif. 92134; res. 4222 Orchard, San Diego, Calif. 92107; m. Aug. 3, '40, Denise Gair; s. Arthur J. III, S. Russell, William Franklin IV, ('74); d. Dennie Gair (*Phleger*), Judy Gordon (*Cottrell*).

DRAPER, 1950, WILLIAM H., III—(*Business*)—Born Jan. 1, 1928, White Plains, N.Y.; Gen. Ptnr., Sutter Hill Ventures, 2 Palo Alto Square, Suite 700, Palo Alto, Calif. 94304, (preferred address for mail); res. 91 Tallwood Court, Atherton, Calif. 94025; AYA; Chmn., Enrollment/Scholarships, Northern Calif.; Dir. & V.P., Alumni Assn., Northern Calif.; Dir., Yale Club, Palo Alto, '76-; Chmn., Pacific Region Major & Special Gifts Com., Campaign for Yale, '76-; Pres., Western Assn. Venture Capitalists, '67-'68; Mbr., Western Electronics Manufacturers Assn., '76-; Dir., Measurex Corp., '68-; Plantronics Inc., '73-; Lexitron Corp., '71-; Bd. of Trustees, United Way, Santa Clara Cty., '68-'76; Pres., United Fund, Palo Alto/Stanford, '67-'76; Trustee, Crystal Springs School for Girls, '67-73; Dir., Population Crisis Com., Washington, D.C., '76-; Mbr., Harold Brunn Soc. for Medical Research, '76-; 1st Lieut., Inf., '47-'52; Combat Infantryman Badge, Meritorious Service Ribbon with Medal Pendant, Airborne Infantryman Badge; m. June 13, '53, Phyllis Culbertson; s. Timothy; d. Rebecca, Polly ('77).

•DREISBACH, 1903, JOHN MARTIN—(*Business*)—Born Nov. 26, 1879, Wilkes-Barre, Pa.; died Nov. 10, 1958, Summit, N.J.

•DuBOIS, 1867, JOHN JAY, LL.B., M.A.—(*Law*)—Born June 6, 1846, Newton Falls, Ohio; died Nov. 11, 1898, Lakewood, N.J.

•DUNHAM, 1859, GEORGE ELLIOTT—(*Student*)—Born Nov. 27, 1838, Hartford, Conn.; drowned July 17, 1858, Springfield, Mass.

DUNHAM, 1938, LAWRENCE BOARDMAN, JR.—(*Business retired*)—Born Mar. 3, 1916, New York, N.Y.; res. 54 Linden Ave., Branford, Conn. 06405; Sr. Dir., Office of Univ. Development, Yale Univ. '67-'73; Management Supervisor, Compton Advertising, Inc., '56-'67; Lieut., USN, '41-'46; Presidential Unit Citation; Sec., RTA, '68-; m. Sept. 7, '40, Angelica V. R. Fales; s. Lawrence B., III ('63); d. Angelica V. R., Gail Fales, Valerie Putnam.

DUNN, 1957, GEORGE J., J.D.—(*Law*)—Born Apr. 29, 1935, Cleveland, Ohio; V.P. & General Counsel, Standard Oil Co., Ohio; 1725 Midland Bldg., Cleveland, Ohio 44115; res. 2374 Roxboro Rd., Cleveland Heights, Ohio 44106; Assoc,, McAfee, Hanning, Newcomer & Hazlett, '60-'67; Assoc., Squire, Sanders & Dempsey, '67-'68; m. May 27, '61, Becky Fisher; s. John F., Gordon B. II.

*DUNNING, 1867, ALBERT ELIJAH, D.D., S.T.D.—(*Ministry*)—Born Jan. 5, 1844, Brookfield, Conn.; died Nov. 14, 1923, Brookline, Mass.

*DUNWODY, 1836, JAMES BULLOCH—(*Ministry*)—Born Sept. 24, 1816, Washington, Ga.; died June 26, 1902, Walterboro, S.C.

DURFEE, 1956, C. GIBSON, JR.—(*Industrial*)—Born Mar. 11, 1934, Jersey City, N.J.; Nuclear Projects Mgr., Northeast Region, Westinghouse Nuclear Energy Systems, Monroeville Nuclear Center, Box 355, Pittsburgh, Pa. 15230; res. 220 Sunridge Rd., Pittsburgh, Pa. 15238; Pres. Yale Club of Pittsburgh, '71-'73; Governor, Yale Club of Pittsburgh, '73-; Class Exec. Com., '56-; Alumni Fund Agt., '56-'66; Vestryman, Calvary Church, '75-; Lieut. (j.g.), USN, '56-'60; m. Nov. 24, '56, Camilla Vilas; s. Charles G. III, Timothy C., Donald R.; d. Susan D., Dorothy V.

DURHAM, 1953, EDWIN A. II—(*Mineral exploration*)—Born June 5, 1931, Sistersville, West Va.; Managing General Ptnr., Everest Exploration Co., (uranium & minerals), P.O. Box 1339, Corpus Christi, Tex. 78403; res. 341 Claremore, Corpus Christi, Tex. 78412; Chmn., Yale 25th Reunion Class Gift Fund; Yale Alumni Schools Com., South Texas Area; Asst. to Gen. Manager, Frankfort Oil Co., '55-'59; Manager, Gulf Coast Exploration, Southern Petroleum Exploration, Inc., '59-'69; Past Dir., Thor Jet Inc.; Wiser Oil Co., Petroleum Exploration & Southern Petroleum Exploration, Inc.; Dir., Independent Petroleum Assn. of America; Corpus Christi Natl. Bank; Mbr. AM. Assn. of Petroleum Landmen; Corpus Christi Geological Soc.; South Tex. Geological Soc.; Corpus Christi Park Bd., '62-'66; St. James Episc. School Bd., '61-'74; Vestry, Church of the Good Shepherd, '70-'72; Creative Arts Center, '75-; Chmn., United Fund, Independent Oil & Gas Operators, '68; Dir., Corpus Christi Museum, '60-'65; YMCA, '73-'76; Trustee, St. Mary's Hall, '73-'76; 1st Lieut., USMC, '53-'55; m. June 19, '54, Kaye Tarrant; d. Edith Sugden, Mary Tarrant, Eleanor Kaye.

DURYEE, 1917, SAMUEL SLOAN, LL.B.—(*Law retired*)— Born Nov. 18, 1893, New York, N.Y.; of Counsel to Parker, Duryee, Zunino, Malone & Carter, 1 E. 44th St., New York, N.Y. 10017; res. 333 E. 68th St., New York, N.Y. 10021; Dir., Alumni Fund; Chmn., '47-'48; Univ. Council, '48; Alumni Bd.,

’47; Assoc. Fellow, Trumbull Coll. ’47-; Pres. St. John’s Guild, ’32-’33; Chief, Tax Amortization Section, Office Under Sec. of War, ’40-’41; Chmn., Tax Amortization Bd., ’41-’42; Pres., Hosp. for Special Surgery, ’48-’58; Life Gov., New York Hosp., ’75; Pres., Trustees of Groton School, ’48-’65; Mbr., Am. Bar Assn.; Assn. Bar of the City of New York; Dir., Am. Subsidiaries of Zurich Ins. Co.; City Bank Farmers Trust Co.; Ptnr., Parker & Duryee and associated and successive firms; Capt., F.A., A.E.F., ’17-’19; 2nd Lieut.; Natl. Guard, Conn., ’16; m. Aug. 18, ’17, Mary Ballard; s. Samuel S., Jr.; d. Nina (*Wood*).

*DWIGHT, 1849, TIMOTHY, M.A., D.D., LL.D.—(*Education*)—Born Nov. 16, 1828, Norwich, Conn.; died May 26, 1916, New Haven, Conn. Prof. of sacred literature, Yale Divinity School, 1858-1886; Pres., Yale University 1886-1899; also acting treasurer, 1886-1888.

*DWIGHT, 1893, WINTHROP EDWARDS, LL.B., Ph.D.—(*Law*)—Born Dec. 23, 1872, New Haven, Conn.; died Dec. 3, 1944, New York City, Assoc. Fellow, Timothy Dwight College, Yale University, ’35-44.

DYESS, 1939, ARTHUR D., LL.B.—(*Law*)—Born Sept. 17, 1916, Temple, Texas; Attny., Foremen, Dyess, Prewett, Rosenberg & Henderson, 2900 United Gas Bldg., Houston, Texas 77002; res. 9015 Sandringham Drive, Houston, Texas 77024; m. Aug. 26, ’44, Elizabeth Treman Booth; s. Arthur, (’68); d. Eugenia, Elizabeth.

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*EAKIN, 1856, EMMET ALEXANDER—(*Farming*)—Born Mar. 26, 1836, Bedford County, Tenn.; died Dec. 27, 1864, Murfreesboro, Tenn.

*EAKIN, 1846, WILLIAM SPENCER, M.A.—(*Business*)—Born July 6, 1820, Shelbyville, Tenn., died Jan. 31, 1880, New York City.

*EAMES, 1843, BENJAMIN TUCKER, M.A.—(*Law*)—Born June 4, 1818, Dedham, Mass.; died Oct. 6, 1901, East Greenwich, R.I. Mbr., R.I. State Senate; 1854-1856, 1859, 1863, and 1884. Mbr., R.I. State Legislature, 1868, and Spkr., 1869. Mbr. of Congress, 1871-1879.

EARLY, 1945, HOBART EVANS, J.D.—(*Law*)—Born June 27, 1922, Brooklyn, N.Y.; Attny., 1116 First Natl. Bank Tower, Atlanta, Ga. 30303; res. 1194 Warrenhall Lane N.E., Atlanta, Ga. 30319; m. Sept. 7, '46, Patricia Hadley Pulfer; m. March 29, '69, Winifred Head Schreiner; s. Hobart Evans, Jr., Harold Steven; d. Suzanne Hadley.

*EATON, 1877, SAMUEL LEWIS, M.A., M.D.—(*Medicine*)—Born Jan. 15, 1853, Lancaster, Wisc.; died April 17, 1930, Newton Highlands, Mass.

*EATON, 1862, SHERBURNE BLAKE—(*Law*)—Born Feb. 23, 1840, Lowell, Mass.; died Dec. 1, 1914, New York City. Capt., Union Army, Civil War.

ECKLUND, 1938, JOHN E., LL.B., M.A. (Hon.)—(*Business*)—Born Apr. 13, 1916, Jamestown, N.Y.; Treas., Yale University, 451 College St., New Haven, Conn. 06511; res. 27 Cedar Rd., Woodbridge, Conn. 06525; Treas., Yale Univ., '66-; Alumni Bd., '55-57; Pres., Yale Club of New Haven, '55-'57; Fellow, Davenport Coll., '50-; Treas., Yale Alumni Fund, '66; Mbr., Bd. of Governors, Yale Univ. Press., '66-; Assoc. Wiggin & Dana, New Haven, '46-'51; Ptnr., '51-'66; Chmn., Woodbridge Town Planning & Zoning Comm., '60-'64; Mbr., Bd. of Dir., Yale New Haven Hosp., '66-; Lieut., USNR, '41-46; Commendation Ribbon, U.S. Atlantic Fleet; RTA: Sec., '46-'56; Dir., c. '59-'62; Pres., '75-; m. Oct. 29, '42, Mary T. Sizer; m. Mar. 22, '75, Constance L. Cryer; s. Peter J., ('67), John E. Jr.; d. Hilda (*Ollmann*), Elizabeth (*Berger*).

EDDY, 1929, MAXON HUNTER, M.D.,—(*Medicine partially retired*)—Born May 31, 1907, Middlebury, Vt.; res. 1 South St., Middlebury Vt. 05753; Practicing Surgeon, Bridgeport & Fairfield, Conn., '39-'69; Volunteer Surgeon, Developing Countries, '69-; Lieut. Cmdr., USNR, Med. Corps, '43-'46; Battle Star; m. Oct. 10, '36, Virginia Marshall; s. Marshall H., David M.; d. Virginia.

EDEN, 1951, JOHN W.—(*Government*)—Born July 30, 1927, Cleveland, Ohio; Asst. Sec. for Economic Development, Room 7800, U.S. Dept. of Commerce, Washington, D.C. 20230; res. 1101 Farquhar Drive, York, Pa. 17403; Bd. of Alumni Placement Com., '59-'61; Pres., Yale Alumni Assn. of Central Pa., '70-'71; V.P., The Eden Corp., Detroit, '51-'58; Division General Mgr., AMF Inc., N.Y. & Conn., '59-'67; Exec. V.P., Graham Engineering Corp., York, Pa., '68-'75; Deputy Under Sec.,

U.S. Dept. of Commerce, '75-'76; Lieut. USNR, '45-'47, '53-'55; m. Aug. 22, '53, Caroline Brayton Ballou; s. John Jefferson, Timothy Starr, Carter Remington; d. Emily Starr.

*EDWARDS, 1857, ALFRED LEWIS, LL.B., M.A.—(*Law*)—Born Dec. 2, 1836, New York City; died Feb. 23, 1910, Athol, N.Y.

*EDWARDS, 1878, GEORGE BENJAMIN—(*Finance*)—Born Jan. 14, 1854, Russellville, Ky.; died Dec. 15, 1929, Louisville, Ky.

*EDWARDS, 1842, NEWTON—(*Law*)—Born Mar. 11, 1822, Andover, Mass.; died May 7, 1855, Augusta, Me.

*EDWARDS, 1901, RICHARD HENRY, M.A.—(*Ministry*)—Born Oct. 22, 1877, Lisle, N.Y.; died April 7, 1954, Lisle; former Dir., Natl. Council on Religious Education in Higher Education; on Natl. War Work Council, YMCA, World War I.

*EELLS, 1901, JOHN SHEPHARD—(*Ranching*)—Born Nov. 23, 1878, Oakland, Calif.; died June 20, 1964; m. Sept. 26, '03, Marion Coffin; s. J.S.E., Jr. ('28); d. Sarah Lucia (*Hoagland*), Marion (*Blakeslee*).

*EICHELBERGER, 1858, MARTIN SMYSER—(*Law*)—Born Jan. 27, 1836, York, Pa.; died July 10, 1893, York.

EISENBERG, 1974, BRUCE ALAN—(*Student*)—Born Dec. 3, 1952, Baltimore, Md.; res. 3305 Labyrinth Rd., Baltimore, Md. 21215; Law School, University of Pennsylvania.

EISLER, 1952, COLIN TOBIAS, M.A., Ph.D.—(*Education*)—Born March 17, 1931 Hamburg, Germany; Prof., N.Y.U. Institute of Fine Arts, 1 E. 78th St., New York, N.Y. 10021; res. 229 E. 79th St., New York, N.Y. 10021; m. June 23, '60, Benita Blitzer; d. Rachel Charlotte.

EKFELT, 1971, RICHARD HENRY, J.D.—(*Law*)—Born May 15, 1949, Omaha, Nebr.; Lawyer, Collier, Shannon, Rill & Edwards, 1666 K St. N.W., Washington, D.C. 20006; res. 2120 Leroy Place, N.W., Washington, D.C. 20008; Law Clerk to Justice Richard Neely, West Virginia Supreme Court of Appeals, '74-'76.

*ELDER, 1873, SAMUEL JAMES, LL.D.—(*Law*)—Born Jan. 4, 1850, Hopeville, R.I.; died Jan. 22, 1918; Boston, Mass. Mbr., Mass. State Legislature, 1885.

*ELDREDGE, 1839, CHARLES ST. JOHN—(*Student*)—Born Feb. 23, 1820, New York City; died Feb. 12, 1840, Townshend, Vt.

ELEBASH, 1944, SHEAREN DANIEL—(*Theatre, Business*)—Born July 23, 1921, Selma, Ala.; bus. P.O. Box 1055, Montgomery, Ala. 36102; res. 805 Cloverdale Rd., Montgomery, Ala. 36106;

Yale Alumni Area Rep., '58-'76; Lieut., USAAF, '43-'45; Air Medal, D.F.C.; m. Oct. 1, '53, Barbara Foss; s. Dean, Brian, Shearen Jr.; d. Barbara.

*ELLIOT, 1871, HENRY RUTHERFORD—(*Literary work*)—Born April 21, 1849, Woodbridge, Conn.; died April 18, 1906, New York City.

*ELLIOT, 1844, WILLIAM HORACE, LL.B., M.A.—(*Law*)—Born Dec. 31, 1824, New Haven, Conn.; died Dec. 8, 1852, Santa Cruz.

ELLIS, 1944, ALEXANDER, JR., LL.B.—(*Insurance*)—Born Apr. 9, 1922, Cambridge, Mass.; Exec. V.P., Fairfield & Ellis, Inc. 255 Franklin St., Boston, Mass. 02110; m. Oct. 26, '46, Nancy Walker Bush; s. Alexander III, Jonathan Prescott, Josiah Wear; d. Nancy Walker.

ELLIS, 1941, F. HENRY, JR., M.D., Ph.D.—(*Medicine*)—Born Sept. 20, 1920, Washington, D.C.; Chmn., Dept. of Thoracic & Cardiovascular Surgery, Lahey Clinic Foundation & New England Deaconess Hospital, 605 Commonwealth Ave., Boston, Mass. 02215; res. 75 Wilson's Lane, Needham, Mass. 02192; Yale Development Bd., '70-'72; Univ. of Minnesota: Instr. in Surgery, '52-'56, Asst. Prof., '56-'60, Assoc. Prof., '60-'64, Prof., '64-'70; Harvard Medical School: Lecturer on Surgery, '70-'74, Assoc. Clinical Prof. of Surgery, '74-; Consultant in Surgery, Mayo Clinic, '53-'70, Lahey Clinic, '70-; Chief, Thoracic Surgery, Mayo Clinic, '66-'70; Chief Cardiovascular Surgery, Lahey Clinic, '70-'75; Mbr., Am. Coll. of Surgeons, International Cardiovascular Society, Societé International de Chirurgie; Bd. of Governors, Am. Coll. of Surgeons, '57-'60, '69-'72; Am. Bd. of Thoracic Surgery, '70-'77; Pres., Soc. for Vascular Surgery, '71; Graduate Education Com., Am. Coll. of Suregons, '71-'76; Editorial Bd., Annals of Thoracic Surgery, '72-; Council, Soc. of Thoracic Surgeons, '74-'78; V.P., Soc. of Thoracic Surgeons, '76; Lieut. (j.g.), USNR, '46-'48; m. Nov. 17, '45, Elizabeth Dunston Watson; s. F. Henry III, Hederick Watson; d. Katherine deSaules (*Felsen*), Elizabeth Dunston, Margot McClintock, Laura Lawson, Marie Armide Longer.

ELLIS, 1951, GARRISON MCCLINTOCK NOEL—(*Business*)—Born Dec. 25, 1929, Washington, D.C.; Publisher, P.R. Counsel, The Country Books, Middleburg, Va. 22117; res. Millwood, Va. 22646; Pres., Wilson, VanDoren-Ellis Co., '70-'73; Asst.

Dir., Greater Baltimore Regional Planning Council, '68-'70; Special Asst. for Congressional & Community Relations, U.S. Office of Economic Opportunity, '65-'68; Exec. Com., Clarke-Frederick-Winchester, Va., Branch, NAACP, '74-; Exec. Com., Princeton, N.J., Democratic Club, '62-64; Pres., Princeton, N.J. Community Players, '61-'63; Vestryman, Cunningham Chapel Parish (Episc.), Millwood, Va. '69-'72; Lieut. (j.g.) USNR, '51-'55; m. Feb. 17, '68, Phoebe Giles Williams.

ELLIS, 1951, G. Corson, Jr., M.B.A.—(*Industrial*)—Born Mar. 13, 1929, Chicago, Ill.; Pres., Kessler-Ellis Products Co., 120 1st Ave., Atlantic Highlands, N.J. 07716; res. Cooper Rd., Atlantic Highlands, N.J. 07716; m. Oct. 7, '51, Joan Ferguson; s. G. Corson III, Kevin Kinney; d. Laura Ferguson.

•ELLIS, 1930, Harlan Montgomery—(*Industrial*)—Born Aug. 23, 1905, Charles City, Iowa; died May 22, 1953, Burbank, Calif.; Mbr., Yale Alumni Bd.; Class Agt.

ELLIS, 1930, Raymond Walleser, LL.B.—(*Law*)—Born Dec. 23, 1907, Charles City, Iowa; Ptnr., Choate, Hall & Stewart, 28 State St., Boston, Mass. 02109; res. Bradlee Rd., Marblehead, Mass. 01945; Lieut., USN, '43-'46; Bronze Star; m. Sept. 28, '33, Eleanor Humphreys Gwin; s. Charles Daniel, ('59), Barnes Humphreys, ('61), Melvin Wilbur; d. Mina Walleser (*Otis*).

•ELLSWORTH, 1905, John Stoughton—(*Farming*)—Born Aug. 21, 1883, Simsbury, Conn.; died Mar. 6, 1969.

•ELWELL, 1945, Francis Bolton, Jr., LL.B.—(*Law*)—Born May 7, 1923, Riverton, N.J.; died Dec. 29, 1958, Washington, D.C.,; Asst. District Attny., New York City, '52-'57; Legal Advisor, Defense Air Transportation Admin. U.S. Dept. Comm.

•ELY, 1906, Grosvenor—(*Finance*)—Born Feb. 21, 1884, Norwich, Conn.; died Aug. 23, 1959, Warwick, N.Y.; Capt. Conn. State Guard, and Chief of Section, War Industries Bd.; World War I; Vice-Chmn., Conn. State War Finance Comm., World War II; Mbr., Conn. State Banking Advisory Council.

EMBERSITS, 1958, John Frank, M.B.A.—(*Business*)—Born Jan. 18, 1937, Pittsburgh, Pa.; Exec. V.P. & Chief Operating Engineer, Welsbach Corp.; Chmn., Energy Task Force (Am. Council on Education), 240 Sargent Drive., New Haven, Conn. 06511; res. 477 Prospect St., New Haven, Conn. & 33 Acorn Rd., Madison, Conn. 06443; Yale Corp., '70-'75; Dir., Univ. Operations, '65-'75; Energy Advisor to Yale Corp., '75-; Univ. Council; AYA Athletic Com.; Treas., Football "Y" Assn., '67-;

Yale Club of Madison, Fellow, Jonathan Edwards Coll.; Pres., Yale PeeWee Hockey; Dir., St. Thomas More House; Co-Chmn., Class of '58 Reunion, '73; Dir.: Greater New Haven Chmbr. of Comm. '68-, New Haven Water Co., '74-, Mercy Center, Madison, '73-, Natl. Assn. of Coll. & Univ. Business Officers '73-; Trust Bd., Union Trust Co., '69-; Mbr., Manufacturers Assn. of New Haven, '72-; Exec. Com., Eastern Assn. of Coll. & Univ. Business Officers, '68-'73; Distinguished Service Award, Madison Jaycees, '70; Outstanding Young Man, Conn. Jaycees, '70; Outstanding Young Man in New England, New England Jaycees, '70; Chmn., Mayor's Management Task Force, New Haven, '76; New England Construction Users Council; Governor's Comm. on Environmental Policy, State of Conn.; United Way of New Haven: Chm., Special Gifts, '69, Campaign Policy Com., '71-73; Campaign Steering Com.: St. Raphael's Hosp., '73, Yale-New Haven Hosp., '72; Chmn., New Haven Booster's Club, '72; RTA: Asst. Treas., '66-, Dir. '70-; s. Jeffrey John, Steven James; d. Leslie Lynn.

*EMERSON, 1834, ALFRED, M.A.—(*Ministry*)—Born April 5, 1812, Beverly, Mass.; died Feb. 7, 1896, Dochester, Mass. Prof. of mathematics and astronomy, Western Reserve College, 1853-1856.

EMERSON, 1953, CHRISTY PAYNE, M.C.P.—(*Business*)—Born Feb. 19, 1931, New York, N.Y.; Proprietor, The Bret Harte, Retirement Residence, No. 26, 3535 Coolidge Ave., Oakland, Calif. 94602; res. 2910 Elmwood Court, Berkeley, Calif. 94705; Class Sec. '53-'63; Lieut. (j.g.) USNR, Submarine Service, '53-'56; m. Aug. 4, '56, Alice Frey; m. May 3, '69, Joan Yasui; s. Peter G., Christy P., Jr. d. Rebecca F.

*EMERSON, 1841, JOSEPH, M.A., D.D., LL.D.—(*Education*)—Born May 28, 1821, Norfolk, Conn.; died Aug. 4, 1900; Beloit, Wis. Prof. of ancient languages, Beloit College, 1848-1855, and of Greek, 1855-1888.

*EMERSON, 1848, SAMUEL, M.A.—(*Education*)—Born May 9, 1827, Norfolk, Conn.; died Jan. 18, 1908, Charlottesville, Va.

ENGLISH, 1975, WILLIAM DESHAY, JR.—(*Industrial*)—Born July 24, 1950, Fairbanks, Alaska; Truckdriver; res. 3416 Vassar Drive, Anchorage, Alaska 99504; 1st Lieut., AUS Intelligence, Sept. 25, '69-May 17, '72; Republic of Vietnam Service.

*ENO, 1869, JOHN CHESTER—(*Finance*)—Born Jan. 22, 1848, New York City; died Feb. 28, 1914, New York City.

°ENO, 1882, WILLIAM PHELPS, M.A.—(*Transportation*)—Born June 3, 1858, New York City; died Dec. 3, 1945, Norwalk, Conn. Author, world's first street traffic regulations (New York, London and Paris) and other traffic control systems, including road traffic control codes of allied troops in World Wars I and II; Dir., Home Defense League of District of Columbia, World War I.

ERCKLENTZ, 1959, ALEXANDER TONIO—(*Finance*)—Born July 13, 1936, New York, N.Y.; Mgr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. Hekma Rd., Greenwich, Conn. 06830; Alumni Fund, Class Agt., Saybrook, '72-'74; Dir., Wilmar Corp,, '73-; Dir., Massassoit Management Corp., '73-'75; Treas. & Dir., Travellers Aid — International Social Service, '71-'75; Repub. Candidate for N.Y. State Assembly, '64; Mbr., Exec. Com., Repub. Party, New York Cty., '65-'68; m. June 13, '64, Katharine Bertles Ley; s. Alexander T., Jr., Nicholas Ley; d. Christina Titaua.

ERICKSON, 1940, THOMAS FRANKLIN—(*Industrial*)—Born Mar. 27, 1918, Oak Park, Ill.; Ptnr. & V.P., Walters & Erickson, Inc., Manufacturers Agents, 300 West Wieuca Rd., Atlanta, Ga. 30342; res. 840 Loridans Circle, Atlanta, Ga. 30342; Treas., Yale Club of Chicago, '50; Pres., Yale Club of Georgia, '61-'63; Alumni Rep., '67-'70; Chmn., Bd. of Advisors, Atlanta Merchandise Mart, '64-'66; Bd. Mbr., Natl.; Assn. of Bedding Manufacturers, '65-'68; Lieut., Pilot, USN, Apr. '42-Dec. '45; Air Medal; m. Apr. 17, '48, Charlotte Walters; s. Thomas F., Jr., ('71), Stephen W.; d. Margaret R., Kristin E.

ERNST, 1960, FREDERICK VINCENT, M.B.A.—(*Industrial*)—Born Feb. 8, 1938, Capetown, South Africa; Asst. to Pres., Great Southern Paper Co., P.O. Box 44, Cedar Springs, Ga.; res. 3000 Briarcliff Rd., Dothan, Ala. 36301; Class Council, '70; m. Jan. 9, '60, Else G. Nye; s. Michael, Jonathan, Charles; d. Anne.

°ERSKINE, 1930, ALBERT DEW, JR.—Died May 26, 1976. Add. 739 2d St., Miami Beach, Fla. 33139.

ESSELSTYN, 1956, CALDWELL BLAKEMAN, JR., M.D.—(*Medicine*)—Born Dec. 12, 1933, New York, N.Y.; General Surgeon, Cleveland Clinic, Cleveland, Ohio; res. 2 Pepper Ridge Rd., Cleveland, Ohio 44124; Capt., A.U.S., '66-'68; Bronze Star; m. June 18, '61, Ann Crile; s. Rip Van, Ted, Zeb; d. Jane Halle.

ESSELSTYN, 1959, ERIK CANFIELD, M.A.T., Ed.D.—(*Education*)—Born Apr. 7, 1937, New York, N.Y.; V.P., Student Services, Central Piedmont Community College, (Higher Education Admin.), P.O. Box 4009, Charlotte, N.C. 28204; res. 1140 Linganore Place, Charlotte, N.C. 28203; Teacher, Hawken School, '63-'64; Brookline High School, '67-'69; Administrator, Central Piedmont Community Coll., '71-'76; Sgt. E-5, A.U.S., June '60-June '63; Parachutist Badge; m. Aug. 19, '67, June Mitchell Bingham; s. Blakeman Bingham; d. June Eriksson.

°ESTILL, 1891, JOE GARNER, M.A.—(*Education*)—Born Oct. 2, 1863, Winchester, Tenn.; died May 1, 1953, Lakeville, Conn.; Mbr., Conn. State Legislature, '32-'34, and '34-'36.

°ESTY, 1845, CONSTANTINE CANARIS, M.A.—(*Law*)—Born Dec. 26, 1824, Framingham, Mass.; died Dec. 27, 1912, Framingham. Mbr., Mass. State Senate, 1857-1858, and of Mass. State Legislature, 1866, Mbr. of Congress, 1872-1873. Mbr., Mass. Bd. of Education, 1871-1879.

ETRA, 1968, DONALD, J.D., M.B.A.—(*Law*)—Born July 23, 1947, New York, N.Y.; Attny.; res. 35 E. 84th St., New York, N.Y. 10028; RTA Dir., '69-'72; Treas., Deer Island Club, '70-'72.

°EUSTIS, 1841, WILLIAM TAPPAN, D.D.—(*Ministry*)—Born July 6, 1821, Boston, Mass.; died Mar. 30, 1888, Springfield, Mass.

°EVANS, 1851, EVAN WILHELM, M.A.—(*Education*)—Born Jan. 6, 1827, near Swansea, South Wales; died May 22, 1874, Ithaca, N.Y. Prof. of natural philosophy and astronomy, Marietta College, 1857-1864; Prof. of mathematics, Cornell University, 1868-1872.

EVANS, 1972, PETER SEELYE—(*Drama*)—Born May 27, 1950, Englewood, N.J.; Actor; res. 521 Hudson St., Apt. 3RN, New York, N.Y. 10014.

EVANS, 1954, TILGHMAN BOYD, LL.B., LL.M.—(*Finance*)—Born Feb. 19, 1932, Bryn Mawr, Pa.; res. 485 Park Ave., New York, N.Y. 10022; m. July 30, '60, Lorraine Goodrich; s. Lloyd Tilghman; d. Shelley.

°EVARTS, 1884, MAXWELL—(*Law*)—Born Nov. 15, 1862, New York City; died Oct. 7, 1913, Windsor, Vt. Asst. U.S. Attny., southern N.Y., 1890-1892.

°EVARTS, 1881, SHERMAN—(*Law*)—Born Oct. 10, 1859, New York City; died Oct. 21, 1922, Hanover, N.H.

°EVARTS, 1837, WILLIAM MAXWELL, M.A., LL.D.—(*Law*)—Born Feb. 6, 1818, Boston, Mass.; died Feb. 28, 1901, New York City. Deputy U.S. district attny., southern N.Y., 1849-Attny. gen. of the U.S. 1868-1869. Sec. of State, 1877-1881. Mbr., U.S. Senate, 1885-1891. Mbr., Yale Corp., 1872-1891.

°EWELL, 1865, JOHN LEWIS, D.D.—(*Education*)—Born Sept. 4, 1840, Byfield, Mass.; died Mar. 16, 1910, Washington, D.C. Prof. of Latin, Washington University, 1866-1867; Prof. of church history and Hebrew exegesis, Howard University, 1891-1910.

°EWING, 1924, SHERMAN, LL.B.—(*Law*)—Born May 26, 1901, Yonkers, N.Y.; died May 15, 1975, New York, N.Y.; Lawyer, 14 E. 55th St., New York, N.Y. 10022; res. Smithfield Rd., Amenia, N.Y. 12501; m. Sept. '25, Mary P. Heffelfinger; m. Nov. 30, '38, Marjorie W. Hughes; s. S.E., Jr., ('49), Frank H.; d. Lucia (*Steidl*), Anna C. (*Bull*).

EYRE, 1970, LAWRENCE L.—(*Education*)—Born Oct. 26, 1948, Davenport, Iowa; Teacher of Transcendental Meditation, Center for the Transcendental Meditation Program, 2940 Brady St., Davenport, Iowa; res. 3241 10th Ave., Rock Island, Ill. 61201; Treas., Yale Class of 1970, '70-'75; Editor, 1971 RTA Catalogue; m. May 24, '75, Victoria Vaughn.

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°FARNAM, 1868, CHARLES HENRY, LL.B., M.A.—Born Sept. 12, 1846, New Haven, Conn.; died Sept. 24, 1909, Denver, Colo.

°FARNAM, 1874, HENRY WALCOTT, M.A., LL.D., R.P.D.—(*Education*)—Born Nov. 6, 1853, New Haven, Conn.; died Sept. 5, 1933, New Haven. Prof. of political economy, Yale University, 1880-1912; Prof. of economics, 1912-1918, and Prof. emeritus, 1918-1933. Pres., Hopkins Grammar School, 1927-1933. Mbr., Conn. State Council of Defense, World War I.

°FARNAM, 1866, WILLIAM WHITMAN, LL.B., M.A., J.U.D.—(*Education*)—Born April 6, 1844, New Haven, Conn.; died June 28, 1929, New Haven. Mbr., Yale Corp., 1885-1889; Treas., Yale University, 1888-1899; trustee, Sheffield Scientific School, 1894-1923.

*FARNHAM, 1890, JOHN DORRANCE—(*Law*)—Born Dec. 28, 1867, Wilkes-Barre, Pa.; died April 14, 1940, Sayre, Pa.

*FARRAR, 1918, JOHN CHIPMAN—(*Literary work*)— Born Feb. 25, 1896, Burlington, Vt.; died Nov. 5, 1974, New York, N.Y. Chmn. Bd., Farrar, Straus & Giroux, Inc., 19 Union Sq., W., New York, N.Y. 10003; Reporter, *N.Y. Sunday World*, '19-'21; Editor, The Bookman, '21-'27; Editor, George H. Doran Co., '25; Dir., Doubleday Doran & Co., '27; Editor, V.P., then Chmn. Bd., Farrar & Rinehart, '29-'44; Editor then Chmn. Bd., Farrar, Straus & Co. (now Farrar, Straus & Giroux), '46-; publishing course, Columbia Univ. ext. prog., '48-'51; Dir., Bread Loaf Writers' Conf., Middlebury Coll., Vt., '26-'28; creative writing course, NYU, '20-'25; Writers' Bd. for World Govt., '40-'43; Federal Grand Jury Assn., '46-'50; Natl. Conf. Christians and Jews, '48-'52; 1st Lieut., USAF, July '17-Feb. '19, Psychological Warfare Branch, OWI, June '43-July '44; Overseas Publications of OWI, editor of USA and Die Amerikanische Rundschau, Sept. 44-Dec. '45; m. May 28, '26, Margaret Petherbridge; s. Curtis, ('48); d. Alison (*Wilson*), Janice (*Thaddeus*).

*FAULKNER, 1839, ENDRESS, M.A.—(*Finance*)—Born Mar. 25, 1818, Dansville, N.Y.; died Nov. 13, 1852, Dansville.

*FEAREY, 1898, MORTON LAZELL, LL.B.—(*Law*)—Born Nov. 17, 1876, Albany, N.Y.; died Dec. 12, 1954, New York City; Chmn., Selective Service Bd. 128, World War I.

FEHR, 1955, GERALD F.—(*Insurance*)—Born May 12, 1933, Seattle, Wash.; Financial V.P., Treas. and Dir., Family Life Insurance Co., Park Place, Seattle, Wash. 98101; res. 4235 N.E. 89th St., Seattle, Wash. 98115; Alumni Fund, '60-'63; Lieut, USN, '55-'57; m. Dec. 27, '58, Sally Snider; s. Randall, Richard; d. Heidi.

FEINERMAN, 1971, JAMES VINCENT, M.A., M.Phil.—(*Student*) —Born Oct. 30, 1950, Chicago, Ill. bus. 4844 Yale Station, New Haven, Conn. 06520; res. 2710 West Summerdale Ave., Chicago, Ill. 60625; Yale-in-China Bachelor, Hong Kong, '71-'73, Undergraduate Admissions Office, '73-'75; Bd. of Athletic Governors, '74-'75; Graduate School Advisory Com., '74-'75; Tutor, Dept. of English, Chinese University of Hong Kong, July '71-May '73; Trustee, Yale-in-China Assn., '74-.

*FELDER, 1844, JOHN HENRY—(*Farming*)—Born Dec. 17, 1821, Orangeburg, S.C.; died Aug. 16, 1861, Orangeburg. Mbr., S.C. State Legislature, 1852-1861. 1st Lieut., Inf., Confederate Army, Civil War.

°FENN, 1854, WILLIAM HENRY, D.D.—(*Ministry*)—Born Mar. 1, 1834, Charleston, S.C.; died Mar. 11, 1916, Daytona, Fla.

°FERGUSON, 1902, ALFRED LUDLOW—(*Business*)—Born Mar. 7, 1879, Stamford, Conn.; died Oct. 7, 1965; Executive, N.Y.C.; m. Oct. 29, '02, Ruth Howard; s. A.L.F., Jr. ('26), Howard ('41); d. Carroll (*Chapman*), Ruth (*Woolfe*).

FERGUSON, 1926, ALFRED L., JR., LL.B.—(*Finance retired*)—Born Apr. 27, 1904, New York, N.Y.; Investment Banker; res. R.F.D. 180A, Atlantic Highlands, N.J. 07716; Lieut. Col., Army Air Force, '42-'46; m. June 30, '28, Janet Kinney; s. Alfred L. III, ('58, Yale Law School, '63); d. Joan (*Ellis*).

FERGUSON, 1944 (1947) JOHN LORD, LL.B.—(*Law*)—Born Aug. 8, 1922, Loveland, Colo.; Attny, Ptnr., Gorsuch, Kirgis, Campbell, Walker & Grover, 1200 American National Bank Bldg., 818 Seventeenth St., Denver, Colo. 80202; res. 3 Vista Rd., Englewood, Colo. 80110; 2d Lieut., AUS, '43-'46; m. Sept. 6, '47, Alice Willgoos; d. Suzanne (*Fuller*), Sandra E. ('73).

°FERRY, 1844, ORRIS SANFORD—(*Law*)—Born Aug. 15, 1923, Bethel, Conn.; died Nov. 21, 1875, Norwalk, Conn. Mbr., Conn. State Legislature, 1855 and 1856. Mbr. of Congress, 1859-1861, and of U.S. Senate, 1866-1875. Brig-Gen., Union Army, Civil War.

FETNER, 1965, P. JAY, B.A. & LL.B. (*Cambridge*), J.D.—(*Law*)—Born Nov. 13, 1942, St. Louis, Mo.; Attny., P. Jay Fetner, Associates, Box 492, Ottsville, Pa. 18942; res. Coachman Farms, Ottsville, Pa. 18942.

°FEWSMITH, 1844, WILLIAM, M.A.—(*Education*)—Born Jan. 24, 1826, Philadelphia, Pa.; died June 19, 1900, Merchantville, N.J.

°FIELD, 1841, DAVID IRVINE, LL.B.—(*Farming*)—Born April 28, 1820, Richmond, Ky.; died Sept. 11, 1859, Bolivar City, Miss.

FIELD, 1937, JOHN WARNER—(*Industrial*)—Born Sept. 15, 1914, Bridgeport, Conn.; Chmn. & Chief Exec. Officer, Warnaco, Inc., 350 Lafayette St., Bridgeport, Conn. 06602; res. 1450 Hillside Rd., Fairfield, Conn. 06430; Alumni Bd.; Class Sec.; Pres. Yale Club of Eastern Fairfield Cty.; Dir., Insilco, Inc.; Connecticut National Bank; m. Apr. 15, '39, Priscilla H. Brown; s. John W., Jr., David W.; d. Margaret (*Paterson*).

°FINCH, 1849, FRANCIS MILES, LL.D.—(*Law*)—Born June 9, 1827, Ithaca, N.Y.; died July 31, 1907, Ithaca, Assoc., judge, N.Y. Court of Appeals, 1880-1896. Dean, Cornell Law School, 1896-1903, and Prof. of the history and evolution of law, 1895-1903.

°FINCKE, 1897, CLARENCE MANN—(*Finance*)—Born Oct. 12, 1894, Brooklyn, N.Y.; died June 19, 1959, Englewood, N.J.

FINLEY, 1947, JOHN GEORGE GILPIN—(*Industrial*)—Born June 21, 1925, Naples, Italy; V.P., Esso Inter America, Inc., 396 Alhambra Circle, Coral Gables, Fla. 33143; res. 4635 Granada Blvd., Coral Gables, Fla. 33146; C.I.A., '50-'54; Sgt., AUS, '43-'45; m. Oct. 15, '49, Anne Simmons; s. James C. W., Peter S.

FINNEY, 1973, C. ROGER—(*Student*)—Born Feb. 11, 1952, Port Pirie, Australia; Student, Columbia School of Architecture, (M. Arch. '77); add. 535 W. 111th St., No. 45, New York, N.Y. 10025.

FINNEY, 1952, GRAHAM STANLEY, M.P.A.—(*City Government*)—Born Sept. 6, 1930, Greenwich, Conn.; Managing Ptnr., Greater Philadelphia Partnership, 900 Western Savings Bldg., Broad & Chestnut Sts., Philadelphia, Pa. 19107; res. 615 W. Hortter St., Philadelphia, Pa. 19119; Class Sec., '67-'72; Visiting Lecturer; Planning Dir., Portland, Maine, '57-'60; Asst. Exec. Dir., City Planning Comm., Philadelphia, '61-'65; Deputy Superintendent of Schools, Philadelphia, '66-'69; Commissioner, Addiction Services Agency, N.Y. City, '70-'72; Spec. 3, AUS, '54-56; m. June 22, '57, Katharine Pillsbury Becker; s. Samuel W., Garrett S.; d. Sarah B. ('80), Martha B.

FINNEY, 1945W, JOHN WARREN—(*Journalism*)—Born Dec. 5, 1923, Springfield, Mass.; Reporter, *New York Times*, 1920 L St. N.W., Washington, D.C. 20036; res. 5275 Watson St. N.W., Washington, D.C. 20016; Ensign, USN, '43-'46; m. Jan. 13, '73, Theresa McMasters; d. Alison, Jessica.

°FISCHER, 1856, LOUIS CHRISTOPHER—(*Finance*)—Born Aug. 13, 1834, Baltimore, Md.; died Nov. 29, 1899, Baltimore.

°FISH, 1905, STUYVESANT—(*Finance*)—Born April 17, 1883, New York City; died June 26, 1952, New York City; Lieut., F.A., World War I.

°FISHER, 1888, IRVING, Ph.D., LL.D.—(*Education*)—Born Feb. 27, 1867, Saugerties, N.Y.; died April 29, 1947, New York City. Asst. Prof. of mathematics, Yale University, 1893-1895;

Asst. Prof. of political economy, 1895-1898 and Prof., 1898-1935. Prof. emeritus, 1935-1947.

*FISHER, 1889, SAMUEL HERBERT, LL.B., M.A., LL.D.—(*Law*)—Born May 26, 1867, Cincinnati, Ohio; died June 7, 1957, Litchfield, Conn.; Chmn., Conn. Tercentenary Com., '33-'35, and Highway Safety Comm., '36-'40; Admin. of Defense, State of Conn., '41-'42; former Class Agt., Trustee, Peabody Museum; fellow of Yale Corp., '20-'35.

FISHER, 1972, SCOTT B., M.A.—(*Business*)—Born March 6, 1950, Los Angeles, Calif.; Dir. of Personnel for Cablecom-General, Inc., 4705 Kingston, P.O. Box 39307, Denver, Colo. 80239; res. 35 Dover St., Lakewood, Colo. 80226; m. June 9, '72, Susan L. Smith, ('72).

*FISHWICK, 1928, DWIGHT BROWN, M.D.—(*Medicine*)—Born July 3, 1906, Chicago, Ill.; died Mar. 5, 1956, Coral Gables, Fla.; Lt. Col., Medical Corps, World War II.

*FISK, 1849, FRANKLIN WOODBURY, M.A., LL.D.,—(*Education*)—Born Feb. 16, 1820, Hopkinton, N.H.; died July 4, 1901, Chicago, Ill. Prof. of rhetoric and English literature, Beloit College, 1854-1859; Prof. of sacred rhetoric, Chicago Theological Seminary, 1857-1900; also Pres., 1887-1900.

*FISK, 1844, SAMUEL AUGUSTUS, M.A., M.D.—(*Medicine*)—Born Mar. 26, 1821, Cambridge, Mass.; died Nov. 16, 1884, Northampton, Mass.

*FISK, 1840, STUART WILKINS, LL.B., M.A.—(*Law*)—Born Aug. 25, 1820, Natchez, Miss.; died Dec. 31, 1862, Murfreesboro, Tenn. Col., Inf., Confedrate Army, Civil War.

FITCH, 1932, GEORGE HOPPER—(*Advertisnig retired*)—Born Nov. 29, 1909, New York, N.Y.; formerly Advertising Exec.; res. 1960 Broadway, San Francisco, Calif. 94109; Governing Bd., Yale Univ. Art Gallery, '73-; Exec. Com.; Author, "So You're Going to Heaven"; presently Dir., Distillers Co. Ltd.; Trustee: Fine Arts Museums of San Francisco, '75-, Am. Federation of Arts, '52-'73, Royal Oak Found., '75-; Commissioner, Asian Art Museum, San Francisco, '75-; Pres., Municipal Art Soc. of New York, '62-'63; Commissioner & V.P., New York City Art Comm., '64-'68; Maj., Army Air Force, Chief, Special Services, '42-'46; Commendation Ribbon; m. '34, Dorothy Quincy Lawrence; m. '53, Muriel Johnson; ss. Edward deCoppet; sd. Jacqueline deCoppet (*Berthet*).

°FITCH, 1847, JAMES—(*Law*)—Born April 23, 1821, Cherry Valley, N.Y.; died Feb. 16, 1904, Cleveland, Ohio.

°FLAGG, 1873, WILBUR WELLS—(*Business*)—Born Jan. 20, 1851, Yonkers, N.Y.; died Sept. 18, 1912, Los Angeles, Calif.

°FLANDERS, 1885, HENRY RICHMOND—(*Insurance*)—Born Sept. 14, 1859, Chilmark, Martha's Vineyard, Mass.; died Sept. 13, 1932, Tisbury, Mass.

°FLEMING, 1838, WILLIAM STUART—(*Law*)—Born April 23, 1816, Zion Ch., Maury City, Tenn.; died July 13, 1896, Columbia, Tenn. Chancellor, 8th Div. of Tenn., 1870-1886.

FLETCHER, 1933, ALEXANDER CHARLES—(*Business retired*)—Born May 25, 1910, Boston, Mass.; res. 165 Middlesex Rd., Darien, Conn. 06820; formerly V.P. & Natl. Sales Mgr., Four Roses Distillers Corp.; Lieut., USN, Oct. '42-Dec. '45; m. Jun 10, '39, Ethel Dixon; s. Dixon M., Alexander, Jr., Alan, Arthur W., Anthony W.; d. Trudy, Lucia L., Ethel F.

°FLINN, 1906, ALEXANDER REX—(*Business*)—Born Feb. 5, 1885, Pittsburgh, Pa.; died May 29, 1950, Pittsburgh; Mbr., Bd. of Education, '43-'50; Mbr., Natl. Exec. Com., Natl. Economy League; Capt., F.A., World War I (AEF); V.P., Yale Club of Pittsburgh, '23-'30, Pres., '30-'32; Chmn., Western Pa., Natl' Yale Alumni Placement Service, '45.

°FOLSOM, 1883, HENRY TITUS—(*Business*)—Born Nov. 4, 1859, St. Louis, Mo.; died Feb. 26, 1937, Llewellyn Park, West Orange, N.J.

°FOOTE, 1883, CHARLES SEWARD, LL.B.—(*Law*)—Born Feb. 7, 1860, Port Henry, N.Y.; died Jan. 11, 1939, Port Henry. Mbr., N.J. State Assembly, '00-'01.

°FOOTE, 1866, HARRY WARD, M.A.—(*Law student*)—Born Aug. 5, 1844, Cincinnati, Ohio; died June 28, 1873, New Haven, Conn.

°FOOTE, 1850, JOSEPH FORWARD—(*Law*)—Born Feb. 7, 1828, Southwick, Mass.; died Dec. 5, 1883, Norwalk, Conn.

°FOOTE, 1844, THADDEUS—(*Law*)—Born April 27, 1821, Southwick, Mass.; died Feb. 3, 1903, Grand Rapids, Mich. Col., Cavalry, Union Army, Civil War.

°FORD, 1865, GEORGE TOD—(*Law*)—Born May 21, 1841, Akron, Ohio; died Dec. 24, 1911, Washington, D.C.

FORD, 1942, WILLIAM, LL.B.—(*Law*)—Born July 6, 1919, Albany, N.Y.; Ptnr., Becket, Ford, Dooley & Bearns, Main St. Box 600E, Lakeville, Conn. 06039; res. Belgo Rd., Lakeville,

Conn. 06039; Pres., Litchfield Cty. Bar Assn., '68-'70; Bd. of Gov., Conn. Bar Assn., '67-'70; Judge of Probate Distr. of Salisbury, '54-'71; Bd. of Finance, Town of Salisbury, '52-; m. Oct. 3, '42, Pauline C. Woodman; s. Edward W.; d. Christina (*Le-Fevre*), Katharine S. (*Braid*).

FORT, 1976, DONALD KENNETH—(*Student*)—Born June 23, 1949; bus. 230 Blatchley Ave., New Haven, Conn. 06513; res. 1009 N. Third, Memphis, Tenn. 38107.

FORTGANG, 1971, Jeffrey, M.S.—(*Student*)—Born June 6, 1949, Brooklyn, N.Y.; Institute of Advanced Psychological Studies, Adelphi Univ., South Ave., Garden City, N.Y. 11530; res. 655 Eagle Ave., West Hempstead, N.Y. 11552.

FORTUNATO, 1954, S. JOSEPH, LL.B.—(*Law*)—Born July 23, 1932, Montclair, N.J.; Ptnr., Pitney, Hardin & Kipp, 163 Madison Ave., P.O. Box 2008 R, Morristown, N.J. 07960; res. 22 Diann Drive, Montville, N.J. 07045; Class Council, '76-; m. June 18, '55, Dian Kimball; s. Michael C., Stephen J. ('78); d. Susan P.

FOSTER, 1967, DAVID JOHN, M.B.A.—(*Finance*)—Born June 25, 1945, Lansing, Mich.; Dir. of Finance, Accuray International S.A., 363 Chausseé de Malines, Brussels, Kraainem, Belgium; res. Avenue Mostinck 52, 1150 Brussels, Belgium; Class Agt., Alumni Fund, '72-'76; General Mgr., Leasing Div., Accuray Leasing Inc.; Lieut., USNR, Navy Supply Corps, '69-'72; Navy Achievement Medal; m. Aug. 19, '67, Joanne Louise Junor; d. Erica Lynn, Amy Juliette, Jane Rebecca.

*FOSTER, 1848, DWIGHT, M.A., LL.D.—(*Law*)—Born Dec. 13, 1828, Worcester, Mass.; died April 18, 1884, Boston, Mass. Attny. Gen. of Mass., 1861-1864. Assoc. judge, Mass. Supreme Court, 1866-1869.

*FOSTER, 1834, ELEAZAR KINGSBURY—(*Law*)—Born May 20, 1813, New Haven, Conn.; died June 13, 1877, New Haven. Mbr., Conn. State Legislature, 1844 and 1845, and Spkr., 1865. Judge of probate, New Haven District 1845, 1846, 1848 and 1849.

*FOSTER, 1879, GEORGE FORRIS—(*Business*)—Born Oct. 22, 1856, Grand Rapids, Mich.; died Aug 24, 1914, Newburgh, N.Y.

*FOSTER, 1869, JOHN PIERREPONT CODRINGTON, M.A., M.D.—(*Medicine*)—Born Mar. 2, 1847, New Haven, Conn.; died April 1, 1910, New Haven.

°FOSTER, 1908, JOSEPH TAYLOR—(*Finance*)—Born June 1, 1895 Ashland, Pa.; died June 24, 1969; Investment Adviser, Foster & Co., Greenwich; m. Oct. 8, '08, Jeannette Schlager (dec.); s. R. James II ('32), J. Taylor (ex'36); d. Sarah F. (*Fulton*).

FOSTER, 1923, MAXWELL E., LL.B.—(*Law retired*)—Born Aug. 27, 1901, Magnolia, Mass.; res. 146 Argilla Rd., Ipswich, Mass. 01938; m. June 9, '26, Elizabeth Vincent; s. Maxwell E., Jr., Vincent.

°FOSTER, 1884, REGINALD, LL.B.—(*Law*)—Born Jan. 2, 1863, Worcester, Mass.; died Dec. 21, 1944, Boston, Mass.

°FOSTER, 1878, ROGER, LL.B., M.A.—(*Law*)—Born April 21, 1857, Worcester, Mass.; died Feb. 22, 1924, New York City.

°FOWLER, 1876, CHARLES NEWELL, LL.B.—(*Law*)—Born Nov. 2, 1852, Lena, Ill.; died May 27, 1932, Orange, N.J. Mbr. of Congress, 1895-1911.

°FOWLER, 1863, HORACE WEBSTER, LL.B.—(*Law*)—Born Oct. 31, 1842, Elmira, N.Y.; died July 20, 1888, Orange, N.J. Capt., Artillery, Union Army, Civil War.

°FOWLER, 1860, WILLIAM, LL.B.—(*Law*)—Born Sept. 26, 1839, Albany, N.Y.; died Nov. 26, 1874, New York City, Capt., Inf., Union Army, Civil War.

FOX, 1938, JOSEPH C., M.B.A.—(*Finance*)—Born Feb. 27, 1916, New York, N.Y.; Ptnr., Kidder, Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005; res. 5475 Palisade Ave., Bronx, N.Y. 10471; m. Feb. 23, '52, Louisa Lee Freeman; s. Henry Stebbins; d. Dell Carrere, Lee Freeman.

°FRANCHOT, 1910, CHARLES PASCAL, LL.B.—(*Law*)—Born Oct. 8, 1886, Olean, N.Y.; died Sept. 8, 1953, New York City; Consular Agt. for France at Buffalo, '16-'26; Special Legal Advisor to Dir. Naval Petroleum Reserves, '46-'50; Maj. Cavalry, World War I (AEF); Capt., USNR, (J.A.G. Dept.), World War II.

FRANCIS, 1964, SAMUEL HOPKINS, M.A., Ph.D.—(*Science*)—Born Jan. 27, 1943, Lancaster, Pa.; Research Physicist, Mbr., Technical Staff, Bell Laboratories, Whippany Road, Whippany, N.J., 07981; res. 57 Dunbar St., Chatham, N.J. 07928; Lieut. (jg), USN, '64-'66; m. June 5, '65, Roberta Louise Williams; s. Christopher Samuel; d. Erika Lynne.

FRANK, 1963, CHARLES AUGUSTUS III, M.B.A.—(*Finance*)—Born July 30, 1940, Glen Cove, Long Island, N.Y.; Asst. V.P., The United States Trust Co. of New York, 45 Wall St., New

York, N.Y. 10005; res. 218 Kane St., Brooklyn, N.Y. 11231; P.F.C., AUS, '63-'69; RTA Dir., '75-; m. Oct. 10, '64, Eliza-,beth J. Taylor; s. Garrett Taylor, Reade Augustus.

FRANK, 1938, CLINTON E.—(*Advertising*)—Born Sept. 13, 1915, St. Louis, Missouri; Chmn. of Bd., Clinton E. Frank, Inc., 120 South Riverside Plaza, Chicago, Ill. 60606; res. 28 Bridlewood Rd., Northbrook, Ill. 60062; Assn. of Yale Alumni Bd.; Pres., Yale Club of Chicago; Bd. of Dir., Stanray Corp.; Pres., Chicago Advertising Club, '76-; Chicago Assn. of Comm. & Industry; Commercial Club of Chicago; Pres., Brain Research Found. '76-; Bd. of Dir. & Consultants, Little City Found.; Bd. of Financial Advisors, The Lambs, Inc.; Bd. of Dir., Northwestern Memorial Hosp.; Natl. Football Found. & Hall of Fame; Trustee, Orchestral Assn.; Lieut. Col., USAF, '41-'45; m. July 26, '41, Frances C. Price; m. May 24, '67, Margaret A. Rathje Mullins; s. Clinton E., Jr., Arthur A., III; d. Marcia C., Laurie (*Dorsey*), Cynthia C.

FRANK, 1950, VICTOR H., JR., LL.B.—(*Finance*)—Born Apr. 4, 1927, Philadelphia, Pa.; Group V.P., CPC International, Englewood Cliffs, N.J. 07632; res. 267 E. Linden Ave., Englewood, N.J. 07631; Scholarship & Enrollment Com.; 25th Reunion Chmn.; Trustee: Dwight Englewood School; Englewood Hosp.; Chmn., Englewood Community Chest; Englewood Financial Advisory Com.; USN, '45-'46; m. Mar. 16, '58, Elizabeth Barker; s. Halsey B., Victor H., III, Jonathan L.

FREDERICKS, 1977, JOEL RICHARD—(*Student*)—Born May 11, 1955, Bethesda, Md.; coll. address (through June '77) 13 Court St., New Haven, Conn.; res. 9 Orange Rd., Middletown, Conn. 06457.

*FREEMAN, 1869, HENRY VARNUM, M.A.—(*Law*)—Born Dec. 20, 1842, Bridgeton, N.J.; died Sept. 5, 1916 enroute to Chicago, Ill. Judge, Superior Court of Ill., 1893-1898. Presiding justice, Appellate Court of Ill., 1898-1915. Capt., Inf., Union Army, Civil War.

*FRENCH, 1882, ASA PALMER, LL.B.—(*Law*)—Born Jan. 29, 1860, Braintree, Mass.; died Sept. 17, 1935, Wellesley, Mass. U.S. district attny., southeastern district of Mass., '02-'06; U.S. district attny., Mass., '06-'14.

*FRENCH, 1910, ROBERT DUDLEY, M.A., Ph.D.—(*Education*)—Born Nov. 4, 1888, New Haven, Conn.; died Aug. 22, 1954, New Haven; Asst. Prof., English, Yale University, '19-'26,

Assoc. Prof., '26-'29, and Prof., '30-'54; Chmn., English Dept., '45-'47; Master, Jonathan Edwards, '30-'54; former Class Sec.

FRIEDLAND, 1970, JONATHAN D.—(*Education*)— Born Feb. 17, 1948, New York, N.Y.; m. June 21, '70, Paula Ruth Feinstein; s. Joshua.

FRITZSCHE, 1957, PETER B., M.B.A.—(*Business*)— Born Feb. 2, 1935, Cleveland, Ohio; Pres., The Elyria Co., 208 South LaSalle St., Chicago, Ill. 60603; res. 901 Green Bay Rd., Winnetka, Ill. 60093; Pres., Yale Club of Indiana, '62-'68; Alumni Fund Rep., '65-'76; Bd. of Dir., Yale Club of Chicago, '69-'76; Class Sec., '72-'76; Bd. of Dir., Hauske Harlen Furniture Co., '63-'68; Wells Aluminum Co., '64-'67; Accurate Products, '64-'68; The Elyria Co., '65-'76; Chmn., Bd. of Dir., Henry Horner Chicago Boys Club, '70-'76; m. Feb. 12, '66, Ruth Evelyn Black; s. Peter Bartley, David Newell, Alex Neracher; d. Kathleen Connolly.

*FROST, 1922, ALBERT CARL, JR.—(*Finance*)—Born Oct. 21, 1899, Chicago, Ill.; died Oct. 27, 1969; Reg. Rep., Bache & Co., Inc., NYC Apprentice Seaman, USN, Sept.-Nov. '18; m. May 10, '29, Rena Harris Gardner; s. A.C.F. III, ('54); d. Aerielle (*Dewart*).

*FROST, 1883, ELIHU BRINTNAL, LL.B.—(*Law*)—Born May 12, 1860, Peekskill, N.Y.; died Aug. 22, 1925, Beach Bluff, Mass.

FULLER, 1969, HENRY W.—(*Education*)—Born Sept. 14, 1946, York, Maine; bus. Sociology & Anthropology Dept., Memorial University, St. Johns, Newfoundland, Canada; m. Sept. 12, '70, Judith Rivinus.

*FULLER, 1881, PHILO CARROLL—(*Industrial*)—Born Mar. 19, 1857, Groveland, N.Y.; died May 24, 1931, Grand Rapids, Mich.

FULLER, 1935, STANLEY EVERT—(*Government retired*)—Born July 21, 1909, Erie, Pa.; res. 2209 Rio Bonito Drive, Port Richey, Fla. 33568; Pres., Akron, Ohio, Yale Alumni Assn., '37; County Juvenile Court Administrator, (retired Jan. 1, '75); Mbr., Bd. of Managers County Juvenile Detention; Major United Fund, '45-'47; m. June 22, '36, Jean Chamberlain; s. Stanley Edward; d. Martha Ann (*Procop*).

*FULLER, 1861, WILLIAM HENRY, LL.B.—(*Industrial*)—Born Nov. 6, 1836, Barryville, N.Y.; died Nov. 26, 1902, New York City.

FULTON, 1932, ROBERT BRANK, Ph.D., B.D.—(*Education*)—Born July 6, 1911, Clinton Ill.; Interim Pastor, Presb. Church, Brighton, Iowa; res. 309 E. Burlington Ave., Fairfield, Iowa 52556; Yale-in-China Assn., China based work, '33-'45, '43-'51, Honorary Trustee, '51-; Grad. Sec., Dwight Hall, '32-'33; Lecturer, Yenching Univ., Peking, '39-'41; Chaplain & Prof. Religion, Union Coll., Schenectady, N.Y., '51-'53, and Lake Forest (Ill.) Coll. '53-'56; Prof. & Chmn., Dept. of Philosophy & Religion, Inter-American Univ., Puerto Rico, '56-'62; Visiting Prof., Miles Coll., Birmingham, Ala., '62-'63; Teaching & Research, Western Coll., Oxford, Ohio, '63-'67; Prof., Philosophy & Religion, Parsons Coll., Fairfield, Iowa, '67-'73; m. July 20, '46, Anne Louise Edwards; s. William Holmes; d. Mary Anne, Cathay Brank, Elizabeth Dwight, Sarah Edwards.

*FURBISH, 1860, EDWARD BROWN, M.A.—(*Ministry*)—Born May 21, 1837, Portland, Me.; died April 27, 1918, Rochester, N.Y. Chaplain, Union Army, Civil War.

G

*GACHET, 1843, CHARLES NICHOLAS—(*Law*)—Born July 2, 1822, Lumpkin, Ga.; died April 14, 1863, Tullahoma, Tenn. Served in Confederate Army, Civil War.

GAGE, 1925, CHARLES STAFFORD, M.A.—(*Education retired*)—Born July 24, 1903, Tyngsboro, Mass.; res. 75 Edgehill Terr., New Haven, Conn. 06511; Treas., Yale Univ., '54-'65; Athletic Bd. of Control, '50-'65; Alumni Bd., '52-; Gov., Bd. of Athletics, '65-'72; Alumni Fund Co-Agt., '66-; Pres., Yale Club of N.Y., '52-'54; E. R. Squibb & Son, Mathiesson Chem. Co., '25-'54; U.S. Lend Lease Admin., '41-'44; Trustee, Phillips Academy, Andover, '50-'76; Dir., United Illuminating Co., '61-'74; Union-New Haven Trust Co., '61-'69; m. May 7, '49, Margaret Siegfried.

GAILLARD, 1919, EDWARD MCCRADY—(*Finance retired*)—Born June 12, 1896, Philadelphia, Pa.; bus. add. c/o Union Trust Co., P.O. Box 404, New Haven, Conn. 06502; res. 71 Blake Rd., Hamden, Conn. 06517; Yale Development Bd. '56-; Yale's Program for the Arts & Sciences, '60-'62; Alumni Fund Volunteer; Class Chmn., Reunion Major Gifts Com., '74; Cita-

tion from Pres. A. Whitney Griswold; Bankers Trust Co. of New York City, '20-'23; Union & New Haven Trust Co., '23-'68, Pres., '43-'63; Chmn., '63-'68; Dir.: United Illuminating Co., '48-'68, Wallace Silversmith Co., '56-'60; Pres., Conn. Bankers Assn., '36-'37; Mbr., Advisory Council on Banking, State of Conn., '45-'49; Exec. Council American Bankers Assn., '37-'40; Stockholders Advisory Com., Fed. Reserve Bank of Boston; Mbr., Bank Management Com., of New England Council, '38-'48; Trustee, Conn. Savings Bank, '38-'68, now Honorary Dir.; a Founder & 1st Pres., United Fund of Greater New Haven; Dir., Gaylord Farm Assn., Wallingford, '32-'68, Pres., '47-'49, Life Dir.; David Russell Lyman Award, Gaylord Hosp., '60; 1st Lieut., F.A. May '17-Sept. '19; Overseas Service Stripes; Dir. RTA during W.W. II; m. Oct. 14, '22, Virginia Ticknor; s. Edward McCrady, Jr., ('45), Lieut., USMC, killed action, Okinawa, May '45; Benjamin T., ('50); d. Virginia T. (*Chew*).

*GAILLARD, 1916, SAMUEL GOURDIN, JR.—(*Industrial*)—Born Mar. 22, 1894, Philadelphia, Pa.; died July 8, 1960, New Haven; 1st Lieut., Ord. Dept., World War I (AEF)); m. Sept. 5, '17, Alcy Elizabeth Hall; d. Alcy Elizabeth (*Stiepock*), Jane McCrady (*Birmingham*).

GAINES, 1975, EDWIN FRANK—(*Entertainment*)—Born Oct. 22, 1952, Bridgeport, Conn.; res. 64 Eastwood Rd., Bridgeport, Conn. 06606 & 321 E. 92d St., New York, N.Y. 10028; Yale Club of New York City; Asst. Musical Dir., 1600 Penn Ave. Co., '75-'76.

GAINES, 1956, MILTON J., M.B.A.—(*Business*)—Born Oct. 13, 1934, Olympia, Wash.; Ptnr., Winfield Design Associates, Winfield International, P.O. Box 3711, San Francisco, Calif. 94119; res. 37 Orchard Rd., Orinda, Calif. 94563; A.S.C.; Alumni Fund Class Agt.; Lieut., USN, '56-'60; m. Dec. 28, '58, Phyllis Reinker; s. Preston, Andrew; d. Melissa.

GALBRAITH, 1950, EVAN GRIFFITH, LL.B.—(*Finance*)—Born July 2, 1928, Toledo, Ohio; Managing Dir., Dillon, Read & Co., New York, Chmn. Dillon, Read Overseas Corp., 1 Hill St., London W1X 7FA, England; res. 13 Pelham Crescent, London S.W.7, England; V.P., Morgan Guaranty Trust Co.; Chmn., Bankers Trust International, Limited; Confidential Asst. to Sec. of Commerce, '60-'61; Lieut., USNR, Nov. '53-Jan. '57; m. '55, Nancy Burdick (divorced '62); m. '64, Marie Helene

Rockwell; s. Evan Griffith, John Hamilton; d. Alexandra, Julie Helene.

*GALLAUDET, 1893, EDSON FESSENDEN, B.E., Ph.D.—(*Engineering*)—Born April 21, 1871, Washington, D.C.; died July 1, 1945, Pine Orchard, Conn. Instructor in physics, Yale University, 1897-1900 and head crew coach, 1900.

*GALLAUDET, 1898, HERBERT DRAPER, B.D.—(*Ministry and literary work*)—Born Sept. 12, 1876, Washington, D.C.; died June 24, 1944, Pine Orchard, Conn. Capt., F.A., World War I (AEF).

GALLICO, 1968, G. GREGORY III, L.Ug. (Oxford), M.D.,—(*Medicine*)—Born May 25, 1946, New York, N.Y.; Surgeon, Dept. of Surgery, Mass. General Hosp., Boston, Mass.; res. 107 Collingwood Pl., Ridgewood, N.J. 07450; Surgical Resident, Mass. General Hosp., '73-'75; Visiting Research Fellow, Dunn School of Pathology, Oxford Univ., '75-'77; m. July 6, '74, Ellen Biggs Polly Levine; s. Max Gregory.

GALVIN, 1971, MICHAEL G.—(*Business*)—Born Mar. 25, 1949, Dallas, Texas; Account Exec., V.P. Marketing, Dir., Public Relations Philip Stogel Co., Inc., 489 Fifth Ave., New York, N.Y. 10017; res. 33 Union Square West, 11th Floor, New York, N.Y. 10003; m. Sept. 6, '74, Carol A. Adams.

*GAMMELL, 1911, ARTHUR AMORY, LL.B.—(*Law*)—Born Sept. 5, 1888, Providence, R.I.; died Oct. 9, 1975, New York, N.Y.; Mbr., Milbank, Tweed, Hadley & McCloy, or predecessor firms, Jan. '24-Dec. '55; Dir., Albany & Susquehanna R.R. Co., '33-'45; Trustee, '27-'55, and 1st V.P., '53-'55, Home for Old Men and Aged Couples; Selective Service Adv. Bd., #50, N.Y.C., '42-'45; Major, F.A., AEF, Aug. '17-May '19.

*GARDNER, 1912, ROBERT ABBE—(*Finance*)—Born April 9, 1890, Hinsdale, Ill.; died June 21, 1956, Lake Forest, Ill.; 1st Lieut., F.A., World War I (AEF); Col., G.S.C., World War II; Class Sec. '41-'56; former Class Co-Agt.; Pres., Yale Club of Chicago, '34-'36; Mbr., Alumni Bd. (Mbr., Exec. Com., '43-'46).

*GARFIELD, 1918, NEWELL—(*Industrial*)—Born Aug. 1, 1895, Chicago, Ill.; died Sept. 3, 1975, Concord, Mass.; V.P., Zephyr Textiles, Ltd., Ormestown, P.Q., Canada; Dir., Riggs & Lombard, Lowell, Mass.; Mbr., Finance Com., Concord; Major, F.A., '17-'18; m. Oct. 7, '22, M. Louise Wyatt; s. N.G., Jr., ('45), Wyatt, ('48); d. Sarah W.

GARNSEY, 1930, WALTER WOOD—(*Business retired*)—Born Oct. 21, 1908, Billings, Mont.; res. 185 Corona St., Denver, Colo. 80218; formerly Pres., Stokes Canning Co.; m. Sept. 17, '38, Jane Kennedy; s. Walter Wood, Jr., ('67); d. Jane Gay (*Luke*).

GARNSEY, 1967, WALTER W., JR., J.D.—(*Law*)—Born Apr. 1, 1945, Denver, Colo; Attny., 824 Equitable Bldg., 730 17th St., Denver, Colo. 80202; res. 2339 Bellaire St., Denver, Colo. 80207; m. Aug. 8, '68, Georgia Penny McCracken; d. Hilary Jill, Megan McCracken.

GARNSEY, 1960, WILLIAM HERRICK—(*Business*)—Born Dec. 10, 1937, Denver, Colo.; Ford Dealer; Pres., Garnsey & Wheeler Co., 1100 8th Ave., Greeley, Colo. 80631; res. 2314 W. 20th Street Rd., Greeley, Colo. 80631; Alumni Schools Com., '64-; V.P., Colo. Yale Assn., '76-; Pres., Greeley New Car & Truck Dealers' Assn., '69; United Way of Weld Cty., '72; Lieut. (j.g.), USN, Oct. '60-Feb. '64; m. June 5, '62, Diane P. Mehaffey; d. Jennifer Diane, Wendy Wood, Elizabeth Herrick.

GARNSEY, 1933, WILLIAM SMITH—(*Business*)—Born Nov. 5, 1911, Billings, Mont.; Dealer, Ford Cars & Trucks, Tractors, P.O. Box D, 401 17th St., Greeley, Colo. 80631; res. 1926 23rd Ave., Greeley, Colo. 80637; Pres., Colo. Yale Assn.; Pres. Greeley, & Colo. State Auto Dealers Assn.; Greeley & Colo. State Chambers of Comm.; Mbr., Weld Cty. Distr. #6 School Bd., '49-'55; Colo. State Senator, '67-'75; Weld Cty. Library Bd.; Treas., Weld Cty. G.O.P., '75-; Lieut. Cmdr., USNR, June '42-Nov. '45; m. June 27, '36, Louisa Boulton Herrick; s. William Herrick ('60), Anson Herrick; d. Louisa G. (*Lambert*).

•GARRISON, 1897, ELISHA ELY—(*Engineering*)—Born Aug. 16, 1871, Cincinnati, Ohio; died Mar. 26, 1935, St. Petersburg, Fla. Served in U.S. Vol. Cavalry (Rough Riders), Spanish-American War. Lieut. Col., F.A., World War I (AEF).

•GARVEY, 1929, JOHN JOSEPH—(*Industrial*)—Born Sept. 6, 1903, Moosic, Pa.; died Jan. 17, 1959, Coral Gables, Fla.

•GATES, 1918, ARTEMUS L., M.A.—(*Finance*)—Born Nov. 3, 1895, Cedar Rapids, Iowa; died June 14, 1976; Banker; Pres., N.Y. Trust Co., '29-'41; Dir., Time, Inc., Union Pacific R.R. Co.; Trustee, Mutual Life Ins. Co. and Presbyterian Hospital.; Asst. Sec. of the Navy for Air, '41-'45; Under Sec. of Navy, '45; Lieut. Cmdr., Naval Air Service, '17-

'19; 2 Distinguished Service Medals (USN); Distinguished Flying Cross (Great Britain); Legion d'Honneur and *Croix de Guerre* with palm (French); m. Jan. 3, '22, Alice T. Davison; d. Cynthia (*Woronzoff-Daschkoff*), Diane (*Robert*).

GATES, 1976, Edward Raymond—Born June 25, 1954; res. 6 Hillview Ave., Roslindale, Mass. 02131.

•GERARD, 1897, Sumner—(*Law*)—Born Aug. 25, 1874, Albany, N.Y.; died Mar. 10, 1966; Lawyer, N.Y.C.: Pres., Aeon Realty Corp., G.B.W. Construction Co., Aeonitt Realty Corp.; Sgt , U.S. Vol. Cav. (Rough Riders), Spanish-American War; Major, F.A., W.W. I; m. July 13, '13, Helen Coster (divorced '26); s. James W. II, S. G., Jr., C. H. Coster, ('41).

GIBSON, 1976, Richard Channing, Jr.—(*Literary work*)—Born Nov. 25, 1953, Des Moines, Iowa; Writer; res. 415 South 67th St., Omaha, Nebraska 68132.

GIEGENGACK, 1960, Robert F., Jr., M.S., Ph.D.—(*Education*)—Born Nov. 27, 1938, Brooklyn, N.Y.; Asst. Prof. Geology, University of Pennsylvania, Philadelphia, Pa. 19104; res. West Rose Valley Rd., Wallingford, Pa. 19086; m. May 14, '67, Francesca Rich Marshall; s. Jonathan, Matthew.

GIESEN, 1954, Arthur R., Jr., M.B.A.—(*Industrial*)—Born Aug. 8, 1932, Radford, Va.; Pres. & Treas., Augusta Steel Corp., Box 980, Verona, Va. 24482; res. 891 Preston Drive, Staunton, Va. 24401; m. Aug. 14, '54, Dorothy Ann Hopkins; s. Arthur Roosa III, Jonathan Hopkins, Robert Kramer; d. Ann Caldwell, Elizabeth Miller, Mary Emilie.

GIFFORD, 1954, Richard C.—(*Business*)—Born June 14, 1931, New York, N.Y.; Assoc. Dir., Business Gifts, Campaign for Yale; P.O. Box 2038, New Haven, Conn.; res. 54 Quarry Ledge, Madison, Conn. 06443; Com. Chmn., Natl. Council Physical Distribution Management, '75; Bd. of Dir., Trust Inc., Chicago, '70-'76; Winnetka Environment Council; Precinct Capt., New Trier Repub. Organization, '69-'74; m. June 25, '55, Wendy E. Thorsen; s. Richard Cammann, Jr., Tucker Alling; d. Linda Shields, Mimi Conyngham, Jennifer Cammann.

GILE, 1939, Clement D.—(*Finance retired*)—Born Jan. 30, 1918, New York, N.Y.; res. Polly Park Rd., Rye, N.Y. 10580; formerly V.P., Morgan Guaranty Trust Co., Wall St., N.Y.C.; Dir., Yale Alumni Fund; Naval Aviator, Lt. Cmdr., USN, '40-'45; D.F.C. (4), Air Medal (4), Purple Heart; m. Jan. 18, '45, June Tyner; d. Anne (*Lachman*), Shelley (*Pfeifer*), Jean Tyner, Susan Dexter.

*GILE, 1914, CLEMENT MOSES—(*Industrial*)—Born Oct. 16, 1891, Andover, Mass.; died June 13, 1964; Lieut. (j.g.), USNR, W.W. I; m. June 3, '16, Anne Bunce Ryce; m. July 7, '55, Harriet V. Overton; s. Clement D., ('39), John K., ('48), David E. ('44).

GILL, 1936, BRENDAN—(*Literary work*)—Born Oct. 4, 1914, Hartford, Conn.; Mbr. of Staff, New Yorker Magazine, 25 W. 43rd St., New York, N.Y.; res. 1 Howe Place, Bronxville, N.Y. 10708; m. June 1936, Anne Barnard; s. Michael; d. Brenda, Holly Madelaine, Rosemary.

*GILL, 1889, CHARLES OTIS, B.D.—(*Ministry*)—Born Mar. 4, 1868, Walpole, Mass.; died June 1, 1959, Staunton, Va.; Inter-Church World Movement work in New England; Fed. Council of Churches of Christ in Am., Ohio.

*GILL, 1888, GEORGE METCALF—(*Industrial*)—Born Mar. 1, 1866, Orange, N.J.; died April 18, 1954, East Orange, N.J.

GILL, 1963, MICHAEL GATES—(*Advertising*)—Born Apr. 17, 1940, Hartford, Conn.; res. 40 High Park, Toronto, Ontario Canada.

GILLESPIE, 1929, KENRICK S.—(*Finance*)—Born Apr. 13, 1907, Morristown, N.J.; Ptnr., Loeb, Rhoades & Co., 42 Wall St., New York, N.Y. 10005; res. 125 E. 63rd St., New York, N.Y. 10021; m. June 13, '31, Emma Frances Cuddihy; s. Kenrick Cuddihy, John T., David; d. Emma C., Eleanor.

GILLESPIE, 1932, S. HAZARD, LL.B.—(*Law*)—Born July 12, 1910, Morristown, N.J.; Ptnr., Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 47 E. 64th St., Apt. 10B, New York, N.Y. 10021; Dir., Allis-Chalmers Corp; Hosp. for Special Surgery; New York State Bar Assn.; Union Settlement Assn.; Baccarat; Fellow, American College of Trial Lawyers; American Bar Foundation; U.S. Attny., Southern Dist. of N.Y., '59-'61; Chmn., Moreland Act Comm. to Investigate Public Welfare, '61-'63; Trustee & Receiver, Fifth Ave. Coach Co., '68-'72; Civilian, USAAF, Operational Research Section, 8th A/F E.T.O., June '44-July '45; s. Samuel Hazard III; d. Jane (*Schwarz*).

*GILLETTE, 1841, AUGUSTUS CANFIELD, M.A.—(*Law and literary work*)—Born May 18, 1822, New York City; died Feb. 7, 1856, Washington, D.C.

*GILLETTE, 1897, CURTENIUS, M.D.—(*Medicine*)—Born June 24, 1873, New York City; died Nov. 10, 1959, White Plains, N.Y.; Lt. Col., Med. Corps, World War I (AEF).

GILLETTE, 1964, HOWARD FRANK, JR., Ph.D.—(*Education*)—Born June 8, 1942, Chicago, Ill.; Asst. Prof. of American Civilization, Dir. of American Studies Program, George Washington, D.C. 20052; res. 2049 Park Rd. N.W., Washington, D.C. 20010; Yale Class Agent, Calhoun, '68-; 1964 Class Council, '74-; Natl. Pres., The Ripon Soc., '70-'72; Trustee, Larry Finkelstein Memorial Fellowship Fund, '74-; m. Aug. 24, '68, Jane Brown; s. Ellery Hale.

*GILMAN , 1852, DANIEL COIT, M.A., LL.D.—(*Education*)—Born July 6, 1831, Norwich, Conn.; died Oct. 13, 1908, Norwich. Librarian, Yale College, 1858-1865, and Prof. of geog., Sheffield Scientific School, 1863-1872. Sec., Conn. State Bd. of Education, 1865-1866. Pres., University of Calif., 1872-1875, of Johns Hopkins University, 1875-1901, and of the Carnegie Institution of Washington, 1902-1905.

*GLAENZER, 1907, GEORGES BRETTE—(*Industrial*)—Born Dec. 25, 1884, Brick Ch., N.Y.; died June 7, 1949, New York City.

*GLEASON, 1853, WILLIAM HENRY, LL.B., D.D.—(*Ministry*)—Born Sept. 28, 1833, Durham, Conn.; died Feb. 21, 1892, New York City. Mbr., New York State Legislature, 1864-1865.

GLOVER, 1940, CHARLES CARROLL, III, LL.B.—(*Law*)—Born Apr. 9, 1918, Washington, D.C.; Ptnr., Wilmer, Cutler & Pickering, 1666 K St. N.W., Washington, D.C. 20006; res. 5235 Duvall Drive, Bethesda, Md. 20016; Mbr., Yale Development Bd., '64-'73; m. July 29, '44, Viginia Dougherty; s. Charles C. IV, ('69), Everett; d. Judith.

GOEDECKE, 1944, WILLIAM SKINNER—(*Finance*)—Born Aug, 28, 1922, Brooklyn, N.Y.; 1st V.P., Smith Barney, Harris Upham & Co., 1345 Avenue of the Americas, New York, N.Y. 10019; res. 21 Green Ave., Rye, N.Y. 10580; Sgt., AUS, '42-'45; m. Jan. 21, '51, Janet Chatman; d. Susan Skinner.

GOLDBERG, 1977, RICHARD JULIUS—(*Student*)—Born Nov. 11, 1955, Pittsburgh, Pa.; 2360 Yale Sta. New Haven, Conn. 06520; res. 114 Greenridge Dr., Monongahela, Pa. 15063.

GONZALEZ, 1974, TIMOTEO F.—(*Student*)—bus. Lawyer's Inn. #203, Southern Methodist University, Dallas, Texas 75275; res. 2845 Lamar St., Corpus Christi, Texas 78405.

GOODENOUGH, 1944, John Bannister, M.S., Ph.D., Docteur Honoris Causa, Univ. of Bordeaux—(*Science*)—Born July 25, 1922, Jena, Germany; Prof., Inorganic Chemistry, Inorganic Chemistry Laboratory, Oxford University, South Parks Rd., Oxford OX1 3QR, England; res. (address not to be used) South Hill Rd., New Boston, N.H. 03070; Section & Group Leader, M.I.T. Lincoln Laboratory Staff, '52-'76; Assoc. Editor, Materials Research Bulletin, Inorganic Chemistry; Capt. USAAF, Sept. '42-Nov. '48; m. June 16, '51, Irene Johnston Wiseman.

GOODYEAR, 1949, Robert M.—(*Cattle Business*)—Born Apr. 5, 1925, Buffalo, N.Y.; Self employed selling registered Aberdeen Angus cattle; res. Box 632, Aiken, S.C. 29801; m. Dec. 20, '47, Patricia Smith.

°GORDON, 1834, Alexander Blucher—(*Law*)—Born Mar. 30, 1814, Falmouth, Va.; died Nov. 28, 1861, Falmouth.

°GORDON, 1938, Edward McGuire—(*Finance*)—Born May 5, 1916, Savannah, Ga.; died Aug. 18, 1944, in the Pacific Area. Lt. Cmdr., USNR, World War II.

GORDON, 1934, George Arthur—(*Literary work*)—Born July 27, 1912, Savannah, Ga.; Exec. Dir., Guideposts Associates, 747 Third Ave., New York, N.Y. 10017; res. P.O. Box 3122, Station A, Savannah, Ga. 31403; Managing Editor, Good Housekeeping Magazine, '36-'42; Editor-in-Chief, Cosmopolitan Magazine, '45-'48; Roving Editor, Readers Digest, '60-; Exec. Editor, Guideposts Magazine, '74-; Lieut. Col.; USAAF, Aug. '42-Sept. '45; Air Medal, Legion of Merit; m. 1935, Jane Y. Ryan; m. 1946, Pamela McGuire; s. Sheridan, Leigh, Kinzie, Dana, McGuire; d. Patricia, Paige, Gray.

°GOULD, 1877, Anthony—(*Law and literary work*)—Born Dec. '31, 1855, Albany, N.Y.; died Feb. 28, 1921, New York City.

°GOULD, 1918, James—(*Finance*)—Born May 15, 1894, Bristol, Pa.; died Sept. 18, 1950, Flourtown, Pa.; Capt., F.A., World War I (AEF)

°GOULD, 1845, James Gardner, M.A.—(*Law*)—Born Aug. 14, 1825, Augusta, Ga.; died Sept. 21, 1854, Marietta, Ga.

GOW, 1955, Robert Haigh—(*Industry*)—Born Apr. 26, 1933, Paris, France; Chmn. of Bd. & Chief Exec. Officer, Stratford of Texas, Inc., 950 Pennzoil Place, South Tower, 711 Louisiana Houston, Texas 77002; res. 11911 McLeods Lane, Houston, Texas 77024; Bd. of Dir., Digicon, Inc.; Terrain King; Dir.,

Planned Parenthood; 1st Lieut., USAF, Feb. '56-Dec. '58; m. July 16, '57, Patricia Lawson; m. Jan. 21, '74, Barbara Lord; s. David Frederick; d. Laura Lawson, Heather Haigh.

°GRAMMAR, 1843, CHRISTOPHER—(*Law*)—Born Mar. 17, 1822, Washington, D.C.; died Nov. 3, 1889, Washington.

°GRANGER, 1843, GIDEON, M.A.—(*Law*)—Born Aug. 30, 1821, Canandaigua, N.Y.; died Sept. 3, 1868, Canandaigua.

°GRANGER, 1855, JOHN ALBERT, M.A.—(*Farming*)—Born July 13, 1833, Canandaigua, N.Y.; died Oct. 27, 1906, Canandaigua.

°GRANT, 1858, EDWARD DROMGOOLE, M.A.—(*Real estate*)—Born Feb. 12, 1836, Brunswick County, Va.; died Nov. 19, 1915, Farmington, Conn.

°GRAVES, 1892, HENRY SOLON, M.A., LL.D.—(*Education*)—Born May 3, 1871, Marietta, Ohio; died Mar. 7, 1951, Brattleboro, Vt.; Dean, Yale Forestry School, '00-'10, and '22-'39; Asst. Chief, Div. of Forestry, U.S. Dept. of Agriculture, 1898-1900; Chief Forester, '10-'20; Lt. Col., Eng. Corps, World War I (AEF); Pres., Yale Alumni Assn. of Washington, '15-'16.

°GRAVES, 1891, WILLIAM PHILLIPS, M.D., Sc.D., F.A.C.S.—(*Medicine*)—Born Jan. 29, 1870, Andover, Mass.; died Jan. 25, 1933, Boston, Mass. Prof. of gynecology, Harvard Medical School, '11-'27; W.H. Baker Prof. of gynecology, '27-'32, and Prof. emeritus, '32-'33.

GRAYSON, 1942, CARY TRAVERS, JR., M.A., Ph.D.—(*Publishing*)—Born Mar. 21, 1919, Washington, D.C.; Pres., Potomac Books, Inc., P.O. Box 40604, Palisades Sta., Washington, D.C. 20016; res. Blue Ridge Farm, Upperville, Va. 22176; U.S. Dept. of State, '58-'61; U.S. Peace Corps, '61-'64; Capt., USMC, '42-'46; m. Sept. 7, '56, Priscilla Alden Roessle; d. Leslie H., Carininthia A., Alicia G., Theodosia H.

GRAYSON, 1940, JAMES GORDON—(*Finance*)—Born Jan. 7, 1918, Washington, D.C.; Sr. Investment Officer, International Finance Corp., 1818 H St. N.W., Washington, D.C. 20433; res. Upperville, Va. 22176; Lieut. Cmdr., USNR, '41-'46.

GRAYSON, 1944, WILLIAM CABELL—(*Telecommunications*)—Born May 28, 1921, Washington, D.C.; Special Coordinator for Public Affairs. Telecommunications, Room 2410, A and I Bldg., Smithsonian Institution, Washington, D.C. 20560; res. 3514 Williamsburg Lane N.W., Washington, D.C. 20008, and Blue Ridge Farm, Upperville, Va. 22176; 25th Anniversary Class Gift Com., Campaign for Yale, Washington Area, Major

& Special Gifts; National Broadcasting Co., Washington, D.C.: WRC-TV: Program Coordinator, Operations Dir., Sales Rep.; WRC-TV & WRC Radio: Program Mgr., '48-'62; Smithsonian Institution: Consultant, Broadcasting & Film, Chief, Broadcasting & Film, Special Asst. for Development & Public Affairs, '64-; Audubon Naturalist Soc. of the Central Atlantic States: Bd. of Dir., V.P. (Program), Pres., Chmn. of Bd., '59-; Bd. of Dir.; Upper Fauquier Assn., CINE, N.Y. State Historical Assn.; Exec. Com., Washington Film Council; Com. of 100 on the Federal City; St. Albans School Bld. of Governors, '58-'65; Trinity Ch., Upperville, Vestry; Exec. Bd., BSA, Natl. Capitol Area Council, '57-'63; Va. Comm. of the Arts & Humanities, '57-'63; 1st. Lieut., USMC, '43-'46, (Capt., Reserves, '50); m. Apr. 14, '51, Janet Ketchum; s. William Cabell, Jr., ('77), George; d. Katherine Mary, ('77).

GRAYSON, 1977, WILLIAM CABELL, JR.—(*Student*)—Born Nov. 4, 1953, Washington, D.C.; 1730 Silliman College, Yale University, New Haven, Conn. 06520; res. Blue Ridge Farm, Upperville, Va. 22176, or 3514 Williamsburg Lane N.W., Washington, D.C. 20008.

°GREADY, 1842, WILLIAM POSTELL, M.A.—(*Ministry*)—Born June 5, 1817, Charleston, S.C.; died Jan. 28, 1882, Toccoa City, Ga.

GREEN, 1973, BENJAMIN P.—(*Medical Student*)—Born Aug. 21, 1950, Orlando, Fla.; bus. Box 21439 Emory, Atlanta, Ga. 30322; Res. 701 Meigs St., Rochester, N.Y. 14620; Alumni Fund.

GREEN, 1955, CHARLES GRADY—(*Finance*)—Born March 19, 1933, Little Rock, Ark.; res. Prince George Hotel, 14 E. 28th St., New York, N.Y. 10016; m. Dec. 31, '60, Mary Elizabeth Salisbury; s. Andrew Salisbury; d. Abigail Spooner.

°GREEN, 1880, EDMUND FRANK, LL.B.—(*Insurance*)—Born April 3, 1857, Corunna, Mich.; died April 16, 1942, San Francisco, Calif.

°GREEN, 1879, HENRY SHERWOOD, LL.D.—(*Library work*)—Born Nov. 12, 1854, New Milford, Conn.; died Jan. 22, 1933, New Haven, Conn. Prof. of Greek, Bethany College, 1896-1900, assoc. Prof. of Greek, West Virginia University, 1900-1901, and Prof. 1901-1912. Served as librarian, World War I.

°GREEN, 1857, JAMES PAYNE—(*Education*)—Born Jan. 7, 1836, Jefferson City, Miss.; died May 13, 1924, Jefferson City. Prof.

of Greek and mathematics, Jefferson College, 1857-1859. Lieut., Cavalry, Confederate Army, Civil War.

GREEN, 1975, RUDOLPH—Add. 1919 Missouri Ave. Fort Worth, Texas 76104.

GREENBERG, 1970, STEPHEN DAVID—(*Student*)—Born Sept. 8, 1948, New York, N.Y.; U.C.L.A. School of Law; res. 1017 Napoli Drive, Pacific Palisades, Calif. 90272; Asst. Soccer Coach, '71-'72; Teacher, Hotchkiss School, '70-'71; Professional Baseball, Texas Rangers, '70-'74; m. May 31, '70, Myrna Katz; d. Jennifer Norton.

GREENE, 1930, WALDO WITTENMYER—(*Farming*)—Born July 18, 1906, Huntingdon, Pa.; Citrus owner; res. South Wattson Rd., P.O. Box 309, Mission, Texas 78572; Lieut. Comdr., USNR, '42-'45; m. July 21, '51, Shirley Brooks.

*GREENWAY, 1900, JAMES COWAN, M.A., M.D.—(*Medicine*)—Born Jan. 28, 1877, Huntsville, Ala.; died July 20, 1976; Assoc. Attend. Physician, N.Y. Hosp., '08-'16; Dir., Yale Univ. Health Dept., '16-'36; Major, Medical Corps, Sept. '17-Mar. '18; m. May 20, '02, Harriet M. Lauder; s. J.C.G., Jr., ('26), George Lauder, ('25), Gilbert C., ('34); d. Ann Lauder (*Griswold*).

*GRIGGS, 1928, HERBERT STANTON, JR.—(*Industrial*)—Born Jan. 27, 1906, Tacoma, Wash.; died Mar. 1, 1959, Tacoma; Lt. Cmdr., USNR, World War II; Trustee, Yale Assn. of Western Wash.

*GRIGGS, 1889, JOHN CORNELIUS, Ph.D.—(*Education*)—Born Sept. 29, 1865, Spring Valley, Minn.; died July 20, 1932, Palo Alto, Calif. Asst. Prof. of music, Vassar College, 1897-1919; assoc. Prof. of English, Canton Christian College (now Lingman University, Canton), 1919-1929, and Prof. of English and head of the dept., 1920-1927.

*GRIGGS, 1896, MAITLAND FULLER, LL.B., L.H.D.—(*Law*)—Born Feb. 12, 1872, Granby, Conn.; died July 24, 1943, Old Lyme, Conn. Originator and a founder of Associates in Fine Arts at Yale University and Chmn., '26-'41; Chmn., Com. on accessions, Yale Art Gallery, '28-'40; Lt. Col., Ord. Dept., World War I.

GRIMES, 1945, DAVID C., M.A. (Hon.)—(*Finance*)—Born Apr. 15, 1925, Omaha Nebr.; Chmn. & Chief Exec. Officer, Brentwood Savings & Loan Assn., 12001 San Vicente Blvd., Los Angeles, Calif. 90049; res. 202 South Rockingham Ave., Los Angeles, Calif. 90049; Alumni Fellow, Yale Corp., '74-'80;

Chmn., Founding Bd. of Gov., Assn. of Yale Alumni, '71; Alumni Bd., '66-'68; Dir., Yale Club of Southern Calif.; Dir., Natl. Savings & Loan League, '76; Ensign (Pilot), USNR, '43-'46; m. Dec. 30, '49, Suzanne Olander; s. David E., George F. ('79); d. Susan H.

*GRISWOLD, 1908, DWIGHT TORREY—Born Dec. 18, 1884, Erie, Pa.; died Dec. 29, 1908, San Francisco, Calif.

*GRISWOLD, 1899, WILLIAM EDWARD SCHENCK, LL.D.—(*Business*)—Born Jan. 8, 1877, Erie, Pa.; died Jan. 19, 1964; Sec., Railroad Securities Comm., '09-'11; Chmn., Yale Alumni Fund, '23, '24; m. Sept. 5, '07, Evelyn Sloane; m. April 20, '48, Ruth Emory; s. W.E.S.G., Jr., ('34), John Sloane, ('37), Dwight, ('40, dec.); d. Ursula W. (*Bingham*), Adela S. (*Bartholomew*), Evelyn (*Mayor*) (dec.).

*GROUT, 1853, ALFRED—(*Law*)—Born Sept. 3, 1830, Sherborn, Mass.; died July 26, 1866, Sherborn.

GROVE, 1929, MANASSES JACOB—(*Finance retired*)—Born Feb. 16, 1906, Frederick County, Md.; res. 405 Giddings Lane, Brenham, Texas 77833; Alumni Interviewer, '50-'60; Mercantile Safe Deposit & Trust Co., Baltimore, '40-'55; V.P. '47-'55; Investment Analyst, Univ. of Texas, Austin, '57-'70; Tech. Sgt., AUS, '41-'42; Cmdr., USNR, '42-'45; m. Apr. 26, '45, Noreen Mae Grote.

*GROVER, 1874, THOMAS WILLIAMS, LL.B.—(*Education*)—Born Nov. 29, 1846, Nashua, N.H.; died Nov. 17, 1893, Chicago, Ill.

*GRUBB, 1873, CHARLES ROSS—(*Finance*)—Born Mar. 31, 1857, Burlington, N.J.; died Aug. 22, 1928, Manada, Pa.

*GRUENER, 1884, GUSTAV, Ph.D., Litt.D.—(*Education*)—Born Mar. 30, 1863, New Haven, Conn.; died Dec. 5, 1928, Providence, R.I. Asst. Prof. of German, Yale University, 1892-1897, and Prof. 1897-1928.

*GUERNSEY, 1902, RAYMOND GANO, LL.B.—(*Law*)—Born Aug. 21, 1880, Poughkeepsie, N.Y.; died May 19, 1959, Poughkeepsie; former Mbr., Poughkeepsie Bd. of Education; Sec., Dutchess Cty. Health Assn.; Off. Candidate, F.A., World War I; Mbr., Class Fund Com.

GUIDOTTI, 1955, HUGO G., M.Ed.—(*Education*)—Born June 12, 1933, Somerville, Mass.; Head of Science Dept., Hudson High School, Hudson, Mass., also Mutual Funds Salesman, Investors Planning Corp. of New England; res. 11 Lilac Lane,

Hudson, Mass. 01749; m. Feb. 4, '56, Sally Theresa Crossman; s. Michael Anthony; d. Mary Ann, Ann Marie, Paula Mary, Sarah Jane.

GUINZBURG, 1950, THOMAS HENRY—(*Publishing*)—Born March 30, 1926, New York, N.Y.; Pres., The Viking Press, 625 Madison Ave., New York, N.Y. 10022; res. 32 E. 64th St., New York, N.Y. 10021; Bd. of Gov., Yale Univ. Press, '69-; Cprl., USMCR, May '44-May '46; Purple Heart; m. March 26, '56, Rita Gam; m. June 21, '67, Rustine Unger; s. Michael; d. Kate, Amanda.

*GULLIVER, 1875, HENRY STRONG, LL.B., M.A.—(*Education*)—Born Oct. 31, 1853, Norwich, Conn.; died April 13, 1923, Waterbury, Conn.

*GULLIVER, 1870, WILLIAM CURTIS, LL.B., M.A.—(*Law*)—Born April 8, 1847, Norwich, Conn.; died May 24, 1909, New York City.

GUTHRIE, 1968, ROBERT K.—Add. 2131 N. Stafford St., Arlington, Va. 22207; m. Aug. 5, '70, Marion Adelheid Melliwight.

GWIN, 1930, SAMUEL LAWRENCE, LL.B.—(*Law retired*)—Born Apr. 4, 1908, Greenwood, Miss.; res. 776 Chestnut St., Needham, Mass. 02192; Sec., Yale Club of Boston, '48; Pres., '49; Bequest & Endowment Chm. for Class of 1930, '72-'74; Ptnr., Choate, Hall & Stewart, Boston, '33-'74; Maj., USAAF, Apr. '42-'Nov. '45; Legion of Merit-Legionnaire, Asiatic Pacific Ribbon with 1 Bronze Star; m. Dec. 2, '33, Elizabeth Chadwick Thomas; s. Samuel L., Jr. ('63); d. Elizabeth (*Vestner*), Sally Humphreys.

GWIN, 1963, SAMUEL LAWRENCE, JR., J.D.—(*Law*)— Born Feb. 4, 1941, Boston, Mass.; Attny., Legal Dept., Massachusetts Financial Services, Inc., 200 Berkeley St., Boston, Mass. 02116; res. 1331 High St., Westwood, Mass. 02090; Assoc., Gaston Snow & Ely Bartlett, Aug. 15, '71-Apr. 30, '76; Capt., AUS, June '63-Sept. '68; 2 Bronze Stars, Purple Heart, Air Medal, Presidential Unit Citation; m. Dec. 24, '69, Susan Nivison; s. Samuel L. III.

H

HAAS, 1935, Frederick Peter, LL.B.—(*Law*)—Born Oct. 16, 1911, Yonkers, N.Y.; V.P., Special Counsel & Dir., Liggett Group, Inc., 4100 Roxboro Rd., Durham, N.C. 27702 (ret. Nov. 1, 1976); res. 1917 Front St., Durham, N.C. 27705; Alumni Fund Agt., Jonathan Edwards College '35-'74; Class Sec., '65-'70; Assoc., Webster & Sheffield, New York, '38-'46; Ptnr., '46-'65; General Counsel, Liggett & Myers, Inc., '65-'76; Pres., Durham Arts Council, July 1, '76-; Lieut. Cmdr., USNR, Feb. '43-Dec. '45; m. Feb. 8, '41, Mary Helen Parke; d. Suzanne Phyfe (*Harned*), Margaret McDevitt, (*Vayda*), Harriet Parke.

°HADDEN, 1920, Briton—(*Literary work*)—Born Feb. 18, 1898, Brooklyn, N.Y.; died Feb. 27, 1929, Brooklyn. 2d Lieut., F.A. World War I.

°HADLEY, 1876, Arthur Twining, M.A., M.L.A., Ph.D., LL.D. —(*Education*)—Born April 23, 1856, New Haven, Conn.; died Mar. 6, 1930, Kobe, Japan. Prof. of political and social science, Yale University, 1886-1891, and of political economy, 1891-1899; dean of the Graduate School, 1892-1895; Acting Treas. of the University, 1909-1910; Pres., 1899-1921, and Pres. emeritus, 1921-1930.

°HADLEY, 1919, Hamilton, LL.B.—(*Law, Writer*)—Born Jan. 13, 1896, New Haven, Conn.; died March 23, 1975, Armonk, N.Y.; Assoc. Fellow, Branford Coll., '39-; Com. on Humanities of Univ. Council; Ptnr., Winthrop, Stimson, Putnam & Roberts, '29-'40; Gov. (now Honorary) Soc. of N.Y. Hosp., '47-; Pres., '53-'57; Councillor, American Geographical Soc., '45-'53; Dir. Research Corp., '33-; Capt., AEF, Air Service, '17-'19; m. July 13, '29, Emily Morris; d. Anne (*Howat*).

HADLEY, 1916, Morris, M.A., LL.D.—(*Law retired*)—Born Mar. 21, 1894, New Haven, Conn.; bus. Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 71 E. 71st St., New York, N.Y. 10021; summer res. Lloyd Lane, Lloyd Neck, Huntington, Long Island, N.Y. 11743; Mbr., Yale Corp., '40-'62; Trustee, Vassar Coll., '31-'41,

Chmn. Bd., '39-'41; Trustee, N.Y. Public Library, '38-, Pres., '43-'58; Trustee, Carnegie Corp. of N.Y., '47-'67, Chmn., '55-'66; Deputy Dir., O.W.I. '41-'42; Maj., F.A. AUS, June-Sept., '16, Apr. '17-June '19; AEF, July '18-Apr. '19; m. July 12, '19, Katherine Cumnock Blodgett; s. Arthur Twining II, ('49), John Wood Blodgett, ('52); d. Katherine Morris (*Michel*) (dec.), Barbara (*Stanton*).

HAFFNER, 1919, CHARLES C., JR.—(*Industrial*)—Born March 15, 1895, Bloomville, Ohio; Chmn., Finance Com., R. R. Donnelley & Sons Co., 2223 Martin Luther King Drive, Chicago, Ill. 60616; res. 902 N. Green Bay Rd., Lake Forest, Ill. 60045; m. Oct. 10, '25, Clarissa Donnelley; s. Charles C. III, ('50); d. Clarissa G., Frances A., Phoebe L.

HAIGHT, 1952, CHARLES S., JR., LL.B.—(*Law*)—Born Sept. 23, 1930, New York, N.Y.; U.S. Distr. Judge, Southern Distr. of N.Y., United States Court House, Foley Square, New York, N.Y. 10007; res. 1105 Park Ave., New York, N.Y. 10028; 20th & 25th Reunion Committees; U.S. Dept. of Justice (Trial Attny., Admiralty & Shipping Section) '55-'57; Haight, Gardner, Poor & Havens, '57-'76; m. June 30, '53, Mary Jane Peightal; d. Nina E. ('79), Susan P.

°HAIGHT, 1847, DUGALD CAMERON, M.A.—(*Law*)—Born May 7, 1827, Bath, N.Y.; drowned Jan. 21, 1852, Chagres Bay, Central America.

HAIGHT, 1928, GEORGE WINTHROP, LL.B.—(*Law*)—Born Dec. 31, 1905, Washington, D.C.; Lawyer, Forsyth, Decker, Murray & Broderick, Suite 3333, 51 W. 51st St., New York, N.Y. 10019; res. 155 E. 82nd St., New York, N.Y. 10028; m. Sept. 2, '33, Mary Lillian Uppercu; d. Laura Uppercu (*Pretor-Pinney*), Linda Folsom (*Demay*), Marcia Winthrop (*Erickson*).

HAINES, 1924, THOMAS FREDERICK DAVIES, J.D.—(*Law retired*)—Born Mar. 13, 1902, Detroit, Mich. res. 139 E. 63rd St., New York, N.Y. 10021; m. Feb. 2, '33, Marian Forsyth Wickes; s. Thomas D. ('59), Alexander F.; d. Marian (*Minton*).

°HALDEMAN, 1851, RICHARD JACOBS—(*Literary work*)—Born May 19, 1831, Harrisburg, Pa.; died Oct. 1, 1885, Harrisburg. Member of Congress, 1869-1873.

°HALE, 1898, EUGENE, JR.—(*Finance*)—Born Mar. 1, 1876, Washington, D.C.; died Feb. 16, 1933, New York City. Priv., Med. Corps, World War I.

°HALL, 1834, DANIEL EMERSON—(*Law*)—Born May 9, 1810, Granville, N.Y.; died April 24, 1852, Mobile, Ala.

HALL, 1941, EDWARD TUCK, M.A., (Hon), Litt.D.—(*Education*) — Born Aug. 1, 1918, Manchester, Mass.; Teacher of English & Latin, Maru a Pula School, Private Bag 0045, Gaborone, Botswana, Africa; res. Cross Point Rd., North Edgecomb, Maine 04556; Mbr., Com. on Yale Coll., '63-'68; Asst. Instr. English, '46; Asst. to Chmn., Bd. of Admissions, '46-'47; Chmn., American Friends of Maru a Pula, Inc., (Fund Raising Found.), Box 150, Wiscasset, Maine 04578; Asst. Headmaster, St. Mark's School, '47-'52; Headmaster, The Hill School, '52-'68; Headmaster, St. Mark's School, '68-'74; Chmn., International Schoolboy Fellowships, '63-'65; Pres., Headmasters Assn., '70; Pres., New England Assn. of Teachers of English, '51; 1st Lieut., Inf. & Intelligence, Aug. '42-Jan. '46; Legion of Merit.

°HALL, 1933, FREDERICK BAGBY, JR.—(*Industrial*)—Born Dec. 21, 1910, St. Louis, Mo.; died Nov. 12, 1946, near Quantico, Va. Cmdr., USNR, World War II.

HALL, 1936, JESSE ANGELL—(*Business*)—Born Jan. 9, 1913, New York, N.Y.; Sales, The Lezius Hiles Co., 1929 E. 61st St., Cleveland, Ohio 44103; res. 164 North St., Chagrin Falls, Ohio 44022; Cub Scout Leader, '52-'54; Chagrin Valley Theatre, '53; Church Deacon, '52-'56; Chmn., Church Fund Raising Campaign, '56; assisted in developing & maintaining ice skating pond for children, Chagrin Falls, '55-'76; Chmn., Library Fund Raising Campaign, Chagrin Falls, '65; Maj., USFA, Jan. '42-Mar. '46; m. June 19, '37, Louise Barnes; s. Jesse A. Jr. (dec.), d. Gretchen (*Green*), Louise (*Dill*), Deborah Anne.

°HALL, 1894, JOHN LOOMER, LL.B.—(*Law*)—Born Jan. 23, 1872, Willimantic, Conn.; died June 13, 1960, New Haven. Pres., Trustees Boston Public Library; Trustee, Boston Museum Fine Arts; Mass. Com. of Defense, Naval Intelligence, World War I; Yale Alumni Bd.; Exec. Com., Yale Law School; Fellow, Branford College; m. Jan. 26, 1910, Dorothy Brinley Morgan; s. John M. (1932), Brinley M., (1934), Edward T., (1941), Richard L., (1949).

°HALL, 1866, JOHN MANNING—(*Law*)—Born Oct. 16, 1841, Willimantic, Conn.; died Jan. 28, 1905, New Haven, Conn. Mbr., Conn. State Legislature, 1870-1872 and 1881, and Spkr.,

1882. Pres., Conn. State Senate, 1889; Judge, Conn. Superior Court 1889-1893.

HALL, 1930, ROBERT A., LL.B.—(*Law, Theatre*)— Born Sept. 9, 1906, Omaha, Nebr.; Attny., Theatrical Producer, Oakdale Musical Theatre, Hartford Tpke., Wallingford, Conn.; res. 5 Westland Rd., Hamden, Conn. 06517; Chmn.: Yale Bd. of Athletic Control, '50-'52, Y Assn., '75-; Mbr., Yale Bd. of Athletic Control, '47-'49; Pres., Yale Football Y Assn., '75; Bd. of Gov., Mory's, '50-'53; Fellow, Branford College, '50-'53; Pres., Musical Theatre Assn., '71-; V.P. & Dir., Natl. Football Found. & Hall of Fame, '52-; Exec. Office of Pres. of U.S., Lend-Lease Admin, Australia, Special Deputy, U.S. State Dept., '42-'45; m. Nov. 8, '33, Ann McDonald Shipley; s. Robert A., Jr., Charles S.

*HALL, 1859, WILLIAM KITTREDGE, M.A., D.D.—(*Ministry*)— Born Nov. 4, 1836, Boston, Mass.; died Sept. 17, 1906, Newburgh, N.Y. Chaplain, Union Army, Civil War.

HALLETT, 1934, JOHN FOLSOM—(*Business retired*)— Born Aug. 2, 1912, Wellesley Hills, Mass.; bus. 3 Pleasant St., Rooms 24-25, Portsmouth, N.H. 03801; res. P.O. Box 62, Chauncey Creek Rd., Kittery Point, Maine 03905; V.P., Yale Club of St. Louis, '59-'60; Mbr. Exec. Com., Yale Class of 1934, '66-; Pres. & Dir., Kittery Historical & Naval Museum; Pres., Bio-Controls, Inc., San Francisco, Calif. (inactive); Dir., Am. Tool & Machine Co., Fitchburg, Mass.; Dir. & Mbr. Exec. Com., Massachusetts Higher Education Assistance Corp., Boston; 10th Distr. Rep., Greenwich, Conn., Town Meeting, '37-'41; Trustee, Metropolitan St. Louis Sewer Distr., '58-'62; Mbr., Kittery Planning Bd., '73-; Cmdr., USN (ret.), '42-'45; Co. Vol. Aviation Unit 9-10, St. Louis, '50-'58; Bronze Star & Air Medal with Battle Stars; Treas. Deer Island Club Corp. '46-'48; m. Mar. 4, '35, Katherine E. Koerber; s. Samuel Goodwin.

HALPIN, 1971, THOMAS M.—Born Sept. 9, 1949, Oakland, Calif.; res. 6822 Chambers Drive, Oakland, Calif. 94611.

*HALSEY, 1842, JACOB—(*Law*)—Born Jan. 30, 1821, New York City; died Sept. 25, 1853, Orange Mountain Water Cure, N.J.

HALSEY, 1942, RALPH WETMORE, JR.—(*Finance*)—Born Dec. 3, 1919, South Orange, N.J.; Ptnr., Halsey Associates, Investment Counsel, 258 Church St., New Haven, Conn. 06510; res. Seymour Rd., Woodbridge, Conn. 06525; Treas., Yale

Class of '42, '52-'57; Class Fund Raising Agt.; Dir., Mory's, '58-'74; Security Ins., '62-'72; Kaneb Services, '55-'65; Tropical Gas Co., '76-; Conn Savings Bank, '76-; Middlesex Ins., '76-; IXL Mfg., '76-; Essex Engineering, '76-; Hotchkiss School, '52-'74; Yale New Haven Hosp., Inv. Comm., '76-; Childrens Center, Inv. Comm., '76; Lieut, USNR, June '42-Dec. '45; Dir. & Treas., RTA '52-'65; m. June 2, '45, Betsey Copp; s. Ralph W. ('71), Thomas S., Andrew M.; d. Betsey Avery (*Dickinson*).

HAMBLETON, 1934, THOMAS EDWARD—(*Theatre*)—Born Feb. 12, 1911, Towson, Md.; Managing Dir., Phoenix Theatre, 149 W. 45th St., New York, N.Y. 10036; res. Box 25, Timonium, Md. 21093; Yale University Council, '55-'60; V.P., Theatre Inc.; Gov. League of N.Y. Theatres and Producers; Pres., First Am. Congress of Theatre; Dir., French & Polyclinic Hosp.; Trustee, Peale Museum, Baltimore; Lieut. Cmdr., USN '42-'46; m. Mar. '37, Caroline Lucinda Hoysradt (dec.); m. Feb. 19, '49, Merrell M. Hopkins; s. Thomas E., Jr., Mark Hopkins; d. Anne Brooks Crawford (dec.), Caroline Lucinda (*Watts*), Susan Sherwood, Mary Merrell.

HAMILTON, 1962, WILLIAM—(*Cartoonist*)—Born June 2, 1939, Palo Alto, Calif.; res. 1855 Broadway, San Francisco, Calif. 94109; PFC., AUS, Jan. '63-Jan. '65; Good Conduct Medal; m. May 9, '69, Candida Darci Vargas; d. Alexandra Manuela Vargas.

HAMLIN, 1961, CHARLES, B.M.S., M.D.—(*Medicine*)—Born Mar. 7, 1939, New Haven, Conn.; Reconstructive Hand Surgeon, Priv. Practice; Clinical Appointment, Univ. of Colorado Medical School, 1666 South University Blvd., Denver, Colo. 80210; res. 966 Bonnie Brae Blvd., Denver, Colo. 80209; Lieut. Col., USAF, Feb. '74-May '76; Diplomat, Soc. of Military Orthopaedic Surgeons; m. June '64, Lucy Aldrich Rockefeller; m. Sept. '72, Linda Livingston Ewing.

*HAMLIN, 1903, CHAUNCEY JEROME, LL.B., LL.D.—(*Investment Banker, Lawyer*)—Born Jan. 11, 1881, Buffalo, N.Y.; died Sept. 23, 1963; Allegheny State Park Comm., '21-'47; Capt., F.A., AEF, W.W. I; m. April 4, '05, Emily Gray; m. Nov. 26, '34, Elizabeth Wilkeson; m. Mar. 20, '52, Ella Gayle; s. C.J.H., Jr. ('28); d. Martha (*Visser't Hooft*), Mary K. (*Brooks*).

*HANNAHS, 1859, DIODATE CUSHMAN—(*Law student*)—Born Feb. 9, 1839, Otsego, N.Y.; died Sept. 10, 1862, Williamsburg, Va. Capt., Cavalry, Union Army, Civil War.

HANSEN, 1955, ROGER A.—(*Finance*)—Born Jan. 11, 1933, Newark, N.J.; Senior V.P., Dean Witter & Co., Inc., 33 N. Dearborn St., Chicago, Ill. 60602; res. 153 Ridge Lane, Lake Forest, Ill.; m. Oct. 17, '59, Wendy Blake; s. Roger Blake, Mark Christian; d. Victoria.

*HARDING, 1845, JOHN WHEELER, M.A.—(*Ministry*)—Born Oct. 12, 1821, Waltham, Mass.; died April 14, 1896, Longmeadow, Mass.

*HARDING, 1867, WILDER BENNETT, M.A.—(*Farming*)—Born Feb. 6, 1839, Putney, Vt.; died Jan. 15, 1926, Springfield, Mass.

*HARE, 1887, CLINTON LARUE—(*Business*)—Born Nov. 7, 1864, Noblesville, Ind.; died June 4, 1909, Indianapolis, Ind.

*HARE, 1894, MEREDITH, LL.B.—(*Law*)—Born July 20, 1870, Orange, N.J.; died Aug. 17, 1932, Fort Garland, Colo.

*HARMAN, 1913, ARCHER—(*Education*)—Born Oct. 11, 1889, Fort Riley, Kans., died Mar. 25, 1954, Cambridge, Mass.; Capt., F.A., World War I.

HARMAN, 1945, ARCHER, JR., Ed.M.—(*Education*)—Born May 25, 1923, Orange, N.J.; Dir. of Guidance, Wellesley High School, Wellesley, Mass. 02181; res. 307 Hillcrest Rd., Needham, Mass. 02192; Alumni Schools Com., '74-'76; Teacher, Westminster School, Simsbury, Conn., '46-'48; St. Paul's School, Concord, N.H., '48-'54; Headmaster, Peck School, Morristown, N.J. '54-'61; St. George's School, Newport, R.I., '61-'72; Trustee, St. Mark's School, Southborough, Mass.; The Walker School, Needham, Mass., A Better Chance, Wellesley, Mass.; Lieut. (j.g.), USN, '43-'46; m. Feb. 26, '44, Mari Brainerd; s. Archer III, David B., John W.; d. Jane (*Brewer*).

HARPER, 1933, HARRY HALSTED, JR.—(*Literary work retired*)—Born Dec. 2, 1910, Chicago, Ill.; res. (5/15-10/15) R.R. #4, St. Patrick's Channel, Whycocomagh, Nova Scotia, Canada B0E 3MO, (10/15-5/15) P.O. Box 236, N. Salem Road. Katonah, N.Y. 10536; Former Exec. Editor & V.P., & Mbr., Bd. of Dir., Readers Digest; Capt., USMC, Sept. '42-'Feb. '46; Legion of Merit; m. Sept. 28, '35, Mary H. Jopling; s. Jonathan M.; d. Jean (*Lindenmeyer*).

HARRIMAN, 1917, E. ROLAND, LL.D.—(*Finance*)—Born Dec. 24, 1895, New York, N.Y.; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. Arden, N.Y. 10910; Pres., Am. Natl. Red Cross, '50-'53, & Chmn., '53-'73; Pres., The Boys Club of N.Y., '34-'57, & Chmn., '57-; Lieut., U.S. Army, '17-'19; m. Apr. 12, '17, Gladys Cahill Fries; d. Elizabeth (*Bliss*) (dec.), Phyllis (*Mason*).

HARRIMAN, 1913, WILLIAM AVERELL, LL.D., L.H.D.—(*Government*)—Born Nov. 15, 1891, New York, N.Y.; res. 3039 N St., N.W. Washington, D.C. 20007; Union Pacific R.R. '15-'17; Merchant Shipbldg. Corp., '17-'25; W. A. Harriman & Co., Inc., '20-'31, then Ptnr., Brown Brothers Harriman & Co. (merger), '31-'46, Limited Ptnr., '46-; Illinois Central R.R. Co., Chmn., exec. Com., '31-'42, Dir., '15-'46; N.R.A., '34; Spec. Rep. of Pres. in Great Britain, Mar. '41; Ambassador, USSR, Aug. '41; Apptd. Rep. in London of Combined Shipping Adjustment Bd., Feb. '42; U.S. Ambassador to Russia, '43-'46, Great Britain, Apr.-Oct. '56; Sec. of Commerce, Oct. '46-Apr. '48; U.S. Rep. in Europe under Econ. Coop. Act of '48 May '48-June '50; Spec. Asst. to Pres., July '50-Jan. '52; Amer. Rep. on NATO Com. to study Western def. plans, Sept. '51-Feb. '52; Dir., Mutual Security Agency, Oct. '51-Jan. '53; Governor, N.Y. State, Jan. '55-Jan. '59; Ambassador-at-Large, Feb.-Dec. '61; Asst. Sec. of State for Far Eastern Affairs, Dec. '61-Apr. '65; U.S. Dept. Rep. to Internatl. Conf. on Settlement of Laotian Question, '61-'62; Spec. Rep. of Pres. for negotiation of nuclear Test Ban Treaty, July '63; Under Sec. State for Political Affairs, Apr. '63-Mar. '65; Ambassador-at-Large, Mar. '65-Jan. '69; U.S. Rep. Vietnam Peace Talks, Paris, '68-'69; Author, *Peace With Russia?* and *America and Russia in a Changing World;* m. Sept. 21, '15, Kitty Lanier Lawrence; m. Feb. 21, '30, Marie Norton Whitney (dec.); m. Sept. 27, '71, Pamela Digby Churchill; d. Mary (*Fisk*), Kathleen (*Mortimer*).

•HARRIS, 1836, HENRY REEDER—(*Farming*)—Born Aug. 15, 1815, Leonardtown, Md., died May 6, 1894, Harris Lot, Charles City, Md.

•HARRISON, 1859, BURTON NORVELL—(*Law*)—Born July 6, 1838, New Orleans, La.; died Mar. 30, 1904, Washington, D.C., Asst. Prof. of physics, University of Miss., 1859-1860. Private Sec. to Jefferson Davis, Civil War.

*HARRISON, 1890, FAIRFAX, M.A.—(*Transportation*)—Born Mar. 13, 1869, New York City; died Feb. 2, 1938, Baltimore, Md. Chmn., Railroad War Bd., 1917.

*HARRISON, 1895, FRANCIS BURTON, LL.B., LL.D.—(*Government*)—Born Dec. 18, 1873, New York City; died Nov. 21, 1957, Flemington, N.J.; Mbr., Congress, '03-'05, and '07-'13; Gov.-Gen., Philippine Islands, '13-'21, later Advisor to Pres., Philippine Islands; Capt. and Adj.-Gen., U.S. Vol. Cavalry, Spanish-American War.

HARRISON, 1942, FRED HAROLD, M.A.—(*Education*)—Born Aug. 24, 1918, Lawrence Mass.; Athletic Dir. & History Instr., Phillips Academy, Andover, Mass. 01810; res. 210 South Main St., Andover, Mass. 01810; Alumn Com. on Admissions & Scholarship, '58-'70; 1942 Exec. Com., '68-'71; 35th Reunion Com., Class of 1942; Coll. Exam. Bd. Reader, '52-'66; Regional Mbr., Natl. Football Hall of Fame Com., '72-'76; Adv. Gifts Com., Joint Lawrence Hosp. Drive, '69-'70; President's Council on Youth Fitness, '60-'63; Mass. Bd. of USO, '59-'61; Dir., Andover YMCA, '60-; Lawrence YMCA, '68; Pres., Andover YMCA, '66-'73; Teen Adult Collaboration Com., '70; Lieut. Col., AUS, '42-'46, Reserve '46-'70; Bronze Star, Army Commendation Medal; m. Mar. 11, '44, Marjorie Joan Alexander; d. Marjorie C. (*Fleming*), Nancy J. (*Bliss*), Elizabeth A. ('77)

*HARRISON, 1910, GEORGE LESLIE, LL.B., M.A., LL.D.—(*Law and Insurance*)—Born Jan. 26, 1887, San Francisco, Calif.; died Mar. 5, 1958, New York City; Mbr., N.Y. State Banking Bd.; Special Consultant to Sec. of War, '43-'46; Mbr., Natl. Council of the Com. for the Marshall PJlan, '48; Capt., Am. Red Cross, World War I (Fgn. Service); Vice-Chmn., N.Y. Chapter, Am. Red Cross; Mbr., Yale Alumni Com. for investigations, '51-'52.

*HARRISON, 1846, HENRY BALWDIN, M.A., LL.D.—(*Law*)—Born Sept. 11, 1821, New Haven, Conn., died Oct. 29, 1901, New Haven. Mbr. Conn. State Senate, 1854-1856, Mbr., Conn. State Legislature, 1865 and 1873, and Spkr., 1883. Gov. of Conn. 1885-1887, Mbr., Yale Corporation, 1872-1885.

HART, 1976, DENNIS CHARLES—(*Education*)—Born May 28, 1953, Framingham, Mass.; History Teacher & Cross Country Coach, E. O. Smith High School, Storrs, Conn.; res. 233 Cedar St., Ashland, Mass. 01721.

*HART, 1843, ROSWELL—(*Finance*)—Born Aug. 4, 1824, Rochester, N.Y.; died April 20, 1883, Rochester. Mbr. of Congress 1864-1866.

*HART, 1833, RUFUS ERASTUS, M.A.—(*Law*)—Born Sept. 10, 1812, Middlebury, Ohio; died Dec. 24, 1891, Marietta, Ohio. Mbr., Ohio State Senate, 1845-1847.

HARTLEY, 1912, CAVOUR—(*Business retired*)—Born Jan. 26, 1890, Duluth, Minn.; bus. 740 E. Superior St., Duluth 55802; res. 3800 E. Superior St., Duluth 55804; 2d Lieut., F.A., AEF, W.W. I; Lieut., USNR, W.W. II; m. June 24, '14, Carolyn W. Munger; s. John ('37), David, ('38), Alfred, ('41), Edward.

*HARTSHORN, 1867, JOSEPH WILLIAM, B.D.—(*Ministry*)—Born June 22, 1840, South Coventry, Conn.; died Feb. 11, 1921, New Haven, Conn.

*HASKELL, 1858, ROBERT CHANDLER, M.A.—(*Industrial*)—Born Sept. 6, 1834, Weathersfield, Vt.; died May 12, 1897, Lansingburg, N.Y.

*HASLAM, 1890, LEWIS SCOFIELD, LL.B.—(*Law*)—Born Aug. 29, 1866, Stamford, Conn.; died Sept. 10, 1935, St. Louis, Mo. Sec. Yale Alumni University Fund Assoc., 1894-1903; Mbr., Yale Alumni Bd., 1933-1935.

*HATCH, 1837, WALTER TILDEN, M.A.—(*Finance*)—Born Oct. 5, 1818, Haverhill, Mass.; died June 8, 1896, Brooklyn, N.Y.

*HAVEN, 1887, GEORGE GRISWOLD—(*Finance*)—Born June 14, 1866, New York City; died July 21, 1925, New York City.

*HAVENS, 1843, DANIEL WILLIAM—(*Ministry*)—Born Jan. 24, 1815, Norwich, Conn.; died Aug. 31, 1889, East Haven, Conn.

*HAWLEY, 1846, DAVID—(*Law*)—Born Oct. 14, 1820, Arlington, Vt.; died Nov. 25, 1903, Yonkers, N.Y.

*HAY, 1893, LOGAN, LL.B. LL.D.—(*Law*)—Born Feb. 13, 1871, Springfield, Ill.; died June 2, 1942, Springfield, Mbr., Ill., State Senate, 1907-1914.

*HAYDEN, 1847, WILLIAM HALLOCK—(*Industrial*)—Born Dec. 31, 1827, Haydenville, Mass.; died Aug. 6, 1891, Haydenville.

HEALY, 1943, HAROLD HARRIS, JR., J.D.—(*Law*)—Born Aug. 27, 1921, Denver, Colo.; Ptnr., Debevoise, Plimpton, Lyons & Gates, 299 Park Ave., New York, N.Y. 10017; res. 1170 Fifth Ave., New York, N.Y. 10029; Mbr., Exec. Com., Yale Law School Assn., '74-; Assoc., Debevoise, Plimpton, Lyons & Gates, '49-'56, Ptnr., '59-; Exec. Asst. to U.S. Atty. General,

’57 & ’58; Chmn., Legal Aid Soc., New York, ’75-; Capt., F.A., AUS, Jan. ’43-July ’46; Bronze Star, Army Commendation Medal; m. May 24, ’52, Elizabeth Anne Debevoise; s. H. Harris III.

*HEARD, 1853, ALBERT FARLEY—(*Government*)—Born Oct. 4, 1833, Ipswich, Mass.; died Mar. 26, 1890, Washington, D.C.

*HEATON, 1869; EDWARD—(*Law*)—Born Sept. 29, 1842, Cincinnati, Ohio; died Jan. 12, 1884, Ridgefield, N.J. Lieut. Artillery, Union Army, Civil War.

*HEBARD, 1851, ALBERT—(*Student*)—Born Jan. 5, 1826, Lebanon, Conn.; died May 18, 1851, Lebanon.

*HEBARD, 1860, DANIEL—(*Education*)—Born Sept. 5, 1836, Lebanon, Conn.; died Aug. 7, 1862, New York City. Asst. Adj.-Gen., Union Army, Civil War.

*HEDGE, 1867, THOMAS, LL.B.—(*Law*)—Born June 24, 1844, Burlington, Iowa; died Nov. 28, 1920, Burlington. Mbr. of Congress, 1899-1907. 2d Lieut., Union Army, Civil War.

*HEERMANCE, 1858, EDGAR LAING, M.A.—(*Ministry*)—Born April 30, 1833, New York City; died April 29, 1888, White Plains, N.Y.

HEFFELFINGER, 1920, FRANK PEAVEY—(*Business retired*)—Born, Oct. 15, 1897, Minneapolis Minn.; res. Wakefield Farm. 560 Old Long Lake Rd., Wayzata, Minn. 55391; Dir. Emeritus, Peavy Co., Peavey Bldg., 730 Second Ave. South, Minneapolis, Minn. 55402; Mbr., Yale Alumni Bd.; Dir., Yale Track Assn.; Chmn., Effective Politics Com., Peavey Co.; Dir., Northwest Bancorporation; North Star Research & Development Institute; Chmn., Repub. Natl. Finance Co.; Mbr., Governor’s State of Minn. Comm. on Alcohol Problems; Dir., Minn. Council on Alcohol Problems; V. Chmn., Hennepin Cty. Task Force on Alcoholism & Inebriety; Dir., Minn. Valley Restoration Project; Found. for Am. Agriculture; Trustee, Hazelden Found.; Great Northern Railway; Natl. Football Found. & Hall of Fame; V.P., Minn. Track & Field Club; V.P. Chamber of Commerce of the U.S.; Dir., Natl. Tax Equality Assn.; 2d Lieut., F.A. U.S. Army, W.W. I; Regional Dir., War Production Bd., W.W. II; m. Jan. 1, ’21, Elizabeth E. Bradley; s. Frank P., Jr., (’49); d. Mary Jane (*Davis*) (dec.), Lucia (*deGrazia*), Rosalie (*Smith*), Mildred (*Humphrey*).

•HEFFELFINGER, 1924, GEORGE WRIGHT PEAVEY—(*Business*) —Born July 24, 1900, Minneapolis, Minn.; died Oct. 6, 1970; Exec. V.P., F. H. Peavey & Co., Minneapolis, Minn.; Pres., Russell Miller Milling Co.; Lieut. Col. USAAF, W.W. II; m. Jan. 31, '26, Ruth Jones; s. G.W.P.H., Jr. Totton Peavey II ('48); d. Louise Engle (*Peebles*), Ruth Bynon.

HEINZ, 1931, HENRY JOHN II—(*Business*)—Born July 10, 1908, Sewickley, Pa.; Chmn. of Bd., H. J. Heinz Co., P.O. Box 57, Pittsburgh, Pa. 15230; res. "Goodwood", State Rd., Sewickley, Pa. 15143; Chmn. Gov. Bd., Yale Art Gallery, Co-Chmn,. Advisory Com., Yale Univ. Economic Growth Center; Pres. H. J. Heinz Co. '41-'59; Chmn. Bd. '59-; Head, Special Foreign Operations Administration Mission to Pakistan, '54; Pub. Adv. Mem. U.S. delegation to 12th session, Gen. Agreement Tariffs & Trade, Geneva, '57; Chmn., U.S. delegation Economic Comm. for Europe, '58-'60; Bd. of Dir., Bus. Com. for Arts; Pittsburgh Regional Planning Assn.; Pittsburgh Symphony Soc.; Pres., Nutrition Found.; m. '35, Joan Diehl; m. '53, Drue E. Maher; s. Henry J. III ('60).

•HELFENSTEIN, 1841, CHARLES PHILIP, M.A.—(*Industrial*)—Born Sept. 12, 1820, Carlisle, Pa.; died Feb. 15, 1900, Shamokin, Pa.

•HELMER, 1852, CHARLES DOWNS, M.A., D.D.—(*Ministry*)—Born Nov. 18, 1927, Canajoharie, N.Y.; died April 28, 1879, Lockport, N.Y.

•HEMINWAY, 1921, BARTOW LEWIS—(*Industrial*)—Born Nov. 24, 1899, Watertown, Conn.; died April 15, 1970; Pres., Heminway Corp., Waterbury, Conn.; Trustee, Waterbury and Gaylord Hospitals; Chmn. Trustees, Waterbury YMCA; Dir., Exec. Com., Colonial Bank & Trust Co., Waterbury; former Trustee, Taft School and St. Margaret's School for Girls; 2d Lieut., F.A., W.W. I; former V.P., Naugatuck Valley Alumni Assn.; m. Oct. 1, '21, Annabel Ruth Hubbard; s. Henry Langon; d. Elizabeth (*Bagdon*).

HEMPHILL, 1959, JAMES T., LL.B.—(*Law*)—Born May 25, 1937, Johnstown, Pa.; Lawyer; Gen. Counsel, Consolidation Coal Co., 3300 One Oliver Plaza, Pittsburgh, Pa. 15222; res. 7720 Abbott, Pittsburgh, Pa. 15221; Pres., Yale Club of Pittsburgh, '73-'75; A.Y.A. Rep., '76-; Chmn., Coal Com., Am. Bar. Assn.; V.P. & Chmn. Membership Com., Harvard-Yale-

Princeton Club, Dir., Bd. of Dir., '76-; Dir., Junior Achievement, Western Pa., '74-; m. (divorced); d. Sarah, Alice.

°HENNEN, 1842, WILLIAM DAVISON, M.A.—(*Law*)—Born Mar. 25, 1823, New Orleans, La.; died May 16, 1883, New York City. Maj. Confederate Army, Civil War.

HENNINGSEN, 1950, VICTOR WILLIAM, JR.—(*Business*)—Born May 19, 1924, New York, N.Y.; Pres., Henningsen Foods, Inc., 2 Corporate Park Drive, White Plains, N.Y. 10604; res. 1009 Esplanade, Pelham Manor, N.Y. 10803; Sec., Yale Class of 1950, '53-'60; Pres., Yale Club of N.Y., '66-'68; Exec. Com., Yale Alumni Bd., '68-'73; Mbr., Assn. Yale Alumni, '73-'75; Dir., Yale Alumni Fund, '68-'71; Yale Development Bd., '68; Corporate Trustee, St. Thomas More Chapel, Yale, '55-; Trustee, Nutrition Found., '68-; Eastchester Savings Bank, '75-; Pres., United Way of Pelham, '60-'62; Trustee, Village of Pelham Manor, '64-'69; Mayor, Village of Pelham Manor, '69-'71; Lieut. (j.g.), USNR, '43-'45; Dir., Deer Island Corp., '55-'60; m. Aug. 27, '49, Mary Florence Bemis Ludington; s. Victor W., III, ('74), Christopher K., Timothy F.; d. Mary F.

HERNANDEZ, 1971, CARLOS ARTURO—(*Student*)—Born June 12, 1947, Bogotá, Columbia, S.A.; bus. Universidad Nacional de Colombia Medical School, Hosp. San Juan de Dios, Bogotá, Colombia, S.A.; res. Carrera 55 No. 45-58, Bogotá - 9, Colombia, South America; Philips Academy, Andover, Mass.: Teaching Fellow in Spanish, '71-'72, Spanish Teacher, Asst. Varsity Soccer Coach, '72-'73.

°HERON, 1910, JOHN, LL.B.—(*Law*)—Born Nov. 20, 1880, Pittsburgh, Pa.; died Jan. 31, 1960, Pittsburgh. Capt., Inf., World War I (AEF).

HERSEY, 1936, JOHN, M.A. (Hon.), LL.D., L.H.D., Litt.D.—(*Literary work*)—Born June 17, 1914, Tientsin, China; res. 420 Humphrey St., New Haven, Conn. 06511; Yale Univ. Council Com. on the Humanities, '51-'56; Univ. Council Com. on Yale Coll., '59-'69, Chmn., '64-'69; Fellow, Berkeley Coll., '50-'65; Master, Pierson Coll., '65-'70, Fellow, Pierson Coll., '65-; Lecturer, English, '71-'76; Visiting Prof., English, '76-; Pres., Authors League of America, '75-; Mbr., Council, Authors League, '46-'70, '76-; Mbr., Council, Authors Guild, '46-; Chmn., Book Contract Com., '63-; Sec. Am. Academy of Arts & Letters, °61-; Delegate to PEN Congress, Tokyo, '58;

Lecturer, Salzburg Seminar in Am. Studies, '75; Visiting Prof., M.I.T., '75; Chmn., Conn. Com. for the Gifted, '54-'57; Visiting Com., Harvard Graduate School of Educ., '60-'65; Natl. Citizens' Comm. for Public Schools, '54-'56; Trustee, Putney School, '53-'56; Trustee, Natl. Citizens' Council for Public Schools, '56-'58; Delegate, White House Conference on Education; Commissioner, Natl. Comm. on New Technological Uses of Copyrighted Works, '75-; War Correspondent, '42-'46; Cited by Sec. of Navy for removal of wounded from field of action, Guadalcanal; m. Apr. 27, '40, Frances Ann Cannon; m. June 2, '58, Barbara Day; s. Martin, John ('65), Baird, Brook; d. Ann.

HESSBERG, 1938, ALBERT II, LL.B.—(*Law*)—Born June 14, 1916, Albany, N.Y.; Ptnr., Poskanzer, Hessberg, Blumberg & Dolin, Suite 755, 60 State St., Albany, N.Y. 12207; res. 1635 New Scotland Rd., Slingerlands, N.Y. 12159; Exec. Com., Alumni Bd., '66-'71; Pres., Albany Cty. Bar Assn., '68; Pres. Estate Planning Council of Eastern N.Y., '70-'71; Exec. Com., Trusts & Estates Law Section, N.Y. State Bar Assn., '68-'74; Bd. of Trustees, Albany Medical Center Hosp., '70-; St. Rose Coll., '71-; Dudley Conservatory, '68-; Lieut. Cmdr., USNR, '41-'45; m. May 9, '48, Elizabeth F.S. Goold; s. Albert III, Philip G.; d. Caroline E.

°HEWITT, 1903, BROWER—(*Industrial*)—Born April 28, 1881, Brooklyn, N.Y.; died Nov. 5, 1958, North Stonington, Conn.; Treas., Marine Historical Assn. of Mystic Seaport.

HEWITT, 1963, HENRY H., J.D.—(*Law*)—Born Aug. 13, 1941, Portland, Oregon; Ptnr., Davies, Biggs, Strayer, Stoel & Boley, 23rd Floor, S W Fifth Ave., Portland, Ore. 97204; A.Y.A. delegate from Oregon; Treas., Oregon Alumni Assn.; Chmn. Bd. of Dir., Delaney Mental Health Center, '75-'76, Oregon Legal Services Corp.; Dir.; Portland Area Chapter ACLU, Martin Luther King Scholarship Fund; Capt., USAR, Nov. '63-May '69.

°HEWITT, 1864, THOMAS BROWNING, M.A.—(*Law*)—Born Sept. 9, 1842, North Stonington, Conn.; died Jan. 6, 1921, Brooklyn, N.Y.

°HIDDEN, 1885, EDWARD, LL.B.—(*Finance*)—Born July 4, 1860, Cincinnati, Ohio; died July 15, 1938, St. Louis, Mo.; Chmn., U.S. Comm. on relations with Haiti; Mbr., Yale Alumni Bd., '12-'18. Regional rep., U.S. Food Admin., and chmn., Southwestern states, third Red Cross roll call, World War I.

HIERS, 1954, RICHARD HYDE, B.D., M.A., Ph.D.—(*Education*) —Born Apr. 8, 1932, Philadelphia Pa.; Prof. of Religion, University of Florida, Gainesville, Fla. 32611; res. 506 SW 40th Terr., Gainesville, Fla. 32607; Sec.-Treas., Yale Club of Gainesville, '65-'67; Pres., Southeastern Region, Am. Academy of Religion, '69-'70; Am. Assn. of University Professors, Univ. of Fla. Chapter, '72-'74; Univ. of Fla. Chapter, Phi Beta Kappa, '75-'76; Pres., Gainesville Council on Human Relations, '71-'72; Citizens' Housing Assn. of Gainesville, '64-'66; Chmn., Citizens' Advisory Com., for a Workable Program for Gainesville, '69-'71; Sec., RTA, '56-'61; m. Jan. 30, '54, Jane Leslie Gale; s. Peter L.; d. Rebecca H.

*HIGGINS, 1861, ANTHONY, LL.D.—(*Law*)—Born Oct. 1, 1840, St. George's, Del.; died June 26, 1912, New York City. U.S. district attny., Del. 1869-1876. Mbr. U.S. Senate, 1889-1895.

HIGHFILL, 1973, PHILIP HENRY, III, M.M.—(*Music*)—Born Aug. 21, 1951, Rochester, N.Y.; Free Lance Pianist, res. 5611 Wood Way, Bethesda, Md. 20016; Santa Fe Opera, '74; Fullbright-Hays Scholar, Austria, '75-'76.

*HILL, 1845, GEORGE CANNING—(*Literary work*)—Born Feb. 10, 1825, Norwich, Conn.; died Nov. 14, 1898, Boston, Mass.

*HILLARD, 1883, LORD BUTLER—(*Law and business*)—Born Dec. 5, 1860, Wilkes Barre, Pa.; died Jan. 30, 1934, Wilkes Barre, Pa.

*HILLES, 1924, CHARLES DEWEY, JR., LL.B.—(*Law*)—Born June 17, 1902, Lancaster, Ohio; died April 28, 1974, New York, N.Y.; Spec. Legal Adviser, U.S. High Commissioner for Germany, '54-'55; m. Mar. 16, '29, Helen Train; d. Lee (*Wertheim*), Linda.

*HILLES, 1922, FREDERICK WHILEY, Ph.D., L.H.D.—(*Education*) —Born June 1, 1900, Lancaster, Ohio; died Dec. 10, 1975; Bodman Prof. English emeritus, Yale Univ.; Mbr., English Dept., '26, '65, Chmn. Dept. '47-'56, '62-'64; Dir. of Humanities '56-'59; Univ. Council's Com. on Library, '58-'61; Chmn., Library Assoc., '66-'70; V.P., Yale Univ. Press, '58-; W.W. I; App. Seaman, USN, Sept.-Dec. '18; W.W. II: Lieut. Col., AUS, '42-'46; Legion of Merit; Hon. O.B.E.; RTA: Pres.; m. June 14, '30, Susan Toy Morse; s. F.W.H., Jr.; d. Susan Ensign (*Bush*).

*HINCKS, 1866, EDWARD YOUNG, M.A., D.D., S.T.D.—(*Education*)—Born Aug. 13, 1844, Bucksport, Me.; died Dec. 23, 1927, Cambridge, Mass. Prof. of biblical theology, Andover

Theological Seminary, 1883-1900, and of Christian theology, 1900-1908; Prof. of biblical theology, Harvard University, 1908-1922, and prof. emeritus, 1922-1927.

*HINCKS, 1872, JOHN HOWARD—(*Ministry and education*)—Born Mar. 19, 1849, Bucksport, Me.; died Dec. 11, 1894, Atlanta, Ga. Prof. of history and social science, Atlanta University; also dean of the faculty.

*HINCKS, 1920, JOHN MORRIS, M.B.A.—(*Insurance, Finance*)—Born July 23, 1898, Bridgeport, Conn.; died Nov. 22, 1973, Farmington, Conn.; Chmn., Middlesex Mutual Assurance Co., Chmn., Middletown Savings Bank; Chmn., 25th Reunion in '45; Class Sec., '68-; Alumni Bd., '69-; Hincks Bros. & Co., '22-'30; Calvin Bullock, '30-'42; Middlesex Mutual '44-; Dir., Institute for Living, '50-; Trustee, Farmington Village Library, '58-'68; Trustee, Vassar Coll., '59-'67; W.W. I: 2d Lieut., F.A., Sept.-Dec. '18; W.W. II: Lieut. Col., Fiscal Div., AUS, '42-'44; Dir RTA, '66-'69; m. Oct. 3, '25, Olive Birch Warner; s. Robert W., ('48), John W., ('52), William T., ('61); d. Jean (*Mead*), Birch (*Milliken*).

HINCKS, 1952, JOHN WINSLOW, LL.B.—(*Law*)—Born April 17, 1931, New Haven, Conn.; Ptnr., Robinson, Robinson & Cole, 799 Main St., Hartford, Conn. 06103; res. 26 Sycamore Rd., West Hartford, Conn. 06117; Yale Law School Exec. Com., '70; Yale Crew Advisory Com.; Ethics Com., Conn. Bar Assn.; Dir., Legal Aid Soc.; Hartford Dispensary Methadone Program: Pres., '73-'75, Dir., '70-; Trustee: Newington Childrens Hosp., Renbrook School; Dir.: Hartford Stage Co., Middlesex Mutual Assurance Co.; Lieut., USN, '52-'55; Dir., RTA, '58-'61, '72-'75; m. June 14, '58, Marcia Lockwood; s. John, Benjamin; d. Rebecca, Jennifer.

*HINE, 1871, CHARLES DANIEL, LL.B.—(*Education*)—Born Feb. 26, 1845, Fairhaven, Vt.; died Aug 27, 1923, Winsted, Conn. Sec., Conn. State Bd. of Education, 1883-1920. State dir. for school war activities and of State War Library Council, and mbr., State Council of Defense, World War I.

*HINKEY, 1895, FRANK AUGUSTUS—(*Finance*)—Born Dec. 23, 1870, Tonawanda, N.Y.; died Dec. 30, 1925, Southern Pines, N.C.

*HINSDALE, 1898, FRANK GILBERT—(*Industrial*)—Born Feb. 11, 1874, Pittsfield, Mass.; died Oct. 12, 1940, New York City.

•HITCHCOCK, 1848, HENRY, LL.D.—(*Law*)—Born July 3, 1829, Mobile, Ala.; died Mar. 18, 1902, St. Louis, Mo. Dean, St. Louis Law School, Washington University, 1867-1879, and Prof. of law, 1867-1884. Asst. Adj.-Gen., Union Army, Civil War.

•HITCHCOCK, 1879, HENRY, LL.B.—(*Law*)—Born June 6, 1858, St. Louis, Mo.; died April 20, 1933, Orange, N.J.

•HIXON, 1901, ROBERT—(*Business*)—Born May 23, 1878, La-Crosse, Wis.; died Dec. 27, 1945, Lake Forest, Ill. Maj., Am. Red Cross, World War I (Fgn. service).

HOAGLAND, 1943, DONALD WRIGHT, LL.B.—(*Law*)—Born Aug. 16, 1921, New York, N.Y.; Ptnr., Davis, Graham & Stubbs, Colorado National Bank Bldg., 950 17th St., Denver, Colo. 80202; res. 2250 So. Columbine St., Denver, Colo. 80210; Scholarship & Capital Fund-raising Committees, Denver area; Lecturer, Univ. of Denver Law School, '71-; Mbr., Bd. of Gov., Colorado Bar Assn., '60-'61; Pres., Legal Aid Soc. of Metropolitan Denver, '75-; Trustee, Denver Art Museum, '59-'63; '72-; Dir. Urban League of Colo., '58-'63, '68-'72, Pres., '71-'72; Trustee, Social Science Found., '75-; Dir. & V. Chmn., Denver Red Cross, '58-'63; Mbr., Colo Legal Services Advisory Council, '76-; Mbr., or Chmn., Denver Planning Bd., '56-'63, '67-'70; Asst. Administrator, U.S. Agency for International Development, '64-'66; Lieut. (j.g.) USN Air Corps, '42-'45; 2 Air Medals, Presidential Unit Citation; m. May 14, '49, Mary Tiedeman; s. Peter M.; d. Mary C., Sara H., Ann W.

•HOBBS, 1885, CHARLES BUXTON, LL.B.—(*Law*)—Born Jan. 7, 1863, Richmond, Va.; died Oct. 8, 1944, Bay Shore, N.Y.

•HOBSON, 1920, FRANCIS THAYER—(*Literary work*)—Born Sept. 4, 1897, Denver, Colo.; died Oct. 19, 1967; Chmn. Bd. William Morrow & Co. Publishers, N.Y.C.; Pfc., AEF, Sgt., French Army, W.W. I; Asst. Instr., English, Yale '22-'23; m. Sept. 27, '35, Isabelle Lavis Garrabrants; s. Timothy, Thayer Jennings, Peter Whiteside, ('63).

HOBSON, 1914, HENRY WISE, B.D., S.T.D., LL.D., L.H.D., D.D.—(*Ministry retired*)—Born May 16, 1891, Denver, Colo.; res. (5/15-10/30) Box 85, Fishers Island, N.Y. 06390, (10/30-5/15) 405 Albion Ave., Glandale, Cincinnati, Ohio 45246; Treas., Yale Athletic Assn., '15; Sec., Com. of 21 to build Yale Bowl, '14-'15; Class Agent, '59-; Dir., Yale Alumni Fund, '63-'68, '69-'76; A.Y.A., '72-'75; Yale Medal, '67; Bishop

Emeritus, Diocese of Southern Ohio, '59-; Bishop, Diocese of Southern Ohio, Episc. Ch., '30-'59; Asst. Minister, St. John's Ch., Waterbury, Conn., '20-'21; Rector, All Saints Ch., Worcester, Mass., '21-'30; Exec. Com., Protestant Episc. Ch., '37-'46, '49-'55; Chmn., Exec. Com., Forward Movement Publications, Episc. Ch., '34-'76; Chmn., Natl. Com., Fight for Freedom Com., '41-'42; Trustee, Phillips Academy, Andover, Mass., '37-'66, Pres., '47-'66; Trustee, Kenyon Coll., '30-'59; Dir., Cincinnati YMCA, '31-'59; Chmn., Trustees of Childrens' Hosp., Cincinnati, '30-'59; Maj., U.S. Army, Mar. '17-Dec. '19; Distinguished Service Cross; m. May 4, '18, Edmonia Taylor Bryan; s. Henry W., Jr. ('43); d. Katharine Bryan (*Sturtevant*), Anne Jannings (dec.) Margery Thayer (*Thomas*).

HODES, 1970, DOUGLAS MICHAEL, F.S.A.—(*Insurance*)—Born Dec. 11, 1946, New York, N.Y.; Actuary, Pension Consultant, Metropolitan Life Insurance Co., One Madison Ave., New York, N.Y. 10010; res. 62 Charles St., New York, N.Y. 10014.

HODGES, 1932, WILLIAM VANDERVEER, JR., LL.B.—(*Law*)—Born Sept. 19, 1911, Denver, Colo.; Lawyer: of Counsel, Davis, Graham & Stubbs, 950 17th St., #2600, Denver, Colo. 80202; res. 235 Vine St., Denver, Colo. 80206; Chmn., Colo. Yale Scholarship Com., '54-'56; Lieut. Cmdr., USNR, '42-'45; m. Dec. 19, '40, June Cantwell; s. William V. III; d. Marilyn (*Wilmerding*).

•HOGAN, 1905, JAMES JOSEPH, LL.B.—(*Law*)—Born Oct. 31, 1872, Glenbane, Ireland; died Mar. 20, 1910, New Haven, Conn.

HOLBROOK, 1960, DAVID DOUBLEDAY—(*Insurance*)—Born Sept. 1, 1938, New York, N.Y.; Senior V.P., Marsh & McLennan, Inc., 1221 Ave. of the Americas, New York, N.Y. 10020; res. Katonah's Wood Rd., Katonah, N.Y. 10536; V.P., Natl. Assn. of Insurance Brokers, Inc., '75-; Pres., G. D. Miller Corp., '75-; m. June 25, '60, Holly M. Gales; s. Christopher C.; d. Helene M., Lee. S.

HOLBROOK, 1959, JOHN, JR., M.Arch.—(*Architecture*)— Born June 23, 1937, New York, N.Y.; Architect, bus. & res. Narrow Brook Farm, Grafton, Vt. 05146; Capt., USMC, Sept. '59-Aug. '62, Asst. Sec., RTA, Sept. '65-June '68; Dir., RTA, Nov. '75-; m. Feb. 4, '61, Edythe W. Murphy; d. Sara, Anna.

HOLDEN, 1944, JOHN MORGAN, M.A.—(*Education, Theatre*)—Born June 21, 1922, Cincinnati, Ohio; Asst. Prof. & Dir. of

Theatre, Porterville Coll., 900 South Main St., Porterville, Calif. 93257; res. 8021 Jovenita Canyon, Los Angeles, Calif. 90046 and 42640 Sierra Drive, Three Rivers, Calif. 93271; Class Treas, '46-'49; Teacher, Athens Coll., Athens, Greece, '63-'64; Teacher, Porterville Coll., '66-; Dir., Three Rivers Playhouse & Barn Community Theatre, '72-; Pres., Bd. of Dir., Barn Community Theatre, '76-'77; 1st Lieut., AUS, '43-46; Bronze Star.

HOLDEN, 1940, REBUEN A., M.A., Ph.D., L.H.D.—(*Education*)—Born Sept. 2, 1918, Louisville, Ky.; Pres. Warren Wilson College, Swannanoa, N. C. 28778; res. as above; University Council, '72-'77; Yale: Asst. to Dean, '46-'47; Asst. to Pres., '47-'51; Assoc. Sec. of University, '51-'53; Sec. of University, '53-'71; Lieut. Col., AUS, '41-46; Dir., RTA; m. June 23, '51, Elizabeth Walker; s. Reuben A., V, ('76), George H. W., ('77); d. Grace M., Mary C.

HOLLAND, 1962, HENRY THOMPSON, M.B.A—(*Business*)—Born Feb. 13, 1940, Detroit, Mich.; European Operations Mgr., Hydraulics Div., Brown & Sharpe, Ltd., Gomm Rd., Beaconsfield, Buckinghamshire, U.K.; res. 7 Beechwood Rd., Beaconsfield, Buckinghamshire, U.K.; Bd. of Dir., Saline Hosp., '74-; Washtenow Soil Conservation Distr., '73-'74; m. May 13, '67, Quanah Winchell; s. Nathan A.; d. Jennifer R.

•HOLLISTER, 1858, ARTHUR NELSON, M.A.—(*Education*)—Born Dec. 28, 1835, Andover, Conn.; died Jan. 18, 1897, Hartford, Conn.

•HOLLISTER, 1905, BUELL—(*Finance*)—Born Sept. 13, 1883, New York, N.Y.; died Aug. 26, 1966; Sr. Ptnr., Pyne, Kendall & Hollister, N.Y.C.; Bd., YMCA, N.Y.C.; Treas., Trustee, Southside Hosp., Bayshore, N.Y., '22-;Vestryman, Sr. Warden, St. Mark's Episc. Church, Islip, '18-; Civilian Chmn., War Funds, Suffolk County Chap., Amer. Red Cross, W.W. I; m. Nov. 12, '12, Louise Rockwell Knowlton; s. B.H., Jr., ('37), Louis Henry, ('43).

HOLLISTER, 1949, JOHN B.—(*Business*)—Born July 25, 1925, Cincinnati, Ohio; V.P. Sales, Cleveland Cliffs Iron Co., Union Commerce Bldg., Cleveland, Ohio 44115; res. 36000 Cedar Rd., Gates Mills, Ohio 44040; Trustee, Hiram House Camp; Sgt., AUS Inf., '43-'45; Purple Heart, Bronze Star; m. Apr. 29, '50, Elizabeth Ruth Boyle; s. John, Thomas, David; d. Ellen.

HOLMES, 1945W, George Burgwin—(*Government*)—Born Jan. 16, 1924, Pittsburgh, Pa.; Foreign Service Reserve Officer, Dept. of State, Washington, D.C. 20520; res. 5009 Tilden St. NW, Washington, D.C. 20016; U. S. Embassy, Brussels, '50-'52; Stockholm, '54-'57; Yaounde, '61-'63; London, '68-'71; Valletta, '72-; Lieut. (j.g.), USNR, '43-'46; m. Sept. 23, '50, Nancy Trowbridge; s. H. Brock, ('75); d. Katharine T., Sarah B.

HOLMES, 1934, John Grier—(*Education retired*)—Born July 15, 1912, Pittsburgh, Pa.; res. 185 North St., Hingham, Mass. 02043; Free Lance Writer-Editor, former Pres., John G. Holmes Associates Inc.; Alumni Music Com., '55-'57, Chmn. 1 year; Asst. to Pres., Sarah Lawrence Coll., '48-'52; Sec., Vassar Coll., '52-'57; Lieut. Cmdr., USN, '42-'45; Bronze Star; m. Sept. '36, Anne Nicodemus; m. March '45, Jane McDonald; s. John G., Jr.; d. Jennifer (*Mirling*), Mary Burgwin (*Boone*), Antonia (*Tuck*).

*HOLMES, 1857, John Milton—(*Ministry*)—Born May 23, 1831, Isle of Sheppey, Kent, England; died Sept. 20, 1871, Jersey City, N.J.

*HOLT, 1903, Henry Chandler—(*Finance*)—Born Jan. 13, 1881, Spuyten Duyvil, N.Y.; died Feb. 20, 1954, Putnam, Conn.; Chmn., Treas., Internatl. Grenfell Assn.; former Sec. and Treas., Class Fund.

*HOLT, 1866, George Chandler, LL.B., LL.D.—(*Law*)—Born Dec. 31, 1843, Mexico, N.Y.; died Jan. 26, 1931, Nice, France. U.S. District judge, southern district of N.Y., '03-'14.

*HOLSTER, 1894, Edwin Olaf, LL.B.—(*Law*)—Born April 23, 1871, Helena Mont.; died June 7, 1964; Pres. Prison Assn. of N.Y.; Trustee, Amer. Scandinavian Found.; 2d Lieut., Signal Corps, U.S. Vols., Spanish American War; s. E.O.H., Jr., ('30); d. Sarah Manning (*Ives*), Elizabeth Sage (*Jennings*), Mary Frances (*Vicario*).

*HOOKER, 1854, John Worthington, M.A., M.D.—(*Medicine*)—Born July 14, 1833, Norwich, Conn.; died Jan. 26, 1863, New Haven, Conn.; Prof. of Hygiene, Amherst College, 1860-1863.

*HOOKER, 1869, Thomas, M.A.—(*Finance*)—Born Sept. 3, 1849, Macon, Ga.; died Oct. 28, 1924, New Haven, Conn.

HOOPES, 1944, TOWNSEND WALTER—(*Publishing*)—Born Apr. 28, 1922, Duluth, Minn.; Pres., Assoc. of American Publishers, Inc., Suite 450, 1707 L St. N.W., Washington, D.C. 20036; res. 4880 Glenbrook Rd., N.W., Washington, D.C. 20016; University Council, '48-'50; Class Agt. for Alumni Fund, '50-'65; Under Sec. of the U.S. Air Force, '67-'69; Dep. Asst. Sec. of Defense, '65-'67; Author of 2 books; recipient of Bancroft History Prize, '73; 1st Lieut., USMC, '43-'46; m. Oct. 20, '43, Marion C. Schmidt; m. Oct. 17, '64, Ann Merrifield; s. Townsend W. III, Peter S., Thomas; d. Marsha, Cecily, Andrea; ss. Briggs S. Cunningham, IV, ('79).

*HOPKINS, 1900, JOHN MORGAN—(*Education*)—Born Nov. 12, 1861, College Grove, Tenn.; died Jan. 1, 1929, Charlottesville, Va.

*HOPPIN, 1872, BENJAMIN—(*Literary work*)—Born Mar. 15, 1851, Salem, Mass.; died June 2, 1923, Baddeck, N.S., Canada.

*HOPPIN, 1840, JAMES MASON, LL.B., M.A., D.D., LL.D.—(*Education*)—Born Jan. 17, 1820, Providence, R.I.; died Nov. 15, 1906, New Haven, Conn. Prof. of homiletics, Yale University, 1861-1879; Prof. of the history of art, 1879-1899, and Prof. emeritus, 1899-1906.

HORD, 1921, STEPHEN YOUNG—(*Finance*)—Born Nov. 7, 1897, Indianapolis, Ind.; Gen. Ptnr., Brown Brothers Harriman & Co., 135 S. LaSalle St., Chicago, Ill. 60603; res. 450 W. Deerpath Rd., Lake Forest, Ill. 60045; Mbr., Yale Crew Assn.; Major Gifts Com., Yale's Program for the Arts & Sciences, '60-'62; Yale Graduate Rowing Com. '22-; Cowles Comm. for Research in Economics, '54-; Phillips Academy, Andover, Mass., Charter Trustee, '63-'68, Trustee Emeritus, '68-; Northwestern Memorial Hosp., Chicago, Dir., '36-, Mbr., Exec. Com., '44-'68, Asst. Sec.-Treas., '44-'68, Mbr., Investment Com., '49-'70; Chicago Area Council Boy Scouts of Am., Mbr. of Bd., '25-, Chmn, Exec. Com., '40-'43, Chmn., Investment Com., '43-'66; Dir., Mbr. Exec. & Pension Com., Ill. Central Railroad Co., '45-'72; Dir., Mbr. Exec. & Finance Com., Ill. Central Industries, Inc., '62-'72; Dir., Abex Corp., '68-'72; Dir. & Mbr. Finance Com., Am. Ins. Co., Am. Automobile Ins. Co., Natl. Surety Co., '47-'69; Dir., Symington Wayne Corp., '57-'68; Rotary Electric Steel Co., '52-'57; Calvert Drilling, Inc., '57-'61; Mbr., Chicago Panel of Arbitrators, N.Y.S.E., '54-; Citizens' Bd. of Univ. of Chicago, '45-; Chamber of Commerce of

U.S., '61-'66; Charter Mbr., Chicago Planetarium Soc., '58-; Mbr., Assn. Reserve City Bankers, '53-'60; Pvt., USMC, AEF, '18-22; m. Oct. 29, '26, Catharine Norcross (dec.); s. Stephen Y., Jr., Frederic N. ('52); d. Brent (*Malarkey*).

*HOTCHKISS, 1875, WILLIAM HENRY—(*Business*)—Born April 17, 1851, Bristol, Conn.; died Nov. 30, 1918, Buffalo, N.Y.

*HOUGH, 1849, EDWARD CLEMENT, M.A.—(*Finance*)—Born Sept. 10, 1827, Bloomfield, Conn.; died June 11, 1872, Savannah, Ga.

*HOUGHTON, 1852, EDWARD—(*Farming*)—Born Nov. 15, 1829, Lancaster, Mass.; died Feb. 7, 1910, Lancaster.

HOUGHTON, 1924, WALTER EDWARDS, M.A., Ph.D., L.H.D.—(*Education retired*)—Born Sept. 21, 1904, Stamford, Conn.; bus. Wellesley College Library, Wellesley, Mass. 02181; res. 19 Summit Rd., Wellesley, Mass. 02181; Master, Hill School, Pottstown, Pa., '24-'25; Phillips-Andover Academy, Andover, Mass., '27-'29; Tutor & Instr., Harvard Univ. & Radcliffe Coll., '31-'35; Faculty Instr. & Tutor, Harvard Univ. & Radcliffe Coll., '35-'38; Asst. Prof. & Tutor, Harvard Univ. & Radcliffe Coll., '38-'41; Tutor, Radcliffe Coll., '41-'42; Teacher, School of English, Breadloaf, Vt., summer '42; Assoc. Prof., English, Wellesley Coll., '42-'48; Prof., '48-'69, (appointed to Sophie Hart Chair of English, '57); Prof. Emeritus, '69-; Mbr., Am. Academy of Arts & Sciences, '64-; m. June 29, '29, Esther Lowrey Rhoads; d. Nancy A. (*Brown*), Esther E. (*Foxworth*).

*HOUSTON, 1834, JOHN WALLACE, M.A.—(*Law*)—Born May 4, 1814, Concord, Sussex County, Del.; died April 26, 1896, Georgetown, Del. Sec. of State, Del., 1841-1844. Mbr. of Congress, 1845-1851. Assoc. justice, Del. Superior Court, 1855-1893.

HOWARD, 1966, JAMES ERNEST, LL.B.—(*Law*)—Born July 3, 1944, Milwaukee, Wis.; Lawyer for Trustees of Penn Central Transportation Co., I V B Bldg., 1700 Market St., Philadelphia, Pa. 19103; res. 120 Guernsey Rd., Swarthmore, Pa., 19081; Mbr., Council of Yale Club of Philadelphia, '70-'76; Mbr., Philadelphia Area Com., Alumni Schools Com., '59-; Consultant Mbr., A.Y.A. Com. on Athletics, '74-'76; Assoc., Montgomery, McCracken, Walker & Rhoads, Philadelphia, '69-'71; Sgt., Penn. Army Natl. Guard, '69-'75; m. June 17, '67, Marianne L. Bauer; s. Edward David, Michael James.

*HOWARD, 1909, James Merriam, B.D., D.D.—(*Ministry*)—Born May 25, 1886, Montclair, N.J.; died March. 24, 1971; Sec. Dwight Hall, '09-'10; occasional preacher, Battell and Dwight Chapels, '21-'46; Pastorates, Bedford Park Presby. Ch., Bronx, N.Y., '14-'20; South St., Presby. Ch., '20-'25, and Presby. Ch., '25-'36, both Morristown, N.J.; Staff of Bd., Christian Educa., Presby. Ch., USA, '44-'46; Washington Assn. of N.J., '22-'36; Trustee, Morristown School, '24-'30; Dir., Union Theol. Sem., '30-'35; Fort Pierce Mem. Hosp., '49-'53; Fla. Council on Human Relations, '59-'70; Capt., Chaplain, F.A., Sept. '17-May '19; m. May 29, '14, Gertrude Hunter; s. J.M.H., Jr., ('43); d. Mary (*Smith*), Laura (*Whipple*).

*HOWARD, 1835, Oran Reed, M.A., D.D.—(*Ministry*)—Born May 24, 1810, Franklin, N.Y.; died Mar. 2, 1893, Bath, N.Y.

*HOWE, 1912, Arthur, M.A., LL.D.—(*Education*)—Born Mar. 3, 1890, South Orange, N.J.; died Mar. 28, 1955, Plymouth, N.H.; Dir. for Conn., U.S. Boys Working Res., World War I.

*HOWE, 1876, Elmer Parker—(*Law*)—Born Nov. 1, 1851, Westboro, Mass.; died June 18, 1918, Boston, Mass.

HOWE, 1958, Gary Woodson—(*Journalism*)—Born Feb. 15, 1936, Sioux City, Iowa; V.P. & Exec. Asst. to the Pres., Omaha World-Herald, World-Herald Square, Omaha, Nebr. 68102; res. 2611 So. 101st Ave., Omaha, Nebr. 68124; Class Agt.; Alumni Schools Com.; Reporter, Omaha World-Herald, '62-'67; City Editor, '67-'71; Administrative Asst. to Pres. '71-'75; Mbr., Bd. of Dir. '74-; Corporate Sec. '74-; Mbr., Bd. of Dir., Omaha Metropolitan YMCA; Health Planning Council of the Midlands; Combined Health Agencies Drive, '75-; Lieut. (j.g.), USN, '58-'61; m. Aug. 18, '68, Anda Grinbergs; s. Evan S.; d. Marisa M.

HOWE, 1940, Harold, II, M.A. (Hon.), LL.D.—(*Education*)—Born Aug. 17, 1918, Hartford, Conn.; V.P. for Education & Research, Ford Foundation, 320 E. 43rd St., New York, N.Y. 10017; res. 340 E. 64th St., New York, N.Y. 10021; Yale Corp. (elected member), Successor Trustee, '60-'70; Principal, Walnut Hills H.S., Cincinnati, '53-'57; Pres., Newton Jr. Coll. & Principal Newton H.S. '57-'60; Superintendent of Schools, Scarsdale, N.Y., '60-'64; Dir. of Learning Institute of North Carolina; Trustee Vassar College '58-'66; Trustee, College Entrance Exam. Bd., '63-'66; U.S. Commissioner of Education, '65-'68; Lieut., USNR, '42-'46; m. Sept. 4, '40, Priscilla

Foster Lamb; s. Gordon A.; d. Merrill (*Leavitt*), Catherine (*Puchtler*) (Yale Ph.D. candidate).

*HOWE, 1909, HENRY ALMY, M.D.—(*Finance*)—Born April 18, 1887, South Orange, N.J.; died Feb. 15, 1935, Orange, N.J. Mbr., Yale Alumni Bd., '34-'35; Maj. F.A., World War I (AEF).

*HOWLAND, 1894, JOHN, M.A., M.D.—(*Medicine*)—Born Feb. 3, 1873, New York City; died June 20, 1926, London, England, Prof. of pediatrics, Washington University Medical School, '10-'12, and at Johns Hopkins Medical School, '12-'26. Maj., Med. Corps, World War I.

HOXTON, 1939, ARCHIBALD ROBINSON, JR., M.A.—(*Education*)—Born Apr. 20, 1916, Fairfax County, Va.; Headmaster, Episcopal High School, bus. & res. 1200 N. Quaker Lane, Alexandria, Va. 22302; Teacher: Hotchkiss School, '39-'41, Episcopal High School, '45-'50; Headmaster: Fairfield Country Day School, '50-'53, Green Vale School, '53-'67, Episcopal High School, '67-; Lieut. Cmdr., USNR, '41-'45; m. Aug. 16, '41, Ruth deWindt; s. A.R., III; d. Ann (*Taylor*).

*HOYSRADT, 1877, ALBERT—(*Law*)—Born Feb. 19, 1855, Hudson, N.Y.; died Dec. 8, 1897, Hudson.

HOYSRADT, 1926, JOHN MCA., M.A.—(*Theatre*)—Born Oct. 5, 1904, Bronxville, N.Y.; Actor, Writer, Director, c/o Stanley Bushell, 9440 Santa Monica Blvd., Beverly Hills, Calif. 90210; res. 17601 Tramonto Drive, Pacific Palisades, Calif. 90272; Bd. Mbr., Recording for the Blind, '69-; Sec., Friends of Santa Monica Mountain Parks, '70-; Head of Lay Readers Group, St. Matthew's Ch., Pacific Palisades; m. Apr. 25, '35, Marion Virginia Burns; m. Sept. 4, '61, Dorothy Oltman Haveman; s. David B.; ss. Kurt Haveman.

*HOYSRADT, 1901, WARREN J.—(*Finance*)—Born Dec. 7, 1878, Hudson, N.Y.; died Feb. 1, 1944, Bronxville, N.Y.

*HOYT, 1840, JOSEPH GIBSON, M.A., LL.D.—(*Education*)—Born Jan. 19, 1815, Dunbarton, N.H.; died Nov. 26, 1862, St. Louis, Mo. Chancellor and Prof. of Greek, Washington University, 1858-1862.

*HOYT, 1906, LYDIG, LL.B.—(*Law*)—Born Dec. 27, 1883, New York City; died April 26, 1959, Staatsburg, N.Y.; Sec. to U.S. Ambassador to Great Britain, '07; Deputy Police Commissioner, New York City; 1st Lieut., F.A., World War I (AEF); Capt., Am. Field Service (overseas ambulance) World War II.

°HUBBARD, 1839, RICHARD DUDLEY, M.A., LL.D.—(*Law*)—Born Sept. 7, 1818, Berlin, Conn.; died Feb. 28, 1884, Hartford, Conn. Mbr., Conn. State Legislature, 1842-1843, 1855, and 1858. Mbr. of Congress, 1867-1869. Gov. of Conn., 1877-1879. Mbr., Yale Corp. 1877-1879.

HUDSON, 1955, FRANKLIN DONALD, M.B.A.—(*Business*)—Born July 21, 1933, Asheville, No. Carolina; V.P., International Corometrics Medical Systems, Inc., Barnes Industrial Park, Wallingford, Conn. 06492; res. 14 Green Beech Dr., Rowayton, Conn. 06853; Seminar Instr., fall '75-'76, Trumbull Coll.; Class Council, '69-; Pres. Yale Club of Puerto Rico, '66-'68; Finance Com., Repub. Party, Conn., '70-'75; Capt., USAF, Jan. '56-Dec. '57; m. Dec. 1, '56, Rosemary Wheatley; s. Lawrence J.; d. Lauren J.

°HUDSON, 1840, WARD WOODBRIDGE—(*Law*)—Born May 1, 1821, Hartford, Conn.; died Mar. 19, 1864, New York City.

HUEY, 1973, MARK CHRISTOPHER, Diploma in Anglo-Irish Literature, Trinity Coll., Dublin—(*Student*)—Born Jan. 31, 1950, Flint, Mich.; res. 2942 Eastview Rd., Bethel Park, Pa. 15102; Graduate Division, Dept. of English, Univ. of Virginia; Alumni Fund, '73-.

°HUGGINS, 1842, WILLIAM SIDNEY, M.A.—(*Ministry*)—Born Mar. 19, 1822, New Haven, Conn.; died Mar. 23, 1862, Kalamazoo, Mich.

°HUGHES, 1905, BERRIEN, LL.B.—(*Law*)—Born Nov. 12, 1882, Richmond, Mo.; died May 27, 1939, Denver, Colo. Capt., F.A., World War I.

°HULL, 1883, LOUIS KOSSUTH, LL.B.—(*Law*)—Born Nov. 9, 1861, Lebanon, Conn.; died Nov. 22, 1931, Minneapolis, Minn., U.S. District Attny., N. Dak., 1885-1887. Col., Spanish-American War.

°HURD, 1836, JOHN CODMAN, M.A., LL.D.—(*Law and literary work*)—Born Nov. 11, 1816, Boston, Mass.; died June 25, 1892, Boston.

°HURD, 1888, RICHARD MELANCTHON—(*Finance*)—Born June 14, 1865, Brooklyn, N.Y.; died June 6, 1941, New York City. Prison commissioner, N.Y. State, '15-'18.

HURLBUT, 1945W, GORDON BUCKLAND—(*Farming*)—Born Dec. 10, 1923, Waterbury, Conn., Farmer, bus. & res. Canaan Farm, Tonganoxie, Kansas 66086; Commissioner, Leavenworth

County, Kansas, '68-'72; Ensign, USNR, '42-'45; m. Oct. 4, '47, Mary Louise Miller; s. Gordon B., III; d. Corinne, Hether, Anne G. ('73).

*HURLBUT, 1849, JOSEPH, M.A.—(*Theological student*)—Born Feb. 19, 1828, New York City; died July 4, 1855, Paris, France.

*HUSTED, 1892, JAMES WILLIAM, LL.B.—(*Law*)—Born Mar. 16, 1870, Peekskill, N.Y.; died Jan. 2, 1925, New York City. Mbr., N.Y. State Legislature, 1895, 1896, and 1897. Mbr. of Congress, 1915-1923. Mbr. Congressional Investigation Com. in France, World War I.

*HYATT, 1837, ROBERT UNDERWOOD, LL.B.—(*Law*)—Born in Washington, D.C.; died Nov. 1, 1843, St. Francisville, La.

*HYDE, 1845, ALVAN PINNEY, M.A.—(*Law*)—Born Mar. 10, 1825, Stafford, Conn.; died Feb. 5, 1894, Hartford, Conn. Mbr., Conn State Legislature, 1854, 1858, and 1863.

HYDE, 1912, DONALD R.—(*Industrial retired*)—Born June 14, 1890, St. Albans, Vt.; res. 77 3rd Ave., Stamford, Conn. 06905; formerly Treas., John G. Paton Co.; m. Sept. 11, '27, Corinne Brewer Weston; s. Robert Livingston, ('52); d. Sarah Weston.

*HYDE, 1879, FRANK ELDRIDGE, LL.B.—(*Law*)—Born Jan. 21, 1858, Tolland, Conn.; died Dec. 1906, Paris, France. Mbr., Conn. State Legislature, 1887-1889, U.S. consul, Lyons, France, 1893-1897.

*HYDE, 1911, FREDERICK WALTON—(*Industrial*)—Born May 18, 1889, St. Albans, Vt.; died Oct. 2, 1941, Burlington, Vt.

HYDE, 1923, LOUIS KEPLER, JR.—(*Investments*)—Born Oct. 5, 1901, Titusville, Pa.; Chmn. Investment Com. & Dir., E. W. Axe & Co., Inc.; Pres. & Dir., Axe-Houghton Fund A, Inc.; bus. c/o E. W. Axe & Co., 400 Benedict Ave., Tarrytown, N.Y. 10591; res. Airlie Farm, Bedford, N.Y. 10506; V.P., Sr. V.P., Chmn. of Bd., E. W. Axe & Co., '67-'73; V.P. & Dir., Axe-Houghton Stock Fund, Inc., '58-'64, '67-; Ptnr., Barringer, Nelson & Hyde, '41-'48; Pres., Simplex Universal Joint, Inc., '29-'32; Dir., Axe Securities Corp., '68-; Planning Counselors, Inc., '69-'74; Henry W. T. Mali & Co., Inc., '58-; Hardigg Industries, Inc., '71-; Church Soc. for Coll. Work, '69-; Dir., Mbr. Exec. Com. & Treas., Am. Fund for Czechoslovakian Refugees, '71-; Trustee, Bedford Free Library; Dep., Dir., Planning & Development Staff & Spec. Asst. to Dep. Adminstr.,

Lend-Lease Admin., '42-'43; Dep. Trade Relations Advisor, Foreign Econ. Admin., '43-'44; Asst. to Sec. of State, in charge of policy review & Analysis, '45; Adviser to U.S. Delegation, U.N. General Assembly, 1st-4th sessions, & 1st-10th sessions of U.N. Economic & Social Council, '46-'69; Mbr., Permanent U.S. Mission to U.N. '46-'50; Alt. U.S. Rep., U.N. International Children's Emergency Fund, '48-'50; m. Sept. 9, '24, Penelope Witherington Overton; s. Louis K., Jr., Richard W. ('53).

*HYDE, 1876, WILLIAM WALDO, LL.B.—(*Law*)—Born Mar. 25, 1854, Tolland, Conn.; died Oct. 30, 1915, Hartford, Conn.

I

INGALLS, 1920, DAVID SINTON, LL.B.—(*Law retired*)—Born Jan. 28, 1899, Cleveland, Ohio; bus. The O. E. Co., 301 Tower East, 20600 Chagrin Blvd., Shaker Heights, Ohio, 44122; res. Stonybrook Farm, 3050 Chagrin River Rd., Chagrin Falls, Ohio 44022; Mbr., Yale Corp.; Attny, V.P., Pan Am. Airways, in charge of Overseas Operations '45-'49; Pres. & Publisher, Cincinnati Publishing Co., '54-'58; Ohio House of Representatives '26-'28, '28-'29; Asst. Sec. of Navy for Aeronautics under Pres. Hoover, '29-'32; Health & Welfare Dir., Cleveland, '33-'35; U.S. Naval Aviation, '17-'19, '42-'45; Capt.; Rear Admiral, USNR, ret.; W.W. I. British Distinguished Flying Cross, U.S. Distinguished Service Medal, French Legion of Honor; W.W. II, Legion of Merit, Bronze Star; m. June 27, '22, Louise Harkness; s. David S., Jr. ('56); d. Louise (*Brown*) Edith (*Vignos*), Anne (*Lawrence*), Jane (*Davison*).

INGALLS, 1956, DAVID SINTON, JR., M.A., M.B.A.—(*Business*)—Born Aug. 27, 1934, Cleveland, Ohio; Pres., O.E. Company, 301 Tower East, 20600 Chagrin Blvd., Shaker Heights, Ohio 44122; res. Oak Hill Farm, Chagrin Falls, Ohio 44022; Pres., Cleveland Yale Alumni Assn.; Lieut., USN, '56-'60; m. May 26, '73, Katherine Stewart; s. David S., III; d. Rebekah W., Louise H., Cynthia L., Fay (1st marriage); s. Redmond S.; d. Nina S. (2d marriage).

•INGERSOLL, 1892, JAMES WERNHAM DUNSFORD, Ph.D.—(*Education*)—Born Sept. 18, 1867, Marengo, Ill.; died April 19, 1921, New Haven, Conn. Asst. Prof. of Latin, Yale University, 1897-1921.

INMAN, 1971, ROBERT D., M.D.—(*Medicine*)—Born March 6, 1949, Toronto, Canada; res. Apt. C-10 2134 Fairfax Ave., Nashville, Tenn. 37212; m. Dec. 31, '71, Emily Straughn Eastman.

•ISBELL, 1888, ORLAND SIDNEY, LL.B.—(*Law*)—Born Nov. 19, 1866, Bridgeport, Conn., died July 19, 1922, New York City.

•ISHAM, 1891, EDWARD SWIFT—(*Industrial*)—Born Jan. 2, 1868, Chicago, Ill.; died May 14, 1927, New York City.

•ISHAM, 1917, HENRY PORTER—(*Business*)—Born Dec. 6, 1894, Chicago, Ill.; died Aug. 18, 1969; Chmn. Bd., Clearing Industrial District, Inc., Chicago; Sec. and Pres., Passavant Mem. Hosp., '33-'47; Trustee, Field Mus. of Nat. Hist., Newberry Library; Capt., F.A., AEF, W.W. I; Chief Purchase Termination and Renegotiation Policy, Chicago Ordnance District, AUS, '43-'46; Meritorious Service, Distinguished Service Medals; m. Feb. 23, '18, Elisabeth Totten; s. H.P.I., Jr., ('41), Robert Totten, ('43), George Snow, ('44).

•ISHAM, 1869, JOHN BEACH, M.A., M.D.—(*Medicine*)—Born Mar. 28, 1847, New York City; died July 19, 1894, Pasadena, Calif.

IVES, 1928, CHAUNCEY BRADLEY, LL.B., M.A., Ph.D.,—(*Education retired*)—Born Mar. 16, 1907, New York, N.Y.; res. Kingston, N.J. 08528; A.Y.A., Mar. '73-Oct. '74; Assoc. Prof., Guilford Coll., N.C., '57-'60; Asst. Prof., Douglass Coll., Rutgers Univ., '60-'70; Assoc. Prof., '70-'72; Maj., Amer. Field Service, '41-'45; Civilian, Office of Strategic Services, '45-'46; m. Aug. 3, '49, Jane Harrison Boyd.

IVES, 1925, GERARD M., M.B.A.—(*Finance retired*)—Born Jan. 7, 1903, New York, N.Y.; res. Center Harbor, N.H. 03226; Pres., Yale Club of New York City, '50-'52; formerly Sr. V.P., Morgan Guaranty Trust Co.; Lieut. Col., Office Chief of Ordnance, '41-'45; m. Aug. 22, '38, Ruth DeWitt Pratt; s. Gerard M., Jr. ('64, '67 Architecture).

•IVES, 1881, HENRY—(*Business*)—Born April 27, 1859, New Haven, Conn.; died Jan. 31, 1924, Omaha, Nebr.

•IVES, 1893, SHERWOOD BISSELL, M.D.—(*Medicine*)—Born Dec. 30, 1870, New York City; died Feb. 16, 1907, Datil, N. Mexico.

J

°JACK, 1853, Thomas McKinney—(*Law*)—Born Dec. 19, 1831, San Felipe de Austin, Tex.; died Aug. 26, 1880, Galveston, Tex. Cty., judge, 1856-1858. Mbr., Texas Legislature, 1859-1861. Lieut. Col., Cavalry, Confederate Army, Civil War.

°JACKSON, 1839, Henry Rootes M.A.—(*Law*)—Born June 24, 1820, Athens, Ga.; died May 23, 1898, Savannah, Ga. U.S. District Attny., Ga., 1843-1849. Judge for eastern circuit, Ga. Superior Court, 1849-1853. U.S. Minister to Austria, 1854-1858, and to Mexico, 1885-1888. Col., Mexican War. Brig. Gen., Confederate Army, Civil War.

°JACKSON, 1934, John Herrick—(*Publishing*)—Born Jan 8, 1912, New Haven, Conn.; died July 29, 1951, Green Farms, Conn.; Deputy, Hamden Air Raid Warning Center and New Haven District Warning Center, World War II; Yale Class Treas., '34-'49; Mbr., Yale Alumni Rowing Com., '35-'51, and Yale Bd. of Athletic Control, '45-'48.

°JACKSON, 1857, Joseph Cooke, LL.B., M.A.—(*Law*)—Born Aug. 5, 1835, Newark, N.J.; died May 22, 1913, New York City. Asst. U.S. District Attny., Southern District of N.Y., 1870. Brig. Gen., Union Army, Civil War.

JACKSON, 1970, Terrence John, M.B.A.—(*Business*)—Born Oct. 8, 1948, New Kensington, Pa.; Sales Rep., Consolidation Coal Co., 32985 Hamilton Court, Farmington Hills, Mich. 48024; res. 31020 Ash, Apt. 8303, Wixom, Mich. 48096; Alumni Schools Com. in Mich., '75-'76.

JACKSON, 1941, William E., LL.B.—(*Law*)—Born July 19, 1919, Jamestown, N.Y.; Ptnr., Milbank, Tweed, Hadley & McCloy, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 530 E. 87th St., New York, N.Y. 10028; m. Sept. 24, '44, Nancy Dabney Roosevelt; d. Miranda Dabney, Melissa Carow, Melanie Eldred, Melinda Roosevelt, Marina Quentin.

°JAMES, 1917, Ellery Sedgwick—(*Finance*)—Born Aug. 6, 1895, East Hampton, N.Y.; died Nov. 25, 1932, New York City. Capt., F.A., World War I (AEF).

*JAMES, 1874, HENRY AMMON, LL.B.—(*Law*)—Born April 24, 1854, Baltimore, Md.; died Aug. 1, 1929, East Hampton, N.Y.

*JAMES, 1890, NORMAN—(*Industrial*)—Born Sept. 2, 1868, Catonsville, Md.; died Jan. 24, 1939, Baltimore, Md.

*JAMES, 1894, ROBERT CAMPBELL—(*Finance*)—Born July 23, 1872, Baltimore, Md.; died Mar. 17, 1896, Baltimore.

*JAMES, 1879, WALTER BELKNAP, M.A., M.D., LL.D.—(*Medicine*)—Born May 11, 1858, Baltimore, Md.; died April 6, 1927, New York City. Prof. of medicine, Coll. of Physicians and Surgeons, '02-'04, Bard Prof. of medicine, '04-'09, and Prof. of clinical medicine, '09-'18. Served with Am. Red Cross, World War I (Fgn. service).

*JAMES, 1878, WILLIAM KNOWLES—(*Law*)—Born Aug. 20, 1852, near Georgetown, Del.; died Nov. 11, 1927, St. Joseph, Mo.; Mbr., Mo. State Legislature, '17-'18.

JAMIESON, 1956, THOMAS CRAWFORD, JR., J.D.—(*Law*)—Born Jan. 20, 1935, Trenton, N.J.; Attny., 194 Nassau St., Princeton, N.J. 08540, & 19 Chancery Lane, Trenton, N.J. 08616; res. "Westpines", Province Line Rd., Princeton, N.J. 08540; Exec. Com., Class of 1956, '56-; Reunion Chmn., Class of 1956, 5th & 10th reunion; Pres., Human Relations Council, Mercer Cty., '65; Delaware Valley United Fund, '71; Mercer Cty. Bar Assn., '73; Bd. of Dir., First Natl. Bank of Princeton, N.J., '70-; N.J. Realty Title Ins. Co. (advisory), '67-; Trenton Savings Fund, '74-'75; Sgt., AUS, '59-'60; m. June 25, '60, Mary Lee O'Connell; s. Crawford, III, Jeffrey W., Paul W.; d. Lee R.

JANEWAY, 1930, CHARLES ALDERSON, M.D., M.A., Doctor hon. causa, Reims—(*Medicine*)—Born May 26, 1909, New York, N.Y.; Sr. Assoc. in Medicine, Children's Hospital Medical Center, 300 Longwood Ave., Boston, Mass. 02115; res. 445 Concord Rd., Weston, Mass. 02193; Thomas Morgan Rotch Prof. of Pediatrics, Emeritus, Harvard Univ. '74-; Physician-in-Chief, Emeritus, Children's Hosp. Medical Center, '74-; Lecturer in Pediatrics, Boston Univ., '76-; Consultant in Child Health, Harvard School of Public Health, '76-; Chmn.: Com. on Blood & Blood Derivatives, Natl. Research Council, Com. on Blood & Blood Derivatives, Advisory Bd. on Health Services, Am. Natl. Red Cross, '48-'51, Exec. Com. of International Pediatric Assn., '62-'68; Mbr., Exec. Bd., International Children's Center, Paris, France, '66; V.P., Center for Blood Research, Boston, '74-; Mbr., Weston Bd. of Health, 9 years;

m. July 9, '32, Elizabeth Bradley; s. Charles A., Jr.; d. Anne A., Elizabeth (*Gold*), Barbara B.

°JAY, 1892, PIERRE, M.A.—(*Finance*)—Born May 4, 1870, Warwick, N.Y.; died Nov. 24, 1949, New York City; Bank Commissioner, Mass., '06-'09; Am. Mbr., Transfer Com. and Deputy Agt. of Reparations, Berlin, '26-'30; Natl. Treas., Russian War Relief, Inc., '41; Gov., Yale Publishing Assn.

°JEFFERSON, 1909, EDWARD FRANCIS—(*Education*)—Born June 17, 1879, South Dennis, N.J.; died Nov. 5, 1952, Philadelphia, Pa.; YMCA Sec., World War I (Fgn. service).

°JENCKES, 1921, MARCIEN, LL.B.—(*Law*)—Born April 5, 1900, Stamford, Conn.; died Oct. 24, 1971; Ptnr., Choate, Hall & Stewart, 28 State St., Boston, Mass. 02109; Boston Delegate to Alumni Bd.; Sec., Yale Club of Boston, '24-'30; Mbr., Bd. Park Commissioners, '42-'45, Chmn., '50-'52; 2d Lieut., F.A., Army, '18-'19; m. June 23, '32, Mollie Webb Cromwell; s. Marcien Cromwell, Lawrence Webb; d. Georgia (*Cunningham*), Mollie Webb (*Shachoy*).

JENKINS, 1945, RICHARD E.—(*Business*)—Born May 27, 1924, Lakewood, Ohio; Sr. Sales Mgr., Eastern Region, Fluor Engineers & Constructors, Inc., 437 Madison Ave., New York, N.Y. 10022; A.Y.A., '69-'71; PFC, Inf., AUS, June '43-Nov. '45; Purple Heart, Presidential Unit Citation; m. June 11, '48, Margaret Wilmore; d. Pamela W., Leslie Ann, Susan L.

°JENKS, 1875, ALMET, FRANCIS, LL.B., M.A., LL.D.—(*Law*)—Born May 21, 1853, Brooklyn, N.Y.; died Sept. 18, 1924, Greenwich, Conn., Judge Advocate Gen., N.Y., 1891-1895; judge, Supreme Court of N.Y., 1896-1921 (presiding justice, 1911-1921).

°JENKS, 1914, ALMET FRANCIS—(*Literary work*)—Born April 18, 1892, Brooklyn, N.Y.; died Feb. 2, 1966; Writer; 1st Lieut., Cav., AEF, W.W. I; Major, USMCR, W.W. II; m. Dec. 4, '23, Charlotte Biddle Williams.

°JENKS, 1884 PAUL EMMOTT—(*Government*)—Born April 6, 1862, Brooklyn, N.Y.; died Sept. 1, 1923, Yokohama, Japan. U.S. vice-counsel, Yokohama, '16-'23.

°JENKS, 1878, TUDOR, LL.B.—(*Law and literary work*)—Born May 7, 1857, Brooklyn, N.Y.; died Feb. 11, 1922, Bronxville, N.Y.

°JENNINGS, 1904, PERCY HALL—(*Industrial*)—Born May 16, 1881, New York City; died Oct. 2, 1951, New York City; Maj., Air Service, World War I (AEF) Assoc. Mgr., War Finance Com. of N.Y., and Supervisor, War Bond activities, Nassau and Suffolk Ctys., L.I.

°JENNINGS, 1887, OLIVER GOULD, LL.B.—(*Law*)—Born April 27, 1865, New York City; died Oct. 13, 1936, New York City. Presidential elector from Conn., 1920; Mbr., Conn. State House of Representatives, 1923.

°JENNINGS, 1880, WALTER, LL.B.—(*Industrial*)—Born Sept. 14, 1858, San Francisco, Calif.; died Jan. 9, 1933, Jekyl Island, Brunswick, Ga.

JESSUP, 1942, JOHN BAKER, LL.B.—(*Law*)—Born July 30, 1921, New York, N.Y.; Ptnr., Winthrop, Stimson, Putnam & Roberts, 40 Wall St., New York, N.Y. 10005; res. 484 Ridgeburg Rd., Ridgefield, Conn. 06877; m. Jan. 31, '42, Dorothy Lucretia Milburn; m. Oct. 8, '55, Nancy Hope Thompson; s. John B., Jr., ('68); d. Diane Hope Nichols, Lesley Gay.

°JESUP, 1840, JAMES RILEY, M.A.—(*Law*)—Born Sept. 18, 1819, Saugatuck, Conn.; died Jan. 23, 1890, Lakewood, N.J.

JOHANSON, 1955, STANLEY MORRIS, LL.B., LL.M.—(*Education*)—Born July 12, 1933, Seattle, Wash.; Judge Benjamin H. Powell Prof. of Law, School of Law, Univ. of Texas, 2500 Red River, Austin, Texas 78705; res. 1906 Hopi Trail, Austin, Texas 78703; Class Agt., Yale Alumni Fund, '55-; Mbr., Texas & Washington State Bars; Academic Fellow, American Coll. of Probate Counsel; Capt., USAF, '58-'61; m. June 24, '55, Geraldine Cunningham; s. David, Robert, John; d. Susan, Barbara, Carolyn.

°JOHNES, 1873, EDWARD RUDOLPH, LL.B.—(*Law*)—Born Sept. 8, 1852, Whitesboro, N.Y.; died Mar. 28, 1903, New York City.

°JOHNSON, 1882, BARCLAY—(*Law*)—Born Aug. 8, 1861, Beirut, Syria; died April 21, 1885, Greenwich, Conn.

°JOHNSON, 1855, CHARLES FREDERICK, LL.B., M.A., L.H.D.—(*Educaton*)—Born May 8, 1836, New York City; died Jan. 9, 1931, Hartford, Conn. Asst. Prof. of mathematics, U.S. Naval Acad., 1865-1870; Prof. of English, Trinity College, 1884-1906, and Prof. emeritus, 1906-1931.

°JOHNSON, 1853, GEORGE ASBURY—(*Law*)—Born July 27, 1829, Salisbury, Md.; died Sept. 20, 1894, San Francisco, Calif. Judge, 17th Judicial Circuit Court, 1872-1874. Mbr., Calif. State Senate, 1882-1886. Attny. Gen. Calif. 1886-1890.

JOHNSON, 1935, JOSEPH—(*Business retired*)—Born Aug. 26, 1911, Hartford, Conn.; res. Juniper Rd., Box 3414, Noroton, Conn. 06820; formerly Mgr., Stamford Div., Hartford Electric Light Co.; Sec.-Treas., Conn. Directors, New England Council, '60-'66; V.P. & Dir., Stamford YMCA '65-'75; 1st V.P. & Dir., & Pres., Easter Seal Rehabilitation Center of Southwestern Conn., '65-'76; Assoc. Dir., State National Bank of Conn., '58-; Trustee, Stamford Hosp., '68-; Mayor's Task Force on Addiction, '65-69; Trustee, Citizens Savings Bank, '68-; Dir., Barnes Engineering Co., '69-; Board of Alderman, Hartford, '36-'40; Lieut. Cmdr., USN, m. Sept. 3, '38, Anne Davis; s. Peter D., Robert H.K.; d. Susan (*Billard*).

JOHNSON, 1971, WILBUR J., M.A.—(*Education*)—Born May 19, 1949, Brooklyn, N.Y.; Teacher, Blind Brook High School, King St., Portchester, N.Y. 10573; res. 390 N. Ridge St., Portchester, N.Y. 10573; m. June 23, '73, Marcia Kathleen Burnsed.

°JOHNSTON, 1835, FRANK, LL.B.—(*Literary work*)—Born Oct. 31, 1816, Philadelphia, Pa.; died Dec. 10, 1863, Pittsburgh, Pa.

°JOHNSTON, 1862, HENRY PHELPS, M.A.—(*Education*)—Born April 19, 1842, Trebizond, Turkey; died Feb. 28, 1923, Middletown, Conn. Prof. of history, College of the City of New York, 1883-1916, and Prof. emeritus, 1916-1923. 2d Lieut., Union Army, Civil War.

°JOHNSTON, 1870, ROSS, M.A.—(*Business*)—Born Sept. 1, 1848, Allegheny, Pa.; died Mar. 11, 1885, Fortress Monroe, Va.

°JOHNSTON, 1860, WILLIAM CURTIS—(*Ministry*)—Born June 11, 1839, Trebizond, Turkey; died Dec. 3, 1862, Munfordville, Ky. Chaplain, Inf., Union Army, Civil War.

°JOHNSTON, 1852, WILLIAM PRESTON, LL.D.—(*Education*)—Born Jan. 5, 1831, Louisville, Ky.; died July 16, 1899, Lexington, Va. Prof. of English literature, history, and political economy, Washington and Lee University, 1867-1877. Pres., Louisiana State University, 1880-1883, and of Tulane University, 1883-1899. Col., Confederate Army, Civil War.

°JOHNSTONE, 1916, HENRY WEBB—(*Industrial*)—Born Oct. 13, 1892, Mexico City, Mexico; died Apr. 5, 1971. formerly Sr. V.P. and Dir., Merck & Co., Inc.; Dir., Kent & Queen Anne's Hosp.,

Chestertown, '58-'64, Pres., '60-'64; Dir., United Fund of Kent County, Md.; 1st Lieut., Army, June '17-May '19; *Croix de Guerre;* m. June 9, '17, Beatrice J. Grieb; s. H.W.J., Jr.; d. Barbara Grieb.

*JONES, 1893, ALFRED HENRY, LL.B.—(*Law*)—Born April 17, 1868, St. Louis, Mo.; died Jan. 15, 1901, Las Vegas, N. Mexico.

*JONES, 1875, DWIGHT ARVEN, LL.B.—(*Law*)—Born Oct. 25, 1854, Utica, N.Y.; died Dec. 7, 1913, St. Louis, Mo.

JONES, 1923, EDWIN ALFRED—(*Industrial retired*)—Born Nov. 17, 1899, Jackson, Ohio; res. Beach Club Hotel, Naples, Fla. 33940; formerly Chmn. of Bd., Globe Iron Co.; Asst. Pres., Interlake Steel Corp; Delegate to 4 National Conventions; Sgt., F.A., '17-'18; m. Oct. 2, '29, Katharine McKee; s. David Brooks; d. Gloria (*Borden*).

*JONES, 1875, FRANK HATCH, LL.B.—(*Finance*)—Born Mar. 6, 1854, Griggsville, Ill.; died Oct. 2, 1931, Chicago, Ill. Asst. postmaster gen. of the U.S., 1893-1897.

*JONES, 1884, FREDERICK SCHEETZ, M.A., LL.D.—(*Education*)—Born April 7, 1862, Palmyra, Mo.; died Jan. 14, 1944, Hamden, Conn. Prof. of physics, University of Minnesota, 1889-1909, and dean of the College of Enginnering, 1901-1909. Dean of Yale College, 1909-1926, and dean emeritus, 1926-1944. Chmn., Conn. State Bd. of Education, 1918-1939; Assoc. fellow, Berkeley College, Yale University, 1933-1944; Chmn. of the Bd., The Hotchkiss School, 1921-1942.

*JONES, 1914, GEORGE GILL—(*Communications*)—Born Sept. 17, 1891, Minneapolis, Minn.; died July 3, 1961; Lieut. (s.g.), USNR, W.W. I; m. Oct. 9, '20, Margaret Shepardson; s. Fred S. II, ('52); d. Margaret Whitney, Janet C.

*JONES, 1860, LUTHER MAYNARD, LL.B., M.A.—(*Law*)—Born April 21, 1837, Marlboro, N.H.; died Dec. 12, 1921, London, England. Served in Union Army, Civil War.

*JONES, 1838, SEABORN AUGUSTUS, M.A.—(*Farming*)—Born Mar. 17, 1818, Burke County, Ga.; died April 25, 1856.

JONES, 1933, THEODORE STEPHEN, M.A.—(*Business*)— Born Aug. 22, 1910, Chicago, Ill.; Prop., Theodore S. Jones & Co. (natl. placement service for designers), 60 Adams St., P.O. Box 41, Milton, Mass. 02187; res. 88 Columbine Rd., Milton, Mass. 02187; Alumni Interviewer, '49-'54; Teacher, Pomfret School, '35-'41; Dean, Hamilton Coll., '45-'47; Headmaster,

Admiral Farragut Academy, St. Petersburg, '47-'48; Exec. Dir., Design in Industry, Boston Institute Contemporary Art, '48-'59; Editor-Publisher, "Your Opportunity; Lovejoy-Jones College Scholarship Guide"; Consultant, Agency for International Development, Israel, '54-'59, Colombia, '59, South Korea, '66; Consultant, The Pathfinder Fund (family planning), Latin America, '68; Mbr., Milton Town Meeting, '49-; Dir., Milton Red Cross, '58-'66; Cmdr., USNR, '42-'45; Presidential Unit Citation, Anti-sub Bombing Sqdn. VP 85; m. July 1, '38, Eleanor Tileston Eustis; s. T. Stephen Jr., ('63); d. Eleanor Tileston (*Wendell*), Edith Hemenway.

JONES, 1963, T. STEPHEN, M.D.—(*Medicine*)—Born Oct. 24, 1941, Boston, Mass.; Student, School of Public Health, University of Michigan; temporary add. 1801 Maryfield Dr., Ann Arbor, Mich. 48103; permanent add. c/o T. S. Jones, 88 Columbine Rd., Milton, Mass. 02187; Medical Intern & Resident, Stanford University Hosp., '67-'69; U.S. Public Health Service, Alaska Health Dept., '69-'71; Chichicastenango, Guatemala, '72-'73; World Health Organization Smallpox Eradication Program, India, Bangladesh, '74-'76; University of Michigan, School of Public Health, Sept. '76-July '77; m. Feb. 24, '67, Maryann Wark (divorced); m. March 22, '71, Jane Ann Jones (divorced).

JONES, 1925, WALTER CLYDE, J.D.—(*Law retired*)—Born Dec. 7, 1902, Chicago, Ill.; res. 624 Drexel Ave., Glencoe, Ill. 60022; formerly General Solicitor, Ill. Bell Telephone Co.; m. June 12, '29, Emily Watt; s. Walter C. III, ('59), William W., ('65); d. Mary (*McKeldin*), Emily (*Meeker*).

°JORDAN, 1923, RALPH EDWARD—Born 1895, Bangor, Me.; died March 12, 1971.

°JUDSON, 1866, FREDERICK NEWTON, LL.B., M.A., LL.D.—(*Law*)—Born Oct. 5, 1845, St. Mary's Ga.; died Oct. 18, 1919, St. Louis, Mo.

°JUDSON, 1873, ISAAC NICHOLS—(*Education*)—Born July 3, 1853, Bridgeport, Conn.; died Dec. 30, 1926, New York City.

K

KAMINSKY, 1964, Robert I., M.D.—(*Medicine*)—Born May 17, 1942, Houston, Texas; Physician (urology), private practice; res. 5018 Glenmeadow, Houston, Texas 77025; Maj., AUS, '69-'72; m. Dec. 31, '67, Marsha Janger; s. Loran Eli; d. Alicia.

KANEHL, 1975, Phillip Edwin—(*Farming*)—Born Aug. 12, 1953, Springfield, Missouri; Farm Hand, 1316 N. Benton, Springfield, Mo. 65802; res. Route 3, Box 132A, Buffalo, Mo. 65622.

KARAGEORGE, 1973, James—(*Education*)—Bus. Dept. of Communication, Stanford University, G-11 Redwood Hall, Stanford, Calif. 94305; res. 3364 Ramona St., Palo Alto, Calif. 94306.

KEE, 1977, Christopher Andrew—(*Student*)—Bus. 25 TD Annex, New Haven, Conn. 06520; res. 129 Fishers Rd., Bryn Mawr, Pa. 19010.

KELLEY, 1937, Lawrence M.—(*Education*)—Born May 30, 1915, Conneaut, Ohio; res. 5917 Strickland Place, Pensacola, Fla. 32506; m. March 30, '46, Anne Goodwin.

•KELLOGG, 1890, Charles Poole, LL.B.—(*Welfare*)—Born April 27, 1868 Waterbury, Conn.; died Dec. 27, 1957, Waterbury; Sec., Conn. Dept. of Public Welfare, 1895-1928.

•KELLOGG, 1883, Fred William—(*Education*)—Born Oct. 30, 1860, Watertown, Wis.; died Nov. 19, 1883, New Haven, Conn.

•KELLOGG, 1846, Stephen Wright, M.A.—(*Law*)—Born April 5, 1822, Shelburne, Mass.; died Jan. 27, 1904, Waterbury, Conn. Mbr., Conn. State Senate, 1853, and of Conn. State Legislature, 1856. Mbr. of Congress, 1869-1873. Judge of probate, Waterbury district, 1854-1861; judge, New Haven Cty. Court, 1864.

KELLOGG, 1939, William Welch, M.A., Ph.D.—(*Science*)—Born Feb. 14, 1917, New York Mills, N.Y.; Meteorologist, Sr. Scientist, Climate Project, Natl. Center for Atmospheric Research, P.O. Box 3000, Boulder, Colo. 80303; res. 445 College

Ave., Boulder, Colo. 80302; Pres.: Am. Meteorological Soc., '73-'74, Meteorology Section, Am. Geophysical Union, '72-'74; Mbr., Space Program Advisory Council, NASA; Science Advisory Bd., EPA; Polar Research Bd., Natl. Academy of Sciences; Pres., Recorder Soc. of Southern Calif., '58-'60; Capt., USAAF, '41-'46; Commendation Ribbon; m. Feb. 14, '42, Elizabeth Jane Thorson; s. Karl Stuart, Joseph William, Thomas Walcott; d. Judith Lillian, Jane (*Stephens*).

KELLY, 1974, Brian Christopher—(*Student*)—Born Nov. 20, 1951, East Orange, N.J.; bus. 40 W. 94th St., Apt. 4, New York, N.Y. 10025; res. 30 Katherine St., Fair Haven, N.J. 07701; Columbia University School of Law, Class of 1977; Sec., Deer Island Club Corp., '74-.

KELLY, 1944, William Cody, J.D.—(*Law*)—Born Mar. 1, 1922, Cincinnati, Ohio, National Research Council, 2101 Constitution Ave., Washington, D.C. 20418; res. Box 135, Glenbrook, Nev. 89413; Class Agt., Pierson, Yale Alumni Fund, '44-69; Chmn., Class Agents, Class of '44, Yale Alumni Fund, '69-'74; Mbr., Yale Development Bd., '74-; Trustee Deaconess Hosp., Cincinnati, Boys' Clubs of Cincinnati, Cincinnati Union Bethel, '50-'62; Councilman-at-Large, Cincinnati, '53-'59; Vice Mayor, Cincinnati, '57-'59; Lieut., F.A. '43-'46; m. Dec. 21, '70, Karen Lucile Brown; s. Patrick L., William Michael, William Cody, Jr.; d. Shannon (*Blackmore*).

*KELSEY, 1878, Clarence Hill, LL.B., M.A.—(*Finance*)—Born Dec. 23, 1856, Bridgeport, Conn.; died April 30, 1930, West Orange, N.J., Mbr., Yale Corp., 1910-1925.

KEMP, 1942, Frank Alexander—(*Business*)—Born May 10, 1921, Denver, Colo.; Self-employed; Livestock Feeder, Farm & Ranch Sales, Land Appraisal & Consulting, c/o Orr Land Co., 4455 Harlan Ct., Denver, Colo. 80033; res. 149 High St., Denver, Colo. 80218; Chm., Colo. Yale Assn. Com. on Scholarships, '52-'54; Pres., Colo. Yale Assn., '69-'70; Dir., Buckingham Square Natl. Bank, Aurora, Colo.; Pres., Colo. Agricultural Council, '76; Trustee, Colo. State Historical Soc., '73-'79; Mbr., Advisory Council St. Joseph's Hosp., '66-'79; Colorado House of Representatives, '53-'54, '63-'66; Colorado State Senate, '67-'71; Capt., USMC, June '41-June '47; Silver Star, Soldiers Medal, 2 Bronze Stars with Combat V, 2 Purple Hearts; m. June 16, '51, Pauline Claire Wilson; s. Frank A., Jr., Hovey.

KEMP, 1950, PHILIP SPERRY, M.E.—(*Business*)—Born May 23, 1925, Denver, Colo.; Pres., Playtime Equipment Co., 808 Howard St., Omaha, Nebr. 68102; res. 740 N. Happy Hollow Blvd., Omaha, Nebr. 68132; Alumni Bd., '67-'72; CM 2/c, USNR (Sea Bees), '43-'46; m. Feb. 27, '54, Emily Fitzgerald Goodwin; s. Philip S., Jr., Bruce K., Lawrence G., James A., Andrew B.; d. Sarah K., Emily F.

*KENDALL, 1834, JOHN NEWTON, M.D.—(*Medicine*)—Born Feb. 4, 1813, Granby, Conn.; died Aug. 18, 1877, Benton, Ala.

*KENDALL, 1887, WILLIAM BURRAGE, JR.—(*Business*)—Born Sept. 10, 1865, Brooklyn, N.Y.; died Oct. 3, 1893, Brooklyn.

*KENERSON, 1891, VERTNER, M.A., M.D.—(*Medicine*)—Born Feb. 28, 1866, Boston, Mass.; died Feb. 2, 1935, Buffalo, N.Y. Surgeon, Spanish-American War.

*KENNEDY, 1845, THOMAS, M.A.—(*Ministry*)—Born Aug. 19, 1822, in Ireland; died Sept. 8, 1849, Baltimore, Md.

*KENT, 1853, ALBERT EMMETT—(*Business*)—Born Sept. 1, 1830, Suffield, Conn.; died Jan. 8, 1901, Genoa, Nebr.

*KENT, 1887, WILLIAM, M.A.—(*Business*)—Born Mar. 29, 1864, Chicago, Ill.; died Mar. 13, 1928, Kentfield, Calif. Mbr. of Congress, '11-'27. Mbr., U.S. Tariff Comm., '17-'21.

*KEPPELMAN, 1901, JOHN ARTHUR, LL.B.—(*Law*)—Born June 18, 1878, Reading, Pa.; died Oct. 21, 1931, West Reading. Federal food administrator, Berks Cty., Pa. World War I.

*KERNOCHAN, 1861, FRANCIS EDWARD, LL.B., M.A.—(*Industrial*)—Born Dec. 12, 1840, New York City; died Sept. 26, 1884, Pittsfield, Mass.

*KERNOCHAN, 1898, FREDERIC, LLB.—(*Law*)—Born Aug. 12, 1876, Newport, R.I.; died Jan. 9, 1937, Tuxedo Park, N.Y. Asst. district attny., New York Cty., '03-'05. Assoc. justice, N.Y. Court of Special Sessions, '13-'16, and chief justice, '16-'37. Served in Light Artillery, Spanish-American War.

*KERNOCHAN, 1863, JOSEPH FREDERIC, LL.B.—(*Law*)—Born Dec. 8, 1842, New York City; Died Aug. 17, 1929, New York City.

*KERR, 1897, ALBERT BOARDMAN, LL.B.—(*Law*)—Born Mar. 17, 1875, Clearfield, Pa.; died June 20, 1945, Charlottesville, Va. Chief Counsel, U.S. Housing Corp., 1918.

KERRY, 1966, JOHN F.—(*Writing*)—Born Dec. 11, 1943, Denver, Colo.; Free-lance Writer; res. 198 Holyroot Ave., Lowell, Mass. 01852; m. May 23, '70, Julia Stimson Thorne.

KETCHAM, 1914, HENRY HOLMAN—(*Industry semi-retired*)—Born June 17, 1891, Englewood, N.J.; Chmn., Henry H. Ketcham Lumber Co., 1661 E. Olive Way, Seattle, Wash. 98102; res. 801 McGilvra Blvd., Seattle, Wash. 98112; Dir, Seattle Trust & Savings Bank, '37-'74; Belgian Consul, State of Washington, '43-'72; decorated 3 times by Belgian Government; Mbr., Natl. Football Assn. & Hall of Fame, '68; Mbr. Bd. of Dir., U.G.N., Chmn. of drive, '40; Bd. Mbr., Lakeside Boys School, '50-'60; Sr. Warden, St. Marks Cathedral; Maj., F.A., 26th Div. Yankee Div., May '17-Apr. '19; m. Nov. 10, '21, Katharine Eugenia Peters; s. Henry H. Jr., ('44), William P., Samuel K. ('52).

•KEY, 1838, THOMAS MARSHALL—(*Law*)—Born Aug. 8, 1819, Mason Cty., Ky.; died Jan. 15, 1869, Lebanon, Ohio. Mbr., Ky. State Senate, 1858-1861. Col., Union Army, Civil War.

KILBORNE, 1935, WILLIAM SKINNER, M.B.A.—(*Business*)—Born Sept. 1, 1912, Stockbridge, Mass.; Independent Business Consultant, bus. & res. 164 Moore St., Princeton, N.J. 08540; Davenport Co-agent, Yale Alumni Fund, '35-'69; Class Agt., Yale Alumni Fund, '69-'74; A.Y.A. Class Rep., '74-; Dir., International Silk Assn. (USA), '48-'53; V.P., '51-'53; William Skinner & Sons, '37-'53, V.P., '42-'53, Trustee, '47-'61; Chmn., Harkil Corp., '69-'75; Special Asst. to Sec. of Commerce, '53-'57; m. June 25, '35, Elizabeth Briggs; m. June 29, '74, Virginia Wylie; s. William S., Jr., ('58), Benjamin Briggs, ('66), Allerton Wright; d. Katharine (*Cornwell*) .

KILCULLEN, 1934, JOHN M.—(*Transportation*)—Born July 9, 1908, New York, N.Y.; Project Mgr., Europe & United Kingdom, Union Commercial S.S. Co., Piraeus, Greece, or 110 Fenchurch St., London, England E.C.3; res. 7 Rue des Cents Gardes, Biarritz-64200, Pyrenees Atlantiques, France: m. March 8, '42, Natalie L. Atherton; m. Sept. 8, '52, Margarete Mendelssohn; s. Gordon V. M.

KILREA, 1954, WALTER C.—(*Industrial*)—Dir., Internatl. & New Products, Abex, Valley Rd., Mahwah, N.J. 07430; res. 223 Woodland Ave., Ridgewood, N.J. 07450; m. Apr. 4, '59, Carol Hyde Harkness; s. Scott Williamson, Jeffrey Smith, Gregory Jennings, Timothy B.

•KIMBALL, 1877, ARTHUR REED—(*Literary work*)—Born Feb. 1, 1855, New York City; died Jan. 27, 1933, Waterbury, Conn.

*KIMBALL, 1858, JOHN EDWIN, M.A.—(*Education*)—Born July 18, 1833, Webster, Mass.; died Sept. 7, 1916, Worcester, Mass.

KIMBALL, 1934, WALTER S., M.D.—(*Medicine*)—Born June 29, 1911, Sisterville, West Va.; Orthopedic Surgeon, 1305 Seneca St., Seattle, Wash.; res. 3404 Evergreen Point Rd., Bellevue, Wash. 98004; m. Sept. 23, '44, Alicia Perea Munoz; s. Walter Nathaniel; d. Zee Alice.

*KING, 1910, LYNDON MARRS—(*Business*)—Born Dec. 6, 1887, Minneapolis, Minn.; died July 3, 1969; ret. as Pres. and Chmn., Northrup, King & Co., Minneapolis; m. Nov. 27, '15, Helen D. Abbott; m. Jan. 27, '41, Elisabeth P. Washburn; s. L.M.K., Jr., ('40), William A. Preston, Abbott; d. Elizabeth (*Maddux*).

*KING, 1914, STODDARD, M.A.—(*Literary work*)—Born Aug. 19, 1889, Jackson, Wis.; died June 13, 1933, Spokane, Wash. Capt., Inf., Wash. Natl. Guard, World War I.

KINGSBURY, 1926, HOWARD THAYER, M.A.,—(*Education retired*)—Born Sept. 11, 1904, New York, N.Y.; res. 14 Cliff St., Stonington, Conn. 06378; formerly Dean, Brooks School, North Andover, Mass.; Lieut. Col., AUS, Apr. '41-Oct. '46; Army Commendation Medal; m. Dec. 17, '31, Ellen M. Wales; s. Nathaniel W., ('63); d. Ruth E. (*Sherman*).

KINGSLEY, 1959, CHARLES C., J.D.—(*Law*)—Born Aug. 27, 1937, New York, N.Y.; Attny., Ptnr., Wiggin & Dana, P.O. Box 1832, New Haven, Conn. 06508; res. 130 Huntington St., New Haven, Conn. 06511; Treas., Class of '59, '70-'75; A.Y.A. Rep. of Class of '59, '70-'75; Conn. Bar Assn.: Pres., Young Lawyers Section, '73-'74, Mbr. Bd. of Dir., '74-'75, Chmn., Estates & Probate Section, '72-'74; Pres., New Haven Colony Historical Soc., '74-; Mbr., Conn. Mental Health Advisory Council, '73-; RTA Dir., '71-'74; m. July 2, '60, Gretchen Hill; s. David; d. Virginia, Deborah.

*KINGSLEY, 1834, HENRY COIT, M.A.,—(*Law and finance*)—Born Dec. 11, 1815, New Haven, Conn.; died Dec. 19, 1886, New Haven. Treas., Yale University, 1862-1886.

*KINNE, 1848, WILLIAM, M.A.—(*Education*)—Born Mar. 26, 1819, Plainfield, Conn.; died Mar. 11, 1898, Plainfield.

*KINNEY, 1871, HERBERT EVELYN, LL.B.—(*Law*)—Born Mar. 28, 1847, Griswold, Conn.; died Aug. 24, 1916, Griswold.

KIPHUTH, 1941, DeLaney, M.A.—(*Education*)—Born March 6, 1918, New Haven, Conn.; Special Asst. to Pres., Yale University, Woodbridge Hall, 105 Wall St., New Haven, Conn. 06520; res. 4 Carleton St., Hamden, Conn. 06517; Alumni Fund Agt., Timothy Dwight, '41-; Yale Univ. Asst. Coach, Freshman Football, '46 & '47, Freshman Swimming Coach, '47 & 48, Dir., Dept. of Athletics, Recreation & Physical Education, and Lecturer in History, '54-'76; The Hotchkiss School: Instr. in History, Asst. in Athletics & Physical Education, '41-'42, Instr. in History, Coach, Football & Swimming, Dir., Athletics & Physical Education, '48-'54; Bd. of Trustees, Hopkins Grammar School, '56-'72; New Haven Boys Club Board; Chmn., Bd. of Dir., U.S. Grant Found., '54-'69; Maj., Army Air Force, '42-'46; *Croix de Guerre*, Bronze Star; Dir. RTA, m. Sept. 18, '44, Janet E. Baillie; d. Margaret Allan, Louise DeLaney (dec.)

*KIRBY, 1849, Jacob Brown, M.A.—(*Farming and industrial*)—Born April 7, 1827, Brownsville, N.Y.; died Mar. 9, 1860, Brownsville.

KIRCHWEY, 1942, George W.—(*Industrial*)—Born Feb. 24, 1920, Brooklyn, N.Y.; V.P., W.R. Grace & Co., Industrial Chemicals Group, Grace Plaza, 1114 Ave. of the Americas, New York, N.Y. 10036; res. 46 Elm Place, New Canaan, Conn. 06840; m. 1942, Barbara V. Wheeler; m. June 19, '54, Ellen-Douglas Allen Tompkins; s. Karl Wendell; d. Catherine W.; ss. B.A. Tompkins, ('64), V.D. Tompkins.

*KITCHEL, 1862, Cornelius Ladd, B.D., M.A.—(*Ministry and education*)—Born July 5, 1841, Thomaston, Conn.; died Feb. 15, 1929, New Haven, Conn. Sec., Bureau of Appointments, Yale University, '04-'09, and Sec. emeritus, '09-'29. Priv., Union Army, Civil War.

*KITCHEL, 1897, Cornelius Porter, LL.B.—(*Law*)—Born Oct. 7, 1875, East Liverpool, Ohio; died Jan. 14, 1947, Vero Beach, Fla.

*KITCHEL, 1892, William Lloyd, LL.B.—(*Law*)—Born Nov. 30, 1869, New Haven, Conn.; died June 1, 1947, Bronxville, N.Y.

*KITTLE, 1904, John Caspar—(*Art*)—Born Oct. 8, 1882, San Francisco, Calif.; died Mar. 17, 1933, San Francisco. Capt., Q.M.C., World War I (AEF).

KITTREDGE, 1952, FRANK D.—(*Business*)—Born Jan. 21, 1931, Pittsfield, Mass.; Mgr. of Sales Planning, General Electric International Sales Div.; res. 9 Northern Drive, Upper Saddle River, N..J 07458; m. Oct. 4, '52, Barbara Kellogg Bradshaw; s. Frank Dutton, Jr., John Bradshaw; d. Laura H.

°KITTREDGE, 1855, GEORGE ALVAH, M.A.—(*Business*)—Born Mar. 29, 1833, Boston, Mass.; died Dec. 26, 1917, Brookline, Mass. Am. vice-consul, Bombay.

°KLOTS, 1909, ALLEN TRAFFORD, LL.B.—(*Law*)—Born Sept. 14, 1889, Brooklyn, N.Y.; died Dec. 31, 1964; Chmn., Mayor's Com. on the Courts, N.Y.C., '57-; Spec. Asst. to Sec. of State of the U.S., '31-'32; Mayor, Village of Laurel Hollow, N.Y., '42-'48; 1st Lieut., F.A., W.W. I; m. Oct. 6, '19, Mary I. FitzBrown; s. A.T.K., Jr., ('43); d. Joan Mary (*Porter*).

KLOTS, 1943, ALLEN TRAFFORD—(*Publishing*)—Born March 31, 1921, New York, N.Y.; Exec. Editor & Sec., Dodd, Mead & Co., Inc., 79 Madison Ave., New York, N.Y. 10016; res. 333 E. 68th St., New York, N.Y. 10021; Bd. of Dir.: City Center of Music & Drama, New York City, '60-'75, Contemporary Music Soc., '70-'75, Friends of French Opera, '75-; Chmn., Young Friends of City Center, '68-'72; Co-Chmn., 30th Anniversary City Center of Music & Drama, '73-'74; Lieut., USNR, '43-'46.

°KNAPP, 1916, FARWELL, LL.B.—(*Law*)—Born Nov. 28, 1893, Bridgeport, Conn.; died Sept. 19, 1942, West Hartford, Conn. Asst. Tax Commissioner of Conn., '25-'37; instructor in law, Hartford College of Law, '28-'38; Dean, '32-'33; Pres., '38-'42, Sgt., F.A., World War I (AEF).

°KNAPP, 1882, HOWARD HOYT, LL.B.—(*Law*)—Born April 18, 1861, South Norwalk, Conn.; died June 17, 1918, Hartford, Conn.

KNAPP, 1936, JOHN MERRILL, M.A., Mus.D.—(*Education*)—Born May 9, 1914, New York, N.Y.; Prof. Woolworth Center Princeton University, Princeton, N.J. 08540; res. Rosedale Lane, Princeton, N.J. 08540; Dir., Princeton Glee Club, '46-'51; Princeton Univ.: Asst. Prof., '47-'53, Assoc. Prof., '53-'61, Prof., '61, Asst. Dean, '55-'58, Dean of Coll., '61-'66; various Bds. of Trustees; Lieut. Cmdr., USN, '42-'46; m. Feb. 21, '44, Elizabeth-Ann Campbell; d. Joan, Phoebe.

°KNAPP, 1886, WALLACE PERCY, LL.B., LL.M.—(*Law*)—Born Aug. 7, 1863, South Norwalk, Conn.; died Aug. 29, 1917, Long Beach, N.Y.

°KNEELAND, 1890, YALE—(*Business*)—Born Aug. 5, 1869, Brooklyn, N.Y.; died Dec. 26, 1933, New York City.

°KNIGHT, 1910, AUGUSTUS—(*Finance*)—Born July 23, 1887, Wichita, Kans.; died Oct. 1963; Pres., Family Welfare Assn. of Evanston, Evanston YMCA; Alderman, Evanston, '27-'31; Commissioner for Park Distr., '18-'38; Dir., Evanston Hosp. Assn.; m. Mar. 24, '13; Katharine French; s. A.K., Jr., ('40); d. Virginia (*Pietsch*).

°KNIGHT, 1887, SAMUEL, LL.B., M.A.—(*Law*)—Born Dec. 28, 1863, San Francisco, Calif.; died Jan. 28, 1943, San Francisco, Calif. Asst. U.S. attny. (later attny.), northern district of Calif., 1893-1898. Maj., Judge Advocate General's Dept., World War I. (AEF).

°KNOTT, 1878, GEORGE TAPSCOTT—(*Farming*)—Born Mar. 14, 1855, Clifton, Ohio; died May 14, 1924, Santa Barbara, Calif.

°KNOX, 1907, HUGH SMITH—(*Education*)—Born Jan. 27, 1883, Allegheny, Pa.; died Jan. 2, 1936, Ithaca, N.Y. Yeoman, U.S. Navy, World War I.

KOLAR, 1968, BRITTON WARD—(*Student*)—Born Feb. 27, 1946, Oak Park, Ill.; Northwestern University Medical School, 303 E. Chicago Ave., Chicago, Ill. 60611; res. 201 E. Walton Place, Apt. 701, Chicago, Ill. 60611; Alumni Fund Class Agt., '68-'73; Lieut., USN, July '68-Jan. '72; National Defense Medal, Navy Achievement Medal, Meritorious Unit Citation, NAVFAC Nicosia, Cyprus; m. June 21, '69, Margaret Louisa McMahan; s. Jordan Knight.

KOSTURKO, 1971, WILLIAM THEODORE, J.D.—(*Law*)—Born Feb. 25, 1949, Bridgeport, Conn.; Attny., Day, Berry & Howard, One Constitution Plaza, Hartford, Conn. 06103; res. 169 Collins St., Hartford, Conn. 06105; m. June 26, '71, Linda Daley.

L

LADD, 1930, Louis Williams, Jr., M.D.—(*Medicine retired*)—Born Jan. 25, 1908, Cleveland, Ohio; Physician, internal medicine; res. Beaver Meadow Road, Sharon, Vt. 05065; Asst. Clinical Prof. of Medicine, Western Reserve Univ., '55-'70; Adjunct Clinical Asst. Prof. of Medicine, Dartmouth Medical School, '73-; Capt., Medical Corps, AUS, '42-'46; m. Sept. 7, '39, Barbara Schutz (dec.); m. June 1, '60, Edith Gardine Brown; s. Louis W. III, William D., James C., ('74).

LAGERCRANTZ, 1965, Bengt M.—(*Business*)—Born Apr. 2, 1942, Habana, Cuba; Group Treas., Imperial-Trans-Europe N.V., Brook House, Woking, Surrey GU21 5BJ, England; res. Tetworth Cottage, Cheapside Rd., Ascot, Berkshire SL5 7DU, England; FNCB Buenos Aires, '67-'69; SKF, Argentine '69-'70; L. M. Ericsson, Stockholm, '70-'71; Hartford Natl. Bank & Trust Co., Conn., '71-'73; Assistant Sec., Manufacturers Hanover Trust Co., New York, '73-'75; m. Oct. 7, '71, Helene S. Hockerfelt; s. Carl Magnus; d. Anna H.

LAIDLEY, 1966, Forrest David—(*Business*)—Born May 14, 1944, Highland Park, Ill.; Midwest Institutional Sales Mgr., Compliance Dept. Asst. Mgr., 135 S. LaSalle St., Chicago, Ill. 60603; res. 552 Stevenson Drive, Libertyville, Ill. 60048; Pres., Yale Scholarship Trust of Ill., '68-; m. July 24, '71, Diane Graham; s. Forrest Michael; d. Jean Marie, Mary Irene.

LALLEY, 1977, Patrick William—(*Student*)—Born June 4, 1955, San Antonio, Texas; res. 819 W. Hildebrand, San Antonio, Texas 78212.

*LAMB, 1867, Albert Eugene—(*Law*)—Born Nov. 9, 1843, Worcester, Mass.; died Feb. 17, 1928, New York City. Deputy attny. gen., 1893.

*LAMB, 1903, Albert Richard, M.D.—(*Medicine*)—Born April 22, 1881, Waterbury, Conn.; died Nov. 22, 1959, Pine Orchard, Conn.; Maj., Medical Corps, World War I (AEF).

*LAMBERT, 1893, Adrian VanSinderen, M.D.—(*Medicine*)—Born June 30, 1872, New York City; died Oct. 15, 1952, New York City.

°LAMBERT, 1884, ALEXANDER, Ph.B, M.D.—(*Medicine*)—Born Dec. 15, 1861, New York City; died May 9, 1939, New York City. Prof. of clinical medicine, Cornell University Medical College, 1898-1931. Col., Med. Corps., World War I (AEF).

°LAMBERT, 1843, ALFRED, M.A., M.D.—(*Medicine*)—Born July 5, 1822, Boston, Mass.; died Jan. 11, 1885, Springfield, Mass.

°LAMBERT, 1854, EDWARD WILBERFORCE, M.A., M.D.—(*Medicine*)—Born Feb. 15, 1831, Boston, Mass.; died July 17, 1904, New York City.

LAMBERT, 1950, PAUL CHRISTOPHER, J.D.—(*Law*)—Born March 14, 1928, New York, N.Y.; Ptnr. Breed, Abbott & Morgan, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 1088 Park Ave., New York, N.Y. 10028; Bd. of Dir., Yale Alumni Fund, '75-; 1950 Class Rep. to A.Y.A., '76-'79; Chmn., A.Y.A. Com. on Residential Colleges; Vice Chmn., 25th Reunion Gift Com.; Milbank, Tweed, Hadley & McCloy, '55-'65; Trustee, The Hotchkiss School, '73-'75, '76-; Dir. & Sec., Natl. Soc. for Prevention of Blindness, '74-; Cprl., AUS, Staff of Strategic Intelligence School, '53-'55; Pres., Deer Island Club Corp., '75-; m. June 9, '56, Mary Lee; s. Paul Christopher, Jr., John Carroll; d. Jennifer, Mary Wilson.

°LAMPMAN, 1866, LEWIS, D.D.—(*Ministry*)—Born Feb. 5, 1843, Coxsackie, N.Y.; died Aug. 29, 1918, Coxsackie.

°LAMPSON, 1855, GEORGE—(*Law*)—Born Jan. 23, 1833, Quebec, Que., Canada; died Jan. 29, 1906, Quebec.

°LAMPSON, 1862, WILLIAM, LL.B.—(*Finance*)—Born Feb. 25, 1840, LeRoy, N.Y.; died Feb. 14, 1897, LeRoy.

°LANE, 1843, WILLIAM GRISWOLD—(*Law*)—Born Feb. 12, 1824, Norwalk, Ohio; died Oct. 28, 1877, Sandusky, Ohio.

°LANIER, 1844, ALEXANDER CHALMERS—Born Oct. 20, 1820, Madison, Ind.; died Oct. 11, 1895, Madison.

LAPHAM, 1931, LEWIS ABBOTT—(*Finance*)—Born March 7, 1909, Brooklyn, N.Y.; formerly Vice Chmn. of Bd., Bankers Trust Co., bus. Suite 1001, 280 Park Ave., New York, N.Y. 10017; res. John St., RD #3, Greenwich, Conn. 06830; Metropolitan (NYC) Leadership Gifts Com., '74-; Dir. Bankers Trust New York Corp., The Chubb Corp., Crane Co., H. J. Heinz Co., Mobil Oil Corp., North American Philips Corp., Tri-Continental Corp.; Chmn., U.S. Philips Trust; Chmn., Natl. Bd. of Associates, Smithsonian Institution, '73-'75, presently Mbr. of Bd.; Chmn., Tournament Players Div., PGA, '74-;

W.W. II, Exec. Asst. (civilian) to Commanding General, San Francisco Port of Embarkation; m. Oct. 14, '32, Jane Foster; s. Lewis Henry, ('56), Anthony Abbott, ('58).

°LAPHAM, 1928, RAYMOND WHITE—(*Business*)—Born Dec. 14, 1903, Worcester, Mass.; died July 11, 1976; Capt., AUS 2½ yrs.; m. Oct. 30, '29, Madge Jarratt; s. Henry G.; d. Virginia (*Mead*), Mary (*Kilroy*).

°LARNER, 1922, ROBERT JOHNSON—(*Finance*)—Born Dec. 10, 1899, Washington, D.C.; died Jan. 21, 1960, New York City; Gunnery Sgt., USMCAR, World War I.

°LATHE, 1873, HERBERT WILLIAM—(*Ministry*)—Born June 15, 1851, Worcester, Mass.; died Aug. 24, 1932, Brookline, Mass.

°LATHROP, 1905, JOHN HIRAM, LL.B.—(*Law*)—Born Oct. 3, 1884, Kansas City, Mo.; died July 7, 1957, Kansas City; Mbr., Appellate Judicial Com. of Mo., '44-'49.

LAUNDON, 1932, MORTIMER HAMLIN—(*Business retired*)—Born Sept. 1, 1908, Cleveland, Ohio; res. Route 100, Weston. Vt. 05161; formerly Pres., Bryant Equipment Corp., West Haven, Conn.; Class Sec. & Mbr. Alumni Bd., '67-'72; Pres., Moutain Valley Health Council, Londonderry, Vt., '76-; m. March 28, '36, Jean Kinney; s. Averill, ('60, Law '66), John Cushing, Arthur Samuel, II; d. Jan.

LAVELLI, 1949, ANTHONY, JR.—(*Theatre*)—Born July 11, 1926, Somerville, Mass.; Musician, Bella Music & Theatre Associates, 37 Spring St., Somerville, Mass. 02143 or 515 Madison Ave., Suite 2200, New York, N.Y. 10022.

°LAW, 1837, WILLIAM FABIAN, M.A.—(*Law*)—Born Nov. 14, 1817, Savannah, Ga.; died Oct. 9, 1891, Savannah.

°LAW, 1838, WILLIAM LYON—Born April 8, 1814, Meredith, N.Y.; Died Oct. 30, 1839, St. Mary's, Ga.

LAWLER, 1977, QUENTIN JOHN—(*Student*)—Born Aug. 20, 1955 South Bend, Ind.; res. 10 Ledge Rd., Woodbridge, Conn. 06525.

°LAWRANCE, 1884, THOMAS GARNER—(*Student*)—Born June 1, 1862, Philadelphia, Pa.; died Oct. 16, 1883, New Haven, Conn.

°LEA, 1834, JAMES NEILSEN—(*Law*)—Born Nov. 26, 1815, New Orleans, La.; died Oct. 26, 1884, Wilkes Barre, Pa. Mbr., La. State Legislature, 1846. Assoc. justice, La. Supreme Court, 1855-1863.

*LEA, 1871, Robert Brinkley—(*Law*)—Born May 7, 1849, Nashville, Tenn.; died Jan. 9, 1895, Geneva, Switzerland.

*LEAF, 1841, Edmund, M.A.—(*Ministry*)—Born Nov. 3, 1818, Pottstown, Pa.; died June 16, 1891, Birdsboro, Pa.

*LEAR, 1869, Henry, M.A.—(*Law*)—Born Mar. 21, 1848, Doylestown, Pa.; died April 27, 1929, Germantown, Pa.

*LEARNED, 1870, Dwight Whitney, Ph.D., D.D.—(*Education*)—Born Oct. 12, 1848, Canterbury, Conn.; died Mar. 19, 1943, Claremont, Calif. Prof. of Greek and mathematics, Thayer College, 1873-1875, and of church history, Bible theology, and Greek, Doshisha College, Japan, 1876-1928. Mbr., Com. for revision of Japanese version of New Testament, 1914-1917.

*LEARNED 1841, William Law, M.A., LL.D.—(*Law*)—Born July 24, 1821, New London, Conn.; died Sept. 20, 1904, Albany, N.Y. Justice, N.Y. Supreme Court, 1870-1892 (presiding justice, 1875-1892).

LEAVENWORTH, 1945, Donald Loyal, M.L.—(*Education*)—Born March 16, 1925, Cleveland, Ohio; Headmaster, Chadwick School, 26800 South Academy Drive, Palos Verdes Peninsula, Calif. 90274; res. 1 Academy Rd., Palos Verdes Peninsula, Calif. 90274; Headmaster, La Jolla Country Day School, La Jolla, Calif., '57-'72, Chadwick School, '72-; Bd. Mbr., Civic Organizations, San Diego, Calif., '60-'72; 1st Lieut., Army Air Force, '43-'45; D.F.C., Air Medal; m. May 8, '48, Cynthia MacKenzie; d. Cynthia (*Duncan*), Laurie (*Kurz*), Julie.

*LEAVITT, 1900, Ashley Day, B.D., D.D.—(*Ministry*)—Born Oct. 10, 1877, Chicago, Ill.; died Jan. 22, 1959, Boston, Mass.

*LEE, 1858, Samuel Henry, M.A.—(*Ministry and education*)—Born Dec. 21, 1832, Lisbon, Conn.; died Oct. 20, 1918, Springfield, Mass. Prof. of political economy, Oberlin College, 1872-1876. Prof. of history and political economy, Am. International College, Springfield, Mass., 1890-1908; also Pres., 1893-1908; Pres. emeritus, 1908-1918.

LeFEVRE, 1962, Robert Eaton, M.D.,—(*Medicine*)—Born March 13, 1940, Cleveland, Ohio; Physician (urologist), Gould Medical Group, 600 Coffee Rd., Modesto, Calif. 95355; res. 3008 Scenic Drive, Modesto, Calif. 95355; Lieut. Cmdr., USN, '68-'70; m. Aug. '66, Christina Ford; m. Jan. '71, Robin O'Neill; s. William Eaton, David Edward; ss. Darin Christopher Morris, Drew Morris.

*LEGORE, 1917, HARRY WILLIAM—(*Industrial*)—Born Aug. 1, 1894, LeGore, Md.; died June 8, 1956, Frederick, Md.; Md. House of Delegates, '30-'34; Md. State Senate, '34-'38, (minority leader, '37-'38); Capt., USMC, AEF, W.W. I.

*LEIGHTON, 1881, JAMES—(*Law student*)—Born May 2, 1859, Abington, Pa.; died Dec. 5, 1883, Glenburn, Pa.

LEIPER, 1949, JOSEPH MCCARRELL II—(*Business*)—Born Aug. 27, 1923, Blauvelt, N.Y.; Deputy Administrator, New York City Transportation Admin., 40 Worth St., New York, N.Y. 10013; res. 36 Leber Rd., Blauvelt, N.Y.; m. Oct. 13, '51, Janet Cooke Howell; s. Joseph McCarrell, Jr.

*LENT, 1843, JOHN ABRAM—(*Business and Law*)—Born Oct. 24, 1821, New York City; died Jan. 2, 1863, San Francisco, Calif.

LEVERETT, 1976, MILES WATSON—(*Fine Arts*)—Born Oct. 16, 1954, Trenton, N.J.; Singer, Sculptor, res. 1212 Calhoun St., Trenton, N.J. 08638.

LEVERING, 1933, WALTER B.—(*Business retired*)—Born Aug. 25, 1909, Amagansett, L.I., N.Y.; res. 10 Gracie Square, New York, N.Y. 10028; Class Com., '33-; Ptnr., Carlisle DeCoppet & Co., '33-'75; Governor, Assn. of Stock Exchange Firms, '59-'61, '64-'66; Greenwich, Conn., R.T.M., '56-'58; Vice Chmn., Repub. Finance Com., '50-58; Chmn. Recreation Com., Town of Greenwich, '50-'56; Merritt Parkway Commissioner, '52-'58; Cmdr., USNR, Feb. '42-Oct. '45; Legion of Merit, Bronze Star, Purple Heart; Dir., RTA; m. June 6, '32, Betty Gerard (dec.); m. June 25, '66, Elsie Hvistendahl; s. Walter B., Jr., ('59); d. Joan (*Jack*).

LEVIN, 1971, CHARLES HERBERT, M.F.A.—(*Theatre*)—Born March 12, 1949, Chicago, Ill.; Actor, res. 420 E. 70th St., New York, N.Y. 10021; Company Mbr., Yale Repertory Theatre, '74-'76; New York Shakespeare Festival, '76; m. Aug. 23, '74, Molly Hall.

*LEWIS, 1833, ASAHEL HOOKER—(*Literary work*)—Born Sept. 11, 1810, Farmington, Conn.; died Sept. 25, 1862, St. Louis, Mo. Mbr., Ohio State Legislature 1847-1848.

*LEWIS, 1886, CHARLTON MINER, LL.B., Ph.D.—(*Education*)—Born Mar. 4, 1866, Brooklyn, N.Y.; died Mar. 12, 1923, New Haven, Conn. Asst. Prof. of English, Yale University, 1898-1899, and Emily Sanford Prof. of English, 1899-1923.

LEWIS, 1974, GEORGE EMANUEL—(*Music*)—Born July 14, 1952, Chicago, Ill.; Trombonist & Composer, Assn. for the Advancement of Creative Musicians, Chicago; res. 5326 S. Harper Ave., Chicago, Ill. 60615; Mbr., Anthony Braxton Quartet; Count Basie Orchestra, March-May, '76.

°LEWIS, 1842, HENRY, M.A.—(*Student*)—Born May 29, 1821, near Lawrenceville, Va.; died Aug. 9, 1841, New Haven, Conn.

°LEWIS, 1868, JOHN—(*Law*)—Born June 22, 1842, Suffield, Conn.; died June 26, 1921, Lawrence, Kansas. Served in Union Army, Civil War.

LEWIS, 1972, MARK SANDERS—(*Education*)—Born Aug. 26, 1949, New Haven, Conn.; Educator-Training Co-ordinator-On Drugs, Inc., Apple Tree Lane, Woodbridge, Conn. 06525; res. 137 S. Butts St., State College, Pa. 16801; Yale Alumni Fund, '72-.

°LIBBEY, 1867, FRANK—(*Business*)—Born Jan. 20, 1847 Georgetown, D.C.; died Oct. 9, 1929, Washington, D.C.

LIGHTFOOT, 1959, RICHARD BISSETT, LL.B.—(*Publishing*)—Born Feb. 12, 1937, New Haven, Conn.; Chmn. & Pres. Shore Line Times Co., Inc., 120 North Fair St., Guilford, Conn. 06437; res. 18 Bonmar Rd., Pelham Manor, N.Y. 10803; Mbr., Bd. of Dir., Yale Alumni Fund, '65-'70; Trustee, The Gunnery School, '68-'76; Vice Chmn., Pelham, N.Y., School Bd., '72-'75; m. Dec. 29, '59, Judith Fay; s. John; d. Alexandra, Elizabeth, Ann.

LIGON, 1962, THOMAS—(*Theatre, Television*)—Born Sept. 10, 1940, New Orleans, La.; Actor, Producer, Director, 227 Waverly Place, New York, N.Y. 10014; res. 1330 N. Stanley Ave., Hollywood, Calif. 90046; V.P., Openhand Corp.

LILES, 1973, COIT REDFEARN—(*Government*)—Born Jan. 25, 1950, Wadesboro, N.C.; Legislative Asst. to Hon. W. G. Hefner, M.C., House Office Bldg., Washington, D.C. 20515; res. 315 C St. N.E., Washington, D.C. 20002 or 211 Woodside Drive, Wadesboro, N.C. 28170; Bd. of Dir., Deer Island Club Corp., '75-.

°LILLEY, 1943, FRANK WALDER, JR.—Born Dec. 26, 1920, Wuhu, China; died May 14, 1946, Honshu, Japan. 1st Lieut., F.A., AUS, World War II.

LILLEY, 1967, ROBERT McG.—(*Business*)—Born Sept. 2, 1945, Upper Montclair, N.J.; Importer & Retailer of clothing from

Asia, Mirage, Inc., Cambridge, Mass; res. 497 Long Hill Drive, Short Hills, N.J. 07078; m. March 8, '73, Jill Laporte.

*LINDENBERG, 1932, JOHN TOWNSEND—(*Literary work*)—Born Oct. 16, 1909, Columbus, Ohio; died Aug. 25, 1940, New York City.

LINDGREN, 1960, RICHARD H., M.B.A., J.D.—(*Finance*)—Born Dec. 4, 1938, Jamestown, N.Y.; V.P. Corp. Finance, New Business, White Weld & Co., 20 Broad St., New York, N.Y. 10005; res. 1158 Fifth Ave., New York, N.Y. 10029; m. June 21, '62, Anne Howard MacPherson; s. Richard Hugo, Jr., Douglas Dobbins; d. Sarah Howard.

LINDLEY, 1933, FRANCIS VINTON, LL.B.—(*Business*)—Born Feb. 4, 1911, New York, N.Y.; Assoc., Greater New York Blood Program, American Red Cross, 150 Amsterdam Ave., New York, N.Y. 10023; res. 70 W. 68th St., New York, N.Y. 10023; m. 1933, Grace Bigelow Cook; m. 1940, Eleanor Tweed Aldrich (dec.); m. 1948, Hilda Livingston; s. John Warwick, Daniel Willard; d. Diana Parker.

LINDSAY, 1961, Dale Alton, Jr., M.B.A.—(*Finance*)—Born June 4, 1939, Erie, Pa.; V.P., Investments, White, Weld, One Liberty Plaza, New York, N.Y. 10006; res. 1140 Fifth Ave., New, N.Y. 10028; m. July, '74, Barbi Zinner; s. Reed Dale.

LINDSAY, 1944, DAVID A., LL.B.—Bus. 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 112 E. 74th St., New York, N.Y.; m. July 29, '46, Elizabeth Ann Austin; m. July 23, '74, Ellen Hurwitch Burbidge; s. David Alexander, Jr., Edward Austin; d. Eleanor Vliet, Marion Austin.

*LINTON, 1846, STEPHEN DUNCAN—(*Farming*)—Born July 25, 1826, New Orleans, La.; died Dec. 15, 1867, Paris, France.

LIPPINCOTT, 1949, DAVID M.—(*Literary work*)—Born June 17, 1924, New York, N.Y.; Sr. V.P., McCann Erickson, Inc., 485 Lexington Ave., New York, N.Y. 10017; res. Birch Mill Rd., Old Lyme, Conn. 06371; m. Oct. 16, '59, Joan Stuart Bentley; s. Christopher Bentley.

*LIPPINCOTT, 1914, WILLIAM JACKSON—(*Finance*)—Born April 5, 1891, Findlay, Ohio; died Mar. 10, 1946, Hobe Sound, Fla.

*LIPPITT, 1909, HENRY—(*Industrial*)—Born July 13, 1886, Providence, R.I.; died Oct. 15, 1974, San Diego, Calif.; m. Feb, 21, '14, Marion Almy (dec. Nov. 7, '70); s. Henry F., 2d, David S., Jonathan S., d. Barbara, Marion.

•LITT, 1921, WILLARD DAVID—(*Finance*)—Born Dec. 17, 1899, East Patchogue, N.Y.; died Oct. 26, 1942, in the Pacific Area. 2d Lieut., F.A., World War I; Lt., USNR, World War II.

•LITTLE, 1907, MITCHELL STUART—(*Industrial*)—Born Jan. 5, 1885, Hartford, Conn.; died Aug. 7, 1969; Mbr., Alumni Bd. m. Feb. 8, '19, Elizabeth Hill Hapgood; s. Stuart West, ('44), Edward Hapgood, ('50); d. Virginia (*Miller*).

•LITTLE, 1851, ROBBINS, LL.B., M.A.—(*Library work*)—Born Feb. 15, 1832, Newport, R.I., died April 13, 1912, Newport. Examiner of claims, War Dept., 1873-1878.

LITTLE, 1944, STUART W.—(*Literary work*)—Born Dec. 19, 1921, Hartford, Conn.; Writer, Editor, bus. c/o The Authors Guild, 234 W. 44th St., New York, N.Y. 10036; res. 165 E. 60th St., New York, N.Y. 10022; University Council, '75-; N.Y. Herald Tribune: N.Y. Correspondent, European Edition, '47-'48, Reporter, '48-'51, Asst. Day City Editor, '51-'54, Theatre News Reporter, '58-'66; News Writer, NBC-TV, '54-'58; Editor, Authors Guild Bulletin, '67-; USAAF,-O.S.S., '43-'45; m. Sept. 25, '45, Anastazia Raben-Levetzau; s. Christopher S.V., ('71); d. Caroline (*Larken*), Suzanne A.S.

•LIVINGSTON, 1879, HERMAN, M.A.—(*Industrial*)—Born June 24, 1856, New York City; died Dec. 31, 1936, Greendale, N.Y.

LIVINGSTON, 1969, RICHARD H. B., M.B.A.—(*Business*)—Born Aug. 19, 1947, Greenfield, Mass.; Shipping, Oivind Lorentzen, Inc., 522 Fifth Ave., New York, N.Y. 10036; res. 115 E. 90th St., New York, N.Y. 10028.

LOESER, 1931, FREDERIC WILLIAM—(*Industrial retired*)—Born May 21, 1908, New York, N.Y.; res. 240 Pleasant Point Rd., Branford, Conn. 06405; Class Treas., '34-; Dir. & Treas., Yale Club of New Haven; Treas., Pres. & Exec Com., Yale Football Y Assoc., '48-'74; Football Advisory Com., '50-; Chmn., Kiphuth Memorial Fund; Yale Assn. Class Officers, '50-'56; formerly Officer of Ecology, Inc.; Dir.: New Haven Boys' Club, '38-, Yale New Haven Hosp. '50-'66; Chmn., United Way Campaign, '51-'52 Pres., '53-'54; Booth Found., '65-; New Haven Found., '67-'73; Development Officer, '74-'75; Chmn., Yale-United Way Game Com., '69-'75; Trustee, Prospect Hill School, '54-'60; 1st Lieut., USMC, '42-'45; m. Feb. 5, '38, Marjorie Stearns; s. F. Gregg, ('63); d. Bonnie Louise (*Corcoran*).

°LOGAN, 1910, WALTER SETH, LL.B.—(*Law*)—Born July 8, 1888, Washington, Conn.; died April 25, 1974; Washington, Conn.; law practice, Washington Depot, Conn. General Counsel Fed. Reserve Bd., Washington, D.C. '20-'22; V.P. and General Counsel, Federal Reserve Bank of N.Y., '28-'53; 1st Lieut., Chemical Warfare Service, July '18-Feb. '19; m. June 16, '16, Verna McCutcheon; d. Barbara (*Reed*); Hollis (*Clark*).

°LOHMANN, 1910, CARL ALBERT, M.A., L.H.D.—(*Education*)—Born Aug. 9, 1887, Akron, Ohio; died May 19, 1957, New Haven, Conn.; New Haven Bd. of Park Commissioners, '54-'56; Lieut., USNRF, World War I; Sec., Yale Alumni Advisory Bd., '25-'27; Sec., Yale Univ., '27-'53; Mbr., Alumni Bd.; Pres., Yale Assn. of Class Secs., '27-'28; Mbr., President's Com. on Undergraduate Housing, '30; Curator Prints, Yale Art Gallery, '26-'30, and '46-'53; Class Sec., '25-'51; Assoc. Fellow, Jonathan Edwards.

°LOMBARD, 1854, JAMES KITTREDGE, M.A.—(*Ministry*)—Born Jan. 15, 1832, Burlington, N.Y.; died Aug. 14, 1889, Darien, Conn.

°LOMBARDI, 1911, CORNELIUS ENNIS, LL.B.—(*Law*)—Born Oct. 3, 1888, Houston, Texas; died Feb. 12, 1956, Kansas City, Mo.; Chmn., Bd. of Commissioners, Redevelopment Authority of Kansas City; 1st Lieut., F.A., World War I (AEF); V.P. Yale Club of Kansas City; Mbr., Yale Alumni Bd.

LONGSTRETH, 1930, GEORGE B.—(*Finance retired*)—Born Oct. 18, 1909, Atlanta, Ga.; res. 890 Burr St., Fairfield, Conn. 06430; Class Agt., Yale Alumni Fund, '61-; formerly Exec. V.P., People Savings Bank, Bridgeport, Conn.; Dir. & Treas., Bridgeport Hosp. '72-; Fairfield Country Day School, Trustee, '54-, Treas., '55-'72, Pres., '72-'74; Trustee, Golden Hill United Methodist Ch., Bridgeport; Dir. & Treas., Fairfield Public Library, '71-; Mbr., Bd. of Finance, Town of Fairfield, '56-'61, Chmn., '59-'61; m. June 7, '35, Alice Lakin Pullman; s. George B., ('61), John P.; d. Ann (*Hughes*).

LONSDORF, 1973, DAVID B.—Add. 415 Old Gulph Rd., Narbert, Pa. 19072.

LOOK, 1927, ALLEN M., LL.B.—(*Law retired*)—Born Nov. 11, 1902, Litchfield, Conn.; res. Box 43, West Tisbury, Martha's Vineyard, Mass. 02575; formerly V.P., Wellington Sears Co., New York, N.Y.; m. July 21, 1934, Maria Sloan Auchincloss; s. Allen M., Jr., Daniel; d. Barbara Ann, Maria Sloan.

*LOOK, 1930, FRANK BYRON—(*Transportation*)—Born Mar. 22, 1904, Hartford, Conn.; died April 27, 1967; Gen. Mgr., New Bedford. Woods Hole, Martha's Vineyard & Nantucket Steamship Authority, New Bedford, Mass.; Lieut. Cmdr., USNR, '41-'47; m. Dec. 27, '45, Virginia D. Keene; d. Virginia H., Hanna A., Sally W.

LORD, 1949, CHARLES EDWIN—(*Finance*)—Born Apr. 26, 1928, New York, N.Y.; Dir. of Institutional Relations & Alumni Programs, Yale University, Woodbridge Hall, New Haven, Conn. 06520; res. 87 Trumbull St., New Haven, Conn. 06511; Pres., Yale Club of Hartford, '62-'63; Mbr.: Yale Alumni Bd., Yale Development Bd. & Exec. Com., '68-; Chmn., Hartford Area, Leadership Gifts, The Campaign for Yale, '74-; Hartford Natl. Bank & Trust Co.: Pres., '67-'76, Chief Exec. Officer, '72-'76; Chmn., Hartford Natl. Corp., Apr. '75-Jan. '76; Dir.: Aetna Life & Casualty Co., '69-, Insilco Corp., '69-'76, Kaman Corp., '68-'76; Symphony Soc. of Greater Hartford: Pres. & Chmn., '66-'70, Dir., '65-'76; Hartford Stage Co.: V.P., '64-'67, Dir., '64-'71; Greater Hartford Arts Council, V.P., Exec. Com., Dir., '71-'76; Chmn. Natl. Alliance of Businessmen, Hartford Area, '72-'76; Public Mbr., Conn. Development Authority, '73-'76; Bd. of Finance, Simsbury, '61-'65; m. Apr. 22, '50, Margaret A. Plunkett; s. Charles E., Jr., William P.; d. Catharine (*Brown*), ('74), Sarah.

*LORD, 1898, FRANKLIN ATKINS, LL.B.—(*Law*)—Born Nov. 9, 1876, Winnebago, Minn.; died Jan. 16, 1945, New York City. Sec., U.S. Shipping Bd., '23-'32.

*LORD, 1854, GEORGE DEFOREST, M.A.—(*Law*)—Born Nov. 21, 1833, New York City; died Mar. 3, 1892, New York City.

LORD, 1926, OSWALD B.—(*Industrial retired*)—Born March 15, 1903, Tarrytown, N.Y.; res. 322 Wildwood Rd., Stamford, Conn. 06903; 1926-1926S Exec. Com.; Reunion Chmn., 50th Reunion; formerly Exec. V.P., Galey & Lord, (Div. of Burlington Industries); Pres., Judson Health Center, New York City, '41-'51; m. Dec. 7, '29, Mary Pillsbury; Charles Pillsbury, ('56), Winston, ('59).

LORD, 1922, WILLIAM GALEY—(*Industrial retired*)—Born July 1, 1901, Tarrytown, N.Y.; res. Box 363, East Hampton, N.Y.; University Council, '62-'67; Class Sec., '22-'50; formerly Textile Executive, Galey & Lord, Inc., Burlington Industries; m. June 22, '25, Frances Norton; s. Sheridan N., ('50), Charles E., ('49).

LORD, 1959, WINSTON, M.A.—(*Government*)—Dir., Policy Planning Staff, State Dept., Washington, D.C. 20520; res. 3600 Rittenhouse St. N.W., Washington, D.C. 20015; m. May 4, '64, Bette Bao; s. Winston Bao; d. Elizabeth Pillsbury.

LOUCKS, 1957, VERNON R., JR., M.B.A.—(*Business*)—Born Oct. 24, 1934, Evanston, Ill.; Corporate Pres., Baxter Travenol Laboratories, One Baxter Parkway, Deerfield, Ill. 60015; res. 2725 Edgewood Lane, Deerfield, Ill. 60015; Sr. Management Consultant, George Fry & Associates, Chicago, '63-'65; Baxter Travenol Laboratories: Asst. to Pres. & Chief Exec. Officer, '66-'68, Administrative V.P., '68-'69, V.P. European Operations, '69-'71, Corporate V.P., Marketing, U.S. & Canada, '71-'72, Pres., Baxter/Travenol Div. & Corporate V.P., '72-'73, Corporate Sr. V.P., '73, Corporate Exec. V.P., '73-'76, Dir., '75; Vice Chmn., Suburban Campaigns, 1976 Crusade of Mercy; Chmn., Suburban Campaigns, 1977 Crusade of Mercy; Dir.: John L. & Helen Kellogg Found., JSK Charitable Found.; Trustee, Rush, Presbyterian St. Lukes Medical Center, Kemper Educational & Charitable Fund; Assoc., Northwestern University; 1st Lieut., USMC, '57-'60; m. May, 1972, Linda Olson; s. Charles, Greg, David, Eric; d. Susan, Kristi.

LOUGHRAN, 1957, ANTHONY HOOKEY—(*Engineer*)—Born Nov. 4, 1929, Philadelphia, Pa.; Distr. Staff Mgr., Pacific Telephone, Room 612 H, 370 Third St., San Francisco, Calif. 94107; res. 51 Craig Ave., Piedmont, Calif. 94611; Yale Club of San Francisco: Alumni Schools Com., '64-, Chmn., '65-'68, Pres., '70-'72, Bd. of Dir., '68-; A.Y.A., '72-'74; Piedmont City Council, '72 & '76; Mayor of Piedmont, '74-'76; Vice Mayor, '76-; Piedmont Council, Boy Scouts of America; Scoutmaster, '67-'70, Exec. Bd., '70-; Chmn., Natl. Defense Section, Commonwealth Club of Calif., '75-; Pres., Economic Round Table of San Francisco, '71-'72; Bd. of Dir., San Francisco Chapter Navy League; Marine Corps Reserve Officers Assn.; Pres. Alameda Chapter, '69-'70, National Dir., '72; Pres., Fleetwood Chapter, Reserve Officers Assn., '72; Mbr., Harold Brown Soc. for Medical Research, Mbr. Bohemian Club; Col., USMCR, Active, '51-'55, Reserve '55-; m. Oct. 11, '52, Jean Stewart Krotzer; s. Edward Paul, III, Anthony Wiley; d. Jeanine, Suzanne.

LOVE, 1951, RALPH FRANK—(*Business*)—Born Nov. 26, 1929, Boston, Mass.; Product Assessment Mgr., IBM AFE Corp., North Tarrytown, N.Y. 10951; res. 180 Park Row, New York,

N.Y. 10038; 1st Lieut., USAF, '51-'53; m. Dec. '57; m. Dec. '70, Magdalena Vitug; s. Joshua F.; d. Marissa V.

LOVEJOY, 1925, WINSLOW MESTON, LL.B.—(*Law*)—Born Feb. 24, 1903, Montclair, N.J.; Lawyer, Ptnr. Lovejoy, Wasson, Lundgren & Ashton, Professional Corp., 250 Park Ave., New York, N.Y. 10017; res. Box 66, Oldwick, N.J. 08858; Exec. Com., Alumni Bd., '59-'61; Class Bequest Chmn., Alumni Fund; Class Agt., Yale Law School Fund; Pres., Yale Football "Y" Assn., '55-'58; Pres., Yale Club of New York City, '62-'64; V.P., Bd. of Managers, N.J. State Reformatory for Males, '66-'72; Township Com., Bedminster, N.J. '52-'57; Maj., AUS, Apr. '42- Jan. '46; Bronze Star; m. Dec. 18, '25, Betty Darlington Stoddard; m. Nov. 8, '33, Josephine Graham Post; s. Winslow M., Jr., ('50), William P., ('56), Robert B., ('59), Thomas A. ('66).

*LOVELL, 1844, JOSEPH, M.A.—(*Law*)—Born June 11, 1824, Washington, D.C.; died Nov. 28, 1869, near Natchez, Miss. Brig. Gen., Confederate Army, Civil War.

LOVETT, 1913, AUGUSTUS SIDNEY, B.D., M.A., D. Litt., D.H.L., D.D.—(*Ministry, Education*)—Born Jan. 30, 1890, Boston, Mass.; Dir. of Memorial Gifts, Yale Alumni Fund, P.O. Box 1658, New Haven, Conn. 06507; res. 31 Lincoln St., New Haven, 06511; University Chaplain, '32-'58; Master, Pierson Coll. '53-'58; University Council, '59-'64; Woolsey Prof. Biblical Literature, '37-'57; Minister, Mt. Vernon Ch., Boston, '19-'32; Chmn., World Student Service; Chmn., New Haven Community Chest; Mbr., Dwight Hall Advisory Bd., '32-; Hon. Chmn., Yale-China Assn.; Chmn. & Mbr., U.S. Grant Found.; Chmn. & Mbr., New Haven Comm. on Equal Opportunities, '64-'73; Pres., RTA; m. May 15, '15, Rebekah B. Mills (dec.); m. Jan. 14, '21, Esther Parker; s. Richard, ('49), Sidney, ('50); d. Eugenia (*West*).

LOVETT, 1918, ROBERT ABERCROMBIE, M.A., LL.D. —(*Finance*)—Born Sept. 14, 1895, Huntsville, Texas; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. Town Cocks Lane, Locust Valley, Long Island, N.Y. 11560; Chmn. Exec. Com., Union Pacific Railroad Co., '53-'66; Special Asst. to Sec. of War. '40-'41; Asst. Sec. of War for Air, '41-'45; Under Sec. of State, '47-'49; Dep. Sec. of Defense, '50-'51; Sec. of Defense, '51-'53; Trustee: Rockefeller Found., '49-'61, Carnegie Found. for the Advancement of

Teaching, '37-'65, Carnegie Institution of Washington, '48-'71, Metropolitan Museum of Art, '31-'40; Life Mbr. Emeritus, Corp. of Mass. Institute of Technology, '61-; Mbr. Bd. of Managers, Presbyterian Hosp., N.Y., '26-'55; Lieut. Cmdr., Air Service, USN, '17-'18; Navy Cross, Distinguished Service Medal, Presidential Medal of Freedom, Grand Cross of the Order of Leopold II of Belguim; m. Apr. 19, '19, Adele Quartley Brown; s. Robert Scott, II ('49); d. Evelyn (*Brown*) (dec.).

LOVETT, 1950, SIDNEY, M.Div.—(*Ministry*)—Born May 1, 1928, Boston, Mass.; Senior Minister, The First Church of Christ, 12 S. Main St., West Hartford, Conn. 06107; res. 46 Mountain View Drive, West Hartford, Conn. 06117; m. June 22, '50, Joan Campbell; s. S.C. Campbell, Peter Augustus; d. Katherine (*Weymouth*), Margaret C., Elizabeth Parker.

•LUCE, 1920, HENRY ROBINSON, M.A., LL.D., Litt. D., L.H.D.—(*Literary work*)—Born April 3, 1898, Teng-chow, China; died Feb. 28, 1967; Ed.-in-Chief, *Time, Life, Fortune, Sports Illustrated, Architectural Forum, House & Home*, Time, Inc., Rockefeller Center, N.Y.C.; Dir., Aid Refugee Chinese Intellectuals, American-Korean Found., Korea Soc., Union Theol. Sem., Univ. of Andes Found.; Trustee, Amer. Heritage Found., China Institute in America, Metropolitan Museum of Art, Roosevelt Hosp., St. Mary's Coll., Yale-in-China Assn.; Sponsor, Internatl. Friendship League, Save the Children Fed., World Brotherhood; 2d Lieut., F.A., W.W. I; Assoc. Fellow, Pierson Coll., '48; Yale Univ. Council, '47-'56; m. Dec. 22, '23, Lila Ross Hotz; m. Nov. 23, '35, Clare Boothe Brokaw; s. H.R.L. III, ('45), Peter Paul.

•LUCKEY, 1923, CHARLES PINCKNEY—(*Finance*)—Born Feb. 17, 1899, New Haven, Conn.; died Nov. 17, 1966; Banker, N.Y.C.; Pvt., F.A., W.W. I; Yale Alumni Bd.; m Oct. 20, '23; Elisabeth Allen; s. C.P.L., Jr., ('50); d. Elisabeth L. (*Whittelsey*).

•LUCKEY, 1950, CHARLES PINCKNEY, B.D.—(*Ministry*)—Born Dec. 29, 1924, Bronxville, N.Y.; died Jan. 20, 1975, Middlebury, Conn.; Minister Middlebury Congregational Church, Middlebury, Conn. 06762; Sgt., Army, '43-'46; m. Aug. 28, 1948, Elaine Cruikshank; s. Peter Allen, Charles Dana, Todd William

°LUDDEN, 1850, WILLIAM—(*Music*)—Born May 19, 1823, Williamsburg, Mass.; died Jan. 2, 1912, Brooklyn, N.Y.

LUFKIN, 1951, CHAUNCEY F.—(*Industrial*)—Born May 28, 1927, New York, N.Y.; Pres., Hytec, Inc., 711 Airdustrial Way, Olympia, Wash. 98502; res. 19 Country Club Drive, Tacoma, Wash. 98501; m. July 11, '53, Elizabeth Heard; s. Chauncey, Andrew; d. Wende, Elizabeth.

LUFKIN, 1953, DAN WENDE, M.B.A., D.Sc.—(*Finance*)—Born Sept. 17, 1931 New York, N.Y.; Private venture capital, bus. 645 Madison Ave., Suite 2200 New York, N.Y. 10022; res. Wells Hill Rd.; Lakeville, Conn. 06039; Commissioner of Environmental Protection, State of Conn., '71-'73; Author, "Many Sovereign States"; 1st Lieut., USMC, '53-'55; m. Jan. 14, '61, Elise Grace Blagden; d. Elise Grace Blagden, Margaret Wende, Alison Wende, Abigail Flavilla.

°LUFKIN, 1925, ELGOOD MOULTON—(*Finance*)—Born June 15, 1902, Buffalo, N.Y.; died Oct. 2, 1957, Norfolk, Conn.; Deputy District Chief and Acting District Chief, N.Y. Ordnance District, '41-'45; Mbr., Advisory Bd., N.Y. Ordnance Districts.

LUFKIN, 1949, PETER WENDE, SR.—(*Industry*)—Born March 8, 1925, New York, N.Y.; Pres., Hytec Corp., Airport Industrial Park, Smyrna Tenn. 37167; res. 4310 Signal Hill Drive, Nashville, Tenn. 37205; S/Sgt., Army Air Force, '43-'46; m. Feb. 2, '57, Blakeslee F. Cook; s. Peter W., Jr., H. Christopher, Timothy B.

°LUMAN, 1925, RICHARD JOHN—(*Government*)—Born April 26, 1900, Rock Springs, Wyo.; died April 25, 1973, Houston, Tx.; Chmn., Wyoming Public Service Comm., Supreme Court & Library Bldg., Cheyenne, Wyo, 82001; Rep., Wyo. State Legislature, '37-'45; Speaker of the House, '43-'45; Wyo. State Senator, '45-'49; Mbr., Wyo. Public Service Com., '53-'59, and Chmn., '63-; Wyo. Deputy State Treas., '59-'63; m. Oct. 24, '32, Louise Bailey; s. Richard Edgar; d. Monteith Louise (*Miller*).

LUMPKIN, 1957, RICHARD ANTHONY, M.B.A.—(*Business*)—Born Feb. 16, 1935, Chicago, Ill.; V.P. & Treas., Illinois Consolidated Telephone Co., 121 South 17th St., Mattoon, Ill. 61938; res. 5 Lafayette Ave., Mattoon, Ill. 61938; Dir., First Natl. Bank, Mattoon; 1st Lieut., AUS '57-'59; m. March 14, '64, Gail Gawthrop; s. Benjamin Iverson; d. Elizabeth Arabella.

LUNT, 1921, STORER BOARDMAN, LL.D.—(*Publishing retired*) —Born July 8, 1897, Portland, Maine; res. 19 Washington Square North, New York, N.Y. 10011; formerly Chmn., W. W. Norton, Inc., New York; Yale Bureau of Appointments, (in charge of Student Employment) '21-'22; Mbr., Governing Bd., Yale Univ. Press, '55-'65; Pres., Am. Book Publishers Council, '62-'65; Chmn., International Publishers Assn., '65-'69; Book Publishing Rep., U.S. Natl. Com. of UNESCO, '63-'69; 2d Lieut., F.A., '17-'18; m. Oct. 21, '67, Margaret Knox McElderry.

LUSK, 1960, Peter A., M.B.A.—(*Finance*)—Born March 17, 1938, Portchester, N.Y.; Chmn. of Bd., Federal Loan Corp., 9300 Wilshire Blvd., Beverly Hills, Calif. 90212; res. 2119 Sunset Crest Drive, Los Angeles, Calif. 90046; m. June 18, '60, Katherine Bridget Morrissy; s. Peter Anthony, Jr.; d. Anne Louise, Katherine Mary.

LUSK, 1924, WILLIAM THOMPSON—(*Business retired*)—Born March 30, 1901, New York, N.Y.; Dir., Tiffany & Co., 727 Fifth Ave., New York, N.Y. 10022 (V.P., '32-'52, Exec. V.P., '52-'55, Pres., '55-'67, Dir., '30-); res. 3 Wahackme Lane, New Canaan, Conn. 06840; Mbr. of Council, Yale Club of N.Y.C., '44-'50; Exec. Com., Jewelers Vigilance Com., '60-'67; Bd. of Gov., Gemological Institute of America, '62-'68; New Canaan Country School: Trustee, '43-'56, V.P., '44-'46, Pres., '46-'48; m. June 25, '31, Katharine Adams; s. William Thompson, Jr., (x'56), Hunt Adams, ('59), Charles Tiffany, (x'63).

LUTZ, 1972, KARL EVAN, J.D.—(*Law*)—Born Dec. 18, 1949, Dearborn, Mich.; Atty. Assoc., Kirkland & Ellis, 200 East Randolph, Suite 5700, Chicago, Ill. 60601; res. 547 Hill Terrace, Winnetka, Ill. 60093; American Bar Assn., '75-; Chicago Bar Assn., '75-; m. June 30, '72, Jeanne Daniel.

LYDGATE, 1931, WILLIAM A.—(*Business*)—Born Nov. 18, 1909, Hawaii; Chmn., Earl Newsom & Co., Inc., 10 E. 53rd St., New York, N.Y. 10022; res. 425 Wynnewood Rd., Pelham Manor, N.Y. 10803; V.P., Bd. Mbr., Yale-in-China, '60-'70; Chmn., Volunteer Com., Westchester/Sound Area, The Campaign for Yale, '76-; Bd. Mbr., Foreign Policy Assn., Chmn., '66-'72; Trustee, Mbr. Exec. Com., Roosevelt Hosp., '72-; Dir., Mbr. Exec. Com., N.Y. Community Blood Council, '68-; m. 1931, Virginia E. Smith (divorced 1939); m. 1940, Constance

Barry; s. John E., ('59), Barry, ('63), William A., Jr., ('68), Timothy E., '73); d. Sarah Jean.

°LYMAN, 1837, CHESTER SMITH, M.A.—(*Education*)—Born Jan. 13, 1814, Manchester, Conn.; died Jan. 29, 1890, New Haven, Conn. Prof. of industrial mechanics and physics, Yale University, 1859-1871, of astronomy and physics, 1871-1884, and of astronomy, 1884-1889; Prof. emeritus, 1889-1890.

°LYMAN, 1882, CHESTER WOLCOTT, M.A.—(*Industrial*)—Born May 25, 1861, New Haven, Conn.; died April 7, 1926, Boston, Mass., Chmn., Red Cross and War Work committees, World War I.

LYNCH, 1964, DENNIS P., M.B.A.—(*Finance*)—Born Sept. 13, 1941, Jersey City, N.J.; Institutional Stock Broker; res. 28 S. Woodland Drive, Fair Haven, N.J. 07701; m. Aug. 21, '65, Ann Marie Blades; s. Dennis P., Jr.; d. Kathleen.

LYNCH, 1945, R. VINCENT—(*Business*)—Born Nov. 14, 1922, New York, N.Y.; Gen. Ptnr., Lynch, Aberg & Co., 2020 Davis Bldg., Dallas, Texas 75202; m. Apr. 3, '48, Rose Peabody Parsons; m. Oct. 4, '58, Frances Nell Orand; s. Russell Vincent, Jr., Alexander Parsons, Charles Bruton, Peter Francis, Joseph Barrett Orand; d. Rose Peabody.

°LYNDE, 1838, CHARLES JAMES, M.A.—(*Law*)—Born April 7, 1816, Shelburne, N.Y.; died Aug. 9, 1841, Lake Erie.

°LYON, 1900, GEORGE ARMSTRONG, LL.B.—(*Finance*)—Born Oct. 7, 1879, Erie, Pa.; died Jan. 16, 1954, Providence, R.I.; Capt., Inf., World War I (AEF); served with Boston Information Center, AAF, World War II.

M

°McANDREW, 1913, ALEXANDER—died July 19, 1971, Ross, Calif.

McBRIDE, 1964, JONATHAN EVANS—(*Finance*)—Born June 16, 1942, Washington, D.C.; Management Consultant, Executive Search, Simmons Associates, 1054 31st St. N.W., Washington, D.C. 20007; res. 2316 20th Street N.W., Washington, D.C. 20009; Alumni Fund Agt., '69-; 5th Reunion Special Gifts Com., '69; Chmn., 10th Reunion Special Gifts Com., '74; Mbr., Bd. of Dir. Yale Alumni Fund, '75-; Asst. Chmn., Yale Alumni

Fund, '76-; Account Exec., Merrill Lynch, Pierce, Fenner & Smith, Washington, '68-'72; V.P., Lionel D. Edie & Co., Investment Counsel, New York, '72-'76; Lieut., USNR, June '64-June '68; Navy Unit Commendation, Vietnam Service Medal, Republic of Vietnam Campaign Medal; m. Sept. 5, '70, Emilie E. Dean.

°McBRIDE, 1882, WILBER—(*Law*)—Born June 6, 1860, Goshen, N.Y.; died Feb. 5, 1933, Goshen.

°McCALL, 1840, HENRY, M.A.—(*Farming*)—Born April 9, 1821, Donaldsonville, La.; died Nov. 12, 1886, Philadelphia, Pa.

McCALLUM, 1924, REVELL, M.A.—(*Industrial retired*)—Born Dec. 28, 1901, Northampton, Mass.; res. 3927 E. Calle de Jardin, Tucson, Ariz. 85711; m. Dec. 28, '27, Esta Wilman; s. Douglas; d. Joanne.

McCALLUM, 1968, ROBERT DAVIS, JR., J.D. B.A. (1st Class), Christ Church, Oxford—(*Law*)—Born Jan. 30, 1946, Memphis, Tenn.; Attny. c/o Alston, Miller & Gaines, 1200 Citizens & Southern National Bank Bldg., Atlanta, Ga. 30303; res. 754 Woodley Drive, N.W., Atlanta, Ga. 30318; Treas., Class of 1968, '68-'76; Alumni Bd., '68-'76; m. June 28, '69, Mary Rankin Weems; s. Robert D., III.

McCARTHY, 1960, CHARLES EDWARD, M.A.T.—(*Education*)—Born March 15, 1938, Hartford, Conn.; Educational Consultant, bus. & res. 1152 Farmington Ave., West Hartford, Conn. 06107; Asst. Dir., Com. on Enrollment & Scholarships, July, '60-July '62; Asst. Dir. of Admissions, July '60-July '67; Dean, Timothy Dwight Coll., Sept. '63-June '64; Dir., Cooperative Program for Educational Opportunity (Based at Yale & Univ. of Chicago), '62-'71; Founder & Dir., The Transitional Year Program (based at Yale), '66-'68; Consultant, U.S. Office of Education, Dept. of H.E.W., '66-'67; Sr. Counselor, Univ. of Chicago Laboratory Schools, '71-'72; Acting Dir. of Admissions, Trinity Coll., Hartford, June '72-Sept. '72; Sr. Counselor, The American School in London, England, '72-'74; Educational Consultant, '74-; m. Aug. 27, '60, Betsy Foster Peck (dec. July 23, '68); m. June 28, '73, Martha Reid Paradis; s. Timothy Charles, Michael Ryan.

°McCLINTOCK, 1891, NORMAN—(*Education*)—Born June 13, 1868, Pittsburgh, Pa.; died Feb. 26, 1938, Orlando, Fla. Prof. in the Dept. of Zoology, Univ. of Pittsburgh, '25-'30; on faculty, Rutgers Univ., '32-'36.

*McCLUNG, 1892, LEE, M.A.—(*Finance*)—Born Mar. 26, 1870, Knoxville, Tenn.; died Dec. 19, 1914, London, England. Treas., Yale Univ., '04-'09. Treasurer of the U.S., '09-'12.

*McCLURE, 1912 ARCHIBALD, B.D.—(*Ministry*)—Born Dec. 30, 1890, Lake Forest, Ill.; died April 8, 1931, South Bend, Ind.

*McCLURE, 1870, JAMES GORE KING, D.D., LL.D.—(*Education*)—Born Nov. 24, 1848, Albany, N.Y.; died Jan. 18, 1932, Lake Forest, Ill. Pres., Lake Forest Univ., 1897-1901, and of McCormick Theological Seminary, '05-'28; Pres. emeritus, '28-'32.

*McCLURE, 1901, JAMES GORE KING, JR., M.A., Sc.D., LL.D.—(*Farming*)—Born Oct. 28, 1884, Lake Forest, Ill.; died June 17, 1956, Asheville, N.C.; Mbr., N.C. Bd. of Conservation and Development, '25-'33; Mbr., Natl. Comm. for Public Schools; Pres., Am. Forestry Assn.

*McCORMICK, 1919, ALEXANDER AGNEW, JR.—(*Student*)—Born Dec. 15, 1897, Chicago, Ill.; died Sept. 24, 1918, near Calais, France. Lieut. (j.g.), Naval Air Service, World War I (Foreign service).

*McCORMICK, 1852, HENRY, M.A.—(*Industrial*)—Born Mar. 10, 1831, Harrisburg, Pa.; died July 14, 1900, Rosegarten, Pa. Col., Union Army, Civil War.

McCRARY, 1932, JOHN REAGAN—(*Business*)— Born Oct. 13, 1910, Calvert, Texas; Chmn., Texcomm, Inc., 161 E. 61st St., New York, N.Y. 10021; res. 10 Shelter Rock Rd., Manhasset, Long Island, N.Y.; Commissioner, Bicentennial, N.Y.C., '76; Lieut. Col., USAF, '41-'45; Legion of Merit, Air Medal, Bronze Star; m. 1933, Sarah Brisbane; m. 1945, Jinx Falkenburg; s. Michael Brisbane, John Reagan, Jr., Kevin Jock.

McCULLOUGH, 1955, DAVID G.—(*Literary work*)—Editor, American Heritage Publishing Co., Inc., 551 Fifth Ave., New York, N.Y. 10017; res. Box 148, Music St., West Tisbury, Mass. 02575; m. Dec. 18, '54, Rosalee Ingram Barnes; s. David Gaub, Jr., William Barnes, Geoffrey; d. Melissa Barnes, Doreen Kane.

*McCUTCHEN, 1870, SAMUEL ST. JOHN, LL.B.—(*Law*)—Born Jan. 14, 1849, Williamsburg, N.Y.; died June 4, 1915, Belmar, N.J.

MACDONALD, 1915, RANALD H.—(*Finance retired*)— Born Nov. 24, 1892, Brooklyn, N.Y.; res. 1035 Fifth Ave., New York, N.Y. 10028; Chmn., Yale Alumni Fund, '43-'45; Mbr.,

Yale Alumni Bd., '43-'45; Mbr., Yale Council, Com. on Publication; Asst. Treas., Bankers Trust Co., '18-'26; Ptnr., Dominick & Dominick, '26-'58; Pres. & Dir., Natl. Shares Corp., '48-'58; Trustee, Mbr. Exec. Com., Franklin Savings Bank, '31-'61; Dir., Great Plains Development Co. of Canada; Trustee, Museum of Modern Art, N.Y.C., '50-'52; Gov., Assn. of Stock Exchange Firms, '42-'46, New York Stock Exchange, '44-'50, Natl. Assn. of Investment Companies, '58-'62; Pres., The Bond Club of N.Y., '54-'55; 2d Lieut., USAF, Pilot, '17-'19; m. June 2, '19; Anne Hunter Thompson; s. Ranald H., Jr., ('45); d. Anne (*Thomas*).

MACDONALD, 1972, RICHARD J.—Add. 65 Pergola Rd., Rexdale, Ontario, Canada.

MACDONALD, 1973, STEPHEN J., LL.B. (Queen's Univ., Kingston, Ontario)—Add. 200 Indian Rd., Kingston, Ontario, Canada.

•MCDONNELL, 1911, JOHN VINCENT—(*Industrial*)—Born Dec. 30, 1889, New York City; died May 23, 1926, New York City. Sgt., Inf., World War I.

MCELROY, 1945, B. THOMAS, J.D.—(*Law*)—Born Nov. 22, 1922, Dallas, Texas; Attny. Ptnr., White, McElroy, White, Sides & Rector, 2505 Republic National Bank Tower, Dallas, Texas 75201; res. 4428 Lorraine Ave., Dallas, Texas 75205; Lecturer, SMU School of Law (Texas Procedure), '75-'76; Research Fellow, Southwestern Legal Found., '70-'76; Officer & Dir., Dallas Bar Assn., '66-'69; Mbr., Grievance Com., State Bar of Texas, '68; Committee Sections, A.B.A., '66-'76; Legislative Asst. to Texas Congressman, '50; Asst. Attny Gen. of Texas, '51-'52; V.P., Repub. Men's Club of Dallas Cty., '76; Lieut. (j.g.), USNR, '44-'46; Overseas Citations & other ribbons; m. July 11, '59, Linda Lee Harris; s. Benjamin Thomas, Jr., Andrew Harris; d. Elizabeth Lynn, Leslie Jane.

MCGAUGHEY, 1945, GUY E., JR., J.D.—(*Business*)—Born Jan. 19, 1924, Olney, Ohio; Pres., Mid-City Shopping Center, Bardstown Rd., Louisville, Ky. 40204; m. Dec. 28, '46, Marilyn TerVeer Pilkington; s. Guy Ennis III, Gordon Bruce.

MCGAULEY, 1933, JOHN MICHAEL—(*Insurance*)—Born Sept. 16, 1908, New York, N.Y.; Insurance Broker, L. M. Huppeler Co., Inc., 430 Park Ave., N.Y. 10022; res. New York Athletic Club, 180 Central Park South, New York 10019; Major, Air Corps, June '42-June '46; m. June 7, '43, Ruth Adams (divorced).

°McGEE, 1906, DONALD ASHBROOK—(*Finance*)—Born Dec. 29, 1883, Plainfield, N.J.; died Oct. 26, 1937, Plainfield, N.J. Mbr., Troop D, National Guard of N.J., Mexican Border service, '16; Distr. Dir., War Dept. Comm. of Training Camp Activities, World War I.

McGREGOR, 1956, JACK E., LL.B.—(*Law*)—Born Sept. 22, 1934, Kittanning, Pa.; Exec. V.P., Carey Energy Corp., 825 Third Ave., New York, N.Y. 10022; res. East Middle Patent Rd., R.F.D. #2, Bedford, N.Y. 10506; Attny., Read, Smith, Shaw & McClay (Pittsburgh), '62-'68, (Washington), '70-'71; Cofounder & Pres., Pittsburgh Penguins Hockey Club, '66-'70; Gov., Natl. Hockey League, '67-68; Gen. Counsel, Potomac Electric Power Co., '72-'74, V.P. '74; V.P. & Gen. Counsel, New England Petroleum Corp., '74-'75 (subsidiary of Carey Energy Corp.); Penn. State Senator, '62-'70; U.S. Economic Stabilization Program; Asst. Legal Advisor for Economic Affairs, U.S. Dept. of State, '71, Gen. Counsel, Pay Board, '72; Capt., USMC. '56-'59 (active), '59-'62 (reserve); m. Nov. 23, '55, Carol Dangerfield; s. Douglas Hampton; d. Nancy Dangerfield, Elizabeth Keeble, Heather Muir.

°McHENRY, 1920, JAMES—(*Finance*)—Born Jan. 30, 1899, Baltimore, Md.; died Feb. 17, 1976, Glyndon, Md.; Limited Ptnr., Alex Brown & Sons, 135 E. Baltimore St., Baltimore 21202; W.W. I: 2d Lieut., F.A. U.S. Army; W.W. II: Capt., USMCR; m May 26, '32, Marjorie Ober; d. Joan (*Hoblitzell*), Marjorie (*Bride*).

°McHENRY, 1885, JOHN—(*Finance*)—Born Aug. 29, 1863, Pikesville, Md., died Dec. 17, 1939, Chattolanee, Md.

McINTOSH, 1927, HARRIS—(*Industrial retired*)—Born July 25, 1904, Cayuga, N.Y.; bus. 1022 National Bank Bldg., Toledo, Ohio 43604; res. 29727 East River Rd., Perrysburg, Ohio 43551; formerly Pres., Toledo Scale Co., m. June 24, '39, Elizabeth R. Knight; s. Harris, Jr., ('72), Daniel K., John W.; d. Elizabeth R.

MACK, 1948, RICHARD G.—(*Business*)—Born Aug. 21, 1925, San Francisco, Calif.; Pres., South Pacific Foods, Ltd., Box 3178, Carmel, Calif. 93921; m. July 14, '49, Linn Lithgow Mitchell; m. May 10, '71, Bokara H. Legendre; s. Joshua Gerstle, Jeffrey Lithgow.

McKEE, 1919, ELMORE McNEILL, B.D., M.A., D.D.—(*Ministry retired*)—Born March 28, 1896, Ridgewood, N.J.; res. 82

Avery Heights, Hartford, Conn. 06106; Sec. Class of 1919, 1974-; Asst., St. John's Church, Waterbury, '21-22; Rector, St. Paul's, New Haven, '23-'27; Chaplain, Yale Univ., '27-'31; Rector, Trinity Church, Buffalo, '31-'36; St. George's, N.Y.C., '36-'46; Head of Mission, Am. Friends Service Co., U.S. Zone, Germany, '46-'47; Field Reporter & originator, The People Act project, 20th Century Fund, '50-'51; Dir., same project, Ford Found., '52-'55; Consultant-Lecturer, Peace Corps Training Center for Latin America, Univ. of New Mexico, '63-'64; School Community Co-ordinator for tutorials, Albuquerque Public Schools, '64-'67; Trustee, Taft School, '26-'30; Dir., Post-Graduate Hosp., N.Y.C., '39-'46; Exec. Com., Comm. on Just & Durable Peace, Federal Council of Churches, '40-'43; 1st Lieut., Sanitary Corps., '17-'19; m. 1918, Katharine A. Truslow (dec.); m. 1949, Sona K. Gilkinson (dec.); m. 1962, Jessie C. Beardshear; s. Elmore McNeill, Jr., ('44).

*McKEE, 1895, LANIER, LL.B.—(*Law*)—Born Mar. 1, 1872, Washington, D.C.; died Jan. 5, 1943, Lawrence, N.Y.

*McKEE, 1896, McKEE DUNN—(*Insurance*)—Born Oct. 21, 1873, Washington, D.C.; died Feb. 3, 1910, Washington, D.C., 2d Lieut., Signal Corps, Spanish-American War.

MACKENZIE, 1975, KENNETH M.—(*Student*)—Born Jan. 20, 1952, Sault Ste. Marie, Ontario, Canada; res. 78 Birch, Sault Ste. Marie, Ontario, Canada, P6B 2J6.

*McKINNEY, 1868, WILLIAM ALLISON, LL.B. M.A.—(*Law*)—Born Aug. 30, 1845, Cooperstown, N.Y.; died Jan. 27, 1923, Binghamton, N.Y. Served in Union Army, Civil War.

*McLALLEN, 1847, PHILEMON FERDINAND—(*Law*)—Born Aug. 20, 1823, Trumansburg, N.Y.; died June 4, 1853, St. Louis, Mo.

McLANE, 1953, JAMES P.—(*Business*)—Born Sept. 13, 1930, Pittsburgh, Pa.; formerly Advertising-Sales, Life Magazine, Minneapolis; res. 2 C Brackett Place, Marblehead, Mass. 01945; m. Jan. 13, '54, Barbara Chapin Hamby; s. James Price III, Peter Chapin, Matthew P.; d. Susan Marriam.

McLAREN, 1972, MICHAEL G., J.D.—(*Law*)—Born Jan. 29, 1950, Joliet, Ill.; Attny., 100 N. Main St., Memphis, Tenn.; res. 4782 Raleigh-LaGrange Rd., Memphis, Tenn. 38128; Alumni Fund Agt., '72-'76; Treas., Deer Island Club Corp.; m. Dec. 20, '75, Karen Yandell.

°McLAUGHLIN, 1883, EDWARD TOMPKINS—(*Education*)—Born May 27, 1860, Sharon, Conn.; died July 25, 1893, New Haven, Conn. Asst. Prof. of English, Yale Univ., 1890-1893, and Prof. of rhetoric and belles-lettres, 1893.

°MACLEAN, 1864, CHARLES FRASER, Ph.D., J.U.D.—(*Law*)—Born Nov. 21, 1841, New Hartford, N.Y.; died Mar. 20, 1924 New York City. Justice, N.Y. Supreme Court, 1895-1909.

°MACLEAN, 1943, JOHN HELM—Born July 31, 1921, Haverford, Pa.; died July 21, 1944, in France, 1st Lieut., Armored Force, AUS, World War II.

MACLEAN, 1961, KENNETH, JR. M.Arch.—(*Architecture*)—Born Apr. 22, 1939, Toronto, Canada; Ptnr., Amsler, Hagenah, MacLean Architects, Inc., 65 Long Wharf, Boston, Mass. 02110; res. 14 Bradford Rd., Hingham, Mass. 02043; S/Sgt E6, Army Natl. Guard, '64-'70; m. May 6, '67, Rebecca Barbour Cooke; d. Rebecca Woolsey, Elizabeth Thomson, Mary Pickett.

McLEAN, 1950, ROBERT, III, M.A.—(*Business*)—Born May 23, 1928, Baltimore, Md.; V.P., Cushman & Wakefield of Penn., Inc. (Real Estate), Suite 2210, 2 Girard Plaza, Philadelphia, Pa. 19119; res. 7311 Elbow Lane, Philadelphia, Pa.19119; Yale Fund Drive & Yale Enrollment Com., Philadelphia Region; Gen. Chmn., Greater Germantown Alliance, '73-'75; V.P. of Admin., Philadelphia 1976 Bicentennial Corp., '68-'70; S/Sgt, USMC, '53-'56; m. May 21, '60, Elizabeth Madison Lewis; s. Alexander, John; d. Elizabeth, Mary.

MACLEISH, 1915, ARCHIBALD, LL.B., Litt.D., LL.D. (*Literary work, Education retired*)—Born May 7, 1892, Glencoe, Ill.; res. Conway, Mass. 01341; Yale University Council; Writer, Poet & Playwright; Asst. Sec. of State, '44-'45; Librarian of Congress, '39-'44; Bolyston Prof., Harvard, '49-'62; Pres., Am. Academy of Arts & Letters, '53-'56; Capt., AEF, F.A., '17-'18; m. June 21, '16, Ada Hitchcock; s. Kenneth, Brewster Hitchcock (dec.), Wililam Hitchcock, ('50); d. Mary Hillard.

MACLEISH, 1950, WILLIAM H.—(*Education*)—Born Aug. 7, 1928, Boston, Mass.; Editor, Oceanus Magazine, Woods Hole Oceanographic Institution, Woods Hole, Mass. 02543; res. 14 Cumloden Drive, Falmouth, Mass. 02540; Special Projects Editor, Vision Magazine, '58-'64; Dir., Cornell Latin American Year, '64-'66; Exec. Dir., Center for Inter-American Rela-

tions, '66-'68; Special Asst. to the Pres., Yale, '68-'70; 1st Lieut., AUS, '51-'54 m. Sept. 19, '53, Margaret Moll; d. Morellen, Meg.

*MacLELLAN, 1858, George Boardman, M.A.—(*Education*)—Born July 27, 1833, King and Queen City, Va., died Oct. 30, 1897, Jacksonville, Fla. Asst. engineer, Confederate Army, Civil War.

*McLELLAN, 1835, William—(*Law*)—Born May 8, 1815, Greencastle, Pa.; died Oct. 21, 1879, Chambersburg, Pa.

*McLEMORE, 1937, John Briggs, Jr. LL.B.—(*Business*)—Born Sept. 29, 1914, Nashville, Tenn.; Sales Rep., Tennessee Mirror Co., 2024 West End Ave., Nashville, Tenn. 37203; res. same; Attny., Curtis, Mallet, Prevost, Mesle, New York, '40-'42; Major-Assimilated, United States Office of War Information, '42-'46; m. June 6, '53, Barbara Hatch (dec.)

*McMILLAN, 1888, James Howard—(*Law*)—Born Sept. 17, 1866, Detroit, Mich.; died May 9, 1902. Colorado Springs, Colo. Major, Spanish-American War.

*McMILLAN, 1894, Philip Hamilton, LL.B.—(*Law and business*)—Born Dec. 28, 1872, Detroit, Mich.; died Oct. 4, 1919, Grosse Pointe Farms, Mich.

*McMILLAN, 1884, William Charles—(*Industrial*)—Born Mar. 1, 1861, Detroit, Mich.; died Feb. 21, 1907, Detroit.

McNAMARA, 1951, Thomas Philip—(*Industrial*)—Born Dec. 16, 1929, New Haven, Conn.; Manufacturing Mgr., Container Machinery Dept., Metal Products Div., Koppers Co., Inc., Glen Arm Rd., Glen Arm, Md. 21057; res. 13611 Brookline Rd., Baldwin, Md. 21013; m. July 17, '54, Pearl Podlich; s. Thomas Philip, Jr., Robert William; d. Sandra Ann.

McPHEE, 1973, Stephen Joseph—(*Student*)— Born Aug. 31, 1951, Boston, Mass.; res. 87 Walnut St., Braintree, Mass. 02184; Maryland Yale Alumni Schools Com., '75-; Student Johns Hopkins Univ. School of Medicine, Class of 1977; Johns Hopkins Hosp.: Medical Intern, '76-77, Medical Resident, '77-'78.

*McQUAID, 1889, William Adolphe, LL.B.—(*Law*)—Born Oct. 3, 1865, Webster, Mass.; died June 15, 1951, New York City; First Deputy Attny. Gen., N.Y., '11-'14; Asst. Distr. Attny., New York City, '18-'27; Class Sec., '89-'95.

°MACVEAGH, 1862, FRANKLIN, LL.B., LL.D.—(*Business*)—Born Nov. 22, 1837, West Chester, Pa.; died July 6, 1934, Chicago, Ill. Sec. of the Treasury of the U.S. '09-'13. Trustee, Univ. of Chicago, '01-'13. Chmn., First Int. Congress of Social Insurance, '14.

°MACWHORTER, 1842, ALEXANDER—(*Ministry*)—Born Jan. 1, 1822, Newark, N.J.; died June 28, 1880, New Haven, Conn. Prof. of metaphysics and English literature, Troy Univ., 1859-1860.

MADDEN, 1969, B. PATRICK, M.B.A.—(*Finance*)—Born May 7, 1947, Steubenville, Ohio; Asst. V.P. & Corporate Banking Officer, First New Haven Natl. Bank, 1 Church St., New Haven, Conn. 06502; res. 7 Sanford Rd., Woodbridge, Conn. 06525; Teacher & Football Coach, Walpole, Mass., High School, '69-'70; Lending Officer, Woodbridge Bank & Trust Co., '71-'72; First New Haven Natl. Bank: New Business Development Rep., '73-'74, Mortgage Officer & Asst. V.P., '74-'75; Mbr., Yale Club of New Haven; New Haven Gridiron Club; United Way Volunteer; Albertus Magnus Coll., New Haven, 50th Anniversary Gift Com.; Dir., Amity-Woodbridge Historical Soc., '75-'76; Co-Chmn., Woodbridge Heart Assn. Fund Drive, '75; Pres., Bethany-Orange-Woodbridge Jaycees, '76-; Alternate, Woodbridge Repub. Town Com.; Sgt., AUS, Conn. Army Natl. Guard, '70-'76; Bd. of Dir., Deer Island Corp., '74-'76; m. Aug. 16, '69, Deborah Russell Whitlock.

MADDEN, 1941, JOHN BECKWITH, M.B.A.—(*Finance*)—Born Jan. 22, 1919, Brooklyn, N.Y.; Managing Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 218 Columbia Heights, Brooklyn, N.Y. 11201; Successor Trustee, Yale, Nov. 8, '75-; Brown Brothers Harriman & Co.: '46, Ptnr., '55, Managing Ptnr., '69-; Capt., AUS, '41-'45 (active), '46-'52 (Reserves); Dir., Treas., RTA, '69-'76; m. June 18, '50, Mary Audrey Ritter; s. John B., Jr., ('76), Peter F.; d. Nancy F., ('73).

°MAFFITT, 1899, THOMAS SKINNER—(*Industrial*)—Born Mar. 6, 1876, St. Louis, Mo.; died Aug. 16, 1940, Estes Park, Colo. Capt. Military Intelligence Div., World War I.

°MAGEE, 1899, JAMES MCDEVITT, LL.B.—(*Law*)—Born April 5, 1877, Pittsburgh, Pa., died April 16, 1949, Pittsburgh, Pa. Mbr. of Congress, '23-'27. Capt., Air Service, World War I.

°MAGEE, 1906, JOHN GILLESPIE, B.D.—(*Ministry*)—Born Oct. 10, 1884, Pittsburgh, Pa.; died Sept. 9, 1953, Pittsburgh. Chmn., Int. Red Cross Com., Nanking, China, World War II; Minister to Episc. Students at Yale, and Assoc. Fellow, Jonathan Edwards Coll., '46-'53; a Founder and Vice-Pres., Yale Hope Mission.

°MAGRUDER, 1856, BENJAMIN DRAKE, LL.D.—(*Law*)—Born Sept. 27, 1838, Magnolia Springs, Miss.; died April 21, 1910, Chicago, Ill. Justice, Ill. Supreme Court, 1885-1906 (chief justice, 1891-1900).

°MALLON, 1885, GUY WARD, LL.B.—(*Law*)—Born April 28, 1864, Cincinnati, Ohio; died Dec. 23, 1933, Cincinnati, Ohio. Mbr., Ohio State Leg., 1890-1891. Mbr., Cincinnati City Council, 1906-1908, and sec., City Charter Committee, '24-'32. Trustee of Ohio State Univ., '03-'19 and of Berea Coll., 1896-1933, (Vice-Pres., '32-'33).

MALLON, 1917, HENRY NEIL—(*Industrial retired*)—Born Jan. 11, 1895, Cincinnati, Ohio; formerly Chmn. & Chief Exec. Officer, Dresser Industries, Inc. Dallas; res. 3800 Turtle Creek Blvd., Dallas, Texas. 75219; m. June 14, '63, Anne Wrightson; ss. Stephen A. Thayer, Frank Thayer; sd. Elise Thayer.

MALLON, 1919, JOHN HOWARD—(*Industry retired*)—Born Jan. 10, 1896, Cincinnati, Ohio; res. 800 S. 4th St., Apt. 705, Louisville, Ky. 40203; formerly Senior V.P., Louisville Cement Co.; Chmn.: Louisville Fund for the Arts Campaign, '52, Louisville Community Chest, '60; Dir., Louisville Water Co., '59-'64, '70 '77; Social Services Advisory Com. to Kentucky Dept. of Economic Security, '64-'65; 1st. Lieut., 151st F.A., 42d Div., AEF, Apr. '17-May '19; m. June 16, '21, Eleanor Coward; s. John C., ('44), Thomas R., ('45).

°MALLON, 1945W, THOMAS RIDGWAY—(*Business*)—Born June 19, 1923, Louisville, Ky.; died Jan. 7, 1970; res. 9 Meadow Rd., Baltimore, Md. 21212; V.P., Gen. Mgr., Materials Div., Arundel Corp., Baltimore, Md.; Ensign, USNR, '43-'46; m. Oct. 18, '47, Patricia Bohmer; s. Neille Bohmer, Leslie Peter; d. Patricia Gay (*Frank*), Karen Ridgway.

MALLORY, 1928, BARTON LEE, JR.—(*Business*)—Born Oct. 1, 1905, Memphis, Tenn.; Pres., Memphis Compress & Storage Co., P.O. Box 9436, 2350 Florida St., Memphis, Tenn. 38109; res. 4255 Gwynne Rd., Memphis, Tenn. 38117; m. June 23,

'33, Agnes A. Howell; m. June 5, '74, Gwenllian Jones; s. Barton Lee, III, ('61), Irwin Howell, ('66).

*MALLORY, 1924, WILLIAM NEELY—(*Industrial*)— Born Nov. 20, 1901, Memphis, Tenn.; died Feb. 19, 1945, in Italy. Dir., Southwestern Coll., '37-'45 and Treas., '38-'45. Major, USAAF, World War II.

MALLOY, 1956, TERRENCE R., M.D.—(*Medicine*)—Born May 27, 1934, Philadelphia, Pa.; Surgeon, res. 1283 Clubhouse Rd., Gladwyne, Pa. 19035; m. Feb. 28, '70, Michele Munley.

*MANICE, 1851, WILLIAM DEFOREST, M.A.—(*Law*)—Born July 11, 1830, New York City; died Sept. 6, 1903, Tuxedo Park, N.Y.

*MANROSS, 1850, NEWTON SPAULDING, Ph.D.—(*Science*)—Born June 20, 1825, Bristol, Conn.; died Sept. 17, 1862, Antietam, Md. Prof. of chemistry, Amherst Coll., 1861-1862. Capt., Union Army, Civil War.

*MANSFIELD, 1871, HOWARD, LL.B., M.A.—(*Law*)—Born July 2, 1849, Hamden, Conn.; died Aug. 14, 1938, Seal Harbor, Me., Treas., Metropolitan Museum of Art, '09-'29. Chmn., Advisory Bd. on Compulsory Service, World War I.

MANVILLE, 1929, HIRAM EDWARD, JR., LL.D.—(*Industrial retired*)—Born Feb. 14, 1906, New York, N.Y.; formerly Dir., Johns-Manville Corp.; res. 1665 Wendy Way, Reno, Nev. 89509; Trustee: Judge Baker Guidance Center, '53-; Hiram Edward Manville Found., '45-, Mzuti Safari Found., '72-'75; Pres.: United Way of Washoe Cty., '68-'70, Nevada Area Council, B.S.A., '68-'73 (Distinguished Eagle Scout, '72); Chmn., Advisory Bd., Univ. of Nevada Medical School, '71-; Capt. USAF, Aug. '41-Aug. '45; m. June 11, '29, Ethel Schniewind; m. Oct. 25, '59, Doris Hawn; s. Hiram Edward, III; d. Ethel (*Woolverton*), Marie H. (*deLaire*)

*MARCH, 1840, DANIEL, M.A., D.D.—(*Ministry*)—Born July 21, 1816, Millbury, Mass.; died Mar. 2, 1909, Woburn, Mass.

*MARMADUKE, 1852, VINCENT—(*Literary work*)—Born April 14, 1831, Arrow Rock, Mo.; died Mar. 25, 1904, Marshall, Mo. Mbr., Mo. State Legislature, 1882-1884. Col., Confederate Army, Civil War.

MARSH, 1963, LEE, J.D.—(*Law*)—Administrator of the Illinois Appellate Court, 3000 Civic Center, Chicago, Ill. 60602; res. 1846 Hudson, Chicago, Ill. 60614.

°MARSHALL, 1953, John Birnie—(*Industrial*)—Born Mar. 29, 1930, Bondi, New South Wales, Australia; died Jan. 30, '57, Australia.

°MARSHALL, 1833, Samuel Davies—(*Law and literary work*)—Born Oct. 8, 1812, Knox Cnty., Ill.; died April 12, 1854, Shawneetown, Ill. Mbr., Ill. State Legislature. Major, Mexican War.

°MARTIN, 1893, George Greene—(*Communications*)—Born Feb. 22, 1871, New Orleans, La.; died Feb. 24, 1907, St. Louis, Mo.

°MARTIN, 1836, John Griffith, LL.B.—(*Law*)—Born Jan. 10, 1817, Paris, Ky.; died Aug. 27, 1847, Paris.

°MARVIN, 1836, George Lockwood—(*Law*)—Born April 29, 1810, Clinton, N.Y.; died Oct. 31, 1882, Buffalo, N.Y.

°MARVIN, 1876, Joseph Howard, LL.B.—(*Law*)—Born Mar. 17, 1853, Brooklyn, N.Y.; died Aug. 26, 1887, New York City.

°MASON, 1871, Alfred Bishop, M.A.—(*Business*)—Born Feb. 23, 1851, Bridgeport, Conn.; died Jan. 25, 1933, Florence, Italy.

°MASON, 1870, Henry Burrall, LL.B.—(*Law*)—Born Dec. 20, 1848, Bridgeport, Conn.; died Feb. 20, 1932, Chicago, Ill.

°MATHER, 1833, Frederick Ellsworth, M.A.—(*Law*)—Born May 23, 1809, Windsor, Conn.; died Nov. 9, 1900, New York City. Mbr., N.Y. State Legislature, 1845.

°MATHEWS, 1842, Albert, M.A.—(*Law and literary work*)—Born Sept. 8, 1820, New York City; died Sept. 9, 1903, Lake Mohonk, N.Y.

MATHEWS, 1951, Craig, LL.B., LL.M.—(*Law*)—Born Oct. 19, 1929, Columbus, Ohio; Ptnr., Leva, Hawes, Symington, Martin & Oppenheimer, 815 Connecticut Ave., N.W., Washington, D.C. 20006; res. 5702 Kirkside Drive, Chevy Chase, Md. 20015; A.Y.A. Assembly Delegate, '72-; A.Y.A. Bd. of Gov., '73-'75; Pres., Yale Club of Washington, D.C., '70-'71; Mbr.: Am. Bar Assn., Distr. of Columbia Bar, Am. Soc. of Internatl. Law; Pres., Environmental Law Institute, '72-; 1st Lieut., AUS, '54-'57; m. March 5, '60, Harriett Elizabeth Chutter; s. Scott Chutter; d. Lynne Caie.

MATHIAS, 1955, Philip H.—(*Business*)—Born May 20, 1933, 1933, Middletown, Pa.; Distr. Mgr., Bell Telephone Co. of Pa., 141 Garrett Rd., Upper Darby, Pa 19082; res. 40 Paxon

Hollow Rd., Media, Pa. 19063; m. Aug. 10, '57, Shirley J. Fischer; s. Mark H.; d. Marlia Lynne, Sharon.

*MATTHIESSEN, 1923, FRANCIS OTTO, B. Litt., M.A. Ph.D., Litt.D.—(*Education*)—Born Feb. 19, 1902, Pasadena, Calif.; died April 1, 1950, Boston, Mass.; Cadet, R.A.F., Canada, World War I; Instr., Yale Univ., '27-'29; Bergen Lecturer, Yale, '48.

MATTLIN, 1973, FRED W.—Bus. Ross Hardies, O'Keefe Babcock & Parsons, One IBM Plaza, Suite 3100, Chicago, Ill.; res. 2705 N. Mildred Ave., Chicago, Ill. 60614.

MAYER, 1951, CHARLES THEODORE—(*Industrial*)—Born Feb. 5, 1924, Vienna, Austria; Representative in the U.S. of the Société Générale de Belgique; bus. and res. 4975 Rockwood Pkwy., N.W., Washington, D.C. 20016; Chmn. and Pres., Foreign Policy Discussion Group, Washington, '68-; 1st Lieut., Army, '43-'46, '51-'53; m. May 23, '56, Countess Franziska Starhemberg; s. Peter Georg, Carl Christian; d. Elisabeth Marie, Beatrice Marie.

MAYOR, 1959, MICHAEL B., M.D.—(*Medicine*)—Born Oct. 29, 1937, Bryn Mawr, Pa.; Orthopedic Surgeon, Dartmouth-Hitchcock Medical Center; Ass't Prof. Clinical Surgery, Dartmouth Medical School; bus. Hitchcock Clinic, Hanover, New Hampshire, 03755; res. 24 Occom Ridge, Hanover, N.H. 03755; Sec. New Hampshire Orthopedic Assoc. '73-'75, Pres. '75-'76; m. June 11, 1961, Elizabeth Fenner Rowland; s. Rowland Brook; d. Anna Hyatt, Harriet Sloane, Catherine Elizabeth.

*MEAD, 1871, FREDERICK, M.A.—(*Business*)—Born Sept. 11, 1848, New York City; died Nov. 6, 1918, Greenwich, Conn.

*MEAD, 1919, WINTER—(*Business*)—Born Dec. 18, 1897, St. Paul, Minn.; died Dec. 10, 1952, Morristown, N.J.; Mbr., Bd. of Assessors, Morristown; 2d Lieut., F.A., World War I; Chmn., Civil Defense, Morristown, World War II; Class Agt.; Trustee, Ellen B. Stoeckel Trust (Yale Summer Music and Art School).

MEEK, 1960, JOHN BURGESS—(*Industrial*)—Born Aug. 1, 1938, Huntington, West Virginia; Business Mgr., Virginia Chemical Inc., 3340 West Norfolk Rd., Portsmouth, Va. 23703; res. 7411 Cortlandt Place, Norfolk, Va. 23505; Chmn., Alumni Schools Com., '71-'76; Co-Chmn., Va. Campaign for Yale, '76; Mbr., Am. Institute of Chemical Engineers, '65-; Pres., Norfolk Symphony Assn., '75-'76; Lieut., USN, '61-'65; m. June 17, '61, Sally Ann Cooke; s. John B. III; d. Elizabeth Ashby.

MEHTA, 1976, AJAY SINGH—(*Student*)—Born Feb. 22, 1954, Berne, Switzerland; bus. 12 Teen Murti Lane, New Delhi, India; res. Jeewan Niwas, near Motha Park, Udaipur, Rajasthan, India.

*MELTON, 1924, WILLIAM DAVIS, JR., LL.B.—(*Law*)—Born Mar. 17, 1903, Columbia, S.C.; died Sept. 3, 1962; Asst. Gen. Counsel, Duke Power Co., Charlotte, N.C.; m. '29, Anne Gaillard Ford; m. '41, Martha Lovvorn; d. Anne Ford (*Kimzey*).

*MENTON, 1956, JAMES PAUL—(*Business*)—Born Nov. 6, 1934, Baltimore, Md.; died Jan. 31, 1966; Stewart & Co., Baltimore; Lieut., USMC, '56-'59.

MENTON, 1953, JOHN DENNIS—(*Business*)—Born Jan. 6, 1932, Baltimore, Md.; Dir., Internatl. Marketing, Owens Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659; res. 28683 East River Rd., Perrysburg, Ohio 43551; Sec., Alumni Assn. of Maryland, '56; m. Nov. 3, '59, Eleanor Stinson; s. John Dennis, Jr.; d. Katharine Stinson.

*MERRIAM, 1872, ALEXANDER ROSS, D.D., S.T.D.—(*Ministry*)—Born Jan. 20, 1849, Goshen, N.Y.; died Dec. 26, 1927, Hartford, Conn. Prof. of practical theology and Christian sociology, Hartford Theological Seminary, 1893-1918, and Prof. emeritus, 1918-1927.

*MERRIAM, 1864, GEORGE SPRING, M.A.—(*Literary work*)—Born Jan. 13, 1843, Springfield, Mass.; died Jan. 22, 1914, Springfield.

*MERRIAM, 1867, JAMES FISKE—(*Finance*)—Born May 2, 1845, Springfield, Mass.; died June 28, 1918, Stafford Springs, Conn.

MERRILL, 1929, HENRY RIDDLE—(*Industrial retired*)—Born Nov. 14, 1906, Glens Falls, N.Y.; res. 1431 Hotiyee Ave., Sebring, Fla. 33870; formerly V.P., Norton Co., Troy, N.Y.; Treas., Class of 1929, Yale Co., '29-'74; Alumni Bd., '63-'66; Chmn., Regional Alumni Fund Com., Alumni Assn. of Northeastern N.Y., '58-'62; Assn. Pres., '64-'66; m. Apr. 27, '39, Lois Anne Myers; s. John, ('67); d. Susan.

*MERRILL, 1865, PAYSON, LL.B., M.A.—(*Law*)—Born Dec. 7, 1842, Stratham, N.H.; died Oct. 15, 1933, New Canaan, Conn. A founder of Yale Alumni Univ. Fund Assn., and chmn., '00-'02. Mbr., Yale Corp., '05-'22. Served in Union Army, Civil War.

*MERRITT, 1912, Henry Newton—(*Law*)—Born April 17, 1888, New York City; died Dec. 13, 1956, Phila., Pa.; Deputy Attny. Gen. of Pa., '31-'35.

*MESICK, 1848, Richard Smith—(*Law*)—Born July 8, 1824, Montgomery City, N.Y.; died May 26, 1893, San Francisco, Calif. Mbr., Calif. State Senate; Distr. judge and judge of the Supreme Court, Nev.

MESSIMER, 1931, Robert L., Jr.—(*Business*)—Born Sept. 5, 1909, New York, N.Y.; Office Mgr., Twombley, Hall & Hirson, 250 Park Ave., New York, N.Y. 10017; res. 28B East Hill Drive, Somers, N.Y. 10589; m. May 26, '34, Dorothy Cowdrey; s. Robert L. III, Nathaniel C.

*METCALF, 1904, Harold Grant—(*Industrial*)—Born Aug. 15, 1882, Springfield, Mass.; died May 19, 1971, Auburn, N.Y.; Hon. Chmn. Bd., Columbian Rope Co., 120 Genesee St., Auburn, N.Y. 13021; Columbian Rope Co.: in mill. '04, Asst. Treas., '05-'21, V.P., '21-'28, Pres., '28-'41, V. Chmn. '41-'48, Chmn. Bd., '48-'52; m. June 1, '14, Maud E. Nye (dec.); d. Nancy (*Green*), Carol (*Hole*), Jean (*Chapman*).

*METCALFE, 1849, Henry Laurens—(*Business*)—Born Sept. 21, 1829, Natchez, Miss.; died April 3, 1912, Natchez. Served in Confederate Army, Civil War.

*METCALFE, 1845, Orrick, M.D.—(*Medicine*)—Born July 17, 1824, near Natchez, Miss.; died Mar. 2, 1898, Natchez. Prof. of languages, Jefferson Coll., 1845-1847, Surgeon, Confederate Army, Civil War.

MEYER, 1954, Russell William, Jr., LL.B.—(*Business*)—Born July 19, 1932, Davenport, Iowa; Chmn. of Bd. & Chief Exec. Officer, Cessna Aircraft Co., P.O. Box 1521, Wichita, Kansas 67201; res. 600 Tara Court, Wichita, Kansas 67206; Trustee, Cleveland Alumni Scholarship Com., '63-'74; Attny, Arter & Hadden, '61-'66; Pres., Grumman American Aviation, '66-'74; Bd. of Dir.: General Aviation Manufacturers Assn., '72-, (Chmn. of Bd., '73-'74), United Way of Wichita & Sedgwick Cty., '76-; USAF, '55-'59, USMCR, '59-'65; m. Aug. 20, '60, Helen Scott Vaughn; s. Russell W., III, Jeffrey V., Christopher M.; d. Carolyn L., Elizabeth E.

MICHEL, 1926, Anthony L., LL.B.—(*Law retired*)—Born Oct. 24, 1905, Simla, India; res. Apt. 5-E, 1420 Sheridan Rd., Wilmette, Ill. 60091; m. Nov. 29, '33, Sarah Prescott; s. Anthony Riker, ('59); d. Eda (*Pallier*), Mary (*Stearns*).

°MIDDLEBROOK, 1915, LOUIS SHELTON, LL.B.—(*Industrial*)—Born Dec. 15, 1892, Bridgeport, Conn.; died Mar. 10, 1927, New York City, 1st Lieut., F.A., World War I (AEF).

MILES, 1937, RICHARD CURTIS—(*Business*)—Born Aug. 7, 1915, New Haven, Conn.; Management Consultant, McKinsey & Co., Inc., 245 Park Ave., New York, N.Y. 10017; res. Ponus Lane, Norwalk, Conn. 06850; Maj., USAF, Jan. '42-'Apr. '46; Bronze Star; m. Dec. 29, '48, Joan Hayes (dec.); s. Richard C., Jr.

°MILES, 1849, JAMES BROWNING, D.D.—(*Ministry*)—Born Aug. 18, 1823, Rutland, Mass.; died Nov. 13, 1875, Worcester, Mass.

°MILLER, 1864, ALANSON DOUGLAS—(*Ministry*)—Born Dec. 13, 1842, Rochester, N.Y.; died Dec. 17, 1929, Glen Ridge, N.J.

MILLER, 1939, ANDREW OTTERSON, LL.B.—(*Law Retired*)—Born Oct. 28, 1917, New York, N.Y.; bus. White & Case, 14 Wall St., New York, N.Y. 10005; res. Ridge Rd., Laurel Hollow, Syosset, N.Y. 11791; Ptnr., White & Case, '56-'74, Assoc., '46-'56; Alumni Fund Agt., '42-'48; Dir., Yale Club of Long Island, '48-'52; Class Sec., '70-'73; Dir.; Distillers Corp.-Seagrams Ltd., '50-'56, Nease Chemical Corp., '62-'72, Lanvin-Charles of the Ritz, Inc., '61-'72, Salant & Salant Inc., '64-'74, Argus Inc., '69-'70, Chicago Pneumatic Tool International, '60-'62; Trustee: St. Barnabas Hosp., N.Y.C., '54-'74, Non-Partisan Civic Assn., Long Island, '54-'64, Police Relief Assn. of Long Island, '56-, Center for Study of Presidency, '64-; Maj., USAAF, June '42-Dec. '46; m. Nov. 7, '42, Jeanne Loring White; s. Jeffrey Clark, ('65), Dwight Ames, ('67), Bradford Putnam; d. Constance Loring, Deborah Brewster.

MILLER, 1939, CHARLES LEWIS, JR.—(*Finance*)—Born Aug. 26, 1916, Little Rock, Ark.; V.P., Connecticut Bank & Trust Co., 1 Constitution Plaza, Hartford, Conn. 06115; res. 56 West Hill Dr., West Hartford, Conn. 06119; Alumni Board, '66-'70; 1st. Lieut., USAAF, Oct. '42-Feb. '46; m. April 4, '42, Virginia Little; s. Thomas C., ('70); d. Elizabeth L.

°MILLER, 1943, DUDLEY LIVINGSTON, LL.B., J.S.D.—(*Law*)—Born April 28, 1921, New York, N.Y.; died Jan. 11, 1969; Sr. Ptnr., Miller, Montgomery & Spalding, N.Y.C., and branch offices in Tokyo Taipei; 2d Lieut., Med. Adminis., AUS, W.W. II; Pres., Yale Glee Club Associates, '58-'63; Alumni Fund Agt. and Dir.; Mayor, Village of Laurel Hollow, N.Y., '51-'59; Prof. Ethics Com., Assn. of Bar of City of N.Y., '61-'64; Sec., Dir.,

Boys Harbor, Inc., '64-; m. June 8, '43, Margery Gerdes; m. Dec. 22, '62, Marilyn Matthews; s. D.L.M., Jr., ('68), Courtlandt G.; d. Alexandra C.

°MILLER, 1842, FRANCIS WILLIAM—(*Law*)—Born May 7, 1820, Cincinnati, Ohio; died Feb. 4, 1883, Cincinnati.

°MILLER, 1870, GEORGE DOUGLAS—(*Industrial*)—Born Nov. 5, 1847, Rochester, N.Y.; died Feb. 9, 1932, Richmond, Va.

°MILLER, 1904, JAMES ELY—(*Finance*)—Born Mar. 24, 1883, New York City; died Mar. 9, 1918, Corbeny, France. Capt. Air Service, World War I (AEF).

MILLER, 1967, JAMES W., Ph.D.—(*Education*)—Born May 7, 1945, Evanston, Ill.; Asst. Prof., Oriental Language Dept., Univ. of Calif., Berkeley, Calif. 94720; res. 162 Panoramic Way, Berkeley, Calif. 94704; m. May 15, '66, Pamela Silin; d. Amanda Sherwood, Emily Snowell, Eliza Whipple.

°MILLER, 1833, PHINEAS TIMOTHY, M.D.—(*Medicine*)—Born May 3, 1810, Middletown, Conn., died Feb. 21, 1850, on shipboard.

MILLER, 1970, THOMAS CLAIBORNE, Ph.D.—(*Banking*)—Born Nov. 20, 1947, Hartford, Conn.; Trust Dept. Riggs National Bank, 800 17th St., N.W. Washington, D.C. 20006; res. 4001 Wakefield Dr., Annandale, Va. 22003, Lecturer in English, Univ. of Calif., Los Angeles, '75-'76; m. Dec. 17, '75, Greta Eisner; ss. Pepi Eisner.

MILLER, 1969, WENTWORTH EARL—(*Student*)—Born Oct. 23, 1947, Oberlin, Ohio; res. c/o Mr. Fred Palm, 220 Benham Rd., Groton, Conn.; Student Yale Law School, Class of 1977; m. July 13, '71, Joy Marie Palm; s. Wentworth III.

°MILLS, 1847, ALFRED—(*Law*)—Born July 24, 1827, Morristown, N.J.; died Dec. 13, 1913, Morristown.

MILLS, 1934, EDWARD ENSIGN—(*Publishing retired*)—Born Nov. 25, 1911, Woodmere, N.Y.; res. Belgo Rd., Lakeville, Conn. 06039; formerly Exec. V.P., David McKay Co., Inc., Book Publishers; Governor, Yale Univ. Press., '59-'70; 1st Lieut., AUS, '43-'46; m. Apr. 19, '41, Julie Chapman; s. Edward Shorney, II, ('65), Peter Westbrook, Jonathan Quimby, ('69); d. Julie Carey.

°MILLS, 1835, ETHELBERT SMITH, M.A.—(*Law*)—Born July 27, 1816, New York City; drowned July 15, 1872, Coney Island, N.Y.

MILLS, 1932, JAMES PAUL—(*Finance retired*)—Born Nov. 7, 1908, Radnor, Pa.; bus. Hickory Tree Farm, Box 125, Middleburg, Va. 22117; res. Box 125, Middleburg, Va. 22117; Investment Banking, Smith, Barney & Co., '32-'41; Managing Dir., Slick Airways, N.Y.C., '46-'49; Dir.: Middleburg Natl. Bank, Allegheny Airlines, '41-'46; Arthritis Found., Dir. & V.P., '50-; Trustee & Chmn., Finance Com., Fauquier Hosp., '52-'70; Trustee, M.C. duPont Found.; Hon. Chmn., Va. Arthritis Found.; V.P.: Va. Thoroughbred Assn., Va. Hereford Breeders Assn.; Lieut. Col., USAF, May '41-July '48; Bronze Star; m. Nov. 27, '35, Alice duPont; s. James Paul, Jr.; d. Mary Chichester (*Smith*), Phyllis Overton (*Wyeth*).

*MITCHELL, 1841, DONALD GRANT, LL.D.—(*Literary work*)—Born April 12, 1822, Norwich, Conn.; died Dec. 15, 1908, New Haven, Conn. U.S. counsel, Venice, 1854.

MITCHELL, 1967, H. COLEMAN, JR.—(*Television*)—Born Jan. 13, 1944, Melrose, Mass.; Television Writer, Producer, Director; Currently Exec. Script Consultant, M.T.M. Enterprises' Television Program "Rhoda", M.T.M. Enterprises, CBS Studio Center, 4024 Radford Ave., Studio City, Calif. 91604; res. 4628 Cerrillos Drive, Woodland Hills, Calif. 91364; m. Sept. 29, '73, Gloria Carbone.

MITCHELL, 1939, HARRY H., LL.B.—(*Business*)—Born Jan. 23, 1917, Hartford, Conn.; Chmn. of Bd. & Chief Exec. Officer, California Life Insurance Co. & California Life Corp., 3255 Wilshire Blvd., Los Angeles, Calif. 90010; res. 1733 Bonita Vista Drive, La Canada, Calif. 91011; Capt., AUS, '43-'46; Cross of Knight, Order of Dannebrog-Denmark; m. Aug. 2, '47, June Elizabeth Merrill; s. Harry Douglas; d. Leslie Ann.

*MITCHELL, 1861, JOHN HANSON, M.A.—(*Law*)—Born June 25, 1842, Linden, Md.; died Nov. 12, 1901, La Plata, Md.

MITINGER, 1953, JOSEPH BERRY, LL.B.—(*Law*)—Born Oct. 27, 1930, Greensburg, Pa.; Lawyer, Ptnr., Mitinger & Mitinger, First National Bank Bldg., Greensburg, Pa. 15601; res. 130 Westmoreland Ave., Greensburg, Pa. 15601; Yale Club of Pittsburgh: Dir. '75-, Enrollment & Scholarship Com., '60-'65; City Solicitor, City of Greensburg, '65-; Pres.: Rotary Club of Greensburg, '66, YMCA of Greensburg, '67-'68, United Way of Central Westmoreland Cty., '74; 1st Lieut., AUS, F.A., June '54-June '56; m. July 25, '59, Suzanne D. Birmingham; d. Elizabeth B., Alice B., Louise P.

°MONTGOMERY, 1898, GRENVILLE DODGE—(*Finance*)—Born Jan. 22, 1876, Council Bluffs, Iowa; died Aug. 29, 1961; Cadet, USN, Spanish-American War; Officer Candidate, F.A., W.W. I; m. Nov. 3, '06, Anne Carrington Allen; d. Elizabeth H. (*Kingsley*).

°MOODY, 1843, THOMAS HUDSON—(*Business*)—Born May 12, 1822, Marion, Ga.; died 185-.

MOORE, 1973, DAVID CLEMENT, Diplome I.E.P. (Paris)—(*Student*)—Born Aug. 19, 1952, Paris, France; res. Apt. 14, 16 Trowbridge St., Cambridge, Mass. 02138, or 77 Rue de Prony, Paris, 75017, France; Trainee, Credit Commercial de France, '73-'75; Graduate Student Sloan School of Management, M.I.T., '76-.

°MOORE, 1883, ELIAKIM HASTINGS, Ph.D., Math.D., Sc.D., LL.D.—(*Education*)—Born Jan. 26, 1862, Marietta, Ohio; died Dec. 30, 1932, Chicago, Ill. Asst. Prof. of mathematics, Northwestern Univ., 1889-1891, and Assoc. Prof., 1891-1892; Prof. of mathematics, Univ. of Chicago, 1892-1931.

°MOORE, 1903, FRANK WOOD, D.D.—(*Ministry*)—Born Aug. 12, 1881, Brooklyn, N.Y.; died June 17, 1947, Auburn, N.Y. Asst. Prof. of homiletics, Auburn Theological Seminary, 1917-1930, and Prof. Emeritus, 1930-1947. Candidate, Chaplain's Corps, World War I.

°MOORE, 1872, GEORGE FOOT, M.A., D.H.L., D.H. Litt., Litt.D., D.D., LL.D.—(*Education*)—Born Oct. 15, 1851, West Chester, Pa.; died May 16, 1931, Cambridge, Mass. Prof. of Hebrew, Andover Theological Seminary, 1883-1902, and Pres., 1899-1901; Prof. of Theology, Harvard Univ., '02-'04, Frothingham Prof. of history of religion, '04-'28, and Prof. emeritus, '28-'31.

MOORE, 1945, JAMES I., LL.B.—(*Law, Real Estate*)—Born Feb. 2, 1923, Brooklyn, N.Y.; Attny. & Realtor, bus. & res. 219 E. 17th St., New York, N.Y. 10003; Class of 1945 fund raising Sgt., AUS, Feb. '43-Nov. '45; m. May 1, '54, Carvel Hidlay; s. James I., Jr., John H.

MOORE, 1936, RICHARD ANTHONY, LL.B.—(*Law*)—Born Jan. 23, 1914, Albany, N.Y.; Attny., 2021 L St. N.W., Washington, D.C. 20036; res. 4917 Rockwood Parkway, N.W., Washington, D.C. 20016; Univ. Council, '67-'71; Chmn., Southern Calif., Yale Program for Arts & Sciences; Special Asst. to the Attorney General, '70-'71; Special Counsel to the President of the U.S.,

'71-'74; Capt., AUS, '42-'46; Legion of Merit; m. March 27, '43, Jane Swift; s. Richard A., Jr., ('67), Matthew S., Joseph F., Samuel S.; d. Kate, '(73).

*MOORE, 1847, WILLIAM EVES, M.A., D.D., LL.D.—(*Ministry*)—Born April 1, 1823, Strasburg, Pa.; died June 5, 1899, Columbus, Ohio. 2d Lieut., Union Army, Civil War.

*MOORHEAD, 1906, WILLIAM SINGER, LL.B.—(*Law*)—Born Aug. 2, 1886, Greensburg, Pa.; died Feb. 12, 1952, Pittsburgh, Pa.; Pres., Pgh. Tuberculosis League; Chmn., U.S. Tax Simplification Bd., '22-'24; 1st Vice-Chmn., Yale Alumni Bd., '33-'34, Chmn., '34-'37; Mbr., Com. on Honorary Degrees; Candidate for Alumni Fellow; Trustee, Yale Scholarship Trust Fund of Pgh.

MOORHEAD, 1945, WILLIAM S., J.D., LL.D.—(*Government*)—Born Apr. 8, 1923, Pittsburgh, Pa.; U.S. Rep., 14th Distr. of Pa., 2467 Rayburn Bldg., Washington D.C., 20515; res. 5226 Westminster Place, Pittsburgh, Pa. 15232; Ptnr., Moorhead & Knox, '52-'70; former Trustee: Pittsburgh Child Guidance Center, Pittsburgh Park & Playground Soc., Tuberculosis League of Pittsburgh, Shadyside Hosp., Negro Emergency Education Drive, Western Penn. Conservancy & Bd. of Visitors of Univ. of Pittsburgh Faculty of Arts & Sciences; Asst. City Solicitor, Pittsburgh, '54-'57; Allegheny Cty. Housing Authority, '56-'58; U.S. Rep., '59-; Lieut. (j.g.), USN, '43-'46; m. Dec. 23, '46, Lucy Galpin; s. William S. III, Perrin G., Stephen G., ('75), James B.

MOREY, 1958, ROBERT WILLIS, JR., M.B.A.—(*Finance*)—Born Aug. 23, 1936, Cleveland, Ohio; Financial Counsel & Entrepreneur, Box I, Tiburon, Calif. 94920; res. 925 Tiburon Blvd., Tiburon, Calif. 94920; Enrollment & Scholarship Com. or Alumni Schools Com.: Central New Jersey, '62-'68, Chmn., San Francisco, '69-'73; Lieut. Cmdr., USNR, '58-'60, active; m. Dec. 14, '68, Maura Burke; s. Robert Willis III; d. Suzanne Elizabeth, Jennifer Langan, Alison Hawkins.

MORGAN, 1971, JAMES W., M.S.—(*Education*)—Born Jan. 6, 1949, Washington, D.C.; Teacher, Special Education & Supportive Services Program Co-ordinator, George Fischer Middle School, Fair St., Carmel, N.Y. 10512; res. 18 Cleveland St., Danbury, Conn. 06810; Alumni Schools Com., '75-'76; Yale Basketball Assn., '71-'76; m. July 25, '70, Mary Louise Frazee; s. Nate James, Robb Joseph.

MORGAN, 1970, ROBERT MACNAIR, M.B.A.—(*Student*)—Born Sept. 26, 1949, Virginia; res. 2816 Gallows Rd., Vienna, Va. 22180; Student, Univ. of Va. Law School, Class of 1977; Articles Editor, Virginia Law Review; 1st Lieut., AUS, '70-'72; U.S. & RVN Parachute Wings, RVN Staff Honor Medal, Cambodian Defense Medal, Bronze Star.

MORGENSTERN, 1976, MARC JAIME—(*Journalism*)—Born Jan. 12, 1955, New Rochelle, N.Y.; Newspaper Reporter, The Trenton Times, 500 Perry St., Trenton, N.J. 08605; res. 38 Humbert St., Princeton, N.J. 08540.

*MORISON, 1888, DAVID WHIPPLE—(*Transportation*)—Born Dec. 19, 1864, St. Paul, Minn.; died Nov. 11, 1941, St. Paul, Minn.

*MORISON, 1891, SAMUEL BENJAMIN—(*Business*)—Born Nov. 25, 1867, St. Paul, Minn.; died June 13, 1920, Redlands, Calif.

*MORISON, 1892, STANFORD NEWEL—(*Farming*)—Born Dec. 31, 1869, St. Paul, Minn.; died Aug. 2, 1947, Yjalon, Chiapas, Mexico.

*MORRIS, 1849, EDWARD DAFYDD, M.A., D.D., LL.D.—(*Ministry*)—Born Oct. 31, 1825, Utica, N.Y.; died Nov. 21, 1915, Columbus, Ohio. Prof. of ecclesiastical history, Lane Theological Seminary, 1868-1898.

*MORRIS, 1854, LUZON, BURRITT, M.A.—(*Law*)—Born April 16, 1827, Newtown, Conn.; died Aug. 22, 1895, New Haven, Conn. Mbr., Conn. State Legislature, 1855, 1856, 1870, 1876, 1880, and 1881, and of Conn. State Senate, 1874. Governor of Conn., 1892-1894.

*MORRIS, 1901, RAY, M.A.—(*Finance*)—Born June 4, 1878, New Haven, Conn.; died May 18, 1961; Pres. Investment Bankers' Assn. of America, '25-'26; W.W. I: Treas. Dept., Chmn. Western Counties, N.Y. State, Liberty Loan Campaign, N.Y. State, Treasury Certif. of Indebtedness; m. Oct. 4, '06, Katherine Grinnell; s. Grinnell ('32), Stephen B. (dec.), John Osgood, ('41); d. Virginia (*Biddle*).

MORSE, 1934, JOHN BOIT—(*Art*)—Born Dec. 28, 1910, San Francisco, Calif.; Artist (painter), res. 526 N. 66th Place, Scottsdale, Ariz. 85253; Jonathan Edwards Fellow; Visiting Critic, Yale Art School; Trustee, San Francisco Art Institute; Artist-in-Residence: American Coll., Lebanon, Le Centre

d'Art, Haiti; Cmdr., USNR, May '41-Sept. '45; m. July 28, '57, Virginia Schwartz; s. Peter, ('57), Richardson, Samuel F.B. III.

°MORSE, 1907, SAMUEL FINLEY BROWN, LL.D.—(*Business*)—Born July 18, 1885, Newton, Mass.; died May 10, 1969; Chmn. Bd., Del Monte Properties Co., Pebble Beach, Calif.; Pres., S.F.B. Morse Development Co., '08-'10; Mgr., Crocker Huffman Land & Water Co., '10-'15; Mgr., Pacific Improvement Co., '15-'62; Pres., Del Monte Properties Co., '19-'68; m. June 29, '07, Anne C. Thompson; m. Feb. 8, '19, Relda Ford; m. Nov. 11, '52, Maurine Church; s. S.F.B.M., Jr. (dec.), John Boit, ('34); d. Nancy (*Walker*), Mary (*Osborne*).

°MORSE, 1890, SIDNEY NELSON—(*Education*)—Born Nov. 29, 1857, North Woodstock, Conn.; died Mar. 7, 1935, Easthampton, Mass.

MORTON, 1954, THRUSTON BALLARD, JR.—(*Radio, TV*)—Born April 6, 1932, Louisville, Ky.; Pres. Orion Broadcasting, Inc., Box 1000, Louisville 40201; res., 441 Lightfoot Rd., Louisville 40207; Pres., Yale Al. Assn. of Ky., '60-'61; Yale Dev. Bd., '67-; U.S. Army, '55-'56; m. Sept. 18, '54, Julie Baquié; s. T.B.M. III, Michael C., Morel B., David M.

MOSELEY, 1943, SPENCER DUMARESQ, M.A. (Hon.)—(*Finance*)—Born Oct. 21, 1919, Evanston, Ill.; Investment Banking, Bacon Whipple & Co., 135 S. LaSalle St., Chicago, Ill. 60603; res. R.R. #2, W. Countyline Rd., Barrington, Ill. 60010; Alumni Board, '58-; Class Agt., '43-; Yale Corp., '66-'72; Pres.: Gatx Corp., '62-'67, Mangood, '67-'69, REA Express, '69-'71; U.S. Olympic Com., '75-; Dir.: Chicago Boy Scouts, '66-'68, McGraw Wildlife Preserve, '66-; Barrington School Bd., '62-'68; Barrington Plan Comm., '75-; Capt., USMC, '43-'45, '50-'52; 7 Air Medals, 2 D.F.C.; m. May 10, '47, Virginia Kleitz; s. Brewster Warren, William Lambert, ('74), Daniel Dumaresq.

MOSELEY, 1945W, THOMAS WILDER—(*Business*)—Born May 16, 1922, Geneva, Ill.; bus. General American Transportation Corp., 1310 Investment Plaza, Cleveland, Ohio 44114; res. 19700 Shelburne Rd., Shaker Heights, Ohio 44118; Chmn., 25th Reunion Class of 1945W; Class Council; Weyerhaeuser Sales Co., '48-'53; Regional Sales Mgr., Gatx, '53-'76; S/Sgt. AUS, Paratroops, 83d Airborne Div., Jan. '43-Sept. '45; Purple Heart; m. July 12, '46, Barbara F. Morley; m. Oct. 6, '73,

Jean Bradley White; s. Thomas W., Jr., George W.; d. Rebecca S., Susan G.

MOSER, 1963, RICHARD EUGENE, M.B.A.—(*Business*)—Born Apr. 13, 1941, Sabetha, Kansas; Mgr., Business Development, Arcata National Corp., 2750 Sand Hill Rd., Menlo Park, Calif. 94025; res. 436 Lotus Lane, Mountain View, Calif. 94043; Alumni Schools Com., Palo Alto Yale Club, '72-'76; Capt., USMC, June '63-July'69; D.F.C., Air Medal (33 times), Vietnamese Cross of Gallantry, Combat Action Medal; m. June 15, '63, Donna Barton; m. Jan. 1, '76, Nancy Fowle; s. Michael Barton, Timothy Dwight, Andrew Glen (dec.); sd. Leigh Maureen Varnadore, Jacqueline Jo Varnadore.

MOYER, 1972, DOUGLAS R.—Add. 1055 Cedar Bend Drive, Ann Arbor, Mich. 48105.

°MULFORD, 1846, DAVID HUMPHREY—(*Business*)—Born Aug. 3, 1823, Steuben, N.Y.; died Jan. 6, 1890.

°MULFORD, 1855, ELISHA, M.A., LL.D.,—(*Ministry and literary work*)—Born Nov. 19, 1833, Montrose, Pa.; died Dec. 9, 1885, Cambridge, Mass.

°MULLINS, 1912, FREDERIC PARSONS—(*Finance*)—Born June 5, 1890, Salem, Ohio; died Nov. 3, 1964; Ptnr., A. E. Masten & Co., Pittsburgh, Pa.; Mbr., Public Utilities Comm., Salem; Pres., School Bd.; Chmn., Community Chest; 1st Lieut., F.A., AEF, W.W. I; m. June 13, '25, Esther Ida Silver; s. William Harold, ('50); d. Mary Elizabeth (*Boyd*).

°MUNN, 1847, JOHN—(*Law*)—Born May 30, 1822, Monson, Mass.; died Jan. 30, 1850, Springfield, Mass.

°MUNROE, 1874, GEORGE EDMUND, M.D.—(*Medicine*)—Born Dec. 9, 1851, on board the "Mandarin" in the Indian Ocean; died April 3, 1932, New York City.

MURCHISON, 1974, BRIAN CAMERON—(*Student*)—Born May 25, 1952, Washington, D.C.; res. 5417 Blackstone Rd., Washington, D.C. 20016; Peace Corps Volunteer, Benin, West Africa, '74-'76; 1st year student, Yale Law School, Sept. '76.

°MURPHY, 1910, FREDERICK JAMES—(*Insurance*)—Born Feb. 4, 1886, Southville, Mass.; died Dec. 17, 1956, Miami, Fla.

°MURPHY, 1912, GERALD CLERY—(*Business*)—Born Mar. 25, 1888, Boston, Mass.; died Oct. 17, 1964; Pres., Mark Cross Co., New York, N.Y.; 2d Lieut., Air Service, W.W. I; m. Dec. 30, '16, Sara Sherman Wiborg; s. Frank B. Wiborg II; d. Honoria, Patricia.

MUSSER, 1930, JOHN MILLER, M.B.A.—(*Business*)—Born Feb. 7, 1908, Muscatine, Iowa; Dir. & Mbr. of Exec. Com., Weyerhaeuser Co., W3080 First Natl. Bank Bldg., St. Paul, Minn. 55101; res. 260 Salem Church Rd., St. Paul, Minn. 55118; Class Treas., '30-'60; University Council: V.P., '64-'65. Pres., '65-'71; Mbr., of Council Com. on Forestry School, '61-'72, Chmn., '72-; Mbr., Yale Development Bd., '57; Campaign for Yale for Twin City solicitations & Forestry School solicitations; Dir.: St. Paul Insurance Companies, '62-, Wylain, Inc., '66-, Aspen Institute for Humanistic Studies, '66-, American Universities Field Staff, First Natl. Bank of St. Paul, '62-'75, Community Development Corp., Metropolitan Improvement Com., '61-; General Service Found.: Treas., Pres. & Dir., '46-; United Way of St. Paul Area, Inc., '37-, Chmn., '65, Pres., '66; Carleton Coll.: Trustee, '46-, Chmn. of Bd., '58-'61; Pres., Indianhead Council, Boy Scouts of America, '62-'64; Comm. on Private Philanthropy & Public Needs; m. June 1, '35, Elizabeth Willett; s. Peter M., Robert W.; d. Susan (*Halby*), Elizabeth (*Dominick*).

N

°NEALE, 1896, JAMES BROWN—(*Mining*)—Born Oct. 4, 1872, Kittanning, Pa.; died Feb. 11, 1943, Buck Run, Pa. Anthracite adviser, U.S. Fuel Adm., World War I.

NEIGHER, 1967, GEOFFREY MARK, J.D.—(*Television*)—Born May 15, 1945, Springfield, Mass.; Exec. Script Consultant, Television Program "Rhoda", M.T.M. Enterprises, Inc., CBS Studio Center, 4024 Radford Ave., Studio City, Calif. 91604; res. 8381 Hollywood Blvd., Los Angeles, Calif. 90069.

°NELSON, 1846, RENSSELAER RUSSELL—(*Law*)—Born May 12, 1826, Cooperstown, N.Y.; died Oct. 15, 1904, St. Paul, Minn. Associate justice, Supreme Court, Territory of Minn., 1857-1858, judge, U.S. District Court, Minn., 1858-1896.

°NETTLETON, 1856, EDWARD PAYSON—(*Law*)—Born Nov. 7, 1834, Chicopee, Mass.; died April 17, 1889, Boston, Mass. Asst. U.S. Distr. Attny., Boston, 1869-1873. Col., Union Army, Civil War.

NEVILLE, 1921, JAMES E., LL.B.—(*Law*)—Born Sept. 9, 1898, Omaha, Nebr.; Attny., 525 South Virgil Ave., Los Angeles, Calif. 90020; res. 162 South Arden Blvd., Los Angeles, Calif. 90004; m. Dec. 16, '22, Mary Johnston; s. James III, John T., Thomas M.

*NEVINS, 1846, WILLIAM RUSSELL—(*Law*)—Born April 24, 1826, Baltimore, Md.; died April 19, 1881, Rochester, N.Y.

*NEWEL, 1861, STANFORD, LL.B., M.A.—(*Law*)—Born June 7, 1839, Providence, R.I.; died April 6, 1907, St. Paul, Minn. U.S. Minister to the Netherlands, 1897-1905.

NEWMAN, 1977, THOMAS MONTGOMERY—(*Student*)—Add. 14148 Sunset Blvd., Pacific Palisades, Calif. 90272.

NEWTON, 1933, JAMES QUIGG, JR., LL.B., M.A. (Hon.) LL.D., D.P.S., L.H.D.—(*Finance retired*)—Born Aug. 3, 1911, Denver, Colo.; Consultant, The Commonwealth Fund, 1 E. 75th St., New York, N.Y. 10021; res. 1170 Fifth Ave., New York, N.Y. 10029; Mbr., Yale Univ. Council, '49-'51, '75- (Chmn., Com. Medical Affairs); Corporation '51-'55; Chmn., 35th Reunion Fund Campaign, '66-'68; The Commonwealth Fund: Vice Chmn. of Bd., '75-'76, Pres., '63-'75; Pres., Univ. of Colorado, '56-'63; Dir. Public Affairs & V.P., Ford Found., '55-'56; Mbr.: Natl. Advisory Mental Health Council, '64-'68, Com. on Health Manpower, '66-'67; Trustee, Natl. Institute Public Affairs & Mbr. Exec. Com.; Univ. of Denver, Bd. of Trustees (Sec., '38-'42, Pres., '46-'47); Social Science Found., Bd. of Trustees, '75-; U.S. Dept. of Health Education & Welfare, Secretary's Comm. to Examine the public Health Service Commissioned Corps, '71; Veterans Admin., Special Medical Advisory Group, '69-'74 (Chmn., '74); YMCA of Greater New York, Bd. of Dir. (Chmn., '76); Am. Arbitration Assn., Dir. & Mbr., Exec. Com.; Mayor, City and Cty. of Denver, '57-'65; Cmdr., USNR, '42-'46; Commendation; m. June 6, '42, Virginia Shafroth; d. Nancy Ellen, Nelle (*Bassin*), Abby Staunton, Virginia M. (*Rice*).

*NICHOLS, 1880, ALFRED BULL, B.D.—(*Education*)—Born July 7, 1852, Lebanon, Conn.; died Sept. 9, 1913, Concord, Mass. Prof. of German, Simmons College, 1903-1911.

NICHOLS, 1934, EDWARD, M.D.—(*Medicine*)—Born Feb. 6, 1911, New York, N.Y.; Physician, 85 Jefferson St., Hartford,

Conn. 06106; res. Old Mountain Rd., Farmington, Conn. 06032; m. Sept. 17, '38, Barbara Webb; s. Webb, Dale Brooks; d. Barbara Leonard, Katherine Wallace.

°NICKERSON, 1845, SERENO DWIGHT, LL.B., M.A.—(*Finance*) —Born Oct. 16, 1823, Boston, Mass.; died Nov. 6, 1909, Cambridge, Mass.

NOBLE, 1927, LAWRENCE MASON, LL.B., M.A., J.D. (Hon.)—(*Education retired*)—Born Dec. 11, 1903, Monroe, Mich.; res 21 Main St., Stonington, Conn. 06378; Yale Varsity Hockey Coach, '28-'30; Yale Jr. Varsity Football Coach, '28-'30; Lawyer, '30-'32; Groton School: Teacher, Coach, Dir. of Admissions, '32-'66; Dir., Recruitment of U.S. Candidates for United World Colleges, especially Atlantic College, Wales; Pres., P.T.A., Groton, Mass. Public Schools, '35-'40; m. June 16, '28, Louise S. McLanahan; s. Lawrence M., Jr., ('53), David G., ('61); d. Louise S. (*Drury*), Alexandra D. (*Heller*).

NOBLE, 1953, LAWRENCE MASON, JR.—(*Education*)—Born March 28, 1931, New Haven, Conn.; Assoc. Sec. of the University, Yale University, Woodbridge Hall, New Haven, Conn. 06520; res. 35 Fennbrook Drive, Hamden, Conn. 06517, Admissions Com., Yale Club of N.Y., '71-; Mbr. of Bd., Yale Club of New Haven, '71-; Sec., Treas., Pres., Dir., Yale Hockey Assn., '63-; Yale Administration, '62-; Hanover Bank, '53; Aluminium Ltd., '56-62; Sec./Treas., New England Assn. of Schools & Colleges, '74-; 1st Lieut, USMC, Sept. '53-Dec. '55; Treas. & Pres., Deer Island Club Corp., '59-'61; m. Dec. 27, '58, Helen C. Rike; s. Lawrence R., Daniel S.; d. Helen C.

NORDHAUS, 1963, WILLIAM D., Ph.D.—(*Education*)—Born May 31, 1941, Albuquerque, N.M.; Asst. Prof. Economics, Yale University, New Haven, Conn.; res. 445 Humphrey St., New Haven, Conn. 06511; m. June 13, '64, Barbara Feise; s. Jeffrey Scott.

°NORRIS, 1839, WILLIAM HERBERT, M.A.—(*Ministry*)—Born Nov. 4, 1814; died Feb. 18, 1880, Philadelphia, Pa.

°NORTHROP, 1857, CYRUS, LL.B., LL.D.—(*Education*)—Born Sept. 30, 1834, Ridgefield, Conn.; died April 3, 1922, Minneapolis, Minn. Prof. of English rhetoric and literature, Yale Univ., 1863-1884. Pres., Univ. of Minnesota, 1884-1911; Pres. emeritus, '11-'22.

NORTHRUP, 1960, ROBERT SMITHER, M.D.—(*Medicine*)—Born Nov. 21, 1938, Buffalo, N.Y.; Field Staff Mbr., Rockefeller Foundation, Box 63, Yogyakarta, Indonesia; res. (summer) 8 Judson Ave., Chautauqua, N.Y. 14722; Investigator: Pakistan Cholera Research Laboratory, Dacca, East Pakistan, '66-'69, Natl. Institute of Health, Bethesda, Md., '69-'73; Assoc. Prof. of Medicine, Univ. of Hawaii, '73-'74; Consultant, Gadjah Mada University '74-; Cmdr., U.S. Public Health Service, '66-'73; Commendation Medal; m. Sept. 1, '62, Margaret Lockett; s. Robert Smither, Jr.; d. Anne Lockett.

*NORTON, 1923, GEORGE WASHINGTON, JR., LL.B.—(*Television*)—Born Feb. 7, 1902, Louisville, Ky.; died Feb. 13, 1964; Pres., Station WAVE, Louisville, Ky.; Maj. USAAF, W.W. II; V.P., Louisville Community Chest; Pres., Area Development Assn.; m. Oct. 23, '28, Jane Morton; s. G.W.N., IV, ('56); d. Mary Ballard (*Dulaney*).

NORTON, 1925, WILLIAM BUNNELL, Ph.D.—(*Education retired, Research*)—Born Feb. 14, 1905, Pittsfield, Mass.; res. 47 Cypress Rd., Wellesley Hills, Mass. 02181; Boston University: Instructor, Prof. of History, Prof. Emeritus, '27-'70; Teacher: Harvard-Boston Univ. Extension Courses, '44-'45, Univ. of Arizona Summer Session, '47, Boston Univ. Overseas Program toward M.A. in Internatl. Relations, for personnel in NATO forces, '70-'71, West Berlin & Belgium; m. Sept. 10, '27, Mildred Elsie Smith; s. Richard Allen, ('51), Charles Perry, ('54), David William.

NOVKOV, 1953, DAVID A.—(*Industrial*)—Born Dec. 9, 1931, Akron, Ohio; Pres., Schlegel Tennessee, Inc., Box 1217, Maryville, Tenn. 37801; res. 2220 Canterbury Circle, Maryville, Tenn. 37801; General Tire & Rubber Co.: Chief Engineer, '63-'69, Production Mgr., '69-'72, Plant Mgr., '72-'76; V.P.: Wabash, Ind., Bd. of Education, Wabash Parks & Recreation Bd.; Pres. & V.P., Cuyahoga Falls, Ohio, Jr. Chamber of Commerce; Advisory Bd., Upper Wabash Area Vocational School; Spec. 3rd, AUS, '54-'56; m. Sept. 13, '53, Joyce Fegancher; s. Bruce A.; d. Lorie A.

NOYES, 1971, EDWARD MACARTHUR, III—Born Feb. 3, 1948, New York, N.Y.; Resident in Emergency Medicine, Valley Medical Center, Fresno, Calif.; res. 2910 E. Huntington Blvd., Fresno, Calif. 93721; m. June 5, '71, Patricia B. Grundy.

O

OBERLIN, 1957, John P.—(*Business*)—Born July 7, 1935, Greenfield, Mass.; Dir., Procurement & Material Management, bus. 200 Egbert Rd., Bedford, Ohio 44146; res. 139 Hudson St., Hudson, Ohio 44236; divorced Feb., '75; s. John; d. Karen, Lisa, Pamela.

*O'BRIEN, 1906, Frank—(*Education*)—Born July 20, 1883, Plattsburgh, N.Y.; died Jan. 14, 1960.

O'BRIEN, 1944, Frank, Jr.—(*Education*)—Born Apr. 16, 1919, Andover, Mass.; Dir. of School Development, Groton School, Groton, Mass. 01450; res. 34 Phillips St., Andover, Mass.; m. June 18, '55, Marianna H. Mead; s. Frank III; d. Dorothy Dole, Elsie Talbott, Louise Walker.

O'BRIEN, 1945W, Philip, Jr., LL.B.—(*Law*)—Born Sept. 30, 1924, Holyoke, Mass.; Attny.; res. 65 Fairfield Ave., Holyoke, Mass. 01040; m. Dec. 28, '73, Mary Margaret McLaughlin.

O'CONNELL, 1963, Timothy James, J.D.—(*Law*)—Born June 28, 1941, Rockville Centre, N.Y.; Legal Dept., American Life of New York, 810 Seventh Ave., New York, N.Y. 10019; res. Red Spring Lane, Glen Cove, N.Y. 11542; County Attorney's Office, Nassau Cty., N.Y. '64-'65; Sgt., USAF, Feb. '66-June '69; m. Oct. 19, '68, Nancy Freitas; s. Anthony; d. Vanessa.

OGDEN, 1932, Alfred, J.D.—(*Law*)—Born Dec. 14, 1909, New York, N.Y.; Counsel, Wickes, Riddell, Bloomer, Jacobi & McGuire, 59 Maiden Lane, New York, N.Y. 10038; res. 150 E. 73rd St., New York, N.Y. 10021 or Stonington, Conn. 06378; Associated with Dunnington, Bartholow & Miller, Shearman & Sterling & Wright, McCanliss & Early, '35-'42; Ptnr., Blair & Ogden, '46-'51; Pres. & Dir., C. Tennant, Sons & Co., N.Y., '52-'54; Ptnr., Alexander & Green, '55-'75; Lieut. Col., AUS, Internatl. Div., General Staff Corps, War Dept., Washington, D.C., '42-'45; Legion of Merit; m. June 25, '38, Mary Fell Jordan; s. Alfred T., II, ('62).

OHENE-FREMPONG, 1970, Kwaku M.D.—(*Medicine*)—Born March 13, 1946, Kukurantumi, Ghana; res. 445 E. 68th St., Apt. 10-B, New York, N.Y. 10021; m. June 31, '70, Janet Louise Williams.

O'LEARY, 1969, JOHN JOSEPH, JR., M.A., (Clare College, Cambridge), J.D.—(*Law*)—Born Jan. 16, 1947, Philadelphia, Pa.; Attny., Pierce, Atwood, Scribner, Allen & McKusick, One Monument Square, Portland, Maine 04111; res. 113 Vaughan St., Portland, Maine; Alumni Fund, '69-'74; Alumni Schools Com., '74-; Mbr., Portland City Council, '75-; Dir., RTA, '75-'76.

OLER, 1976, CLARKE KIMBERLY, JR.—(*Music*)—Born July 24, 1954, New York, N.Y.; Freelance Musician, res. 503 N. Camden Drive, Beverly Hills, Calif. 30210.

OLER, 1916, WESLEY M.—(*Business retired*)—Born Dec. 15, 1891, Baltimore, Md.; res. Goodwin House, 4800 Fillmore Ave., Alexandria, Va. 22311; Retired Dec., '56, as Dir. of Public Relations, Overseas Operations, Div., General Motors Corp.; V.P., American Ice Co., '17-'29; Mbr., New York Stock Exchange, '29-'42, Ptnr., Pershing & Co.; General Motors Corp., Overseas Div., '42-'65; 1st Lieut., Army Aviation, Test Pilot, '17-'18; m. Apr. 11, '17, Imogene M. Rubel; s. Wesley M., Jr., ('40), William H., ('45), Clarke K., ('49).

*OLMSTEAD, 1847, JOHN HULL, M.D.—(*Literary work*)—Born Sept. 21, 1825, Hartford, Conn.; died Nov. 24, 1857, Nice, Italy.

*OLSEN, 1917, ALBERT WILLIAM—(*Finance*)—Born Aug. 17, 1891, Chicago, Ill.; died April 10, 1976; formerly V.P., N.Y. Trust Co.; Class Agt., Al. Fund. '51-; 1st Lieut., F.A., U.S. Army, '18; m. Oct. 12, '18, Gertrude Woodruff Richards; s. A.W.O., Jr., ('43); d. Sally Lambert (*Davis*), Elizabeth (*Horne.*)

*O'NEILL, 1932, EUGENE GLADSTONE, JR., Ph.D.—(*Education and literary work*)—Born May 5, 1910, New York City; died Sept. 25, 1950, Woodstock, N.Y.; Mbr., Faculty, Yale Univ., '36-'47; Fellow, Jonathan Edwards Coll.

*ORD, 1873, JOSEPH PACIFICUS, LL.B.—(*Finance*)—Born April 30, 1852, Monterey, Calif.; died Jan. 9, 1913, New York City.

*ORDWAY, 1880, HENRY CHOATE, LL.B.—(*Finance*)—Born Aug. 8, 1856, Hampstead, N.H.; died Oct. 31, 1926, Winchester, Mass.

ORR, 1956, ANDREW ALEXANDER—(*Business*)—Born July 1, 1934, Bryn Mawr, Pa.; Pres., Spray Products Corp., P.O. Box 737, Noristown, Pa. 19404; res. 700 Brooke Rd., Wayne, Pa.

19087; S/Sgt., Penn. Natl. Guard, '57-'63; m. Dec. 6, '58, Ann Pedersen; s. Andrew A., Jr., John P.; d. Elizabeth W., Cynthia R.

ORRICK, 1940, ANDREW DOWNEY, LL.B.—(*Law*)—Born Oct. 18, 1917, San Francisco, Calif.; Lawyer, Orrick, Herrington, Rowley & Sutcliffe, 600 Montgomery St., San Francisco, Calif. 94111; res. 2509 Scott St., San Francisco, Calif. 94115; San Francisco Regional Administrator, Securities & Exchange Com., '54-'55; Mbr., Securities & Exchange Comm., '55-'60; Capt., AUS, '42-'46; m. June 25, '52, Marjorie Soule; s. Andrew Downey, Jr., Winsor Soule, Murray Scott, Samuel Whittemore; d. Elizabeth Winsor.

ORRICK, 1937, WILLIAM H., JR., LL.B.—(*Law*)—Born Oct. 10, 1915, San Francisco, Calif.; U.S. District Judge for the Northern Distr. of Calif., Ptnr., Orrick, Herrington, Rowley & Sutcliffe, 600 Montgomery St., 11th Floor, San Francisco, Calif. 94111; res. 6 Presidio Terrace, San Francisco, Calif. 94118; m. Dec. 5, '47, Marion Naffziger; s. William H. III; d. Mary Louise, Marion.

*OSBORN, 1914, RICHARD—(*Finance*)—Born July 22, 1891, Fall River, Mass.; died Oct. 23, 1950, Chestnut Hill, Mass.; Service Sanitaire, 5th French Army and 1st Lieut. Coast Artillery Res. Corps.

*OSBORNE, 1882, ARTHUR SHERWOOD, LL.B.—(*Law*)—Born Jan. 11, 1861, New Haven, Conn.; died Nov. 4, 1924, New Haven.

*OSBORNE, 1881, THOMAS BURR, Ph.D., Sc.D.—(*Science*)—Born Aug. 5, 1859, New Haven, Conn.; died Jan. 29, 1929, New Haven.

*OTIS, 1919, JAMES SANFORD—(*Finance*)—Born Aug. 20, 1896, Chicago, Ill.; died April 20, 1975, Libertyville, Ill.; Lieut. Naval Aviation, April '17-Feb. '19; m. Dec. 28, '46, Violetta Lansdale Berry; d. Violetta Lansdale (*Swett*).

*OVERTON, 1917, JOHN WILLIAMS—(*Student*)—Born Oct. 10, 1894, Nashville, Tenn.; died July 19, 1918, Vierzy, France; 1st Lieut., Marine Corps, World War I (AEF).

*OWEN, 1837, ALLEN FERDINAND—(*Law*)—Born Oct., 1816, Wilkes Cty., N.C.; died April 7, 1865, Talbotton, Ga. Mbr., Ga. State Legislature, 1843-1847. Mbr. of Congress, 1848-1852. U.S. consul, Havana.

°OWEN, 1860, Charles Hunter, LL.B., M.A.—(*Literary work*)—Born Mar. 15, 1838, Hartford, Conn. died April 21, 1922, Hartford. Mbr., Conn. State Legislature, 1882. Capt. Heavy Artillery, Union Army, Civil War.

°OWEN, 1872, Edward Thomas, Ph.D.—(*Education*)—Born Mar. 4, 1850, Hartford, Conn.; died Nov. 9, 1931, Madison, Wis. Prof. of French, Univ. of Wisconsin, 1879-1915, and Prof. emeritus, '15-'31.

°OWEN, 1864, Henry Elijah, M.D.—(*Medicine*)—Born May 28, 1843, Hartford, Conn.; died Oct. 12, 1912, New York City.

P

°PACKARD, 1856, Lewis Richard, M.A., Ph.D.—(*Education*)—Born Aug. 22, 1836, Philadelphia, Pa.; died Oct. 26, 1884, New Haven, Conn. Asst. Prof. of Greek, Yale Univ., 1863-1867, and Hillhouse Prof. of Greek, 1867-1884.

°PADDOCK, 1900, Brace Whitman, M.D.—(*Medicine*)—Born Aug. 14, 1878, Pittsfield, Mass.; died May 22, 1935, Pittsfield, Mass.

°PAGE, 1922, Robert Guthrie, LL.B.—(*Business*)—Born July 7, 1901, Columbus, Ohio; died Dec. 25, 1970; Chmn., Exec. Com. (formerly Pres. and Bd. Chmn.), Phelps Dodge Corp., New York; Sec. to Justice Louis D. Brandeis, '26-'27; Reg. Adminis., Securities & Exchange Comm., '35; Spec. Asst. to Under Sec. of Navy, '40-; Trustee, Village of Quogue, N.Y., '47-'51; m. June 12, '31, M. Jermain Townsend.

°PAINE, 1856, Levi Leonard, M.A., D.D.—(*Ministry*)—Born Oct. 10, 1832, East Randolph (now Holbrook), Mass.; died May 10, 1902, Bangor, Me. Prof. of Ch. history, Bangor Theological Seminary, 1870-1902; also dean of faculty.

°PAINE, 1894, Ralph Delahaye, M.A.—(*Literary work*)—Born Aug. 28, 1871, Lemont, Ill.; died April 29, 1925, Concord, N.H. Mbr. N.H. State Legislature, '18-20. Mbr., Fed. Fuel Comm., 1918. War correspondent, Cuba, Spanish-Am. War, and in China, Boxer Rebellion. With Bureau of Public Information and Navy Dept., World War I (Fgn. service).

PAINE, 1929, RALPH D., JR.—(*Literary work retired*)—Born March 31, 1906, Newark, N.J.; Bus. add. 250 Park Ave., New York, N.Y. 10017; res. Maple Rd., Easton, Conn. 06425; formerly V.P., Time Inc., New York, N.Y.; Dir., Itek Corp., Lexington, Mass.; m. March 7, '33, Elena D. von Hoershelman; m. '47 Anne White Dauphinot; d. Katherine Delahaye; ss. Gillette Dauphinot.

°PAINTER, 1884, HENRY MCMAHON, Ph.B., M.D.—(*Medicine*)—Born July 12, 1863, West Haven, Conn. died Mar. 11, 1934, New York City. Prof. of Obstetrics, Coll. of Physicians and Surgeons, Columbia Univ., '06-'20.

PALMER, 1930, ARTHUR E., LL.B.—(*Law*)—Born Aug. 15, 1908, Lansing, Mich.; Attny.; bus. & res. Mount Desert, Maine 04660; Chmn., Yale Alumni Fund, '58-'59; m. June 7, '40, Julia C. Reed; s. Lansing Reed, ('65), Stewart L., ('70); d. Constance.

°PALMER, 1945, CHARLES EDGAR—(*Business*)—Born Aug. 10, 1923, Cleveland, Ohio; died June 3, 1970; Marketing V.P., A. S. Harrison Co., South Norwalk, Conn.; 2d Lieut., USAAF, W.W. II; m. July 22, '44, Louise Tracy; s. Michael Charles, Tracy P.

°PALMER, 1883, HARRY HERBERT—(*Literary work*)—Born April 8, 1860, Pittsford, Vt.; died May 1, 1942, Middletown, Conn.

PALMER, 1957, L. GUY, II—(*Finance*)—Born June 14, 1934, Hartford, Conn.; Investment Counsel, Pres., Davis, Palmer & Biggs Inc., 330 Madison Ave., New York, N.Y. 10017; res. 400 Monterey Ave., Pelham Manor, N.Y. 10803; V.P., Bank of New York, '58-'66; Dir.: Pelham Day Care Center, '70-'74, Pelham United Fund, '72-; Capt., AUS, '57-'64; m. Aug. 16, '58, June Lawrence; s. L. Guy, IV, Philip Bradford, Edward Dickinson; d. Deborah Ann, Dorothy Ellen.

°PALMER, 1864, WILLIAM HENRY, M.D.—(*Medicine*)—Born Aug. 17, 1840, Stonington, Conn.; died June 19, 1871, Hartford, Conn.

°PARIS, 1915, IRVING—(*Finance*)—Born April 29, 1893, New York, N.Y.; died Mar. 28, 1964; Lieut. (s.g.), Naval Aviation, W.W. I; m. '20, Barbara Russell; m. '36, Marguerite I. Kenny; d. Star (*Myles*).

°PARK, 1861, WILLIAM EDWARDS, M.A., D.D.—(*Ministry*)—Born July 1, 1837, Andover, Mass.; died May 19, 1910, Oberlin, Ohio.

°PARKER, 1898, GRENVILLE—(*Finance*)—Born Dec. 22, 1873, New York, City; died July 18, 1924, New York City. Officer Candidate, F.A., World War I.

PARKER, 1933, ROBERT BOYD—(*Business retired*)—Born Sept. 26, 1911, San Francisco, Calif.; res. Juniper Hill Farm, Francestown, N.H. 03043; formerly Asst. to Chmn., Abex Corp., New York, N.Y.; Univ. Council, '67-'71; Football Advisory Com.; Chmn., New Hampshire Major & Special Gifts TCFY; m. June 22, '35, Elizabeth Richmond; m. Dec. 19, '53, Brenda Sweet; s. Peter B.; d. Barbara (*Groves*), Pamela (*Fountain*), Heidi B.; sd. Dianne L. Kilmer, Brenda J. Lorenzen.

°PARKER, 1880, WILBUR—(*Business*)—Born May 28, 1858, Titusville, Pa.; died Dec. 2, 1938, Tucson, Ariz. Mbr. Ohio State Legislature, 1890-1891, and of Ohio State Senate, 1892, 1893.

°PARKER, 1893, WILLIAM WHITE WILSON—(*Law and finance*)—Born April 18, 1868, Mifflintown, Pa.; died Sept. 6, 1956, Mifflintown; engaged in war work, U.S. Govt., '16.

°PARKIN, 1874, WILLIAM, LL.B.—(*Law*)—Born Sept. 3, 1854, New London, Conn.; died Dec. 24, 1943, New York City.

°PARROTT, 1883, JOSEPH ROBINSON, LL.B.—(*Law and transportation*)—Born Oct. 30, 1858, Oxford, Me.; died Oct. 13, 1913, Lake Thompson, Me.

°PARSONS, 1893, FRANCIS, LL.B., M.A.—(*Finance and law*)—Born Jan. 13, 1871, Hartford, Conn.; died Dec. 30, 1937, Hartford, Conn. Mbr., Yale Corporation, '25-'37; Trustee, Peabody Museum of Natural History, '36-'37. Capt., American Red Cross, World War I (Fgn. service).

PARSONS, 1933, H. MCILVAINE, M.A., Ph.D.—(*Science, Education*)—Born Aug. 31, 1911, Lenox, Mass.; Pres., Experimental College of the Institute for Behavorial Research, Inc., Exec. Dir., Institute for Behavioral Research, Inc., 2429 Linden Lane, Silver Spring, Md. 20910; res. 4701 Willard Ave., #502, Chevy Chase, Md. 20015; Pres.: Human Factors Soc., '68-'69, Soc. of Engineering Psychologists (Div. 21 of the Am. Psychological Assn.), '75-'76; Lieut. Cmdr., USN, '42-'45; m. 1938, Renee Oakman; m. 1949, Marina Svetlova; m. 1957, Marjorie Thorson; s. Robert.

PARSONS, 1921, LANGDON, M.D.—(*Medicine semi-retired*)—Born Dec. 13, 1899, Milton, Mass.; Surgeon, 1180 Beacon St. 4D, Brookline, Mass. 02146; res. 57 Dudley Rd., Newton

Centre, Mass. 02159; Prof. of Obstetrics & Gynecology, Chief of Dept., Boston Univ. School of Medicine, '49-'63; Harvard: Clinical Prof. Obstetrics & Gynecology, '63-'66, Dir., Alumni Relations, '63-'71, Prof. Emeritus, '71; Lieut. Col., M.C., AUS, '42-'45; Legion of Merit; m. Sept. 6, '30, Elizabeth Hungerford; s. Jeffrey Langdon, ('56); d. Clare Stevenson (*Weaver*).

*PARTRIDGE, 1880, SIDNEY CATLIN, D.D.—(*Ministry*)—Born Sept. 1, 1857, New York City; died June 22, 1930, Kansas City, Mo. Prot. Epis. Bishop of Kyoto, Japan, '00-'11, and of West Mo., '11-'30.

*PATTERSON, 1914, GEORGE WASHINGTON, JR.—(*Advertising*)—Born Jan. 19, 1893, Ann Arbor, Mich.; died in Feb. 1925. Aspirant, Artillery, French Army, World War I.

*PATTERSON, 1920, MOREHEAD, LL.B. L.H.D.—(*Industrial*)—Born Oct. 9, 1897, Durham, N.C.; died Aug. 5, 1962; with American Machine & Foundry Co., N.Y.C.; Deputy U.S. Representative on U.N. Disarmament Comm.; London, '54; U.S. Rep. for Internatl. Atomic Agency Negotiations, '54-'55; 2d Lieut., F.A., W.W. I; m. '21, Elsie Parsons; m. '45, Helen Mitcheill Clark (dec.); m. '56, Margaret Tilt Bissell; s. Rufus Lenoir III (dec.), Herbert Parsons, ('47).

*PATTERSON, 1927, THOMAS CLEVELAND—(*Literary work*)—Born Aug. 3, 1905, Vivian, W. Va.; died Oct. 24, 1932, Huntington, W. Va.

*PATTON, 1875, JOHN, LL.B.—(*Law*)—Born Oct. 30, 1850, Curwensville, Pa.; died May 24, 1907, Grand Rapids, Mich. Mbr., U.S. Senate, 1894-1895.

*PAUL, 1912, CHARLES HENRY—(*Law*)—Born June 18, 1890, Los Angeles, Calif.; died July 8, 1976; m. June 5, '15, Alice Paine; m. July 28, '38, Gertrude Weinzirl; d. Charlotte (*Reese*), Jacqueline (*Roberts*) Mary Gould (*Quinn*).

*PAYSON, 1872, HENRY SILAS, LL.B.—(*Farming*)—Born Dec. 23, 1849, Chicago, Ill.; died Jan. 23, 1922, Peoria Township, Ill.

PECK, 1962, ARTHUR JOHN JR., LL.B.—(*Law*)—Born March 2, 1940, Trenton, N.J.; Asst. Counsel, Corning Glass Works, Corning, N.Y. 14830; res. 72 Catherine St., Corning, N.Y. 14830; Admissions Officer, Lawrenceville School, '62-'65; Assoc., Shearman & Sterling, '68-'72; m. July 18, '70, Susan Williams Lodge; s. David Andrew; d. Margaret Emily.

•PECK, 1861, TRACY, M.A., LL.D.—(*Education*)—Born May 24, 1838, Bristol, Conn.; died Nov. 24, 1921, Rome, Italy, Prof. of the Latin language and literature, Cornell Univ., 1871-1879, and at Yale Univ., 1880-1908; Prof. emeritus, '08-'21.

PELLY, 1923, BERNARD B.—(*Business retired*)—Born May 19, 1901, Seattle, Wash.; Bus. 301 Norton Bldg., Seattle, Wash. 98104; res. Rt. 6, 11 Beans Bight, Bainbridge Island, Wash. 98110; formerly Senior V.P. & Dir., Balfour, Guthrie & Co., Ltd.; SATC, Sept., Oct., Nov. '18; m. June 28, '30, Elizabeth Nute (dec.); m. Jan. 29, '75, Jane Hillman Strenic; s. Bernard B. Jr., Charles A.

PELTZ, 1931, WILLIAM LEARNED, M.D., M.A.—(*Medicine*)—Born Feb. 11, 1909, Albany, N.Y.; Psychiatrist, P.O. Box 706, Manchester, Vt. 05254; res. Longview Drive, Manchester, Vt. 05254; Fellow, Branford College, '40-'42; Clinical Instr., Medicine, Yale School of Medicine, '40-'42; Prof. of Clinical Psychiatry, Univ. of Pennsylvania School of Medicine; Pres., Bd. of Trustees, Ethan Allen Community Coll., Manchester, Vt.; Psychiatric Consultant to Hoosac School, Hoosick, N.Y.; Capt.-Maj., Army Med. Corps. 39th Gen. Hosp. (Yale Unit), Pacific, '42-'45; m. Jan. 29, '38, Margaret Ruth Adams; s. Mason Tyler, William Hun, Thomas Adams.

PENDEXTER, 1958, JOHN FOWLER, M.B.A.—(*Business*)—Born July 5, 1936, Chicago, Ill.; Management Consultant, Mergers & Acquisitions, bus. & res. 21 Old Farm Rd., Darien, Conn. 06820; Pres., Yale Club of Darien-Norwalk, '69-'73; Dir. & Treas., Yale Club of Darien, '73-'76; R.T.M. Finance Com. of Darien, '72-'74; m. Aug. 30, '58, Karla M. Dougan; s. Leslie M., John F., Geoffrey M.

•PERCY, 1877, FREDERICK BOSWORTH, M.D.—(*Medicine*)—Born July 23, 1856, Bath, Me.; died June 15, 1928, Brookline, Mass. Assoc. Prof. of materia medica, Boston Univ. Medical School, 1891-1898, and Prof., 1898-1909; Prof. of clinical medicine, '08-'15, and Prof. emeritus, '15-'28.

•PERKINS, 1840, JOHN, LL.B.—(*Law*)—Born July 1, 1819, Natchez, Miss.; died Nov. 28, 1885, Baltimore, Md. Mbr. of Congress, 1853-1857. Sec. of the Navy, Confederate States, Civil War.

•PERKINS, 1842, NATHANIEL SHAW—(*Business*)—Born April 19, 1822, New London, Conn.; died Feb. 8, 1905, New London.

°PERKINS, 1858, THOMAS ALBERT—(*Finance*)—Born Jan. 17, 1839, Brooklyn, N.Y.; died Jan. 1, 1909, Brooklyn; Sgt., Union Army, Civil War.

°PERKINS, 1840, WILLIAM, LL.B.—(*Law*)—Born April 26, 1821, Grand Gulf, Miss.; drowned Sept. 27, 1854 in the Atlantic Ocean.

°PERRIN, 1869, BERNADOTTE, Ph.D., LL.D.—(*Education*)—Born Sept. 15, 1847, Goshen, Conn.; died Aug. 31, 1920, Saratoga Springs, N.Y. Prof. of Greek, Western Reserve Coll., 1881-1893; Prof. of Greek, Yale Univ., 1893-1909, and Prof. emeritus, '09-'20.

°PERRIN, 1879, JOHN—(*Finance*)—Born Jan. 17, 1857, Rossville, Ind.; died Dec. 27, 1931, Washington, D.C.

°PERRIN, 1909, JOHN BATES—(*Finance*)—Born Jan. 16, 1887, Lafayette, Ind.; died Oct. 29, 1913, Pasadena, Calif.

°PERRIN, 1906, LEE JAMES, LL.B.—(*Law*)—Born Dec. 27, 1884, Cleveland, Ohio, died Sept. 14, 1946, New York City. Officer candidate, F.A., World War I.

°PERRIN, 1908, LESTER WILLIAM, M.C.E.—(*Finance*)—Born Oct. 29, 1886, Lakewood, N.J.; died Jan. 6, 1973, Far Hills, N.J.; formerly Ptnr., Lazard Freres et Cie., N.Y.C.; Mayor, Bernardsville, N.J., '40-'44; Capt., Inf., May 17- June '19; m. Jan. 8, '38; Vieva M. Fisher.

°PERRY, 1863, DAVID BRAINARD, B.D., M.A., D.D.—(*Education*)—Born Mar. 7, 1839, Worcester, Mass.; died May 21, 1912, Battle Creek, Mich. Prof. of Greek and Latin, Doane Coll., 1873-1881, and Pres. 1881-1912.

PERRY, 1977, DAVID BULKLEY—(*Student*)—Born Apr. 18, 1954, Norwalk, Conn.; res. 350 Willow St., Southport, Conn. 06490.

°PERRY, 1870, JOHN HOYT, LL.B., M.A.—(*Law*)—Born July 26, 1848, Southport, Conn.; died Sept. 2, 1928, Averill, Vt. Mbr., Conn. State Legislature, 1877, 1878, 1881, and Spkr. 1889; Mbr., Conn. State Senate, 1913-1915. Pres. Bd. of Commissioners of Conn. State Police, '10-'21.

°PERRY, 1871, WILBERT WARREN, LL.B.—(*Law*)—Born Dec. 20, 1851, Canton, Conn.; died Feb. 12, 1895, Hartford, Conn. Asst. state's attny., Conn. 1877-1881. Mbr., Conn. State Legislature, 1883.

°PERSHING, 1966, RICHARD WARREN—Born Oct. 25, 1942; died Feb. 17, 1968, in Vietnam; Lieut., 101st Airborne Div.

PETERS, 1970, DANIEL JAMES—(*Writing*)—Born July 24, 1948, Milwaukee, Wis.; Writer, bus. & res. Lee Hook Rd., R.F.D. 1, Newmarket, N.H. 03857; Recording Sec., Vancouver, B.C., Shoes for Industry Drive, '72-'73; CO, Vietnam Resistance Brigade, '70-'72; m. June 14, '70, Annette Kolodny.

*PETERS, 1886, FRANK GEORGE—(*Law*)—Born Aug. 18, 1863, Syracuse, N.Y.; died May 13, 1893, West Superior, Wis.

*PETERS, 1842, JOHN ANDREW, LL.D.—(*Law*)—Born Oct. 9, 1822, Ellsworth, Me.; died April 21, 1904, Bangor, Me. Mbr., Maine State Senate, 1862-1863 and of Maine State Legislature, 1864. Attny. Gen. of Maine, 1864-1866. Mbr. of Congress, 1866-1873. Associate justice, Maine Supreme Court, 1873-1883, and chief justice, 1883-1900.

*PETERS, 1880, WILLIAM ALLISON—(*Law*)—Born Mar. 8, 1858, Atlanta, Ga.; died Oct. 26, 1929, Seattle, Wash.

PFAU, 1948, GEORGE HAROLD, JR.,—(*Finance*)—Born May 7, 1924, Milwaukee, Wis.; 1st V.P., White Weld & Co., Inc., 1 Bush St., San Francisco, Calif. 94104; res. 2810 Fillmore St., San Francisco, Calif. 94123; Dir., Systron Donner Corp., '61-; Trustee: Town School, '66-'70, Thacher School, '67-; The Guardsmen, '66-'67; Bd. Mbr., Pathfinder Fund, '74-; Bd. Mbr., San Francisco, Alameda Planned Parenthood Assn., Pres., '66-'67; Cprl., CE AUS, '42-'44; American Field Service, '44-'45; Italy Star; m. Jan. 7, '51, Elizabeth Spencer; m. Dec. 7, '74, Anne E. Mayhew; s. Peter Wright; d. Mary Deming, Elizabeth Churchill.

PHELAN, 1958, HOWARD T., M.A. (*Hon.*)—(*Business*)—Born Oct. 19, 1936, Washington, D.C.; Pres. & Chief Exec. Officer, Welsbach Corp., 240 Sargent Drive, New Haven, Conn. 06511; res. 207 Farms Road, Greenwich, Conn. 06830; graduate work in international economics and nuclear physics, University of Freiburg, West Germany, '58-'59; Yale Alumni Board, '64-'69; Yale Development Bd., '70-; Dir. Management Operations and University Development, principal business officer of the University and officer of the Yale Corporation, '65-'70; Yale Alumni Fund: Asst. Chrmn., Dir., Mbr. Exec. Com., Class Chrmn., '62-'70; Trustee, St. Thomas More Corp., '63-'69; Dir., RTA '66-'70; m. July 4, '64, Mary Elizabeth Voss; d. Elizabeth Andre, Victoria Taylor.

*PHELPS, 1886, EDWARD JOHNSON, M.A.—(*Finance*)—Born April 18, 1863, Andover, Mass.; died Aug. 9, 1938, New Monterey, Calif. Mbr., Yale Alumni Bd. '10-'16.

*PHELPS, 1886, SHEFFIELD—(*Literary work*)—Born July 24, 1864, New Haven, Conn.; died Dec. 1902, Aiken, S.C.

*PHELPS, 1860, WILLIAM WALTER, LL.B., M.A., LL.D.—(*Law and government*)—Born Aug. 24, 1839, New York City; died June 17, 1894, Englewood, N.J. Mbr. of Congress, 1873-1875, and 1883-1889. U.S. Minister to Austria, 1881-1882, and to Germany, 1889-1893. Judge N.J. Court of Errors and Appeals 1893-1894. Mbr., Yale Corporation, 1872-1892.

*PHELPS, 1895, ZIBA BENNETT—(*Insurance*)—Born Dec. 7, 1871, Wilkes-Barre, Pa.; died Nov. 2, 1961; V.P., Security Mutual Life Ins. Co., Binghamton, N.Y.; Bd. Pres., Binghamton City Hosp. 20 yrs.; Lieut., Amer. Red Cross, W.W. I; m. April 8, '26, Elizabeth Drown; s. Z.B.P., Jr. ('28); d. Elizabeth, Emily, Martha.

*PHILBIN, 1913, JESSE HOLLADAY, LL.B.—(*Law, Business*)—Born Oct. 27, 1890, New York, N.Y.; died Mar. 14, 1969; Asst. Gen. Counsel and Sec., '27, Fed. Res. Bank of N.Y.; 2d Lieut., and Aide to Gen. Hatch (AEF), W.W. I; State Department, W.W. II; m. May, '17, Elizabeth Parker; m. Nov. '45, Helen Pratt; d. Jessie Holladay, Mary McBurney.

*PHILBIN, 1910, STEPHEN H., LL.B.—died Nov. 13, 1973, Old Lyme, Conn.

*PHINNEY, 1846, ELIHU, M.A.—(*Industrial*)—Born June 20, 1823, Cooperstown, N.Y. drowned Sept. 20, 1892, Cooperstown.

PICKETT, 1941, LAWRENCE KIMBALL, M.D.—(*Medicine*)—Born Nov. 10, 1919, Baltimore, Md.; Medical Administrator, Pediatric Surgeon, Chief of Staff, Yale-New Haven Hospital, 789 Howard Ave., New Haven, Conn. 06504; res. 205 Blake Rd., Hamden, Conn. 06517; Assoc. Dean, Yale School of Medicine; Prof. of Surgery & Pediatrics, William H. Carmalt Chair; 1941 Class Sec., '76-; Dir., Alumni Fund, '66-; Capt. AUS, M.C., '51-'53; RTA: Pres., '71-'74, Dir., '68-'74; m. Dec. 17, '43, Pauline Ferguson; s. Lawrence K., Jr., Paul F. Steven Buck; d. Nancy (*Thomas*).

*PIERCE, 1904, FREDERICK ERASTUS, M.A., Ph.D.—(*Education*)—Born Mar. 11, 1878, South Britain, Conn.; died Mar. 26,

1935, New Haven, Conn. Asst. Prof. of English, Yale Univ., '10-'26; Assoc. Prof., '26-'35.

*PIERSON, 1886, CHARLES WHEELER, M.A.—(*Law*)—Born May 3, 1864, Florida, N.Y.; died May 4, 1934, New York City.

*PIERSON, 1836, WILLIAM SEWARD, M.A.—(*Law*)—Born Mar. 28, 1815, Durham, Conn.; died April 18, 1879, Keene, N.H. Brig. Gen. Union Army, Civil War.

*PILLSBURY, 1936, EDMUND PENNINGTON—(*Business*)—Born Dec. 22, 1913, Minneapolis, Minn.; died Feb. 22, 1951, Sutherland, Nebr.; Flight Instr. Army cadets, World War II; Mbr. Exec. Com., Yale Alumni Assn. of the Northwest.

PILLSBURY, 1935, JOHN SARGENT, LL.B.—(*Insurance*)—Born Oct. 28, 1912, Minneapolis, Minn.; Chmn. & Chief Exec. Officer, Northwestern National Life Insurance Co., 20 Washington Ave. South, Minneapolis, Minn. 55440; res. 315 Woodhill Rd., Wayzata, Minn. 55391; Yale Alumni Bd., '56-'68, Exec. Com. '61-'68; Yale Development Bd.; Dir.: Hennepin Cty. United Fund, '60-'73, Minnesota Orchestral Assn., '58-, (Chmn., '71-'74); Chmn.: Life Insurance Assn. of America, '67, Institute of Life Insurance '68; Lieut. Cmdr., USN, '42-'45; Unit & Personal Commendation Ribbons; m. June 11, '36, Katharine Harrison Clark; s. John S. III, ('60), Donaldson C., ('62 & Law School '67), Lynde Harrison, ('65); d. Katharine (*Wood*).

*PINCHOT, 1897, AMOS RICHARDS ENO—(*Law*)—Born Dec. 6, 1873, Paris, France; died Feb. 18, 1944, New York City. Priv., Cav., Spanish-American War. A founder, 1917, American Civil Liberties Union, Inc. and an organizer of American Com. on War Finance, 1917.

*PINCHOT, 1889, GIFFORD, M.A., Sc.D., LL.D.—(*Government*)—Born Aug. 11, 1865, Simsbury, Conn.; died Oct. 4, 1946, New York City. U.S. Forester and Chief of Division of Forestry, 1898-1910. Prof. of forestry, Yale Univ., '03-'36 and Prof. emeritus, '36-'46. Commissioner of Forestry, State of Pennsylvania, '20-'23. Governor, State of Pennsylvania, '23-'27 and '31-'35. Mbr., U.S. Food Administration, World War I.

*PINCKARD, 1848, THOMAS CICERO, M.A.—(*Education*)—Born Aug. 23, 1826, Forsyth, Ga.; died Oct. 16, 1904, Opelika, Ala.

PINNEY, 1965, JOHN M.—(*Government*)—Born Nov. 22, 1943, Brooklyn, N.Y.; Management Analyst, U.S. Dept. of Health,

Education & Welfare, 643 Constitution Ave., N.E., Washington, D.C. 20002; m. March 27, '71, Harmon Biddle.

PIONZIO, 1950, DINO JOHN—(*Finance*)—Born Aug. 9, 1923, New Haven, Conn.; bus. Dillon, Read & Co., Inc., 46 William St., New York, N.Y. 10004; res. 82 Ridgecrest Rd., Stamford, Conn. 06903; formerly with C.I.A.; Sgt., Army Air Force, '43-'46; Bronze Star; m. Jan. 9, '51, Rose M. DeLucia; s. Dino J. Jr., Evan W.; d. Patricia Ann.

*PLATT, 1882, HENRY BARSTOW—(*Insurance and transportation*)—Born Feb. 2, 1860, Owego, N.Y.; died Oct. 20, 1938, New York City. Dir., Bureau of Personnel, Overseas Service, Atlantic Div., Am. Red Cross, World War I.

*PLATT, 1879, LEWIS ALFRED—(*Industrial*)—Born May 31, 1854, Waterbury, Conn.; died Jan. 21, 1919, Miami, Fla. Mbr. Conn. State Senate, '10-'12.

POLICH, 1954, RICHARD FRANK, M.S.—(*Business*)—Born Sept. 25, 1932, Lyons, Ill.; Pres., Tallix Inc., Center Dock, Peekskill, N.Y. 10566; res. R.D. #3, South Mountain Pass, Peekskill, N.Y. 10566; Lieut. (j.g.), USN (Aviator), '56-'59; m. Aug. 10, '73, Lawrence Lowell Putnam; s. Philip, William, George, Felix; d. Susan, Jane, Catherine.

*POLLOCK, 1878, GEORGE EDWARD—(*Industrial*)—Born Aug. 30, 1856, Pittsfield, Mass.; died Aug. 2, 1918, New York City.

*POLLOCK, 1882, WILLIAM—(*Transportation*)—Born April 2, 1859, Pittsfield, Mass.; died Nov. 1, 1916, New York City.

*POMEROY, 1887, JOHN NORTON, LL.B., M.A.—(*Education*)—Born May 7, 1866, South Orange, N.J.; died May 31, 1924, Urbana, Ill. Asst. Prof. of Law. University of Illinois, 1910-1911, and Prof., '11-'24.

POND, 1965, JEFFREY CRAIG, LL.B.—(*Law*)—Born Aug. 28, 1943, Springfield, Mass.; Ptnr., Holland & Hart, 500 Equitable Bldg., Denver, Colo. 80202; res. 1200 Pennsylvania, Apt. 10, Denver, Colo. 80203; m. June, '63, Jan Winsborough (divorced '73); d. Dana Korey, Brette Lynsey.

*POOLE, 1891, WILLIAM FREDERICK, LL.B.—(*Law*)—Born Jan. 14, 1868, Melrose, Mass.; died Sept. 19, 1926, Canton, Mass.

*POORE, 1926, CHARLES GRAYDON—(*Literary work*)—Born Aug. 20, 1902, Monterey, Mexico; died July 26, 1971; Writer; Mbr., Univ. Council and Publications Com.; formerly Book Critic *New York Times,* and Chief Book Critic, *Harper's Magazine* in '50s; retired to write, "Extravagant Victory," on Mexican War,

1846-48; Major, G.S.C., U.S. Army, June '42-April '45; *Croix de Guerre,* 3 battle stars; m. Jan. 11, '30, Mary Carter; s. C.G.P. III (dec.); d. Susan Chapman (*Brys*).

°PORTER, 1858, EDWARD CLARKE, M.A.—(*Ministry*)—Born Dec. 3, 1836, Old Hadley, Mass.; died Jan. 8, 1876, Racine, Wis.

°PORTER, 1916, GILBERT EDWIN, 3D.—(*Finance*)—Born July 19, 1892, Chicago, Ill.; died April 10, 1939, Chicago, Ill. 1st Lieut. F.A., World War I.

°POST, 1927, RUSSELL LEE, LL.B.—(*Law*)—Born Aug. 22, 1904, West Hartford, Conn.; died April 1, 1948, New York City. Lt. Col., USAAF, World War II.

POST, 1958, RUSSELL LEE, JR., LL.B.—(*Law*)—Born Jan. 7, 1937, New York, N.Y.; Ptnr., Post & Pratt, Avon Park North, Avon, Conn. 06001; res. Lawton Rd., Canton, Conn. 06019; Ptnr., Shipman & Goodwin, Hartford, '65-'70; Rep., 62nd Distr., Conn. State Legislature, '72-; Deputy Commissioner of Personnel, State of Conn., '71-'72; m. June 4, '60, Linda Norton Ritchey; s. Russell Lee III, Lincoln Strong; d. Katherine Loring, Alison Ritchey.

°POTTER, 1902, RODERICK—(*Business*)—Born Sept. 13, 1879, Buffalo, N.Y.; died Mar. 4, 1959, Athens, Greece.

°POTWIN, 1854, LEMUEL STOUGHTON, M.A., D.D.—(*Education*)—Born Feb. 4, 1832, South Windsor, Conn.; died Jan. 9, 1907, Cleveland, Ohio. Prof. of Latin, Western Reserve Univ., 1871-1892, and of English, 1892-1906; Prof. emeritus, '06-'07.

°PRATT, 1857, GEORGE—(*Law*)—Born Oct. 12, 1832, East Weymouth, Mass.; died June 4, 1875, Norwich, Conn. Mbr., Conn. State Legislature, 1860, 1864, 1865, and 1869.

°PRATT, 1842, JULIUS HOWARD, M.A.—(*Business*)—Born Aug. 1, 1821, Meriden, Conn.; died Oct. 14, 1909, Montclair, N.J.

°PRATT, 1864, WILLIAM HALL BRACE, M.D.—(*Medicine*)—Born Oct. 16, 1842, Brooklyn, N.Y.; died Aug. 27, 1916, Brooklyn.

°PRENTICE, 1928, JOHN ROCKEFELLER, LL.B.—(*Business, Law*)—Born Dec. 17, 1902, New York, N.Y.; died June 3, 1972, Phoenix, Az.; Owner, American Breeders Service, Inc., '41-'67; Law, '31-'41; Major, F.A., '41-'46; Bronze Star; m. Aug. 11, '41, Abra Cantrill; d. Abra (*Anderson*).

°PRENTICE, 1873, SAMUEL OSCAR, LL.B., M.A., LL.D.—(*Law*) —Born Aug. 8, 1850, North Stonington, Conn.; died Nov. 2, 1924, Hartford, Conn. Judge, Conn. Supreme Court, '01-'20 (chief justice, '13-'20). Prof. of pleading Yale Law School, '01-'16.

°PRESTON, 1836, HENRY KIRK—(*Law*)—Born Jan. 30, 1814, Northbridge, Mass.; died Oct. 21, 1854, Savannah, Ga.

PRESTON, 1967, JAMES MARSHALL—(*Law*)—Born June 1, 1945, New York, N.Y.; Lawyer, Assoc., Coudert Fréres, 52 Avenue des Champs-Élysées, Paris 75008, France; res. 14 Rue Charlot, Paris 75003, France.

PRESTON, 1958, JOHN LOUIS—(*Business*)—Born March 1, 1936, Galliopolis, Ohio; Pres., Stiffler Stores, Inc., 211 Broadway, Jackson, Ohio 45640; res. 170 W. South St., Jackson, Ohio 45640; m. Dec. 22, '56, Elizabeth Faye Morrison; s. John Louis-Gordon, Stephen Ashley.

°PRESTON, 1899, ORD—(*Finance*)—Born Aug. 15, 1874, St. Helena, Calif.; died Feb. 7, 1949, LaJolla, Calif. Major, Air Service, World War I.

PRICE, 1941, CHARLES BAIRD, JR.—(*Business*)—Born Nov. 28, 1919, Louisville, Ky.; Chmn. of Bd. & Chief Exec. Officer, Booker-Price Co., 1318 McHenry St., Louisville, Ky. 40217; res. 500 Club Lane, Louisville, Ky. 40207; V.P., Louisville Area Chamber of Comm., '74-'78; Lieut. Col., F.A., Sept. '41-Feb. '46; Bronze Star; m. Oct. 7, '50, Charlotte Williams; s. Charles B, III (dec.); d. Ann H. (*Davis*), Elizabeth M.

°PRICE, 1892, FRANK JULIAN, LL.B.—(*Law*)—Born Feb. 3, 1870, Brooklyn, N.Y.; died Feb. 4, 1950, New York City; Mbr., N.Y. State Legislature, '00-'01; Asst. Corp. Counsel, New York City '11-'18.

PRICE, 1951, RAYMOND KISSAM, JR.,—(*Writing*)—Born May 6, 1930, New York, N.Y.; bus. & res. 3234 Prospect St. N.W., Washington, D.C. 20007; Asst. to Editor, *Colliers*, '55-'56; Reporter, *Life*, '57; *New York Herald Tribune*, '57-'66, Editor of Editorial Page, '64-'66; Asst. to Richard Nixon, '67-'68; Special Asst. to U.S. Pres., '69-'73; Special Consultant to U.S. Pres., '73-'74; Lieut. (j.g.), USNR, '51-'55.

PRICE, 1954, Ross E.—Add. 14 Morrison Court, Syndal, Victoria, Australia.

PRIDEAUX, 1930, TOM—(*Writer*)—Add. 100 W. 57th St., New York, N.Y. 10019.

PRINDLE, 1964, THOMAS HARRISON, M.A., M.Phil.—(*Education*)—Born Feb. 14, 1942, Washington, D.C.; res. 73 Edgewood Ave., New Haven, Conn. 06511; presently completing Ph.D. dissertation in German; Visiting Asst. Prof. of German, Ohio State Univ., '71-'72.

°PUGSLEY, 1864, ISAAC PLATT, M.A.—(*Law*)—Born June 5, 1843, Goshen, N.Y.; died June 3, 1915, Toledo, Ohio. Judge, Court of Common Pleas, 1883-1903. Asst. Paymaster, U.S. Navy, Civil War.

PULASKI, 1964, CHARLES ALEXANDER, JR., LL.B.—(*Education*)—Born Oct. 22, 1941, Flushing, N.Y.; Prof. of Law, College of Law, Univ. of Iowa, Iowa City, Iowa 52242; res. 365 Ellis Ave., Iowa City, Iowa 52240; m Aug. 14, '65, Linda Shannon Holden.

°PUMPELLY, 1915, HAROLD ARMSTRONG—(*Mining*)—Born Aug. 7, 1890, Owego, N.Y.; died Feb. 25, 1954, Owego; Lieut. Naval Air Service, World War I.

°PURNELL, 1854, CHARLES THOMAS—(*Law*)—Born April 16, 1833, Denton, Md.; died Sept. 26, 1866, McNutt, Miss.

°PUTNAM, 1839, JAMES OSBORNE, M.A.,—(*Law*)—Born July 4, 1818, Attica, N.Y.; died April 24, 1903, Buffalo, N.Y. Mbr., N.Y. State Senate, 1854-1855. U.S. consul, Havre, France, 1861-1866. U.S. Minister to Belgium, 1880-1882, Chancellor, Univ. of Buffalo.

°PUTNAM, 1916, PHELPS—(*Literary work*)—Born July 9, 1894, Allston, Mass.; died July 3, 1948, Jamaica Plain, Mass.

PYLE, 1961, MICHAEL J.—(*Broadcasting*)—Born July 18, 1939, Keokuk, Iowa; Broadcaster, Independent Sports Broadcasting, WGN, Continental Broadcasting Co., 330 West Monroe St., Chicago, Ill. 60606; res. 104 E. Westleigh Rd., Lake Forest, Ill. 60045; Owner-Ptnr., St. Bernard Inn Restaurant, Breckenridge, Colo.; m. June 29, '68, Sharon Selby; s. Michael Cameron; d. Samantha.

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QUARLES, 1965, JAMES PERRIN III, J.D.—(*Law*)—Born May 22, 1943, Tampa, Fla.; Assoc. Dir. The Research Group International, 2000 Holiday Dr., Charlottesville, Va.; res. P.O. Box 6668, Charlottesville, Va. 22906; Legal Staff Office of Enforce-

ment, Environmental Protection Agency, '72-'75; Co.-Dir. Water Project, Natural Resources Defense Council, '76; 1st Lieut., AUS, Artillery, '65-'68, Bronze Star, Army Commendation Medal; m. June 11, '69, Margaret Anne Spies; d. Hillary Elizabeth.

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*RAFFERTY, 1835, John Chandler—(*Law*)—Born Dec. 29, 1816, Woodbury, N.J.; died Dec. 31, 1880, Flemington, N.J. Mbr., Pa. State Senate.

*RAMSDELL, 1872, Charles Benjamin, D.D.—(*Ministry*)—Born June 12, 1843, New York City; died June 4, 1906, Washington, D.C. Acting Pres., New Windsor Coll. Served in Union Army, Civil War.

*RAND, 1909, Stuart Craig, LL.B.—(*Law*)—Born June 9, 1888, Newton Center, Mass.; died Oct. 7, 1956, Boston, Mass.; Mbr., Mass. State Legislature, '43-'46; Capt., Air Service, World War I; former Mbr., Yale Alumni Bd.

*RANDOLPH, 1911, Francis Fitz, M.A., J.D.—(*Finance*)—Born Feb. 24, 1889, Elmira, N.Y.; died Oct. 12, 1973, New York, N.Y.; Sr. Ptnr., J & W Seligman & Co.; Chmn., Exec. Comm., Tricontinental Investment Cos.; Al. Fd. Agt., '11-'18; Cravath & Henderson, '14-'17; Asst. Counsel, B&O. R.R., '15-'16; Chmn. Bd. and Exec. Com. Globe & Rutgers Fire Ins. Co. and Amer. Home Fire Ins. Co., '40-'52; Pres., M-K-T- R.R. Co., '46-'60; Mbr. Exec. Com., Tricontinental Corp., Natl. Investors Corp., Broad St. Investing Co., Union Service Corp., Whitehall Fund, Inc.; Dir., Newport News Shipbuilding & Drydock Co., '40-'61; Trustee, Mbr. Exec. Com., Bowery Savings Bank; Trustee, Chmn. Fin. Com., Vassar Coll., '46-'65; Trustee, Coll. Retirement Equities Fund, '52-'58; Treas., RTA, '42-'55; Treas., Metropolitan Opera Guild, '46-'48; Dir., Metropolitan Opera Assn.; Chief, Paris Bur. for Armenia and Rumania, Amer. Relief Adminis., '19; Mbr., War Loan Staff, U.S. Treasury, '19-'20; Capt., U.S. Army, Cavalry and F.A., '16-'19; Cited twice Gen. Orders, 1st Div., AEF; Silver Star, Medal, Battle of Soissons, Victory Medal with clasps for 5 major operations, Army of Occupation, Germany Medal, Fourragere of *Croix de Guerre,*

Conspicuous Sevice Medal, N.Y. State; m. Nov. 3, '23, Sarah Tod Bulkley (divorced); m. Nov. 27, '65, Mary Hill Hadley; s. F.F.R., Jr., ('50), Peter Bulkley F., ('56); d. Sarah Tod F. (dec.), Elizabeth Anne F. (*Cole*).

RANKIN, 1936, B. COURTNEY, J.D.—(*Law*)—Born June 3, 1914, Boston, Mass.; Attny., Consulting Ptnr., 800 1st National Bldg., Detroit, Mich. 48226; res. 735 Lake Shore Drive, Grosse Pointe Shores, Michigan 48236; Reorganized Yale Alumni Assn. of Mich. in late 1940s & held roster of offices; Mbr., Exec. Com. of Alumni Bd., 1950s; Interviewer for Schools & Scholarship Com. of Y.A.A. of Mich., 17 years; various offices, through Chmn., of State Bar Tax Com.; Trustee or Mbr. of Bd. of Dir.: Detroit Area Council (BSA), Neighborhood Service Organization, Cottage Hosp., Friends of Grosse Pointe Public Library, Northeast Guidance Clinic; m. June 27, '42, Ellen Jane McKean; m. Feb. 21, '74, Betty McCoy (*Glancy*); s. Richard C.; d. Judy M. (*Fearnside*).

*RANKIN, 1845, ROBERT—(*Law*)—Born April 23, 1823, Brooklyn, N.Y.; died Oct. 7, 1859, San Francisco, Calif.

RANNEY, 1934, GEORGE ALFRED, LL.B.—(*Industrial*)—Born May 30, 1912, Chicago, Ill.; Vice Chmn., Inland Steel Co., 30 West Monroe St., Chicago, Ill. 60603; res. Casey Rd., Libertyville, Ill. 60048; Class Agt., Class of 1934, Yale Alumni Fund, '64-'75; Univ. Council, '71-'76, Chmn. of Com. on Community Relations; Inland Steel Co.: Mbr., Bd. of Dir., '54-, V.P. & General Counsel, '62-'69, Sr. V.P., '69-'71; Mbr., Bd. of Dir., Harris Trust & Savings Bank, '67-; Sidley, Austin, Burgess & Smith '38-'62 Ptnr. '51-'62; Trustee, Univ of Chicago, '51-; Trustee & former V.P., Chicago Educational Television Assn. (WTTW); Bd. of Dir., Chicago Urban League; Bd. of Dir., Community Fund of Chicago, '59-'64, '66-'75, V.P., '67-'69; Pres., Welfare Council of Metropolitan Chicago, '59-'61; formerly Trustee, Chicago Child Care Soc.; formerly Chmn., presently Mbr., Citizens Com. on the Juvenile Court of Cook Cty.; 1st Lieut., F.A., AUS, '42-'45, ETO '44-'45; m. June 18, '38, Nora Ryerson; s. George A., Jr., Edward R., ('64), David M., d. Nancy (*Levi*).

*RATHBORNE, 1931, JOSEPH CORNELIUS—(*Industrial*)—Born June 17, 1909, Harvey, Jefferson Parish, La.; died July 21, 1954, Boston, Mass.; Maj., USAAF, World War II; V.P. and Pres., Yale Alumni Assn. of La.; Pres., Yale Polo Assn.

RAYMOND, 1949, GEORGE T.P.—(*Business retired*)—Born June 18, 1921, Oxnard, Calif.; formerly Sales Dir., Cabot Corp.; bus. 110 Rue du Bac, Paris, 75007, France; Lieut. Cmdr., USNR, '41-'46; m. Feb., '64, Francoise Chresteil; s. Daniel, Tod Pathe; d. Helen, Sarah.

*RAYMOND, 1841, HENRY HUNTER, LL.B., M.A.—(*Law*)—Born July 2, 1822, Charleston, S.C.; died May 31, 1876, Charleston. Maj., Confederate Army, Civil War.

*RAYMOND, 1869, HENRY WARREN, LL.B., M.A.—(*Literary work*)—Born Sept. 10, 1847, New York City; died Feb. 18, 1925, Germantown, Pa.

*READ, 1945, RICHARD ROLLINS—(*Insurance*)—Born July 30, 1922, Boston, Mass.; died April 23, 1967; Lieut. (j.g.), Navy Aviation, W.W. II; m. May 6, '50, Carol Meriam Ryan; s. R.R.R., Jr., Jonathan Ryan; d. Carol Meriam.

*REED, 1889, HARRY LATHROP, D.D., S.T.D.—(*Education*)—Born Dec. 15, 1867, Port Byron, N.Y.; died May 23, 1964; Pres., Auburn Theological Seminary; Trustee, Wells Coll. '14-'49; m. May 18, '05; s. Frank O., ('27).

*REED, 1904, LANSING PARMELEE, LL.B.—(*Law*)—Born April 2, 1882, New York City; died Dec. 2, 1937, New York City. Trustee, Union Theological Seminary, '29-'37. Chmn., Yale Univ. Fund Assoc., '30-'32.

REID, 1951, EDWARD SNOVER, LL.B.—(*Law*)—Born March 3, 1930, Detroit, Mich.; Ptnr., Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 22 Garden Place, Brooklyn, N.Y. 11201; Yale Alumni Fund Class Agt., '51-; Assoc. with same or predecessor firm, '57-'64; Dir.: General Mills, Inc., Metropolitan Opera Assn., Inc.; Chmn., Bd. of Trustees, Brooklyn Institute of Arts & Sciences (Vice Chmn., Governing Com., The Brooklyn Museum); Mbr.: New York City Bd. of Higher Education, '71-'73, Am. Bar Assn., N.Y. State Bar Assn. (Comm. on Corporation Law), Bar Assn., City of N.Y.; Capt., USMCR, '51-'59; m. Dec. 30, '53, Carroll Grylls; s. Richard Gerveys; d. Carroll Kercheval, Jane Franklin, Margaret Wetherill.

REIGELUTH, 1975, DOUGLAS SCOTT—(*Finance*)—Born March 17, 1952, New Haven, Conn.; Internatl. Banking Dept., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res. 315 E. 86th St., Apt. 9-R East, New York, N.Y. 10028.

REILLY, 1915, John Sylvester—(*Industrial Retired*)—Born Feb. 24, 1891, Brockton, Mass.; res. 1 Lexington Ave., New York, N.Y. 10010; formerly Pres., Gordon & Dilworth, Inc., and Diplomat Products, Inc.; Capt. Ordnance, '17-'19; m. June 9, '17, Estelle Mulqueen; s. John Sheridan (dec.), Gregory Mulqueen (dec.), Myles Gilson; d. Joan Gilroy (*Malone*), Macy Ann (*Beha*), Mary Agnes (*Kiernan*), Madeleine Halpin.

REPONEN, 1954, Robert Gordon—(*Finance*)—Born May 19, 1932, Gardner, Mass.; General Mgr., Banco de Jerez, 27 Wood St., London, EC2V 7AL England; res. 64 Frensham Rd., Farnham; Surrey, England; Sec./Treas., Yale Club of London, '69-'70; First Natl. City Bank, '56-'75; Capt., AUS, '54-'57; m. Nov. 5, '55, Deborah H. Underwood (divorced); m. May 22, '71, Stephanie W. Weickert; s. Erik Arne; d. Catherine Anne, Abigail Underwood.

°RIBEIRO, 1838, Carlos Fernando, M.A., M.D.—(*Farming*)—Born 1816, Alcantara, Maranham, Brazil; died in 1889, Alcantara, Brazil.

°RICH, 1838, Charles, M.A.—(*Business*)—Born Sept. 12, 1809. Boston, Mass.; died Oct. 31, 1862, Beardstown, Ill.

RICHARDS, 1967, David Alan, B.A. & M.A., Cambridge, J.D.—(*Law*)—Born Sept. 21, 1945, Dayton, Ohio; Assoc., Paul, Weiss, Rifkind, Wharton & Garrison, 345 Park Ave., New York, N.Y. 10022; res. 240 E. 82nd St., Apt. 5B, New York, N.Y. 10028; Mbr., Yale Comm. on Alumni Affairs, '69-'70; Special Asst. for Foreign Visitors, Yale Internatl. Office, '69-'72; m. June 26, '71, Marianne Del Monaco; s. Christopher Mark.

°RICHARDS, 1885, Eugene Lamb—(*Law*)—Born June 14, 1863, New Haven, Conn.; died Sept. 17, 1927, Woodbridge, Conn. Deputy Attny. Gen., N.Y. 1896-1898.

°RICHARDS, 1840, George, M.A.—(*Ministry*)—Born Nov. 2, 1816, New London, Conn.; died Oct. 20, 1870, Bridgeport, Conn. Mbr., Yale Corp., 1868-1870.

°RICHARDSON, 1901 Allan Harvey—(*Insurance*)—Born Oct. 19, 1872, Montville, Mass.; died Nov. 27, 1955, Virginia Beach, Va.; Treas., Puerto Rico, '12-'15; former Class Agt.

°RICHARDSON, 1905, Gardner—(*Government*)—Born Feb. 8, 1884, Hanover, N.H.; died June 22, 1972, Woodstock, Conn. Commercial Attaché, Dept. of Commerce, '26-'38; First Sec., Dept. of State, '38-'47; Comm. for Relief, Belgium, '15-'17; Chief of America Relief Adminis., Hungary, '19-'20, Austria,

'20-'23; Exec. Asst. to Dir. Gen., Internatl. Refugee Organization, '48-; Capt. Cav., AEF, W.W. I; Chmn. '05 Class Com.; m. Nov. 24, '23, Dorothea S. K. Davies; s. Peter B. (killed in action in Korea June 16, '53); d. Katharine.

*RICHARDSON, 1869, RUFUS BYAM, B.D., Ph.D.—(*Education*)—Born April 18, 1845, Westford, Mass.; died Mar. 10, 1914, Clifton Springs, N.Y. Prof., Indiana Univ., 1880-1882, and at Dartmouth 1882-1893. Dir. Am. School of Classical Studies at Athens, 1893-1903. Corp., Inf., Union Army, Civil War.

*RICHARDSON, 1849, WALKER—(*Farming*)—Born Oct. 1, 1825, Elbert County, Ga.; died Jan. 20, 1875, Glenville, Ala. Served in Confederate Army, Civil War.

*RIGGS, 1865, BENJAMIN CLAPP, M.D.—(*Medicine*)—Born Feb. 16, 1845, St. Louis, Mo.; died April 18, 1883, Saranac Lake, N.Y.

RIMAR, 1977, STEPHEN III—(*Student*)—Born Mar. 28, 1955, Trenton, N.J.; res. 24 W. Railroad Ave., Jamesburg, N.J. 08831.

*RIPLEY, 1862, GEORGE COIT, M.A.—(*Law*)—Born Aug. 24, 1839, Norwich, Conn.; died Jan. 19, 1909, Minneapolis, Minn. 1st Lieut., Inf., Union Army, Civil War.

*RITCHIE, 1927, WALLACE PARKS—(*Medicine*)—Born Feb. 20, 1905, St. Paul, Minn.; died Jan. 22, 1969; Clinical Prof. of Neurosurgery, Univ. of Minnesota; Pres., Ramsey County Medical Soc., '40-'41, St. Paul Surgical Soc., '50-'51; Minnesota Soc. Neurological Sciences, '66-'67, Minnesota Academy of Medicine, '67-'68; Major, M.C., Army, '41-'44; m. Nov. 10, '34, Alice Otis; s. W.P.R., Jr. ('57), J. Timothy, ('59), D. Goodbine.

RITCHIE, 1957, WALLACE PARKS, JR., M.D., Ph.D.—(*Medicine*)—Born Nov. 4, 1935, St. Paul, Minn.; General Surgeon, Dept. of Surgery, University of Virginia School of Medicine, Charlottesville, Va. 22903; res. 2311 Glenn Court, Charlottesville, Va. 22901; Univ. of Va.: Asst. Prof. of Surgery, '73-'75, Assoc. Prof. of Surgery, '75, Prof. of Surgery, '76-; Lieut. Col., AUS, '70-'73; Army Commendation Medal; m. Aug. 20, '60, Barbara Carey Jewell; s. David; d. Stephanie, Jessica.

RITTERBUSH, 1972, STEPHEN G., JR.—Add. Ayre Rd., Harvard, Mass. 01451.

*ROBB, 1844, JAMES MADISON—(*Law*)—Born Oct. 1823, Philadelphia, Pa.; died July 1, 1899, Philadelphia.

°ROBB, 1843, JOHN HUNTER—(*Law*)—Born Feb. 12, 1822, Philadelphia, Pa.; died Oct. 7, 1864, Philadelphia.

°ROBBINS, 1874, EDWARD DENMORE, LL.B.—(*Law*)—Born Oct. 20, 1853, Wethersfield, Conn.; died Oct. 7, 1932, New Haven, Conn. Prof. of general and medical jurisprudence, Yale Univ., 1899-1903. Mbr., Conn. State Legislature, 1882-1883, and of Conn. State Bd. of Education, 1884-1919. Trustee, Conn. Coll. for Women, '11-'22.

°ROBBINS, 1927, WILLIAM WELLS, LL.B.—(*Law*)—Born June 18, 1902, Norwich, Kans., died Feb. 11, 1945, New York City. With Lend-Lease Administration, Cairo, 1943.

°ROBERTS, 1916, CHARLES HOLMES, JR.—(*Finance*)—Born Jan. 31, 1894, Brooklyn, N.Y.; died Oct. 22, 1941, Framingham, Mass. Rep. in Massachusetts General Court, '39-'41. Lieut., Naval Air Service, World War I (Fgn. service)

°ROBERTS, 1850, ELLIS HENRY, M.A., LL.D.—(*Finance*)—Born Sept. 30, 1827, Utica, N.Y.; died Jan. 8, 1918, Utica. Mbr., N.Y. State Legislature, 1867. Mbr. of Congress, 1871-1875. Asst. Treas. of the U.S, 1889-1893, and Treas., 1899-1903.

ROBERTS, 1952, GEORGE BROOKE, JR., M.A.—(*Government*)—Born May 25, 1930, Philadelphia, Pa.; Foreign Service Officer, Class One, Director for Thai & Burmese Affairs, Bureau of East Asian & Pacific Affairs, Dept. of State (EA/TB), Washington, D.C. 20520; res. 7505 Lynn Drive, Chevy Chase, Md. 20015; Trainee, Foreign Service Institute, Washington, '57-'58; 3rd Sec., Am. Embassy, Bangkok, '58-'60; 2nd Sec., Am. Embassy, Vientiane, '60-'62; Internatl. Relations Officer, EA/VN, Dept. of State, '62-'66; 1st Sec., Am. Embassy, Dar es Salaam, '67-'69; Counselor of Embassy, Am. Embassy, Kingston, '70-'73; Special Asst. to Deputy Sec., Dept. of State, '73-'74; Dir., EA/TB, Dept. of State, '74-'76; Lieut. (j.g.), USNR, '53-'57; National Defense Ribbon, China Service Ribbon; m. June 20, '52, Zara Bentley; s. George B. III, Michael H.; d. Jocelyn.

ROBERTSON, 1928, ARTHUR CLENDENIN, M.A., Diplomé d'Anthropologie, Exeter College, Oxford, Doctorat de l'Université de Strasbourg—(*Education retired*)—Born May 13, 1905, Nashville, Tenn.; res. Route 1, Box 159, St. Germain, Wis. 54558; European History Instr., Yale, '30-'32; Maj., AUS Inf., '42-'47; Bronze Star, 5 Campaign Ribbons, Citations from France & the Philippines; m. 1934, Helen Farr Smith; m. 1947, Gertrude Louise Ford; s. Peter Clendenin, John Overton.

•ROBERTSON, 1859, CHARLES FRANKLIN, M.A., D.D., LL.D.—(*Ministry*)—Born Mar. 2, 1835, New York City; died May 1, 1886, St. Louis, Mo. Prot. Episc. Bishop of Missouri, 1868-1886.

•ROBERTSON, 1833, ROBERT—(*Literary work*)—Born Feb. 3, 1813, Norfolk, Va.; died Aug. 4, 1845, Norfolk.

•ROBESON, 1837, ABEL BELLOWS, M.D.—(*Medicine*)—Born April 10, 1817, Fitzwilliam, N.H.; died Mar. 22, 1853, New York City.

ROBINSON, 1927, FREDERICK FLOWER—(*Industrial retired*)—Born October 21, 1904, Watertown, N.Y.; bus., National Aviation & Technology Corp.; 630 Fifth Ave., New York, N.Y. 10020; res. 110 East End Ave., New York, N.Y. 10028; Yale Alumni Fund; Asst. to Pres., Libby-Owens-Ford, '37-'38; Pres., National Aviation Corp., '42-'76; Asst. Administrator to NRA, '33-'34; Vice Chmn., Flight Safety Found., '50-'65; m. Feb. 21, '37, Suzanne Spitzer.

•ROBINSON, 1856, GEORGE CHESTER—(*Ministry*)—Born Aug. 9, 1833, Hartwick, N.Y.; died Sept. 21, 1863, Wellsboro, Pa.

•ROBINSON, 1889, HENRY SEYMOUR—(*Insurance*)—Born April 16, 1868, Hartford, Conn.; died Mar. 3, 1926, Nassau, Bahama Islands, B.W.I.

ROBINSON, 1945, HOWARD COPLAND, JR.—(*Business*)—Born Oct. 16, 1921, Planfield, N.J.; Assoc. Marketing Dir., Liggett Group, Inc., 4100 Roxboro Rd., Durham, N.C. 27702; res. 2122 N. Lake Shore Drive, Chapel Hill, N.C. 27514; m. Nov. 4, '43, Alice M. Ely; s. H. Copland, III; d. Ann (*Worthen*), Mildred Ely, Cathy Waring, Nancy Copland.

•ROBINSON, 1893, JOHN TRUMBULL—(*Law*)—Born April 25, 1871, Hartford, Conn.; died Nov. 27, 1937, Hartford, Conn. U.S. Attny., Distr. of Conn. '08-'12.

ROBINSON, 1937, JOHN TRUMBULL—(*Education retired*)—Born March 20, 1915, Hartford, Conn.; res. 4811 Avenida De La Colina, Tucson, Ariz. 85715; formerly Teacher, Coach, Watkinson School, Hartford, Conn.; Alumni Bd., Chicago, '57-'58; V.P., Yale Club of Chicago, '57-'58, Dir., 3 yrs., Chmn., Com. on Enrollment & Scholarships, '52-'56; Yale Scholarship Trust of Ill., '52-'57; Class Agt., Alumni Fund; Dir., Hartford Amateur Hockey Assn.; Lieut., USN, '43-'45; Air Medal; m. Aug. 1, '42, Elizabeth Hemingway; m. June 16, '68, Audrey deFontaine; s. John T., III, ('65), Donald H., David F.; d. Anne C.

*ROBINSON, 1843, LUCIUS FRANKLIN, LL.B., M.A.—(*Law*)—Born Feb. 1, 1824, Hartford, Conn.; died Mar. 11, 1861, Hartford.

*ROBINSON, 1885, LUCIUS FRANKLIN, LL.D.—(*Law*)—Born June 12, 1863, Hartford, Conn.; died June 11, 1941, Hartford, Conn. Pres., Hartford Common Council, 1890-1891. Pres., Connecticut Constitutional Convention, 1933, and Chmn., State Park and Forest Commission, '17-'38.

*ROBY, 1893, JOSEPH, M.D.—(*Medicine*)—Born Aug. 19, 1871, Rochester, N.Y.; died July 15, 1954, Rochester.

*ROBY, 1888, SAMUEL SIDNEY BRESE—(*Business*)—Born Mar. 10, 1866, Rochester, N.Y.; died April 23, 1931, Rochester.

*ROCKEFELLER, 1900, PERCY AVERY—(*Finance*)—Born Feb. 27, 1878, New York City; died Sept. 25, 1934, New York City.

*ROCKWELL, 1906, FOSTER HARRY—(*Finance*)—Born Aug. 15, 1880, in Vermont; died Jan. 26, 1942, Phoenix, Ariz. Major, American Red Cross, World War I (Fgn. service).

*ROCKWELL, 1849, JOHN, M.A.—(*Finance*)—Born April 26, 1829, Savannah, Ga.; died Oct. 23, 1909, Santa Barbara, Calif.

RODD, 1940, DAVID B.—Born Jan. 6. 1918, Pittsburgh, Penn.; res. c/o Thomas Rodd, Byram Lake Rd., Mt. Kisco, N.Y. 10549; m. June 28, '40, Rebecca L. Laughlin (divorced).

RODD, 1935, THOMAS—(*Finance retired*)—Born Sept. 12, 1913, Pittsburgh, Pa.; res. Byram Lake Rd., Mt. Kisco, N.Y. 10549; former Vice Chmn. & Dir., J. P. Morgan & Co., Inc., New York, N.Y.; m. Nov. 27, '37, Wendy Morgan; s. F. Morgan, Thomas Jr., ('65), Carey Rathbone.

*RODMAN, 1879, ROBERT SIMPSON—(*Farming and mining*)—Born Feb. 1, 1855, Pittsburgh, Pa.; died Sept. 23, 1928, near Lakeport, Calif.

*ROGERS, 1898, DAVID FRANCIS—(*Finance*)—Born April 5, 1876, New York City; died April 9, 1943, New Canaan, Conn.

*ROGERS, 1893, DERBY—(*Law*)—Born Dec. 15, 1871, New York City; died Mar. 20, 1955, New Canaan, Conn.; Supply Sgt., New Canaan Co., Conn. State Guard, '18.

*ROGERS, 1905, EDMUND PENDLETON—(*Finance*)—Born July 28, 1882, Hyde Park, N.Y.; died Sept. 15, 1966; Officer Candidate, F.A., W.W. I; m. Mar. 29, '16, Edith January Elliot (dec.); m. Sept. 30, '31, Dorothy Knox Goodyear; s. E.P.R., Jr. ('39), H. Elliott ('41) ss. Frank H., Robert M. Goodyear; sd. Marjorie, Dorothy Goodyear.

*ROGERS, 1914, HERMAN LIVINGSTON, B.S.—(*Engineering*)—Born Sept. 27, 1891, Hyde Park, N.Y.; died Oct. 21, 1957, Cannes, France; Maj., F.A., World War I (AEF); Chief French Section, NBC, World War II.

*ROGERS, 1887, JOHN, Ph.B., M.D.—(*Medicine*)—Born Feb. 19, 1866, New York City; died Nov. 19, 1939, New York City. Prof. of clinical surgery, Cornell Univ. Medical Coll., '10-'26, and Prof. emeritus, '26-'39.

*ROOT, 1861, ALEXANDER PORTER—(*Finance*)—Born June 21, 1840, Wilmington, Del.; died Feb. 18, 1908, Houston, Texas. Major, Cav., Confederate Army, Civil War.

ROOT, 1926, REGINALD DEAN, LL.B. In Causa Honoris, Universidad Nacional de Mexico—(*Education retired*)—Born June 28, 1903, Caledonia, N.Y.; res. 7060-52, N.E., Seattle, Wash. 98115; Dean of Men, Emeritus, Univ. of Washington, Seattle; Yale Coach, Football & Lacrosse '29-'48; Coach, Football, Univ. of Washington, '48-'52; Dir., Financial Aids, Dir. Personnel, Dean of Men, Univ. of Washington, '53-'72; m. June 30, '38, Mabel Fritzell; s. John Pierson, David Merritt.

ROOT, 1922, WELLS—(*Writing, Theatre*)—Born March 21, 1900, Buffalo, N.Y.; Free-lance Writer & Instr. in Theatre Arts, c/o Theatre Dept., U.C.L.A., Los Angeles, Calif.; res. 701 Hampden Place, Pacific Palisades, Calif.; 90272; m. 1928, Lillian Segal; m. 1944, Wilhelmina Doyle; s. Jonathan Schuyler.

ROSE, 1963, JONATHAN CHAPMAN, LL.B.—(*Government*)—Born June 8, 1941, Cleveland, Ohio; Lawyer, Deputy Asst. Attny. General, Antitrust Div., Room 3115, Dept. of Justice, Washington, D.C. 20530; res. 501 Slaters Lane, Alexandria, Va. 22314; Special Asst. to the President, '71-'72; General Counsel, Council on Internatl. Economic Policy, White House, '72-'74; Assoc. Deputy Attny. General, '74; Dir., Office of Justice Policy and Planning, '74-'75; 1st Lieut., AUS, '69-'71.

ROSS, 1928, LANNY PATRICK, LL.B.—(*Music*)—Born Jan. 19, 1906, Seattle, Wash.; Singer & Performer, bus. & res. 322 E. 57th St., New York, N.Y. 10022; Radio career, '28-'60; Maj., AUS, '43-'46; Legion of Merit; m. July 29, '35, Olive White; sd. Barbara (*Walsh*).

ROSS, 1951, THOMAS BERNARD—(*Journalism*)—Born Sept. 2, 1929, New York, N.Y.; Author, Washington Bureau Chief, Chicago Sun-Times, 1901 Pennsylvania Ave. N.W., Washington, D.C. 20006; res. 2911 P St. N.W., Washington, D.C.

20007; Nieman Fellow, Harvard, '63-'64; Lieut. (j.g.), USN, '51-'54; m. Nov. 2, '63, Gunilla Ekstrand; d. Maria, Anne, Kristina.

*ROSS, 1852, William Baldwin, LL.B., M.A.—(*Law*)—Born Nov. 13, 1831, New York City; died Jan. 14, 1904, New York City. Served in Union Army, Civil War.

ROWE, 1964, Thomas D., Jr., B.Phil., Oxford, J.D.—(*Education*)—Born Feb. 26, 1942, Richmond, Va.; Assoc. Prof. of Law, Duke Univ. School of Law, Durham, N.C. 27706; res. 712D Constitution Drive, Durham, N.C. 27705; 1964 Class Council; Assoc., Miller, Cassidy, Larroca & Lewin, Washington, '73-'75; Asst. Counsel, U.S. Senate Subcom. on Administrative Practice and Procedure, '71-'73; Law Clerk to Assoc. Justice Potter Stewart, Supreme Court of the U.S. '70-'71.

ROWLAND, 1911, John T.—(*Literary work*)—Born March 5, 1888, Greenwich, Conn.; Author, res. River Rd., Newcastle, Maine 04553; Cmdr., USN, Destroyer, Anti-submarine & Convoy Duty, European waters, '17-'20; m. Apr. 4, '34, Mary Hyde; d. Helen M.

*ROWLAND, 1836, William Sherman—(*Law*)—Born Oct. 23, 1817, Windsor, Conn.; died May 5, 1856, New York City.

RULON-MILLER, 1963, Patrick—(*Finance*)—Born March 17, 1940, Cooperstown, N.Y.; Investment Advisor, Inverness Counsel Inc., 345 Park Ave., New York, N.Y. 10022; res. 42 Mercer St., Princeton, N.J. 08540; Investment Research: Empire Trust, '64-'66, Bank of New York, '66-'68; m. Judith Rollinson; s. Ian Davis; d. Sarah.

*RUMSEY, 1902, Bronson Case—(*Education, Farming*)—Born Jan. 11, 1879, Buffalo, N.Y.; died Oct. 6, 1967; State Senator, '32-'40, Wyoming; Capt. American Field Service, W.W. II m. Feb. '10, Anna Bowditch Perkins; m. Elizabeth Lynah; s. B.C.R., Jr., James Lynah.

RUMSEY, 1966, David McIver, B.F.A., M.F.A.—(*Finance*)—Born Apr. 29, 1944, New York, N.Y.; Managing Ptnr., D.J.D. Properties (Real Estate Investment Partnership), 3407 Sacramento St., San Francisco, Calif. 94118; res. 574 Belvedere St., San Francisco, Calif. 94117; Lecturer in Art, Yale School of Art & Architecture, '70-'72; Visiting Faculty in Art, Calif. Institute of the Arts, Los Angeles, '70-'73, Assoc. Dir., Am. Soc. for Eastern Arts, San Francisco, '72-'74; Exec. Asst. to

the Pres., N.Y. State Urban Development Corp., '75-'76; m. July 6, '67, Patricia Binkerd; d. Tessa A. S.

•RUNNALLS, 1937, JOHN FELCH BERTRAM—(*Theological student*)—Born April 6, 1915, Corvallis, Ore.; died Sept. 7, 1945, Washington, D.C. Major, AUS (Military Intelligence), World War II.

•RUSSELL, 1926, FRANK FORD—(*Industrial*)—Born Aug. 9, 1904; died Mar. 22, 1969; National Aviation Corp.; V.P., '29, Sec., '32, Dir., '37, Pres., '39, Chmn., Exec. Com., '54-'68; Cerro Corp: Dir., '43, Pres., '44, Chmn. Bd., '50-'67; formerly Dir., Chase Manhattan Bank, Otis Elevator Co., Worthington Corp.; Gen. Mgr., National Aircraft War Production Council, '43-'44; Alumni Fund Bequest Chmn., Class of '26, Jan. '57-; Yale's Program for Arts & Sciences, '60-'62; Mbr. Exec. Com., Class of '26; m. April 11, '46, Alice Abely.

•RUSSELL, 1876, PHILIP GRAY, LL.B.—(*Law*)—Born Feb. 14, 1854, New Haven, Conn.; died July 21, 1900, Washington, D.C.

RUSSELL, 1951, RICHARD WARREN—(*Engineering*)—Born June 17, 1929, Boston, Mass.; General Mgr., James Russell Engineering Works, Inc., 9 Dewar St., Boston, Mass. 02125; res. 65 Whitman Rd., Needham, Mass. 02192; Cprl., AUS, Oct. '52-Sept. '55; m. Sept. 24, '55, Katherine Rae Wehmann; s. Warren King, ('80), Richard Andrew; d. Elizabeth Suzanne, Margaret Warren.

•RUSSELL, 1833, WILLIAM HUNTINGTON, M.A., M.D.—(*Education*)—Born Aug. 12, 1809, Middletown, Conn.; died May 19, 1885, New Haven, Conn. Mbr., Conn. State Legislature 1846-1847. Founder of Collegiate and Commercial Institute, New Haven; Major-Gen., Conn. N.G., 1862-1870.

RYAN, 1954, ALLAN A. III—(*Finance*)—Born Aug. 6, 1931, New York, N.Y.; 1st V.P., Public Finance, Smith Barney Harris Upham & Co., Inc., 1345 Ave. of the Americas, New York, N.Y. 10019; res. 17 E. 89th St., New York, N.Y. 10028; RTA Dir.; m. Nov. 2, '57, Barbara Ann Redmond; s. Allan A IV; d. Sally Newbold, Melissa Fortune.

RYAN, 1951, JOSEPH M.—(*Finance*)—Born Jan. 22, 1928, Toledo, Ohio; Salesman, Blyth & Co., 632 Buhl Bldg., Detroit, Mich. 48226; res. 1064 Oxford Rd., Birmingham, Mich. 48008; m. July 30, '55, Beverly Stuart Carmichael; s. Joseph Mather, Jr., Michael David, John Douglas, Andrew Stuart.

°RYLE, 1892, ERNEST—Born April 3, 1871, Paterson, N.J.; died Nov. 6, 1921, New York City. Canteen worker, World War I (French Army).

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SAFFEN, 1975, DAVID—Add. 513 Sumner Ave., Aptos, Calif. 95003.

°SAFFORD, 1852, GEORGE BLAGDEN, M.A., D.D.—(*Ministry*)—Born Jan. 6, 1832, Boston, Mass.; died Oct. 24, 1895, Brooklyn, N.Y.

°SAFFORD, 1920, THEODORE LEE, B.D.—(*Ministry*)—Born Feb. 22, 1898, New Rochelle, N.Y.; died April 10, 1924, Holyoke, Mass. 2d Lieut., F.A., World War I.

°SAGE, 1897, DEAN, LL.B., M.A., LL.D.—(*Law*)—Born Dec. 13, 1876, Brooklyn, N.Y.; died July 1, 1943, at Wyer's Brook, Restigouche Cty., New Brunswick; Deputy Asst. Distr. Atty., N.Y. County, '02. Mayor Borough of Mendham, N.J., '17-'22. Chmn., Bd. of trustees, Atlanta Univ., '29-'43. Civilian, Army Transport Service, World War I.

°SAGE, 1890, HENRY MANNING—(*Real Estate*)—Born May 18, 1868, Menands,, N.Y.; died Sept. 25, 1933, Menands, N.Y. Mbr., N.Y. State Legislature, 1898-1899, and of N.Y. State Senate, '11-'21. Chmn., Hudson River Regulating Bd., '22-'32. Trustee, Cornell Univ., '00-'04. Mbr., N.Y. State Hospital Development Comm., '14-'20.

SALEH, 1968, MUHAMMAD AHMED, M.A.—(*Business*)—Born Oct. 1, 1945, Jerusalem; Personnel, Corporate Dir. of Compensation & Benefits, Timex Corp., Waterbury, Conn. 06720; res. 42 Hampton Park West, Branford, Conn. 06405; Timex Corp.: Mgr., Corporate Benefit Planning, July '73-Apr. '75, Mgr., Compensation & Benefits, Apr. '75-Apr. '76; Consultant, Frank B. Hall & Co., '71-'73; Underwriter, Conn. General Life Insurance Co., '69-'71; Bd. of Dir., RTA, '72-'75, '76-; m. June 1, '68, Mary Soderstrom; s. Tarek Muhammad; d. Saraab Alison.

°SANDERSON, 1909, BENJAMIN BLETHEN, LL.B.—(*Law*)—Born Oct. 22, 1885, Lynn, Mass.; died Jan. 30, 1974, Portland, Me.; Chmn., Portland Chap., Red Cross, '40-'44; Pres., Hospital Council of Portland, '46-'48, Corporator of Maine Medical

Center; Pres., Maine YMCA, '53-'54, Dir., '50-'62; Pres., Portland YMCA, '50-'52, Hon. Life Member; V.P., '47-'49, Dir., '45-'50; Chmn., United Fund campaign, Portland, '48; m. June 12, '14, Emily Hart Brown (dec.); m. June 1, '34, Anne Blauvelt.

*SANFORD, 1847, CHARLES FREDERICK, M.A.—(*Law*)—Born Mar. 22, 1827, New Haven, Conn.; died Oct. 21, 1881, New York City.

*SARGENT, 1920, JOSEPH WEIR—(*Insurance*)—Born Dec. 29, 1897, New Haven, Conn.; died Jan. 19, 1970; 2d Lieut., F.A., '17-'18; m. June 28, '20, Phebe McKean Downs (died 1958); m. Feb. 21, '59, Frances Vinson Conrad; s. J.W.S., Jr.; d. Mrs. Robert Lesher, Mrs. George Harding.

*SARGENT, 1905, MURRAY—(*Industrial*)—Born Aug. 30, 1884, New Haven, Conn.; died Oct. 19, 1974, New York, N.Y.; formerly Pres. and Bd. Chmn., Sargent & Co., New Haven; '05 Class Sec., '05-'08, '60-; Al. Fund. Agt., '62-; Administrator, N.Y. Hosp., 14 yrs., Pres., Knickerbocker Hosp., 14 yrs., Blood Transfusions Assn., N.Y. Hosp. Assn.; W.W. I: Dir., Hardware and Hand Tool Section, War Industries Bd.; m. Jan 30, '13, Mary Hale Cunningham; s. M.S., Jr., ('35), James Cunningham, Henry Bradford, ('40), John Moffat, ('49).

SAUBER, 1972, RICHARD ALAN, B.Litt. (Oxford)—(*Student*)—Born March 7, 1950, Philadelphio, Pa.; res. 98 Elton St., Providence, R.I. 02906; Law Student, New York Univ. Law School.

*SAVAGE, 1932, BOUTELLE—(*Business*)—Born Jan. 13, 1910, Bangor, Me.; died Nov. 21, 1970; Chmn. Bd., Hannaford Bros. Co., Portland, Me.; Pres.-Treas., T. R. Savage Co., Bangor, '33-; Dir., Merrill Trust Co., Bangor, '55-; Trustee, Bangor Public Library, '55-'62, Eastern Maine Gen. Hosp., '51-'57, Maine Central Inst., '64, V.P., '66-; Pres., Higher Education Assistance Found., '66-'68; Pres., Bangor Chmbr. Commerce, '52-'54; Bangor Zoning Bd., '44-'46, City Council, '46-'49, School Bd., '53-'57; m. Mar. 24, '41, Margaret Ruth Webber; s. Mitchell T., Thomas W.

*SAVAGE, 1846, JOSIAH—(*Law*)—Born Oct. 5, 1824, Cromwell, Conn.; died Nov. 1, 1849, Trinity River, Calif.

*SAWYER, 1913, HOMER EUGENE, JR.—(*Industrial*)—Born April 18, 1892, Malden, Mass.; died Nov. 12, 1968; Capt., AEF, W.W. I; m. Dec. 8, '17, Kathryn Motley; s. Motley; d. Kathryn M.

SAXON, 1967, JAMES M., J.D.—(*Finance*)—Born June 9, 1945, Monessen, Pa.; Bond Salesman, Salomon Brothers, One New York Plaza, New York, N.Y. 10004; res. 372 Central Park West, New York, N.Y. 10025; Lawyer, Cadwalader, Wickersham & Taft, '70-'72.

*SCARBOROUGH, 1837, WILLIAM SMITH, M.A.—(*Law*)—Born Aug. 2, 1814, Brooklyn, Conn.; died Nov. 27, 1900, New York City. Mbr., Conn. State Senate 1846.

SCATTERGOOD, 1970, THOMAS B.—(*Education*)—Born Nov. 9, 1948, Baltimore, Md.; Asst. Dir. Admissions, Teacher/Counselor, 6th, 7th, 8th grades, Moses Brown School, 250 Lloyd Ave., Providence, R.I. 02906; res. 125 Congdon St., Providence, R.I. 02906.

*SCHERMERHORN, 1920, ALFRED COSTER—(*Finance*)—Born Jan. 3, 1898, New York City; died May 2, 1956, Washington, D.C.; 2d Lieut., F.A., World War I: Lt. Col. USAAF, World War II, Class Agt.

*SCHERMERHORN, 1938, AMOS EGMONT—(*Finance*)—Born Feb. 17, 1915, New York, N.Y.; died Aug. 18, 1966; Stock Broker, White, Weld & Co., San Francisco; Cmdr., USNR, W.W. II; m. Jan. 31, '40, Zanita Campbell (Muller); sd. Marilyn Elizabeth (*Farmer*).

SCHLESINGER, 1977, DANIEL ADAM—(*Student*)—Born June 10, 1955, New York, N.Y.; res. 5007 North Hills Drive, Raleigh, N.C. 27612.

SCHMIDT, 1968, THOMAS CARLTON, M.B.A.—(*Land Use Planning*)—Born June 3, 1945, Cincinnati, Ohio; Land Use Planner, Land Classification Technician, Dept. of State Lands, Capitol Station, Helena, Mont. 59601; res. 2009 Orofino Gulch Drive, Helena, Mont. 59601; Alumni Schools Com., '75-; Planner, Helena—Lewis and Clark County City-County Planning Dept., '73-'74; V.P., Unionville Territory Assn., '76-; Sp5-E5, AUS, Oct. '68-'July '70; m. July 1, '72, Deborah Caroline Beaumont; s. Carey Beaumont Christian.

SCHNAITTER, 1954, SPENCER JASON—(*Law*)—Lawyer, City Attny., K. of P. Bldg., S. Jefferson St., Madison, Ind. 47250; res. 449 Bellaire Drive, Madison, Ind. 47250; m. July 25, '54, Laura Mills; s. Dwight Paul, Spencer Mills; d. Laura Suzanne.

SCHOLLANDER, 1968, DONALD ARTHUR—(*Finance*)—Born Apr. 30, 1946, Charlotte, N.C.; Pres., The Schollander Co., (financial consulting-investing firm), 1130 SW Morrison Ave.,

Portland, Ore. 97205; res. 1131 North Shore Rd., Lake Oswego, Ore. 97034; President's Council on Physical Fitness, '72-'75; Bd. of Dir., U.S. Olympic Com., '70-'72; Chmn., Oregon Handicapped Children Fund Drive, '75 & '76; m. Dec. 28, '68 Penny Susan Stark.

*SCHUYLER, 1859, EUGENE, LL.B., Ph.D., LL.D.—(*Government*)—Born Feb. 26, 1840, Ithaca, N.Y.; died July 16, 1890, Venice, Italy. Served in U.S. Diplomatic Service as Sec., Consul, and Minister to Russia, Turkey, England, Italy, Greece, Rumania, Serbia, and Egypt, 1867-1890.

*SCHWAB, 1886, JOHN CHRISTOPHER, M.A., Ph.D., LL.D.—(*Education*)—Born April 1, 1865, New York City; died Jan. 12, 1916, New Haven, Conn. Asst. Prof. of political economy, Yale Univ., 1893-1898, and Prof.. 1898-1905; librarian of the Univ., '05-'16. Trustee, Mt. Holyoke Coll.

*SCHWAB, 1913, LAURENCE VONPOST—(*Business*)—Born May 1, 1891, New York City; died May 14, 1923, Amiens, France. 2d Lieut., Air Service, World War I.

SCHWARZMAN, 1969, STEPHEN ALLEN, M.B.A.—(*Finance*)—Born Feb. 14, 1947, Philadelphia, Pa.; Assoc. in Corporate Finance, Lehman Brothers, Inc., 1 William St., New York, N.Y. 10004; res. 655 Park Ave., Apt. 4-B, New York, N.Y. 10021; President's Council, Museum of the City of New York, '72-; Pvt., Army Reserve, '70; m. Dec. 29, '71, Ellen Philips.

*SCOTT, 1858, EBEN GREENOUGH, M.A.—(*Law*)—Born June 15, 1836, Wilkes Barre, Pa.; died July 5, 1919, Wilkes Barre. 1st Lieut., Union Army, Civil War.

SCOTT, 1960, EUGENE LYTTON, J.D.—(*Law*)—Born Dec. 28, 1937, New York, N.Y.; Lawyer, res. 435 E. 52nd St., New York, N.Y. 10022; Author, "Tennis-Game of Motion"; Publisher "Tennis Week", '74-; Pres., Sports Investors, Inc., '68-; Bd. of New York Stock Exchange Arbitrators, '71-; Pres.: Eastern Tennis Assn., '72-'73, Internatl. Lawn Tennis Club of U.S.A., '66-.

SCOTT, 1925, HENRY CLARKSON—(*Business retired*)—Born Nov. 26, 1901, St. Louis, Mo.; res. P.O. Box 451, Manchester, Vt. 05254; Asst Mgr., Dorado Beach Development, '70-'73; General Mgr., Pan Am Hotel Development, '60-'67; V.P., West Indies Sugar Co., '55-'60; Pres., Caldwell & Scott, Inc., '54; V.P., Iglehart, Caldwell & Scott, '38-'55; Asst. Supt., Thompson-Starrett Construction Co., '25-'38; m. 1926, Michelle

Bouvier; m. 1938, Agnes Murphy; m. 1948, Jean Kelly; s. Hery Clarkson Jr., ('51); d. Michelle, Margaret E., Joan M.

SCOTT, 1977, LARRY GLENN—(*Student*)—Bus. add. 70 Howe St., Apt. 608, New Haven, Conn. 06511; res. 734 East Phil-Ellena St., Philadelphia, Pa. 19119.

*SCOTT, 1928, STEWART PATTERSON—(*Finance*)—Born Jan. 15, 1907, Scranton, Pa.; died Oct. 22, 1965; Installment Credit Banking, Denver United States Natl. Bank, DUSN Center, Denver; 1st Lieut. USAAF, W.W. II; Asst. Football Coach, Yale, '28-'35; m. Nov. 28, '28, Elizabeth Loomis; m. Aug. 5, '51, Mildred Griffith; s. Stephen Edwin; d. Elizabeth (*Lane*), Nancy (*Ferraro*).

SCOTT, 1973, WILLIAM IAIN—(*Student*)—Born August 2, 1951, Parry Sound, Ontario, Canada; Law Student; res. 58 Colborne St., Kingston, Ontario, Canada KFK 1C6; Caretaker, Deer Island Club Corp., '75 & '76; m. June 3, '72, Janis L. Ryder.

*SCUDDER, 1880, DOREMUS, M.D., D.D.—(*Ministry*)—Born Dec. 15, 1858, New York City; died July 23, 1942, Puente, Calif. Maj., Am. Red Cross, World War I (Fgn. service).

*SEABURY, 1909, MORTIMER ASHMEAD—(*Finance*)—Born July 26, 1886, Dedham, Mass.; died Sept. 8, 1968; formerly Investment Counselor; Yale Alumni Board; Pres., Boston Yale Club, '26-'27, Capt., AUS, Ordnance, W.W. I; m. Mar. 16, '12, Frida Semler; s. M.A.S., Jr. (ex-'36), George Semler, ('40).

SEAMAN, 1945, IRVING JR.—(*Finance*)—Born July 14, 1923, Milwaukee, Wisc.; Consultant, National Boulevard Bank of Chicago; res. 946 North Elm Tree Rd., Lake Forest, Ill. 60045; Pres., Yale Club of Chicago, '59; Mbr.: Yale Development Bd., '67-, Leadership Gifts Com. Campaign for Yale, '75-; Chmn. Exec. Com. & Chief Exec. Officer, National Boulevard Bank of Chicago, '61-'76; V.P., Continental Illinois Bank & Trust Co. of Chicago, '47-'61; Pres.: Lake Forest Hosp. '72-'73, Lake Forest Country Day School, '66-'69; Dir.: Episc. Church Found., '72-, Protestant Found. of Greater Chicago, '68-, Better Business Bureau of Metropolitan Chicago, '63- (Chmn., '70-'72); Dir. & 1st V.P., Community Fund of Chicago, Inc., '71-; Dir.: Abbott Laboratories, '68-, Am. Chain & Cable Co., Inc., '67-, Wm. Wrigley Jr. Co., '71-; formerly Dir., Pullman Co., and John Morrell & Co.; Lieut, (j.g.), USN, '44-'46; m.

June 24, '50, June Carry; s. Peter Stewart, Irving Osborne; d. Marion Carry, Anne Douglas.

SEARLES, 1955, PAUL DAVID, M.A.T., LL.D.—(*Education*)—Born Jan. 1, 1933, Bangor, Maine; Deputy Dir., U.S. Peace Corps., Washington, D.C. 20525; res. 6649 Holland St., McLean, Va. 22101; Yale Alumni Fund, '55-; U.S. Peace Corps. '71-; 1st Lieut., USMC, '55-'58; m. June 23, '56, Mary Lawson; s. Richard, John; d. Rachel.

*SEARS, 1877, JOSHUA MONTGOMERY—(*Finance and farming*)—Born Dec. 25, 1854, Yarmouth Port, Mass.; died June 2, 1905, Southboro, Mass.

SEELEY, 1961, GEORGE WHEELER, J.D.—(*Education*)— Born July 26, 1939, Bridgeport, Conn.; Chmn., Social Studies Dept., Belmont Hill School, 350 Prospect St., Belmont, Mass. 02178; res. Concord Rd., Lincoln, Mass. 01773; m. June 15, '68, Susan Slaymaker.

*SEELEY, 1835, JOHN EDWARD, M.A.—(*Law*)—Born Aug. 1, 1810, Ovid, N.Y.; died Mar. 30, 1875, Ovid. Mbr. of Congress, 1870-1871.

*SEELY, 1878, EDWARD HOWARD, JR., LL.B.—(*Literary work*)—Born Oct. 25, 1856, New York City; died June 22, 1894, Brooklyn, N.Y.

*SEELY, 1860, JOHN FRANK, LL.B.—(*Law*)—Born Oct. 1, 1836, Ludlow, Ohio; died Oct. 21, 1865, Des Moines, Iowa.

*SEELY, 1862, WILLIAM WALLACE, M.A., M.D.,—(*Education*)—Born Aug. 17, 1838, Ludlow, Ohio; died Nov. 7, 1903, Cincinnati, Ohio. Prof. of ophthalmology and otology, Medical Coll. of Ohio (now Univ. of Cincinnati), 1866-1900; also dean of the faculty, 1881-1900.

SELANDER, 1969, DUANE ARTHUR—(*Insurance*)—Born Dec. 2, 1942, Oakland, Calif.; Area Marketing Mgr., Safeco Insurance Co., 7901 Mountain Rd. N.E., Albuquerque, N.M. 87110; res. 3815 Cheraz St. N.E., Albuquerque, N.M. 87111; Cprl., USMC, '62-'65; m. June 20, '67, Audrey Marie Zorna; s. Derek Kyndell, Justin Thayne.

*SELDEN, 1870, EDWARD GRIFFIN, D.D.—(*Ministry*)—Born June 9, 1847, Hadlyme, Conn.; died June 3, 1904, Saratoga Springs, N.Y.

SENAY, 1952, EDWARD C., M.D.—(*Medicine*)—Born Dec. 29, 1927, Holyoke, Mass.; Asst. Prof. Psychiatry, Univ. of Chicago, Chicago, Ill.; res. 17 East Rd., Chesterton, Ind. 46304.

°SEWARD, 1888, William Henry—(*Law and Finance*)—Born Nov. 10, 1864, Auburn, N.Y.; died Feb. 16, 1951, Auburn.

°SEYMOUR, 1908, Charles, M.A., Ph.D., Litt.D., L.H.D, LL.D. —(*Education*)—Born Jan. 1, 1885, New Haven, Conn.; died Aug. 11, 1963; Pres. Emeritus, Yale Univ.; Curator of Edward M. House Collection, Yale Univ.; Provost, '27-'37; Master, Berkeley Coll., '33-'37; Prof. History, '18-'37; Pres., Yale Univ., '37-'50; Trustee, Carnegie Found., Archaeological Institute; American Comm. to Negotiate Peace, '18-'19; U.S. Delegate, Czechoslovak and Rumanian Commissions, '19; Chmn., Conn. Post-War Planning Comm., '43-'45; Dept. of State, W.W. I; m. May 4, '11, Gladys Watkins; s. C.S., Jr. ('35); d. Elizabeth Atwater, Sarah (*Howard*).

SEYMOUR, 1935, Charles Jr., Ph.D.—(*Education*)—Born Feb. 26, 1912, New Haven, Conn.; Prof., Yale University, History of Art Dept., New Haven, Conn. 06520; res. 74 Laurel Rd., Hamden, Conn. 06514; Faculty, Yale Univ., '38-'39, '49-; RTA, Pres., '65-'67, Dir.; m. May 4, '40, Charlotte Ball; s. Charles III, ('65); d. Charlotte Elizabeth.

°SEYMOUR, 1867, Horatio, M.A.—(*Engineering*)—Born Jan. 8, 1844, Utica, N.Y.; died Feb. 21, 1907, Utica.

°SEYMOUR, 1835, John Forman, M.A.—(*Business*)—Born Sept. 21, 1814, Pompey Hill, N.Y.; died Feb. 22, 1890, Utica, N.Y.

°SEYMOUR, 1875, John Sammis, LL.B.—(*Law*)—Born Sept. 28, 1848, Whitney Point, N.Y.; died June 16, 1931, Binghamton, N.Y. Mbr., Conn. State Senate, 1891-1892. U.S. Commissioner of patents, 1893-1897.

°SEYMOUR, 1857, Storrs Ozias, M.A., D.D.—(*Ministry*)—Born Jan. 24, 1836, Litchfield, Conn.; died Sept. 8, 1918, Litchfield. Mbr., Conn. State Bd. of Education, 1880-1884. Trustee, Berkeley Divinity School.

°SHACKELFORD, 1958, Robert Campbell—(*Education*)—Born Dec. 1, 1935, Pittsburgh, Pa.; died Feb. 23, 1963; Instr., Economics Dept., Univ. of Illinois, Urbana, Ill.

SHATTUCK, 1965, John H. F., M.A., LL.B.—(*Law*)—Born Sept. 22, 1943, Pasadena, Calif.; Lawyer, National Counsel, American Civil Liberties Union, 22 E. 40th St., New York, N.Y. 10016; res. 340 Riverside Drive, New York, N.Y. 10025; Visiting Lecturer: Columbia, New York Univ. Law School, Princeton Univ.; Mbr., Assn. of the Bar of the City of New York;

Dir., A.C.L.U. Projects on Privacy & National Security; Dir., Correctional Assn. of New York; m. May 17, '70, Petra Tölle; d. Jessica Colt.

°SHATTUCK, 1870, JOHN WALDON—(*Business*)—Born Aug. 18, 1846, Colerain, Mass.; died Sept. 18, 1926, Menands, N.Y.

°SHEARER, 1861, SEXTUS (*Theological student*)—Born Oct. 14, 1838, Buffalo, N.Y.; died Mar. 5, 1869, San Diego, Calif.

°SHEDDEN, 1915, WILLIAM MARTINDALE, M.D.—(*Medicine*)—Born Oct. 25, 1892; died Aug. 28, 1970; Instr., Anatomy, Harvard Sch.; Instr., Surgery, Tufts University Medical Sch.; Chief Surgeon, Veterans Adminis. Hosp., Lake City, Fla.; Cmdr., USN, M.C., '42-'45; m. April 24, '18, Ruth Blodgett; s. Richard, Robert, W.M.S., Jr.; d. Ann.

°SHEFFEY, 1835, HUGH WHITE, LL.D.—(*Law*)—Born April 12, 1815, Wythe Cty., Va.; died April 8, 1889, Staunton, Va. Mbr., Va. State Legislature, 1846; Spkr., 1861-1865. Judge, Superior Court, 1865-1869.

°SHEFFIELD, 1863, GEORGE ST. JOHN, M.A.—(*Finance*)—Born April 2, 1842, New Haven, Conn.; died Dec. 14, 1924, Providence, R .I.

SHEFFIELD, 1959, JAMES ROCKWELL, M.A.T., Ed.D.—(*Education*)—Born Dec. 15, 1936, New York, N.Y. Dir. of Internatl. Studies, Teachers College, Columbia Univ., New York, N.Y. 10027; res. 262 Central Park West, New York, N.Y. 10024; Research Assoc., Education & World Affairs, '64-'65; Program Specialist, The Ford Found., '65-'67; Asst. Prof. & Assoc. Prof., Teachers College, Columbia Univ., '67-'76; Pres., Internatl. Medical & Research Found., '73-'76; m. June 27, '64, Jill Wilkinson; s. James R., III; d. Sarah T.

°SHELDEN, 1913, ALLAN—(*Finance*)—Born Oct. 8, 1890, Detroit, Mich.; died Mar. 28, 1935, New York City. Lt., USNRF, World War I.

°SHEPARD, 1936, BLAKE—(*Insurance*)—Born Nov. 21, 1913, St. Paul Minn.; died Jan. 8, 1972, Sun Valley; Pres., W. A. Lang Co., 66 W. 7th St., St. Paul 55102; Lieut., USNR, '42-'46; m. Oct. 11, '40, Nancy Troxell; s. B.S., Jr.; d. Nancy C., Constance, Christine B., Alison.

SHEPARD, 1951, CHARLES R. S., M.A.—(*Education*)—Born Feb. 22, 1927, Chicago, Ill.; Teacher of English, Hillhouse High School, 480 Sherman Parkway, New Haven, Conn. 06511; res. 154 Armory St., New Haven, Conn. 06511; Pres.,

Yale-China, '71-; Mbr., Advisory Bd., Dwight Hall; Assoc. Fellow, Pierson College, '70-; Headmaster, Hamden Hall Country Day School, Hamden, Conn., '64-'69; Mbr., Mayor's Task Force on Education, New Haven, '76-; Cprl., AUS, June '45-Dec. '46; m. Aug. 8, '50, Mary Jo Pelkey; s. Timothy C., ('75), Charles E.; d. M. Carrie.

•SHEPARD, 1916, DONALD CARRINGTON—(*Industrial*)—Born Oct. 8, 1891, Buffalo, N.Y.; died Oct. 25, 1967. 1st Lieut., F.A., World War I; m. Aug. 27, '21, Sylvia W. Smith; s. D.C.S., Jr., ('50), Charles R. S., ('51).

SHEPARD, 1950, DONALD CARRINGTON—(*Business*)—Born May 6, 1924, Chicago, Ill.; Senior V.P., Menasha Corp., Box 367, Neenah, Wisc. 54956; res. 1113 E. Forest Ave., Neenah, Wisc. 54956; Pres.: Community Chest, Local Chapter-Chamber of Comm., School Board; Trustee, local hosp.; Mbr. School Bd., '65-'71; Tech. Sgt., USMC, '43-'46; m. Aug. 27, '49, Jane Ellen Steinborg; s. Donald C. III, William A.; d. Susan Sylvia, Julia R.

SHEPARD, 1917, FRANK PARSONS—(*Finance retired*)—Born May 16, 1895, St. Paul, Minn.; res. 1021 Park Ave., New York, N.Y. 10028; formerly V.P., Bankers Trust Co., N.Y.C.; 1st Lieut., F.A., May '18-Dec. '19; m. Oct. 11, '19, Katherine McMillan; s. F.P.S., Jr. ('42) (dec.) James Renwick; d. Margaret McMillan (*Harder*).

SHEPARD, 1939, LLOYD MONTGOMERY, JR.—(*Business*)—Born Sept. 27, 1916, St. Joseph, Mich.; Pres., Berrien County Abstract & Title Insurance Co., 100 Church St., P.O. Box 127, St. Joseph, Mich. 49085; res. 1756 North Shore Drive, Benton Harbor, Mich. 49022; Pres., Mich. Land Title Assn., '70-'72; Mich. Finance Chmn., Com. to Re-elect the President, '72; Delegate, Repub. Natl. Conventions, '56, '60, '72; Cmdr., USNR, '41-'46; Atlantic Mediterranean, & Pacific Campaign Ribbons with 7 Battle Stars; m. Sept. 9, '50, Mary Helen Brown; d. Deborah, Sandra, Rebecca.

SHEPARD, 1914, LORRIN ANDREWS, M.D.—(*Medicine retired*) —Born March 24, 1890, Gaziantep, Turkey; res. R.F.D. 1, Boothbay, Maine 04537; Asst. to Sec. Reuben Holden, in charge of foreign visitors to Yale, '59-'62; Medical Dir. & Surgeon, American Hosp. of Istanbul, '27-'57; Dir., International House, '57-'58; Med. Dir., Mission Hosp., Gaziantep, '19-'25; Chevalier of French Legion of Honor, granted in

recognition of services to French Military personnel, '20-'21; m. Jan. 3, '19, Virginia Moffat; s. Frederick D., ('43, M.A. '48), Robert A., ('45, Ph.D. '50), Barclay M.; d. Alice (*Cary*) (M.D. Yale '45), Constance (*Jolly*).

°SHEPARD, 1908, ROGER BULKLEY—(*Finance*)—Born Sept. 14, 1885, St. Paul, Minn.; died June 12, 1972, St. Paul, Minn.; formerly Chmn., Bd. Dirs., Federal Reserve Bank of Minneapolis; Ensign, USN, '17-'18; m. July 27, '10, Katherine Kohlsaat; s. R.B.S., Jr. ('35), Blake, ('36), Stanley, ('51).

SHEPARD, 1935, ROGER BULKLEY, JR.—(*Insurance*)—Born Oct. 5, 1911, St. Paul, Minn.; Senior V.P., St. Paul Fire & Marine Insurance Co., 385 Washington St., St. Paul, Minn. 55102; res. 2155 Delaware Ave., St. Paul, Minn. 55118; Lieut. Cmdr., USN, '42-'45; m. Jan. 29, '39, Mary Reed; s. Lansing Reed, Thomas B., Roger Whitten, ('68); d. Katherine (*Morris*).

°SHEPLEY, 1895, ARTHUR BEHN, LL.B.—(*Law*)—Born Mar. 25, 1873, St. Louis, Mo.; died Dec. 30, 1918, St. Louis. Madill Prof. of equity, Washington Univ. Law School, '10-'13. Served in Spanish-American War.

°SHEPPARD, 1887, WALTER BRADLEY—(*Literary work*)—Born Nov. 22, 1865, Penn Yan, N.Y.; died Oct. 2, 1949, Denver, Colo.

°SHERMAN, 1836, FREDERICK ROGER, M.A.—(*Law*)—Born Mar. 31, 1815, New Haven, Conn.; died Jan. 10, 1892, New York City.

SHERRILL, 1949, FRANKLIN GOLDWAITHE, S.T.M.—(*Ministry*)—Born May 5, 1928, Boston, Mass.; Rector, Grace Episc. Church, 254 Hicks St., Brooklyn, N.Y. 11201; res. 65 Joralemon St., Brooklyn, N.Y. 11201; m. June 12, '53, Mary Taylor; s. Edmund; d. Ann, Sarah.

°SHEVLIN, 1921, EDWIN LEONARD—(*Business*)—Born Oct. 29, 1898, Crookston, Minn.; died Oct. 13, 1950, Boston, Mass.; 2d Lieut., F.A., World War I; V.P., Yale Alumni Assn. of the Northwest, '46-'47, Pres., '47-'48.

°SHIPMAN, 1886, ARTHUR LEFFINGWELL, LL.B.—(*Law*)—Born Nov. 19, 1864, Hartford, Conn.; died Oct. 16, 1937, Hartford, Conn. Corp. Counsel of Hartford, '04-'08 and '10-'12. Mbr., Hartford Common Council, 1892; of State Comm. on Sculpture, and Chmn. Hartford Com. of State Council of Defense, 1917.

•SHIRLEY, 1869, ARTHUR, B.D., M.A.—(*Ministry and education*) —Born Nov. 19, 1845, Portland, Me.; died Feb. 5, 1927, Stratford, Conn.

•SHUGART, 1955, THORNE MARTIN—died March 6, 1972, El Paso, Tx.

•SILL, 1861, EDWARD ROWLAND—(*Literary work*)—Born April 29, 1841, Windsor, Conn.; died Feb. 27, 1887, Cleveland, Ohio. Prof. of English, Univ. of California, 1874-1882.

•SILL, 1852, GEORGE GRISWOLD, M.A.—(*Law*)—Born Oct. 26, 1829, Windsor, Conn.; died May 19, 1907, Hartford, Conn. Lieut. Gov., Conn., 1873-1877. Mbr., Conn. State Legislature, 1882-1883. U.S. Distr. Attny., Conn. 1888-1892. Mbr., Yale Corp., 1873-1877.

•SILLIMAN, 1837, BENJAMIN, M.A., M.D., LL.D.—(*Education*) —Born Dec. 4, 1816, New Haven, Conn.; died Jan. 14, 1885, New Haven. Prof. of chemistry, Yale Univ., 1846-1849 and 1854-1885; Prof. of medical chemistry and toxicology, Univ. of Louisville, 1849-1854.

•SIMMONS, 1898, FRANK HUNTER—(*Industrial*)—Born Jan. 1, 1874, Brooklyn, N.Y.; died April 11, 1937, New York City.

•SIMMONS, 1890, WALLACE DELAFIELD—(*Industrial*)—Born Nov. 24, 1867, St. Louis, Mo.; died Dec. 7, 1929, St. Louis. Mbr., Conservation Div., War Industries Bd., World War I.

•SIMMS, 1891, WILLIAM ERSKINE—(*Farming*)—Born Aug. 1, 1869, Paris, Ky.; died Dec. 31, 1956, New Orleans, La.

•SIMPSON, 1817, KENNETH FARRAND, LL.B.—(*Law*)—Born May 4, 1895, New York City; died Jan. 25, 1941, New York City. U.S. Attny., Southern Distr. of New York '25-'27. Spec. Asst. to Attny. Gen. of U.S., '26; Mbr., Repub. Natl. Com., '37-'40, and Mbr., U.S. House of Representatives, '40-'41. Capt., F.A., World War I (AEF).

•SINCERBEAUX, 1902, FRANK HUESTIS, LL.B.—(*Law*)—Born July 12, 1874, Kelloggsville, N.Y.; died May 10, 1969; Dir., Greater N.Y. Councils, Boy Scouts of America, '35, V.P., '42-'47, Gen. Counsel, '47-; Exec. Bd., Queens B.S. Council, '25-'32, V.P. '32-'43; Dir., N.Y. School for the Deaf, '37- Pres., '47-'54; Dir., Eva Gebhard Gourgaud Found., '47-; Church Advocate, Diocese of Long Island (Episc.), '44-'58; Vestryman, '26-'39, Warden, '39-; Church of the Resurrection, Richmond Hills, N.Y.; m. June 30, '03, Jessie Marion Batterson; s. Robert A. (Yale Law '39); d. Helen S. (*Clark*), Barbara A. (Newman).

SINGER, 1966, RONALD LEONARD, M.A. Cambridge Univ.—(*Business*)—Born March 10, 1944, Glenwood Springs, Colo.; Executive; res. 9 Glen Avon Drive, Riverside, Conn. 06878; Senior V.P. & Chief Financial Officer, Weslbach Corp., '71-'75; Dir., Education Section, New York City Budget Bureau, '70-'71; Operations Research Analyst, U.S. Dept. of Defense, '68-'70; m. June 15, '68, Anne Catherine Hallgren; s. Erik Kristian.

SINGLETON, 1961, THOMAS H.—(*Business*)—Born Feb. 16, 1939, Evanston, Ill.; Business Mgr., Tennis Clothing, Wilson Sporting Goods Co., 2233 West St., River Grove, Ill. 60171; res. 853 W. Castlegate Court, Lake Forest, Ill. 60045; Yale Alumni Fund Class Agt., '61; 1st Lieut., USMC, Mar. '62-May '65; m. Feb. 22, '69, Diane Lally; s. Matthew Thomas.

*SLADE, 1954, FRANCIS HENRY—(*Business*)—Born Sept. 9, 1833, Boston, Mass.; died Mar. 2, 1890, Orange, N.J.

*SLADE, 1851, JOHN MILTON, M.A.—(*Business*)—Born in July 1831, Boston, Mass.; died Aug. 13, 1890, White Lake, N.Y.

*SLOANE, 1866, HENRY THOMPSON, M.A.—(*Business*)—Born Dec. 1, 1845, New York City; died Sept. 18, 1937, Southampton, N.Y.

*SLOANE, 1905, JOHN—(*Business*)—Born April 20, 1883, New York, N.Y.; died Aug. 3, 1971, Bennington, Vt.; formerly Chmn. Bd., W. & J. Sloane; Class Agt., '10-'21; Class Sec., 4 yrs.; W.W. I; Mil. Intell. Div., Combat Sec., General Staff, Washington, D.C., '18; commissioned as 1st Lieut., M.I.D., 11/10/18, but as war had ended declined commission; Intell. Officer, N.Y. State Guard; retired as Col.; m. June 23, '17, Elsie Nicoll; m. Sept. 14, '54, Hope Colgate Jerome; d. Grace Elsie (*Vance*), Nancy (*Coates*), Evelyn (*Pyne*).

*SLOANE, 1868, THOMAS CHALMERS, M.A.—(*Business*)—Born Oct. 21, 1847, New York City; died June 17, 1890, Lenox, Mass. Mbr., Yale Corp., 1889-1890.

*SLOANE, 1895, WILLIAM—(*Business*)—Born Feb. 18, 1873, New York City; died Aug. 11, 1922, Southampton, Long Island. Trustee, Robert Coll. (Istanbul). Chmn. Natl. War Work Council, Y.M.C.A., World War I.

SLOCUM, 1915, EDWIN LYON—(*Finance retired*)—Born Jan. 17, 1892, Homestead, Pa.; res. 417 E. Main St., Apt. W1, Bay Shore, N.Y. 11706; formerly Broker, Francis I. Dupont & Co., New York; Asst. Treas., Class of 1915; Exec. Com., Class of

1915; Capt., 306th Inf., Apr. '17-'19; m. 1937, Marion Curtiss; s. John Curtiss; d. Marion C.

SMITH, 1960, BRUCE D.—(*Art*)—Born Jan. 10, 1938, Chicago, Ill.; Professional Artist, Windflower Studios, Elizabeth, Colo. 80107; res. Star Route 1064, Elizabeth, Colo. 80107; m. Aug. 24, '63, Margaret Moore; s. David; d. Kelly.

*SMITH, 1906, BRUCE DONALD—(*Finance*)—Born Aug. 13, 1885, Lake Forest, Ill.; died May 29, 1952, Lansford, Pa.; Assoc., Emergency Unemployment Relief Comm. of N.Y.C., 32-'33; Red Cross work, '34-'41; Assoc. Administrator, N.Y., State Section, U.S. War Bonds; Spec. Asst. to Chmn. of War Manpower Comm.; Consultant to Gen. Mgr., Atomic Energy Comm., '48; Mbr., Personnel Security Review Bd., '49; Capt., Chemical Warfare Service, World War I (AEF).

*SMITH, 1865, CHARLES EDGAR—(*Law*)—Born Dec. 25, 1839, Machias, Me.; died Dec. 18, 1896, Brooklyn, N.Y. Priv., Union Army, Civil War.

*SMITH, 1875, EDWARD CURTIS, LL.B., LL.D.—(*Transportation*)—Born Jan. 5, 1854, St. Albans, Vt.; died April 6, 1935, St. Albans, Vt. Mbr., Vermont State Legislature, 1890 and Gov. of Vermont, 1898-1900.

*SMITH, 1859, EUGENE, LL.B.—(*Law*)—Born April 24, 1839 New York City; died April 5, 1928, New York City.

SMITH, 1966, FREDERICK W.—(*Business*)—Born Aug. 11, 1944, Marks, Miss.; bus. Federal Express Co., AMF Box 30167, Memphis, Tenn. 38130; res. 46 Morningside Park, Memphis, Tenn. 38104; m. June 7, '70, Linda B. Grisham; d. Sandra Windland, Laura Fredette.

*SMITH, 1889, HERBERT AUGUSTINE, Ph.D—(*Forestry*)—Born Dec. 6, 1866, Southampton, Mass.; died July 21, 1944, South Salem, N.Y. Instr. in English, Yale Univ., 1892-1898. With U.S. Forest Service, 1901-1937.

SMITH, 1942, HOWARD FREEMAN, JR.—(*Industrial*)—Born Feb. 4, 1920, Bay City, Mich.; Pres., Lasalle Building Corp., 17249 Sherwood St., Detroit, Mich. 48212; res. 279 Grosse Pointe Blvd., Grosse Pointe Farms, Mich. 48236; 1st Lieut., USMC '42-'46; D.F.C., 4 Air Medals; m. Jan. 19, '46, Marion Jarveis Miller; m. Oct. 28, '59, Betty McDonald; ss. Theodore Eaton; d. Caroline Fay.

SMITH, 1912, J. GREGORY—(*Industrial*)—Born July 16, 1889, St. Albans, Vt.; Pres., Equities, Inc., 78 N. Main St., St.

Albans, Vt. 05478; res. 109 Congress St., St. Albans Vt. 05478; m. Apr. 16, '21, Genevieve C. Babbitt; m. Aug. 28, '62, Janet Ankeny; s. Timothy Dean, ('51), John Gregory, ('45).

°SMITH, 1847, JOHN DONNELL—(*Science*)—Born June 5, 1829, Baltimore, Md.; died Dec. 2, 1928, Baltimore. Capt., Light Artillery, Confederate Army, Civil War.

SMITH, 1929, LLOYD HILTON—(*Industrial*)—Born July 9, 1905, Pittsburgh, Pa.; Independent Oil & Gas Producer, 1530 Capital National Bank Bldg., Houston, Texas 77002; res. 2 Longfellow Lane, Houston, Texas 77005; Pres., Paraffine Oil Corp.; Dir.; First Natl. Bank of Houston, '48-'55, National Review and Curtiss-Wright Corp., '55-'70, Information Storage Systems, '67-'70, Falcon Seaboard Corp., '68-'70, Kinetics Internatl. Corp., '70; Adv. Dir., First City Natl. Bank of Houston, '56-'70; Lieut Cmdr., USNR, '42-'45; m. 1931, Jane Clay Zevely; m. 1940, Elizabeth Keith Weiss; d. Camilla Clay, Sandra Keith (*Mosbacher*), Sharon Lloyd (*Keller*), Sydney Carothers (*Kerr*).

°SMITH, 1876, RUFUS BIGGS, LL.B.—(*Law*)—Born Oct. 20, 1854, Cincinnati, Ohio; died Dec. 18, 1923, Cincinnati. Prof. of law and chmn., bd. of trustees, Cincinnati Law School, 1896-1900.

SMITH, 1919, TRAVER—(*Ranching retired*)—Born June 14, 1897, Jamaica, West Indies; res. P.O. Box 447, Big Timber, Montana 59011; Lieut. (j.g.), USN, '18-'19; m. Dec. 4, '18, Catherine Clinton; s. Traver C., ('42); d. Shirley (*Shortlidge*).

°SMITH, 1860, WILLIAM THAYER, M.A., M.D., LL.D.—(*Medicine*)—Born Mar. 30, 1839, New York City; died Sept. 17, 1909, Hanover, N.H. Assoc. Prof. of physiology, Dartmouth Medical School, 1883-1885, and Prof., 1885-1907; Prof of surgery, '07-'09; also dean, 1896-1909.

°SMITH, 1896, WINTHROP DAVENPORT—(*Business*)—Born Sept. 12, 1874, New York City; died May 5, 1922, New York City.

°SMYTH, 1897, NATHAN AYER, LL.B., M.A.—(*Law*)—Born May 29, 1876, Quincy, Ill.; died Dec. 7, 1956, New York City; Asst. Dist. Attny., N.Y. Cty., '02-'10; Asst. Dir. Gen., U.S. Employment Service, '17-'18; Asst. Gen. Counsel, U.S. Shipping Bd., '21; Gen. Counsel, U.S. Shipping Bd. Emergency Fleet Corp., '22-'25; Class Sec.

SNELL, 1967, BRADFORD CURIE, J.D.—(*Law*)—Born April 27, 1946, Brookline, Mass.; Antitrust Attny., Author, bus. 1435 Fourth St. S.W., #308, Washington, D.C. 20024; Counsel, U.S. Senate Antitrust Subcommittee (Judiciary), '73-'75; Guest Scholar, Brookings Institution, '72; Assoc., Pillsbury, Madison & Sutro, San Francisco, '71-'72; Mbr., Energy & Environment Task Force & Transportation Task Force, Democratic Natl. Com., '75-'76; Sp-5, USAR—M.I.D., '68-'74; m. Mary Martin Gant.

SNELL, 1918, RAYMOND FRANKLIN—(*Finance retired*)—Born June 26, 1894, Brocton, Mass.; res. 733 Kline St., La Jolla, Calif. 92037; formerly engaged in financial management; 2d Lieut., F.A., May '17-Jan. '19; m. March 9, '18, Natalie Parker (dec.); m. March 28, '58, Valerie Dade Savage; s. Parker Crowell (killed in action, Italy, Nov. 6, '43).

SOLBERT, 1941, PETER O. A., J.D.—(*Law*)—Born March 9, 1919, Copenhagen, Denmark; Lawyer, Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 416 West Neck Rd., Lloyd Harbor, N.Y. 11743; Board of Seven Springs Farm Center, a Yale affiliate; Deputy Asst. Sec. of Defense for Internatl. Security Affairs, '63-'65; Lieut. Cmdr., USN, '41-'45; Dept. of Defense Meritorious Civilian Service Medal; m. 1945, Deborah Kirk; s. Alan, ('75), Christopher; d. Leslie (*Fogg*), Elizabeth, Alison.

*SOLLEY, 1888, FRED PALMER, Ph.B., M.D.—(*Medicine*)—Born Oct. 10, 1866, Newark, N.J.; died Sept. 7, 1950, New York City.

SOLLEY, 1922, ROBERT FOLGER, M.D.—(*Medicine retired*)—Born Feb. 25, 1901, New York, N.Y.; res. 8 Mallard Drive, Old Saybrook, Conn. 06475; Cmdr. (M.C.), USNR, '18, '42-'46; m. Ann Ewing; s. David Bennett, ('55), Robert Folger, Jr.

SOMERVILLE, 1957, JOHN W.—(*Finance*)—V.P., Brown Management Co., Financial Plaza Pac., 915 Fort St., Suite 1100, Honolulu, Hawaii 96813; res. c/o Waialae Country Club, 4997 Kahala Ave., Honolulu, Hawaii 96816; m. June 10, '61, Harriet Kittredge Metcalf; s. Henry Kittredge, James Atwell; d. Hannah Frances, Elizabeth G.

*SOPER, 1904, WILLARD BURR, M.D.—(*Medicine*)—Born Dec. 28, 1882, Bloomington, Ill.; died Oct. 30, 1939, New Haven, Conn. Assoc. Clin. Prof. of Medicine, Yale Univ., '27-'31; and Assoc. Prof. of medicine and tuberculosis consultant, Dept.

of Univ. Health, '31-'39. Maj., Med. Corps, World War I (AEF).

*SOULE, 1911, LESLIE—(*Industrial*)—Born April 29, 1889, Flushing, N.Y.; died July 18, 1971, Dover, Mass.; formerly Treas., Masoneilan Div., Worthington Corp.; Lieut. (j.g.), USN, April '17-'18; m. June 9, '17, Evelyn Macleod; d. Ann (*Truesdale*), Evelyn M. (*Cunningham*).

*SOUTHGATE, 1866, CHARLES McCLELLAN—(*Ministry*)—Born Nov. 18, 1845, Monroe, Mich.; died June 5, 1912, Gloucester, Mass. Trustee, Hartford Theological Seminary, 1894-1912.

*SOUTHMAYD, 1834, SAMUEL GRAY, M.D.—(*Industrial*)—Born Oct. 30, 1811, Middletown, Conn.; died Oct. 9, 1877, Hartford, Conn.

*SOUTHWORTH, 1875, EDWARD WELLS, LL.B., LL.M.—(*Law*) Born Jan. 14, 1854, West Springfield, Mass.; died April 20, 1902, New York City.

*SOUTHWORTH, 1863, GEORGE CHAMPLIN SHEPARD, LL.B., M.A., LH.D.—(*Education*)—Born Dec. 13, 1842, West Springfield, Mass.; died Feb. 19, 1918, Springfield. Prof. of belles-lettres, Kenyon Coll., 1881-1888; Prof. of Sacred theology, Bexley Theological Seminary, 1885-1888; Prof. of the English language and literature, Case School of Applied Science, 1889-1900.

*SPALDING, 1838, EBENEZER, M.A.—(*Law*)—Born Oct. 21, 1816, Brooklyn, Conn.; died Aug. 17, 1866, St. Louis, Mo.

*SPALDING, 1872, GEORGE ATHERTON, M.D.—(*Medicine*)—Born Jan. 14, 1849, Greenup Court House, Ky., died Oct. 2, 1906, New York City.

SPAULDING, 1945, JOSIAH AUGUSTUS, LL.B.—(*Law*)—Born Dec. 21, 1922, Worcester, Mass.; Attny., 125 Nashua St., Boston, Mass. 02114; res. Smith's Point, Manchester, Mass. 01944; Ptnr., Bingham, Dana & Gould, Boston, '57-'74; Capt., USMC, '42-'45, '51-'53; D.F.C., 4 Air Medals; m. June 29, '49, Helen Hamilton Bowdoin; s. Josiah A. Jr., George Bowdoin, Alexander Hamilton.

SPEAR, 1974. WESLEY JOHN—(*Art*)—Born Feb. 28, 1952, Cleveland, Ohio; Painter, add. 62 So. 11th St., Brooklyn, N.Y. 11211.

SPEARS, 1952, ROBERT SAMUEL, A.M.P.—(*Business*)—Born Sept. 6, 1929, Minneapolis, Minn.; General Sales Mgr., Product Divisions, Republic Steel Corp., P.O. Box 6778, Republic

Bldg., Cleveland, Ohio 44101; res. 18040 S. Woodland, Shaker Heights, Ohio 44120; m. July 21, '56, Carolyn B. Marcy; s. Timothy B., ('80), Daniel B.; d. Gretchen M., Sara M.

SPEED, 1956, JAMES BRECKENRIDGE—(*Industrial*)—Born Jan. 3, 1934, Davenport, Iowa; Pres., Arkansas-Best Freight System, Inc., Dir., Arkansas Best Corp., 301 South 11th St., Fort Smith, Ark. 72901; res. 2323 South 40th St., Fort Smith, Ark. 72901; Arkansas-Best Freight System, Inc.: Administrative Training, '58, Dir. of Terminals, '59, V.P., Terminal Operations, '63, Pres., '66-, Dir., Arkansas Best Corp., '64-; Dir.: Transport Insurance Co., Dallas, Southwest Operators Assn., Central & Southern Motor Freight Bureau, Trucking Employers, Inc., Fort Smith Boys Club, City Natl. Bank; ATA Bd. of Gov. & Dir., ATA Found.; past Campaign Chmn., Fort Smith United Fund; past Dir.: Fort Smith Girls Club, Fort Smith Child-Family Guidance Center, Ark. Bus & Truck Assn., Mississippi Trucking Assn.; Mbr., Ark. Economic Development Study Comm., '75-; m. July 7, '56, Marilyn June Young; s. James Breckinridge III, Robert Young, John Fry.

*SPENCER, 1878, CHARLES LANGFORD—(*Welfare*)—Born Feb. 10, 1855, Utica, N.Y.; died Sept. 24, 1941, St. Paul, Minn. Clerk, U.S. District Court of Minn., 1892-1921, and U.S. Commissioner, 1895-1921.

*SPENCER, 1880, EDWARD CURRAN, M.D.—(*Medicine*)—Born Dec. 8, 1858, St. Paul, Minn.; died Dec. 26, 1891, Coronado Beach, San Diego, Calif.

*SPENCER, 1834, GEORGE GILMAN, M.A.—(*Business*)—Born Sept. 13, 1812, Hartford, Conn.; died Oct. 15, 1885, Brooklyn, N.Y.

*SPENCER, 1867, JAMES MAGOFFIN, LL.B., M.A.—Born April 9, 1839, Brooklyn, N.Y.; died May 13, 1920, Burlington, N.Y. Prof. of mathematics, Gallaudet Coll., Washington, D.C., 1867-1873.

*SPERRY, 1871, WATSON ROBERTSON—(*Literary work*)—Born June 25, 1842, Sauquoit, N.Y.; died Feb. 13, 1926, Hartford, Conn. U.S. Minister to Persia, 1892-1894.

SPITZ, 1962, ROBERT W., M.S.—(*Business*)—Born Dec. 11, 1940, Philadelphia, Pa.; Acct. Rep., IBM Corp., 5930 Hohman Ave., Hammond, Ind. 46320; res. 321 Douglas St., Park Forest, Ill. 60466; m. March 7, '64, Honor Collins Florence Berger; s. Brian William, Eric Andrew.

SPITZER, 1935, LYMAN, JR., Ph.D., D.Sc., LL.D.—(*Education*) —Born June 26, 1914, Toledo, Ohio; Charles A. Young Prof. of Astronomy, Chmn., Dept. of Astrophysical Sciences, Dir., Observatory, Princeton University, Peyton Hall, Princeton, N.J. 08540; res. 659 Lake Drive, Princeton, N.J. 08540; Mbr., Yale Council; m. June 29, '40, Doreen Damaris Canaday; s. Nicholas Canaday, Dionis Coffin; d. Sarah Lutetia (*Saul*), Lydia Strong.

SPOFFORD, 1924, CHARLES MERVILLE, M.A. (Hon.), J.D. LL.D.—(*Law*)—Born Nov. 17, 1902, St. Louis, Missouri; of Counsel, Ptnr., Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. Windmill Lane, East Hampton, N.Y. 11937; Instr., Yale, '24-'25; Alumni Fellow Corporation, '56-'64; Fellow, Saybrook Coll., '56-; Assoc., Isham, Lincoln & Beal, Chicago, '28-'30; with present firm (and predecessor firms) since '30, mbr. of firm since '40; Dir.: Council on Foreign Relations, Metropolitan Opera Assn. (Chmn. Exec. Com. '56-'71, Pres. '46-'50), American Univ. in Beirut, '57-'63, Natl. Council, English Speaking Union, '55-'64, Distillers Co., Ltd., '52-'76, CIBA Corp., '57-'71, Institute for Defense Analyses, '60-'70; Trustee: Carnegie Corp. of New York, Juillard Musical Found., Mutual Life Ins. Co. of New York; Vice Chmn. & Dir., Lincoln Center for the Performing Arts, Inc.; Mbr. Exec. Com., Am. Branch, Internatl. Law Assn.; Mbr. Exec. Council, Am. Soc. Internatl. Law; Deputy U.S. Rep., North Atlantic Council; Chmn., North Atlantic Council Deputies, '50-52; Carnegie Lecturer, Hague Academy of Internatl. Law, '64; Commissioned Lieut. Col., Oct. '42, Col., Sept. '43, Brigadier General, Sept. '44; staff officer in Mediterranean & ETO, Oct. '42-July '45; Distinguished Service Medal, Purple Heart; decorations from Great Britain, Tunisia, Italy, France, Iceland, Belgium; m. 1930, Margaret M. Walker; m. 1960, Carolyn M. Storrs; m. 1970, Sydney R. Brewster; s. Charles Nicholas, ('56), John S. W., ('64); d. Nancy (*Yerkes*), Margaret (*Benkard*).

•SPRING, 1855, ANDREW JACKSON—(*Education*)—Born July 29, 1832, Meadville, Miss.; died April 11, 1865, Mobile, Ala. Sgt. Major, Artillery, Confederate Army, Civil War.

SPROLE, 1942, FRANK ARNOTT, LL.B.—(*Law*)—Born Sept. 13, 1918, Brooklyn, N.Y.; Senior V.P. & General Counsel, Bristol-Myers Co., 345 Park Ave., New York, N.Y. 10022; res. 786

Hollow Tree Ridge Rd., Darien, Conn.; Treas., Class of 1942, '42-'57; Pres., Yale Club of Darien, '61-'62; Dir.: Xomox Corp., '73-, The Knapp Fund, '50-; Trustee, The Hotchkiss School, '70-; Mbr., Bd. of Education, Darien, '58-'61; Lieut., USN, '42-'45; m. Sept. 23, '44, Sarah Louise Knapp; s. Frank Jared, ('69), Jonathan Knapp; d. Wendy Allen (*Bangs II*), Anne Louise (*Jacobs*), Sarah Elizabeth.

STACK, 1940, JOSEPH WILLIAM, JR.—(*Business*)—Born July 13, 1918, Lansing, Mich.; Pres., Stack Associates, management consulting firm, 230 Park Ave., New York, N.Y. 10017; res. 1082 West Rd., New Canaan, Conn. 06840; A.Y.A. founding to present; Class Sec., '70-'75; Mbr., Navy & Marine Acquisition Review Com., '74-'75; Lieut. Cmdr., USNR, '40-'45; Dir., RTA, '71-'73; m. Sept. 25, '48, Wolcott Rorick; s. Christopher D., Nathan S., Joseph W., III (dec.), David R., ('79), Peter S.

*STACKPOLE, 1915, EDWARD JAMES—(*Publishing*)—Born June 21, 1894, Harrisburg, Pa.; died Oct. 1, 1967; Dir. and Pres., Soldiers Orphans' School, Scotland, Pa.; Dir., Harrisburg Hosp.; Commanding Gen., Pennsylvania Natl. Guard, '46-'47; Capt., Inf., Cavalry, W.W. I; Alumni Bd., '51-'59; Yale Development Corp., '57; Pres., Yale Alumni Assn. of Central Pa., '51-'59; m. Aug. 17, '17, Frances Bailey (dec.); d. Mary Frances (*Detweiler*).

*STAGG, 1888, AMOS ALONZO, LL.D., L.H.D., M.A., M.P.E., Ped.D., D.P. Sv.(*Education*)—Born Aug. 16, 1862, Orange, N.J.; died Mar. 17, 1965; Adv. Football Coach, Susquehanna Univ., '47-'52; Adv. Coach, Stockton Coll., '53-; m. Sept. 10, '94, Stella Robertson; s. A.A.S., Jr., Paul; d. Ruth (*Lauren*).

STANBERRY, 1966, WILLIAM BURKS, JR., J.D.—(*Business*)—Born Jan. 23, 1944, Austin, Texas; Pres. & Dir., Hycel Inc., 7920 Westpark Drive, Houston, Texas 77042; res. 10918 Walwick Drive, Houston, Texas 77024; Chmn., Class of 1966 Quarter-Century Fund; Asst. to the Pres., Crutcher Resources Corp., '69-'71; Hycel Inc.: Corporate Sec., '71-'72, V.P., Legal & Finance, '72-'73; m. May 20, '72, Sandra Lynn Melass.

*STANLEY, 1908, HAROLD—(*Finance*)—Born Oct. 2, 1885, Great Barrington, Mass.; died May 14, 1963; Ltd. Ptnr., Morgan Stanley & Co., N.Y.C.; m. Oct. 28, '14, Edith Thurston (dec.); m. Jan. 7, '39, Louise Ross Todd (Gilbert); ss. S. Parker Gilbert, ('56), John Jouett Gilbert; sd. Louise Gilbert (*Mauck*).

*STANLEY, 1852, William, M.A.—(*Law*)—Born Aug. 9, 1830, Goshen, Conn.; died June 28, 1893, Great Barrington, Mass.

*STAPLER, 1874, Henry Beidleman Bascom, LL.B.—(*Law*)—Born Feb. 24, 1853, Mobile, Ala.; died Dec. 1, 1906, Pelham Manor, N.Y. Asst. Distr. Attny., N.Y. City and Cty., 1891-1893.

STEADMAN, 1952, John Montague, LL.B.—(*Education*)—Born Aug. 8, 1930, Honolulu, Hawaii; Prof. of Law, Georgetown University Law Center, 600 New Jersey Ave. N.W., Washington, D.C. 20001; res. 2960 Newark St. N.W., Washington, D.C. 20008; 1952 Class Sec., '72-'77; Mbr., Assn. of Yale Alumni, '72-'75; formerly Visiting Prof. of Law, Univ. of Penn.; Assoc., Pillsbury, Madison & Sutro, San Francisco, '56-'63; Attny., U.S. Dept. of Justice, Washington, '63-'64; Deputy Under Sec. of Army, '64-'65; Special Asst. to Sec. of Defense, '65-'68; Gen. Counsel of Air Force, '68-'70; m. Apr. 8, '61, Alison Storer Lunt; s. Eric Cammett; d. Catharine Neilson, Juliette Montague.

STEADMAN, 1955, Richard Cooke, M.B.A.—(*Business*)—Born Oct. 1, 1932, Honolulu, Hawaii; Ptnr., J.H. Whitney & Co., Room 3200, 630 Fifth Ave., New York, N.Y. 10028; res. 333 E. 68th St., New York, N.Y. 10021; Class Sec., '55-'64; Trustee: The Children's Television Workshop, '72-; The Brearley School, '70-; Deputy Asst. Sec. of Defense, '66-'69; m. Aug. 20, '55, Jane B. Nuckolls; s. Peter, Christopher, ('78); d. Lee.

*STEARNS, 1870, Edwin Russell, M.A.—(*Industrial*)—Born Jan. 10, 1847, Cincinnati, Ohio; died Oct. 24, 1914, Wyoming, Ohio.

*STEBBINS, 1902, Edwin Allen—(*Finance*)—Born May 30, 1879, Oswego, N.Y.; died June 6, 1954, Rochester, N.Y.; Dir., Rochester Chmbr. of Comm., and Bureau Municipal Research.

STEBBINS, 1933, Hart Lyman—(*Ministry*)—Born Sept. 3, 1911, New York, N.Y.; Pres., Catholics United for the Faith, Inc., 222 North Ave., New Rochelle, N.Y. 10801; res. 40 Oxford Rd., New Rochelle, N.Y. 10804; m. Oct. 15, '37, Marsinah Neison; m. June 30, '59, Madeleine Froelicher; s. Timothy Neison, John Henry; d. Victoria Neison (*Wallop*).

*STEBBINS, 1862, Henry Hamilton, D.D.—(*Ministry*)—Born June 3, 1839, New York City; died Aug. 19, 1917, Rochester, N.Y.

°STEELE, 1846, HENRY THORNTON, M.A.—(*Law*)—Born July 8, 1821, East Bloomfield, N.Y.; died Nov. 10, 1890, Chicago, Ill.

°STERLING, 1864, JOHN WILLIAM, LL.B., M.A., LL.D.—(*Law*) Born May 12, 1844, Stratford, Conn.; died July 5, 1918, Grand Metis, Que., Canada.

STETSON, 1934, EUGENE WILLIAM, JR.—(*Business*)—Born Oct. 4, 1911, New York, N.Y.; Pres., Fairhill Oil & Gas Corp.; res. Calderwood Neck, Vinalhaven, Maine 04863; Yale Crew Advisory Com., '46-'51; Lieut. Cmdr., USNR; Bronze Star; m. Sept. 20, '34, Grace Richardson; m. March 21, '56, Kathryna Ray; s. Eugene William III; d. Nancy, Stuart (*Daly*), Patricia (*Tripp*); ss. Ryckman Walbridge; sd. Leslie (*Smith*).

STEVENS, 1940, ALBERT B.—(*Business*)—Born Dec. 14, 1917, Wallingford, Conn.; Sales Mgr., Lee Co., Westbrook, Conn. 06498; res. Box 354, Guilford, Conn. 06437; m. Sept. 14, '40, Elizabeth G. Berger; s. David B.; d. Lucy M., Mary E.

°STEVENS, 1858, FREDERIC WILLIAM, LL.B.—(*Law and Finance*)—Born Sept. 19, 1839, New York City; died Jan. 20, 1928, New York City.

°STEVENS, 1843, HENRY, M.A.—(*Literary work*)—Born Aug. 24, 1819, Barnet, Vt.; died Feb. 28, 1886, London, England.

STEVENS, 1938, JOSEPH B., JR.—(*Business*)—Born Oct. 4, 1916, Cleveland, Ohio; Pres., Harry M. Stevens, Inc., 521 Fifth Ave., New York, N.Y. 10017; res. 4370 Province Line Rd., Princeton, N.J. 08540; Lieut. Cmdr., USN, '42-'45; m. Feb. 2, '40, Frances Pine; s. Joseph Brewster; d. Brooke, Sarah (*Webb*).

STEVENS, 1925, MARVIN A., M.D., B.S., D.M.S.—(*Medicine*) Born April 14, 1900, Stockton, Kans.; Orthopedic Surgeon; res. 11260 Regent St., Los Angeles, Calif. 90066; m. 1925, Barbara Abbey; m. Oct. 2, '43, Dorothy Hill Hopper (dec.); s. Marvin A., Jr.; d. Lucinda A., ('55 Drama) (dec.), Jean Hill (*Violante*), Marcy Gay.

STEVENSON, 1941, CHARLES P.—(*Industrial*)—Born Sept. 23, 1918, Buffalo, N.Y.; Treas. & Dir., Eastman Machine Co., 779 Washington St., Buffalo, N.Y. 14203; res. 27 Tudor Place, Buffalo, N.Y. 14203; m. Jan. 24, '43, Mary-Louise Lord; s. Wade II, Charles P., Jr., ('68), Robert Lord, ('72), Roy; d. Louise Lord (*Gillespie*).

STEVENSON, 1925, DONALD, D., M.F.—(*Forestry retired*)—Born Oct. 2, 1903, New York, N.Y.; res. 7 Stockbridge Place,

Asheville, N.C. 28805; Sec., Dwight Hall, '25-'27; Instr., Lingnan Univ., Canton, China, '30-'33; Prof., Penn. State Forestry School, '36-'45; Forester: Champion Papers, Canton, N.C., '45-'50, Buckeye Cellulose Corp., Perry, Fla., '52-'68; Quaker Commissioner, Arab Relief, Middle East, '51-'52; Clerk: Friends Meeting, Gainesville, Fla., '66-'67, Asheville, N.C., '74-76'; Mbr., Natl. Council, Soc. of American Foresters, '63-'67; m. June 11, '30, Lois E. Davis; s. J. Ross, Philip D., ('58).

*STEVENSON, 1888, FREDERIC AUGUSTUS—(*Communications*)—Born April 27, 1867, New York City; died Dec. 17, 1937, Plainfield, N.J. Mbr., Yale Alumni Bd., '16-'36.

STEWART, 1918, CHARLES J.—(*Finance retired*)—Born June 3, 1898, Dallas, Texas; res. 1601 Gulf Shore Blvd., Naples, Fla.; formerly Chmn. of Bd., Manufacturers Hanover Trust Co. of New York; 2d Lieut., F.A., 26th Div., Feb. '18-Apr. '19; m. June, '20, Maud Emily Tenison (dec. Jan. 1968); m. July, '69, Clothilde de Veze; s. Charles J., Jr., ('48); d. Emily (*Goyer*).

STEWART, 1916, DONALD OGDEN—(*Literary work retired*)—Born Nov. 30, 1894, Columbus, Ohio; author, playwright, screen writer; res. 103 Frognal, London N.W.3, 6XR, England; m. July '26, Beatrice Ames; m. March 4, '39, Ella Winter; s. Ames Ogden, Donald Ogden, Jr.

STEWART, 1961, JAMES C., LL.B.—(*Finance*)—Born Apr. 7, 1939, Cleveland, Ohio; Asst. V.P. & Trust Officer, Security Trust Co. of Rochester, One East Ave., Rochester, N.Y. 14604; res. 3485 Elmwood Ave., Rochester, N.Y. 14610; m. May 4, '64, Barbara Hyde Dean; s. Whitney Alaire; d. Allison Dean.

*STEWART, 1931, JAMES ROSS, LL.B.—(*Law*)—Born Mar. 4, 1909, Cleveland, Ohio; died Mar. 3, 1970; Ptnr., Arter & Hadden, Cleveland; Trustee, Hathaway Brown School for Girls, '47-(Pres. til '69); Col., AUS, Gen. Staff Corps, June '42-Dec. '45; Legion of Merit, Officer British Empire, Chevalier-Legionne d'Honeur; Exec. Com., Yale Law Sch. Assn., '37-'66; Yale Alumni Scholarship Com. of Chicago, '36-'65; V.Chmn., Alumni Bd.; m. Nov. 21, '35, Elizabeth Cobb; s. James C., ('61), William R., ('65); d. Mary, Susan.

STEWART, 1921, JOHN—(*Finance semi-retired*)—Born Nov. 15, 1898, Baltimore, Md.; Investment Counsel (formerly V.P.), Cooke & Bieler, Inc., 1324 Philadelphia Natl. Bank Bldg., Broad & Chestnut Sts., Philadelphia, Pa. 19107; res.

1110 Beech Rd., Rosemont, Pa. 19010; Class Exec. Com., Class Alumni Fund Agt., '61-; 2d Lieut., F.A., U.S. Army, Sept.-Dec., '18; m. Nov., '24, Dorothy B. Rodgers (divorced); m. Nov., '47, Frances T. Leaf (dec.); m. Feb., '65, Josephine W. Gloninger; d. Dora B. (*Lewis*), Mary Washington (*Borie*).

°STEWART, 1890, PERCY HAMILTON, LL.B.—(*Law*)—Born Jan. 10, 1867, Plainfield, N.J.; died June 30, 1951, Plainfield; Mayor of Plainfield, '12-'13; Mbr., N.J. State Bd. of Education, '19-'21, and of N.J. State Highway Comm., '23-'29; Mbr., Congress, '31-'32; Civilian Aide to the Adj. Gen., World War I.

°STEWART, 1928, PETER HELLWEGE—(*Finance*)—Born Nov. 14, 1906, New Orleans, La.; died June 25, 1942, New Orleans.

°STEWART, 1886, PHILIP BATTEL, M.A., LL.D.—(*Finance*)—Born Jan. 27, 1865, Middlebury, Vt.; died July 22, 1957, Colorado Springs, Colo.

STEWART, 1937, POTTER, LL.B., LL.D.—(*Government*)—Born Jan. 23, 1915, Jackson, Mich.; Assoc. Justice, U.S. Supreme Court, Washington, D.C. 20543; res. 5136 Palisade Lane N.W., Washington, D.C. 20016; Exec. Com., Yale Law School Assn.; Cincinnati City Council, '50-'54 (Vice Mayor '50-53); Judge, U.S. Circuit Court of Appeals for the Sixth Circuit, '54-'58; Lieut., USN, '42-'45; m. Apr. 24, '43, Mary Ann Bertles; s. Potter, Jr., ('70), David Bertles; d. Harriet Potter (*Virkstis*).

°STEWART, 1894, WALTER EUGENE, JR., LL.B.—(*Law*)—Born Nov. 7, 1872, Plainfield, N.J.; died Mar. 5, 1901, San Francisco, Calif. 2d Lieut., Inf., Spanish-American War.

STEWART, 1943, ZEPH, M.A.—(*Education*)—Born Jan. 1, 1921, Jackson, Mich.; Prof. of Greek and Latin, Dept. of the Classics, Boylston Hall, Harvard University, Cambridge, Mass. 02138; res. 104 School St., Belmont, Mass. 02178; Yale Univ. Council: Com. on the Humanities, '58-'59, Com. on Yale Coll., '62-'64, Chmn., Com. on Yale Coll., '76-; Harvard University: Asst. Prof. to Prof., '53-, Senior Tutor, Adams House, '55-'60, Master, Lowell House, '63-'76; Trustee: Bishop Rhinelander Found., '64-'70; Hotchkiss School, '64-, Radcliffe College, '72-'76, Loeb Classical Library, '73-; Capt., AUS, '43-'47, '51-'53; Legion of Merit; RTA; Dir., '61-'64, Pres., '63-'64; m. Dec. 29, '59, Diana Childers; s. Christopher Childers; d. Sarah Barton, Mary Alden.

°STILES, 1846, JOSEPH, M.A.—Born Jan. 14, 1826, Savannah, Ga.; died Aug. 17, 1851, Cass County, Ga.

•STILES, 1959, William Augustus—(*Literary work*)—Born Mar. 9, 1837, Deckertown, N.J.; died Oct. 5, 1897, Jersey City Heights, N.J.

•STILLE, 1839, Charles Janeway, M.A., LL.D.—(*Literary work*)—Born Sept. 23, 1819, Philadelphia, Pa.; died Aug. 11, 1899, Atlantic City, N.J. Prof. of belles-lettres, Univ. of Pennsylvania, 1866-1868; provost, 1868-1882. Mbr., U.S. Sanitary Comm., Civil War.

•STILLMAN, 1935, George Schley, M.A., B.Arch.—(*Museum work*)—Born Nov. 2, 1912, New York, N.Y.; died Sept. 7, 1964; Sec. Museum of Modern Art, N.Y.C.; Lieut. Cmdr., USNR, W.W. II; m. June 15, '48, Frances Mount Mason; s. G.S.S., Jr.; d. Constance Pratt.

•STILLMAN, 1894, Leland Stanford, LLB.—(*Law and finance*)—Born Sept. 8, 1870, San Francisco, Calif.; died July 5, 1933, Redlands, Calif. Priv., Cav., Spanish-American War.

STILLMAN, 1940, Peter Gordon Bradley—(*Education*)—Born May 31, 1918, Rye, N.Y.; Headmaster, Riverdale Country School, Fieldston Rd. & W. 253rd St., Riverdale, N.Y. 10471; res. 5223 Fieldston Rd., Riverdale, N.Y. 10471; 1940 Class Treas., '55-'65; Trustee, Independent Day School, Middlefield, Conn., '62-'71; Dir., Conn. Assn. of Independent Schools, '66-'72; V.P., N.Y. Guild of Independent Schools, '76-; Vice Chmn., Wallingford Charter Comm., '59-'61; Capt., AUS (Anti Aircraft), '40-'46; m. Dec. 12, '42, Eugenia W. Watters; s. Peter G., ('66), J. Frederick, III, ('75), Alfred, III, ('80), Waddell W.; d. Anne (*Nordeman*).

•STIMSON, 1865, Henry Albert, B.D., M.A., D.D., S.T.D., Litt.D.—(*Ministry*)—Born Sept. 28, 1842, New York City; died July 18, 1936, New York City. Lecturer, Oberlin Theological Seminary, 1891, Andover, 1900-1904, Chicago, '02-'03, and Yale, '04-'05. Acting Prof. of Homiletics, Hartford Theological Seminary, '16-'17, Trustee, Carleton Coll., 1870-1880, Drury, 1886-1893, Mount Holyoke, 1894-1936, and Hartford Theological Seminary '03-'19; director, Chicago Theological Seminary, 1874-1879; Mbr., Bd. of Visitors, Wellesley Coll., 1882-1886, and Andover Theological Seminary, '08-'12.

•STIMSON, 1888, Henry Lewis, M.A., LL.B., LL.D.—(*Law*)—Born Sept. 21, 1867, New York City; died Oct. 20, 1950, Huntington, L.I., N.Y.; Attny. southern dist. of N.Y., '06-'09; Sec. of War, '11-'13; Gov.-Gen. of Philippines, '28-'29; Sec. of

State, '29-'33; Sec. of War, '40-'45; Chmn., Am. Delegation to London Naval Conferences, '30, and of Am. Delegation to Disarmament Conferences, '32; Col., F.A., World War I (AEF); Assoc. Fellow, Timothy Dwight Coll., Yale Univ.

*STOKES, 1896, ANSON PHELPS, B.D., M.A., D.D., LL.D., S.T.D. —(*Ministry and Education*)—Born April 13, 1874, New Brighton, N.Y.; died Aug. 13, 1958, Lenox, Mass.; Founder and Trustee, Am. Univ. Union in Europe, '17-'33; Trustee, Rockefeller Foundation, Gen. Education Bd., Internatl. Education Bd.; Dir. Education Dept., Y.M.C.A., World War I (AEF); Sec., Yale Univ., 1899-1921.

STOKES, 1927, ANSON PHELPS, JR., B.D., D.D., S.T.D.—(*Ministry retired*)—Born Jan. 11, 1905, New Haven, Conn.; res. 182 Walnut St., Brookline, Mass. 02146; formerly Bishop of Episcopal Diocese of Mass.; Trustee of Episc. Ch. at Yale; Class Agt., Alumni Fund, '27-'28; Asst. Rector, St. Mark's Ch., Shreveport, La., '32-'33, Assoc. Rector, '33-'36; Rector, Trinity Ch., Columbus, Ohio, '37-'45; Rector & Canon, St. Andrew's Cathedral, Honolulu, '45-'50; Rector, St. Barthlolmew's Ch., New York City, '50-'54; Bishop Co-Adjutor, '54-'56; Bishop, Diocese of Mass. '56-'70; City Planning Bd., Shreveport, La., '34-'46; Advisory Bd., Mass. Comm. Against Discrimination, '55-'60; m. July 10, '43, Hope Procter; d. Carol (Freemont-Smith), Mary Elizabeth.

*STOKES, 1909, HAROLD PHELPS—(*Journalism*)—Born Jan. 10 1887, New York, N.Y.; died June 8, 1970; Sec. to Herbert Hoover (Sec. of Commerce), '24-'25; 1st Lieut., F.A., AEF, W.W. I; Class Sec., '09-'21; m. Sept. 17, '20, Elizabeth Miner King; d. Helen Elizabeth (*Hawkins*), Lydia King (*Katzenbach*), Anne Cornelia (*Ketchum*).

*STOKES, 1889, HORACE SHELDON, M.D.—(*Medicine*)—Born Aug. 18, 1867, Detroit, Mich.; died Dec. 19, 1924, New York City.

*STONE, 1878, CHARLES MARTIN—(*Law and industrial*)—Born Feb. 6, 1856, Binghamton, N.Y.; died July 2, 1929, Binghamton.

*STONE, 1902, HAROLD, LL.B.—(*Finance*)—Born Oct. 19, 1878, Syracuse, N.Y.; died Feb. 22, 1958; with U.S. Public Service Res., U.S. Employment Service, Dept. of Labor, World War I.

°STONE, 1937, LOUIS TALCOTT, LL.B.—(*Law*)—Born July 22, 1914, Bronxville, N.Y.; died Jan. 2, 1958, New York City; Maj., AUS, World War II (Military Intelligence, War Dept.).

°STONE, 1865, WILLIAM—(*Art*)—Born Jan. 31, 1842, Brooklyn, N.Y.; died Oct. 27, 1913, South Yarmouth, Mass.

°STORRS, 1850, CORDIAL—(*Law*)—Born Sept. 1, 1823, Martinsburg, N.Y.; died April 9, 1891, Washington, D.C.

STRAW, 1964, RALPH L., LL.B.—(*Law*)—Born June 1, 1942, Morristown, N.J.; Attny., Wharton, Stewart & Davis, 50 W. Main St., Somerville, N.J. 08876; res. R.D. 1, Cross Brook Rd., Califon, N.J. 07830; m. Aug. 29, '65, Diane Patricia Temme; d. Jennifer.

°STREET, 1912, HENRY ABBOTT—(*Business*)—Born Aug. 12, 1889, Pawtucket, R.I.; died Mar. 16, 1956, Bristol, R.I.; Capt., Ord. Dept., World War I (AEF).

°STRICKLER, 1848, SAMUEL ALEXANDER—(*Finance*)—Born May 2, 1826, Shelbyville, Tenn.; died May 1, 1872, Indianapolis, Ind.

°STRONG, 1835, CALEB, M.A.—(*Ministry*)—Born Jan. 31, 1816, Northampton, Mass.; died Jan. 4, 1947, Montreal, Que., Canada.

°STRONG, 1870, CHARLES HALL, M.A., D.D.—(*Ministry*)—Born Dec. 29, 1850, New Orleans, La.; died Jan. 21, 1914, Milledgeville, Ga.

°STRONG, 1871, GEORGE ARTHUR—(*Law*)—Born Oct. 21, 1848, Port Gibson, Miss.; died May 25, 1926, Plainfield, N.J.

°STRONG, 1922, HENRY BARNARD—(*Government*)—Born Oct. 5, 1899, Hartford, Conn.; died Nov. 25, '1973; Rep., Gen. Assembly, from Salisbury, Conn., '43; State Central Com., '43-'47; Exec. Sec. for Govs. Baldwin and McConaughy, '43-'47; Public Utilities Commission, State of Conn., '47-'65; Navy, W.W. I; m. Oct. 27, '62, Helen Flaherty; d. Eunice Barnard (*Groark*).

°STROUT, 1912, EDWIN AUGUSTUS, JR.—(*Finance*)—Born June 30, 1890, Seattle, Wash.; died Mar. 8, 1945, Seattle, Wash. Capt., F.A., World War I (AEF), Lt. Col., G.S.C., AUS, World War II.

STRUZZI, 1975, THOMAS A.—Add. 801 N. Penn St., Penn, Pa. 15675.

°STUBBS, 1835, ALFRED, M.A., D.D.—(*Ministry*)—Born May 12, 1815, Turk's Island, West Indies; died Dec. 12, 1882, Princeton, N.J.

°STUCKY, 1940, WILLIAM McDOWELL—(*Journalism*)—Born Dec. 12, 1916; Lexington, Ky.; died Jan. 1, 1961; Assoc. Dir., American Press Institute, Columbia Univ., New York, N.Y.; Lieut. Cmdr., USNR, W.W. II; m. Mar. 27, '43, Robyn Smith; s. W.M.S., Jr., Robert Hoover.

°STURGES, 1841, HEZEKIAH—(*Law*)—Born Nov. 3, 1819, Gilbertsville, N.Y.; died Dec. 4, 1884, Cooperstown, N.Y.

°STURGES, 1835, THOMAS BENEDICT—(*Ministry*)—Born in 1810, Bridgeport, Conn.; died May 8, 1877, Greenfield Hill, Conn.

°SULLIVAN, 1900, CORLISS ESMONDE—(*Finance*)—Born Dec. 19, 1876, Shreve, Ohio; died Feb. 14, 1939, Hunting Valley, Ohio. Mbr., Advisory Council, Fed. Res. Bd., '21-'24.

SULZER, 1973, JAMES S.—(*Education*)—Bus. Model Secondary School for the Deaf, Kendall Green, Washington, D.C. 20002; res. 2812 34th Place N.W., Washington, D.C. 20007.

°SUMNER, 1897, GRAHAM, LL.B.—(*Law*)—Born Oct. 25, 1876, New Haven, Conn.; died Nov. 16, 1946, Greenwich, Conn.

°SUMNER, 1863, WILLIAM GRAHAM, LL.D.—(*Education*)—Born Oct. 30, 1840, Paterson, N.J.; died April 12, 1910, Englewood, N.J. Prof. of Political and social science, Yale Univ., 1872-1885; Pelatiah Perit Prof. 1885-1909, and Prof. emeritus, '09-'10.

SUMNER, 1945, WILLIAM S.—(*Insurance*)—Born March 10, 1923, New York, N.Y.; Senior V.P., Marsh & McLennan, Inc., One Oliver Plaza, Pittsburgh, Pa. 15222; res. 5600 Northumberland St., Pittsburgh, Pa. 15217; Pres., Plainfield, N.J. Yale Club; Lieut. (j.g.) USN '43-'46; m. June 5, '48, Janet L. Strong; s. William S., Jr., Robert D.; d. Susan B., Janet L.

°SUTHERLAND, 1931, RICHARD ORLIN, M.S., Ph.D.—(*Education*)—Born May 5, 1909, Chicago, Ill.; died July 17, 1963; Dept. of Chemical Engineering, Missouri School of Mines & Metallurgy.

°SUTPHIN, 1903, STUART BRUEN—(*Business*)—Born Nov. 26, 1882, Cincinnati, Ohio; died Mar. 10, 1951, Cincinnati; Capt. Q.M.C., World War I; Mbr., Yale Alumni Bd. '29-'35.

°SWAN, 1902, JOSEPH ROCKWELL—(*Finance*)—Born Oct. 21, 1878, Utica, N.Y.; died Nov. 9, 1965; bus. c/o Smith, Barney & Co., N.Y.C.; Pres. N.Y. Botanical Gardens, '38-'46, Chmn. Bd., '46-; Major, Amer. Red Cross, W.W. I; m. Dec. 20, '11, Nathalie Henderson; d. Nathalie (*Rahn*), Emma (*Hall*), Lois Junkin.

•SWEET, 1899, CARROLL FULLER—(*Industrial*)—Born June 24, 1877, Grand Rapids, Mich.; died Sept. 26, 1955, Suburban Chicago, Ill.

•SWEET, 1871, EDWIN FORREST, LL.B.—(*Law*)—Born Nov. 21, 1847, Dansville, N.Y.; died April 2, 1935, Ojai, Calif. Mayor of Grand Rapids, Mich., '04-'06. Mbr. of Congress, '11-'13; Asst. Sec., Dept. of Commerce, '13-'21. Mbr., War Industries Bd., World War I.

SWENSON, 1940, EDWARD FRANCIS, JR.—(*Finance*)—Born Sept. 3, 1918, New York, N.Y.; Owner-Mgr., Edward F. Swenson & Co., 1515 First National Bank Bldg., Miami, Fla. 33131; res. 21 Casuarina Concourse, Coral Gables, Fla. 33142; Chmn., Alumni Fund, '68-'70; Founding Bd., A.Y.A., '71; Co-Chmn., The Campaign for Yale, '74-; formerly Senior V.P. in charge of the Trust & Investment Div., Southeast First Natl. Bank of Miami; Capt., Inf., '43-'46; m. July 11, '42, Marie Bassett; s. Edward F., III, ('67); d. Katherine (*Lobell*).

•SWIFT, 1836, JOHN MORTON—(*Farming*)—Born Sept. 18, 1816, Washington, Dutchess County, N.Y.; died April 3, 1887, Jacksonville, Fla.

•SWIFT, 1915, WALKER ELY, M.D.—(*Medicine*)—Born Jan. 7, 1894, New York City; died Dec. 21, 1953, Sarasota, Fla.

SWIL, 1967, ROY ANTONY—(*Business*)—Born Oct. 10, 1945, Cape Town, South Africa; Credit Mgr., Cape Gate, Fence & Wireworks, Ltd., P.O. Box 17, Parow, Cape, S.A.; res. 57 Bantry Court, Bantry Bay, Cape Town, South Africa.

•SWINBURNE, 1879, LOUIS JUDSON—(*Literary work*)—Born Aug. 24, 1855, Albany, N.Y.; died Dec. 9, 1887, Colorado Springs, Colo.

•SWOOPE, 1931, WALTER MOORE, LL.B.—(*Law*)—Born April 17, 1908, Madera, Pa.; died March 17, 1975; Attny., Ptnr., Bell Silberblatt Swoope, Clearfield, Pa., and 230 N. Front St., Philipsburg, Pa. 16866; res. 213 S. Centre St., Philipsburg, 16866; T/Sgt., Army, Sept. '43-Oct '45; m. Sept. 27, '37, Mary Louise Fryberger; s. W.M.S., Jr.; d. Elizabeth Nuttall (*McDougall*).

T

TABOR, 1943, JOHN KAYE, B.A. & M.A. Cambridge, LL.B., D.Litt. Humane—(*Law, Government*)—Born Apr. 19, 1921, Uniontown, Pa.; Ptnr., Purcell & Nelson, 1776 F. St. N.W., Washington, D.C. 20006; res. 1616 34th St. N.W., Washington, DC. 20007; Yale Alumni Fund, '43-'56; Class Sec., '43-'53; Yale Scholarship Com., Pittsburgh, '53-'63; Dir., Yale Alumni Assn., Pittsburgh, '69-'73; Fund for Yale, Special Gifts (Washington Vice Chmn.), '76-; Assoc., Winthrop, Stimson, Putnam & Roberts, New York, '50-'53; Kirkpatrick, Pomeroy, Lockhart & Johnson, Pittsburgh: Assoc., '53-'58, Ptnr., '58-'63; Ptnr., Kirkpatrick, Lockhart, Johnson & Hutchison, Pittsburgh, '70-'73; Allegheny Cty. Health & Welfare Federation: Chmn., Housing Task Force, '70-'72, Housing Strike Force, '72-'73; Penn. Sec. of Commerce, '63-'67; Penn. Sec. of Internal Affairs, '67-'68; Penn. Sec. of Labor & Industry, '68-'69; U.S. Under Sec. of Commerce, '73-'75; Lieut., USNR, '43-'46; RTA Club Solicitor, '75-'76; m. Dec. 13, '52, Kate Hill Williams; s. John Kaye, Jr., ('77), William H.

*TAFT, 1833, ALPHONSO, M.A., LL.D.—(*Law*)—Born Nov. 5, 1810, Townshend, Vt.; died May 21, 1891, San Diego, Calif. Sec. of War, U.S., 1876; Atty. Gen., U.S., 1876-1877, U.S. Minister to Austria, 1882-1884, and to Russia, 1884-1885. Mbr., Yale Corp., 1872-1882.

TAFT, 1918, CHARLES PHELPS, LL.B., LL.D.—(*Law, Government*)—Born Sept. 20, 1897, Cincinnati, Ohio; City Councilman, Broadcaster, bus. & res. 1071 Celestial St., Cincinnati, Ohio 45202; University Council, '47-'54; Prosecuting Attny., Hamilton Cty., Ohio, '27-'28; Mbr., Cincinnati City Council, '38-'42, '48-'51, '55-; Mayor, Cincinnati, '55-'57; 1st Lieut., F.A., AEF (France), '17-'18; Capt., Army Reserves, '19-'39; m. Oct. 6, '17, Eleanor Kellogg Chase (dec.); s. Seth Chase, ('43-'44), Peter R., ('58); d. Eleanor Kellogg (*Hall*), Sylvia Howard (*Lotspeich*), Lucia (dec.), Cynthia (*Morris*), Rosalyn (dec.).

°TAFT, 1880, HENRY WATERS, M.A.—(*Law*)—Born May 27, 1859, Cincinnati, Ohio; died Aug. 11, 1945, New York City. Spec. Asst. to Attny.-Gen. of U.S.; '05-'07, Mbr., com. on reorganization of N.Y. State Government, '25-'26, and of N.Y. State com. on cost of public education, '33. Trustee, Coll., of the City of N.Y., '03-'05.

°TAFT, 1883, HORACE DUTTON, M.A., L.H.D., LL.D.—(*Education*)—Born Dec. 28, 1861, Cincinnati, Ohio; died Jan. 28, 1943, Watertown, Conn. Founded the Taft School, 1890. Headmaster 1890-1936; headmaster emeritus, '36-'43; trustee, '26-'43 and Pres. of the Bd., '26-'36.

°TAFT, 1900, HULBERT, Litt.D., LL.D.—(*Journalism*)—Born Sept. 21, 1877, Cincinnati, Ohio; died Jan. 19, 1959, Indian Hill, Cincinnati; Mbr., Cincinnati Home Guard, World War I.

°TAFT, 1867, PETER RAWSON, M.A.—(*Law*)—Born May 10, 1846, Cincinnati, Ohio; died June 3, 1889, Cincinnati.

°TAFT, 1910, ROBERT ALPHONSO, M.A., LL.B., LL.D., D.C.L.—(*Law*)—Born Sept. 8, 1889, Cincinnati, Ohio; died July 31, 1953, New York City; Asst. Counsel, U.S. Food Admin., '17-'18; Counsel, Am. Relief Admin., '18-'19; Mbr., Ohio House of Representatives, '21-'26 (Spkr., '26), and Ohio Senate, '31-'32. U.S. Senator from Ohio, '38-'53; Mbr., Yale Corp., '36-'53.

TAFT, 1971, THOMAS PRINDLE—(*Education*)—Born July 19, 1948, Cleveland, Ohio; School Teacher & Carpenter; bus. & res. 1257 Ferrelo Rd., Santa Barbara, Calif. 93103; m. July 24, '71, Dudley; s. Nathan Dudley.

°TAFT, 1878, WILLIAM HOWARD, LL.B., D.C.L., LL.D.—(*Law*)—Born Sept. 15, 1857, Cincinnati, Ohio; died Mar. 8, 1930, Washington, D.C. Solicitor-Gen. of the U.S., 1890-1892. Judge, U.S. Circuit Court, 1890-1892. Gov., Philippine Islands, 1901-1904. Sec. of War, '04-'08. Pres. of the U.S., '08-'12. Chief Justice of the U.S., '21-'30. Prof. of law (also dean), Cincinnati Law School, 1896-1900; Kent Prof. of law, Yale Coll., and Prof. of constitutional law, Yale Law School, '13-'21. Mbr., Yale Corp., '06-'13 and '22-'25. Trustee, Carnegie Institution.

°TALCOTT, 1838, THOMAS GROSVENOR, M.A.—(*Law*)—Born Dec. 22, 1819, New Hartford, N.Y.; died Mar. 7, 1870, Hartford, Conn.

•TARBELL, 1873, Frank Bigelow, Ph.D.—(*Education*)—Born Jan. 1, 1853, West Groton, Mass.; died Dec. 4, 1920, New Haven, Conn. Asst. Prof. of Greek, Yale Univ., 1882-1887; Dir., Am. School of Classical Studies, Athens, 1888-1889 and 1892-1893; Assoc. Prof. of Greek, Univ. of Chicago, 1893-1894, and Prof. of classical archaeology, 1894-1918.

•TAYLOR, 1902, Alan McLean, B.D.—(*Welfare*)—Born Mar. 1, 1878, Sidney, Ohio; died Aug. 30, 1947, Adrian, Mich.

•TAYLOR, 1859, Alfred Judd, LL.B., M.A.—(*Law*)—Born April 4, 1883, Huntington, Mass.; died July 12, 1901, Huntington.

•TAYLOR, 1862, John Phelps, M.A., D.D.—(*Ministry*)—Born April 6, 1841, Andover, Mass.; died Sept. 13, 1915, Andover. Taylor Prof. of Biblical theology, Andover Theological Seminary, 1883-1899.

•TAYLOR, 1845, Richard—(*Farming*)—Born Jan. 27, 1826, New Orleans, La.; died April 12, 1870, New York City. Mbr., La. State Senate, 1856-1860. Served in Mexican War. Lieut.-Gen., Confederate Army, Civil War.

•TENER, 1912, Alexander Campbell, LL.B.—(*Law*)—Born Oct. 13, 1888, Newcastle, Pa.; died Nov. 4, 1965; Judge Orphans Court, Allegheny Cty., Pa., '43-'45; Chmn., Renegotiation Bd., Pittsburgh Office, Army Ordnance, '42-'43; m. June 15, '16, Marion Clement (dec.); m. Jan. 9, '48, Ethel Drew Logan; s. George Evans, ('40).

•TENER, 1916, Kinley John, LL.B.—(*Law*)—Born Oct. 6, 1893, Pittsburgh, Pa.; died May 10, 1947, Pittsburgh, Pa. Capt., F.A., World War I (AEF).

TERRY, 1935, H. P. Baldwin,—(*Insurance semi-retired*)—Born March 10, 1913, New York, N.Y.; Special Internatl. Risk Consultant, The Foxboro Co., Foxboro, Mass.; res. 151 Forest St., Sherborn, Mass. 01770; permanent res. Small Point, Maine 04567; formerly V.P., Alexander & Alexander, New York; Alumni Fund Agt., Pierson Coll., '35-'47; Class Sec., '70-; Pres., Syosset, N.Y. PTA, '46-'47; Trustee, N.Y. Eye & Ear Infirmary, '50-'60; Chmn., Planning Bd., Laurel Hollow, N.Y., '69-; Lieut. Col., F.A., Jan. '44-Dec. '47; Air Medal with 3 clusters; m. Sept. 27, '36, Barbara Mason; s. H. P. Baldwin, Jr., ('62), W. Gray; d. Sarah (*Graves*).

•TERRY, 1885, Wyllys—(*Insurance*)—Born Dec. 6, 1865, Brooklyn, N.Y.; died April 31, 1949, New York City.

TERRY, 1962, WYLLYS III, M.F., Ed.M.—(*Education*)—Born Oct. 25, 1939, New York, N.Y.; Head of The Upper School, The Greenhill School, 14255 Midway Rd., Dallas, Texas 75240; res. 3107 Rolling Knoll, Dallas, Texas, 75240; A.Y.A., '68-'70; 1st Lieut., USMC, '62-'65; m. June 25, '66, Leonie DeBary Lyon; s. Wyllys, Lyon; d. Tiffany.

°THACHER, 1868, JAMES KINGSLEY, M.D.—(*Medicine*)—Born Oct. 19, 1847, New Haven, Conn.; died April 20, 1891, New Haven. Prof. of physiology, Yale Medical School, 1879-1891 (also of clinical medicine, 1887-1891).

°THACHER, 1877, JOHN SEYMOUR, M.D.—(*Medicine*)—Born June 10, 1856, New Haven, Conn.; died Oct. 28, 1922, New York City. Prof. of clinical medicine, Columbia Univ., 1903-1922.

°THACHER, 1883, SHERMAN DAY, LL.B., M.A.—(*Education*)—Born Nov. 6, 1861, New Haven, Conn.; died Aug. 5, 1931, Santa Barbara, Calif. Founded Thacher School, 1889. Chmn. Ventura Cty. (Calif.) Exemption Bd. (rank of Major), World War I.

°THACHER, 1871, THOMAS, LL.B., M.A., LL.D.—(*Law*)—Born May 3, 1850, New Haven, Conn.; died July 30, 1919, Watch Hill, R.I.

°THACHER, 1835, THOMAS ANTHONY, M.A., LL.D.—(*Education*)—Born Jan. 11, 1815, Hartford, Conn.; died April 7, 1886, New Haven, Conn. Prof. of Latin, Yale Coll., 1842-1886. Mbr., Conn. State Bd. of Education 1856-1877.

°THACHER, 1904, THOMAS DAY, LL.D.—(*Law*)—Born Sept. 10, 1881, Tenafly, N.J.; died Nov. 12, 1950, New York City; Asst. U.S. Attny., Southern Distr. of N.Y., '07-'08; Judge, U.S. Distr. Court, Southern Distr. of N.Y., '25-'30; Solicitor Gen. of U.S., '30-'33; Corp. Counsel, City of N.Y., '43; Chmn., N.Y.C. Charter Comm.; Judge, N.Y. Court of Appeals, '43-'48; Maj., Am. Red Cross, World War I (Fgn. Service); Alumni Fellow, Yale Corp., '31-'49 (Mbr., Prudential, Educational Policy, Honorary Degrees, and Finance coms.); Agt. Class Fund, '04-'17; Assoc. Fellow, Branford Coll.; Pres., Yale Law School Assn., '33-'36.

°THACHER, 1887, WILLIAM LARNED—(*Education*)—Born Oct. 9, 1866, New Haven, Conn.; died Nov. 2, 1953, Sierra Madre, Calif.

°THOMAS, 1873, CHARLES HENRY, M.D.—(*Business*)—Born Jan. 6, 1851, Pomeroy, Ohio; died Oct. 29, 1904, Baltimore, Md.

°THOMAS, 1922, JOHN ALLEN MINER—(*Literary work*)—Born Jan. 10, 1900, New York City; died Mar. 12, 1932, New York City.

THOMAS, 1941, WALTON D., M.D., M.S.—(*Medicine*)—Born July 7, 1919, Montgomery, Ala.; Surgeon, 3003 West Good Hope Rd., Milwaukee, Wisc. 53209; res. 7829 North Regent Rd., Milwaukee, Wisc. 53217; Founder & Pres., Milwaukee Medical Clinic, '67-; Assoc. Clinical Prof. of Surgery, Medical Coll. of Wisc., '65-; Pres., Milwaukee Surgical Soc., '74-'75; Boys Club; Treas., Milwaukee Academy of Medicine, '70; Lieut. Cmdr., USN, '44-'45, '53-'55; m. July 5, '44, Jane Magin; s. Gregory W., Clay R.; d. Leslie L., Jan M.

°THOMPSON, 1903, DONALD, LL.B.—(*Law*)—Born Oct. 27, 1882, Allegheny, Pa.; died Jan. 28, 1948, Pittsburgh, Pa. Officer candidate, C.A.C., World War I.

THOMPSON, 1938, JOHN R., LL.B.—(*Law, Government*)—Born Apr. 16, 1917, New York, N.Y.; 1st Deputy Comptroller, State of New York, Dept of Audit & Control, State Office Bldg., Albany, N.Y. 12225; res. 5 Stonehenge Lane, Albany, N.Y. 12203; Faculty, Yale Law School, '49-'56; Law Clerk to Chief Justice, U.S. Supreme Court, '47; New York City: Asst. Corporation Counsel, '66-'72, 1st Asst. Corporation Counsel, '72-'75; Lieut. Col., AUS, '41-'46; Bronze Star; m. 1948, Margaret Lynch.

THOMPSON, 1970, JONATHAN PENFIELD—(*Engineering*)—Born Dec. 27, 1948, Winsted, Conn.; Engineer, The Torrington Co.; res. Colebrook, Conn. 06021.

°THOMPSON, 1838, JOSEPH PARRISH, M.A., D.D., LL.D.—(*Ministry*)—Born Aug. 7, 1819, Philadelphia, Pa.; died Sept. 20, 1879, Berlin, Germany.

°THOMPSON, 1881, NORMAN FREDERICK—(*Finance*)—Born June 27, 1856, Perry, Ga.; died Mar. 3, 1931, Colebrook, Conn.

°THOMPSON, 1879, OLIVER DAVID—(*Law*)—Born Sept. 24, 1854, Butler, Pa.; died June 10, 1925, Edgeworth, Pa.

THOMPSON, 1967, STEPHEN E., JR.,—Add. Box 7, Sisters, Oregon 97759.

THOMPSON, 1969, WILLIAM McILWAINE, JR., J.D.—(*Law*)—Born Feb. 19, 1947, New Haven, Conn.; Lawyer, Guardian Oil Company, 615 W. W. Jones Bldg., Corpus Christi, Texas

78401; res. Chateaux Dijon Apt. 9, 5414 Beverly Hill Lane, Houston, Texas 77056; Sec. Class of 1969, '69-'74; A.Y.A., '75-.

THOMSON, 1924, CLIFTON SAMUEL, LL.B.—(*Law retired*)—Born Jan. 3, 1903, Johannesburg, South Africa; bus. add. 63 Wall St., New York, N.Y. 10005; res. Mosle Rd., Far Hills, N.J. 07931; Ptnr., Appleton, Rice & Perrin, '34-; Gen. Counsel and Dir., CIBA Corp., '46-'64; Mayor, Sands Point, N.Y., '40-'47; Mbr., Township Com., Mendham, N.J., '61-'71; m. June 4, '27, Charlotte Deyer; d. Victoria (*Romig*), Charlotte (*Iserbyt*).

*THOMSON, 1891, SAMUEL CLIFTON, E.M.—(*Engineering*)—Born May 7, 1869, Pottsville, Pa.; died July 13, 1940, New York City. Trade Advisor, Export Div., War Trade Bd., '17-'18. m. 1902, Victoria Stanton; s. Clifton Samuel ('24).

THORNE, 1968, Brinkley Stimson, M. Arch.—(*Architecture*)—Born Aug. 13, 1945, New York, N.Y.; Designer; bus. & res. 138 Main St., Northampton, Mass. 01060; Visiting Critic, Architecture, Yale College; m. Sept. 9, '73, Mazie Cox; d. Dune Delafield.

THORNE, 1974, CHARLES HEDGES MCKINSTRY—(*Student*)—Born Oct. 27, 1952, Oakland, Calif.; Student, U.C.L.A. School of Medicine; res. 1016 Tiverton Ave., Apt. 201, Los Angeles, Calif. 90024; Peace Corps Volunteer, Chemistry Master, Oda Secondary School, Ghana, '74-'76.

THORNE, 1966, DAVID HOADLEY, M.S.—(*Communications*)—Born Sept. 16, 1944, New York, N.Y.; Ptnr., Martilla, Payne, Kiley & Thorne, Inc., One State St., Boston, Mass. 02109; res. 310 Beacon St., Boston, Mass. 02116; Finance Chmn., Udall for President Com.; Chmn. of Bd., Institute of Contemporary Art, Boston, '75-; USN; Navy Commendation and Navy Achievement Medal, Combat Action Ribbon, Vietnam Service Ribbon; m. June 26, '71, Rose Geer.

*THORNE, 1940, PETER BRINCKERHOFF—Born Oct. 2, 1917, Rye, N.Y.; died Nov. 30, 1939, New Haven, Conn.

*THORNE, 1896, SAMUEL, LL.B.—(*Law*)—Born June 30, 1874, Saugatuck, Conn.; died Oct. 3, 1963; Deputy Asst. Distr. Attny. N.Y.C., '01-'05; Pvt., Home Guard, W.W. I; m. June 16, '03, Ethel M. Cheney; s. Samuel, ('28), Dr. Lewis, ('31, dec.), Ward Cheney, ('31), Arthur, Peter Brinckerhoff, (ex-'40, dec.), James Neale, (ex-'42, dec.); d. Emeline Lewis (*Brawley*).

°THORNE, 1896, SAMUEL BRINCKERHOFF—(*Business*)—Born Sept. 19, 1873, New York City; died June 3, 1930, New York City. Served on a comm. sent abroad by Fed. Fuel Admin., World War I.

THORNTON, 1954, EDMUND BRAXTON—(*Business*)—Born March 9, 1930, Chicago, Ill.; Chmn. & Chief Exec. Officer, Ottawa Silica Co., P.O. Box 577, Ottawa, Ill. 61350; res. Thornwood, P.O. Box 1, Ottawa, Ill. 61350; 1954 Class Council; Yale Development Bd., '67; A.Y.A., '72; Chmn., Ill. Manufacturers Assn., '75-'76; Dir., Ill. State Chamber of Comm., '72-; V.P., Associated Employers of Ill., '75-'76; Dir., Ill. State Historical Soc.; Chmn.: Ill. Nature Preserves Comm., '66-'72, Ill. Historic Sites Advisory Council, '69-'74, National Parks Centennial Comm., '72-'73; 1st Lieut., USMCR, '50-'58; m. Dec. 31, '64, Elizabeth Moore; s. Thomas Volney, Jonathan Butler; d. Amanda Braxton, Susan Oakes.

°THORNTON, 1908, JAMES CARLTON—(*Finance*)—Born July 11, 1884, Ford, Ky.; died Mar. 29, 1949, Greenwich, Conn. Capt. F.A., World War I (AEF).

THORSON, 1959, PETR ANDREAS, M.B.A—(*Finance*)—Born Sept. 8, 1937, Dubuque, Iowa; Investment Counsel, Pres., Thorson Brown, Inc., 41 West Putnam Ave., Greenwich, Conn. 06830; res. 38 Close Rd., Greenwich, Conn. 06830; V.P., Morgan Guaranty Trust Co., New York, '59-'68; Officer, Laird Inc., New York, '68-'70; Pres., Optical Sciences Group, Inc., San Francisco, '70-'71, (Dir., '70-); Dir., Greenwich Health Assn., '74-; Stanwich Club, Greenwich: Dir., '75-, Mbr. Exec. Com., '76-; m. Nov. 28, '59, Sarah Paull; d. Karen List, Elizabeth Morgan, Sara Andreas.

°TIFFANY, 1840, WILLIAM HENRY—(*Business*)—Born Feb. 10, 1819, Killingly, Conn.; died Dec. 23, 1880, Stamford, Conn.

°TIGHE, 1879, AMBROSE, M.A.—(*Law*)—Born May 8, 1859, Brooklyn, N.Y.; died Nov. 11, 1928, St. Paul, Minn., Mbr., Minn. State Legislature, '03 and '07. Special Asst. Attny. Gen., Minn., '17-'19.

°TIGHE, 1916, LAURENCE GOTZIAN, M.A.—(*Finance*)—Born Mar. 19, 1894, St. Paul, Minn.; died Dec. 3, 1954, New Haven, Conn.; Capt., F.A., World War I; Assoc. Treas., Yale Univ. '38-'42, Treas., '42-'53; Treas. Yale Alumni Fund, Yale Athletic Assn., Yale Library Associates; Trustee, Yale-in-China

TIGHE, 1941, LAURENCE G.—(*Education*)—Born Feb. 26, 1919, Newton, Mass.; Teacher, Cisgua School, Cantitoe St., Bedford, N.Y. 10506; res. Box 155, R.D.2, Pound Ridge, N.Y. 10576; m. Sept. 8, '42, Frances Moffat; s. Laurence G. III; d. Lorna.

*TIGHE, 1923, RICHARD LODGE, LL.B.—(*Law*)—Born Jan. 13, 1902, St. Paul, Minn.; died April 30, 1938, Wayzata, Minn.

*TILLINGHAST, 1875, CHARLES, M.A., M.D.,—(*Medicine*)—Born Oct. 5, 1853, Cincinnatus, N.Y.; died Dec. 26, 1886, Cortland, N.Y.

*TILNEY, 1905, ROBERT FINGLAND, 2D—(*Engineering*)—Born Feb. 22, 1882, Plainfield, N.J.; died Dec. 19, 1934, Bound Brook, N.J.

*TILNEY, 1870, THOMAS JOSEPH, LL.B.—(*Industrial*)—Born Feb. 28, 1845, Paris, Ont., Canada; died Dec. 19, 1893, Brooklyn, N.Y.

*TINKER, 1868, ANSON PHELPS—(*Ministry*)—Born Oct. 15, 1844, Old Lyme, Conn.; died Nov. 25, 1886, Denver, Colo.

TOM, 1977, CHAN BRUCE III—(*Student*)—Born March 31, 1955, Bethesda, Md.; res. 902 Thackeray Drive, Highland Park, Ill. 60035.

*TOMPKINS, 1884, RAY—(*Finance*)—Born Jan. 28, 1861, Lawrenceville, Pa.; died June 30, 1918, Elmira, N.Y.

*TOWNSEND, 1922, FREDERIC DEPEYSTER, JR., LL.B.—(*Law*)—Born April 23, 1900, Cambridge, Mass.; died Feb. 20, 1961; m. June '28, Susan Bass; s. Lyman; d. Susanne T. (*Johnson*).

*TOWNSEND, 1908, GEORGE HENRY—(*Industrial*)—Born July 22, 1884, New Haven, Conn.; died Feb. 18, 1957, Fort Lauderdale, Fla.; Industrial War Service, World Wars I and II.

*TOWNSEND, 1874, JAMES MULFORD, LL.B.—(*Law*)—Born Aug. 26, 1852, New Haven, Conn.; died Oct. 31, 1913, Mill Neck, Long Island, Trustee, N.Y. Law School, '04-'13, and Pres., '12-'13.

*TOWNSEND, 1908, JAMES MULFORD—(*Business*)—Born June 20, 1886, Pelham Manor, N.Y.; died June 23, 1950, West Windsor Township, N.J.; Lieut., Inf., World War I.

*TOWNSEND, 1891, JOHN BARNES—(*Finance*)—Born Feb. 9, 1867, Memphis, Tenn.; died Dec. 24, 1947, Radnor, Pa.

*TOWNSEND, 1871, WILLIAM KNEELAND, LL.B., LL.M., D.C.L., —(*Law*)—Born June 12, 1848, New Haven, Conn.; died June 2, 1907, New Haven, Judge, U.S. Distr. Court, Conn., 1892-

1902, and of U.S. Circuit Court of Appeals, 2d Circuit, '02-'07. Prof., Yale Law School, 1881-1907.

*TRACY, 1890, EVARTS—(*Architecture*)—Born May 23, 1868, New York City; died Jan. 31, 1922, Neuilly, France. Lieut. Col., Eng. Corps, World War I (AEF).

TRAIN, 1936, ROBERT—(*Industrial retired*)—Born June 9, 1913, Savannah, Ga.; formerly CEO, Bibb Mfg. Co., Macon, Ga.; res. 1209 Jackson Springs Rd., Macon, Ga. 31201; Lieut. Cmdr., USNR, '41-'45; m. Jan. 17, '42, Geraldine Jones; s. Robert, Jr., John Comer, ('70), Gerald Jones; d. Campbell, Louise.

TRAPHAGEN, 1956, PETER A.—(*Business*)—Born Aug. 30,, 1933, Erie, Pa.; V.P. Operations, Custom Engineering Co., P.O. Box 9099, Erie, Pa. 16504; res. 6390 West Lake Rd., Erie, Pa. 16505; Dir., Fairview Distr. School Bd., '72-; Sgt. E-5, AUS, '56-'58; m. 1958, Lorna Peplinski; s. Patrick Abraham; d. Katherine Anne, Sandra Elizabeth.

*TRASK, 1846, CHARLES HOOPER, M.A.—(*Business*)—Born Sept. 4, 1824, Manchester, Mass.; died Dec. 11, 1905, Lincoln, Mass.

*TREADWAY, 1896, RALPH BISHOP—(*Law*)—Born April 10, 1874, Sioux City, Iowa; died Aug. 5, 1939, Elmhurst, Ill.

*TROTTER, 1839, SILAS FLOURNOY—(*Business*)—Born Mar. 4, 1820, Courtland, Ala.; died prior to 1860, Panama.

*TROWBRIDGE, 1902, MASON, LL.B.—(*Law*)—Born Nov. 8, 1877, Chicago, Ill.; died Mar. 10, 1962; Deputy Asst. Distr. Attny., N.Y.C., '06, '09; Asst., English Dept., Yale Coll., '04-'05; Asst. Prof., Yale Law School, '15-'16; m. June 26, '09, Helen Fox; s. M.T., Jr., ('32), George F., ('38), James R. II, ('42); d. Harriet G., Adaline F. (dec.), Cornelia R. (dec.).

TROWER, 1970, C. CHRISTOPHER, J.D.—(*Law*)—Born June 21, 1948, Harrodsburg, Ky.; Law Clerk, to Judge Elbert Parr Tuttle, Senior Circuit Judge, U.S. Court of Appeals for the 5th Circuit, United States Courthouse, Atlanta, Ga. 30303; res. 429 Cane Run, Harrodsburg, Ky. 40330; Yale Alumni Fund Class Rep.; m. Aug. 19, '71, Freida K. Smith.

*TRUDEAU, 1896, EDWARD LIVINGSTON, JR., M.D.—(*Medicine*)—Born May 18, 1873, New York City; died May 2, 1904, New York City.

*TRUESDALE, 1907, CALVIN—(*Business*)—Born June 29, 1885 Minneapolis, Minn.; died July 11, 1958, New York City; Lieut., F.A., Res. Corps, World War I.

*TUCKER, 1944, Carll, Jr.—(*Journalism*)—Born Aug. 26, 1921, West End, N.J.; died Feb. 6, 1968; Newspaper Publisher, Patent Trader, Mt. Kisco; Pres., Financial Management, Inc., Mt. Kisco; Sec., Trustee, Chatham Hall, Va., '57; Trustee Northern Westchester Hosp., '56-, Bedford-Rippowam School, '53-; Treas., Upper Westchester Community Assn., '58-; Dir., Westchester Cancer Com., '58-, Westchester Children's Assn., '56-, Westchester Adoption Service, '52-'54, Mt. Kisco Boys' Club, '48-'51; 1st Lieut., USAAF, W.W. II; Yale Univ. Council, Com. on Publications; Yale Press Adv.; m. Mar. 14, '42, Emily G. O'Connor; s. C.T. III, Nicholas Brady; d. Toinette, Stephanie, Gay Gilpin.

TUCKER, 1931, Luther, B.D.—(*Ministry*)—Born June 20, 1909, New York, N.Y.; Canon Pastor, Diocese Southern Ohio; res. 4535 Drake Rd., Cincinnati, Ohio 45243; Dwight Hall: Sec., '31-'32, '42-'49, Advisory Bd., '43-; Trustee, Yale/China, '36-'59; Com. on Religion, Alumni Council, '56-'59; Large Gifts Campaign for Yale, '76-; Pres., Financial Management, Inc., '69-; Asst., Christ Ch., Cambridge, Mass., '34-'37; Far East Sec., World Student Christian Federation, '38-'40; Assoc. Ex. Nat. Student YMCA, '40-'42; Minister, Indian Hill Episcopal/Presbyterian Ch., '49-'73; Dir., Union Seminary, New York City, '47-'50, '60-'75; V.P., M.B.T. Found., '57-; Mbr. Bd., Children's Home, Cincinnati, '51-; Asst. Treas., RTA, '43-'49; m. June 30, '34, Josephine L. Pullman; s. Luther, Jr.; d. Elizabeth (*Sanders*), Marcia (*Boogaard*), Naomi (*Stoehr*).

*TUFTS, 1935, Bowen Charlton—(*Theatre*)—Born July 16, 1911, Arlington, Mass.; died June 4, 1970; address unknown.

*TURNER, 1905, Harold McLeod—(*Business*)—Born April 27, 1882, Brooklyn, N.Y.; died May 5, 1947, New York City. Lt., N.Y. Natl. Guard, World War I.

TURNER, 1937, Harold McLeod, M.S., M.A., Ph.D.—(*Library work, Education*)—Born Aug. 9, 1914, New York, N.Y.; Lecturer on Bangladesh, four trips to the country '73-'76 as case study in world hunger; bus. and res. 35 Valley Rd., Bronxville, N.Y. 10708; Librarian; N.Y.C. Public Library, '59-'60, Sarah Lawrence Coll., '60-'62; Lecturer, Columbia School of Library Service, '62-'72; Instr., Humanities Dept., Polytechnic Institute of New York, '72-'74; Library Consultant to Bangladesh Government, '73; Spec. 1/C, Public Relations, U.S. Coast Guard, '42-'46; m. Sept. 12, '47, Virginia Wilson Binford; s.

Harold McLeod III, James Binford; d. Louise Binford, Amy Barnes.

*TURNER, 1906, SPENCER—(*Business*)—Born Mar. 16, 1884, Brooklyn, N.Y.; died Oct. 18, 1928, New York City. Exec. Dir., cotton goods section, War Industries Bd., World War I.

*TUTTLE, 1907, GEORGE COOLIDGE, LL.B.—(*Law and Mfg.*)—Born Dec. 30, 1884, Minneapolis, Minn.; died Apr. 28, 1966; m. June 20, '08, Mabel Freeman; s. James Howard; d. Helen M. (*Murdoch*), Elizabeth F. (*Lyman*), Anne T. (*Reed*).

*TUTTLE, 1877, GEORGE MONTGOMERY, B.D.—(*Medicine*)—Born Oct. 2, 1856, Rochester, N.Y.; died Oct. 29, 1912, New York City. Prof. of gynecology. Coll. of Physicians and Surgeons, Columbia Univ., 1885-1903.

*TWEEDY, 1891, HENRY HALLAM, M.A., D.D.—(*Education*)—Born Aug. 5, 1868, Binghamton, N.Y.; died Sept. 11, 1953, Brattleboro, Vt.; Prof., Practical Theology, Yale Div. School, '09-'37.

*TWEEDY, 1834, JOHN HUBBARD—(*Transportation*)—Born Nov. 14, 1814, Danbury, Conn.; died Nov. 12, 1891, Milwaukee, Wis. Mbr, of Congress, 1847-1848 and of Wis. State Legislature, 1853.

*TWEEDY, 1868, SAMUEL—(*Law*)—Born April 21, 1846, Danbury, Conn.; died Oct. 6, 1910, South Norwalk, Conn.

TWICHELL, 1945W, CHARLES P., M.A.—(*Education*)—Born Feb. 27, 1924, New York, N.Y.; res. 820 Hartford Turnpike, Hamden, Conn. 06517; m. May 1, '48, Ann M. Chase; d. Penelope Chase, Eliza, Cary Hamilton.

*TWOMBLY, 1854, ALEXANDER STEVENSON, M.A., D.D.—(*Ministry*)—Born Mar. 14, 1832, Boston, Mass.; died Nov. 19, 1907, Newton, Mass.

*TWOMBLY, 1912, EDWARD BANCROFT, LL.B. LL.D.—(*Law*)—Born Feb. 25, 1891, Summit, N.J.; died June 7, 1969; Sr. Ptnr., Putney, Twombly, Hall & Skidmore, N.Y.C.; Mbr., Common Council, Summit, '22-'25, Pres., '26-'28, Mayor, '29-'31; Pres., Summit Republican Club, '32-'38, Union County Republican Club, '36-'38; Chmn., Defense Council, W.W. II; Chmn., United Fund, '38; Chmn., 1912 Reunion Com., '37-; Lieut. Col., Cavalry, Inf., 1916, Mexican Border; W.W. I: Capt. Co. B, 304th M.G. Bn., overseas, Mar. '18-May '19; Major, 77th Staff, '18; Silver Star; Lieut. Col., '21; Lieut. Col. (ret.); m. April 14, '17 Mildred Hadra; s. Doane, ('39), Gilmer, E.B.T., Jr. ('45W).

°TWOMBLY, 1884, Henry Bancroft—(*Law*)—Born Nov. 10, 1862, Albany, N.Y.; died Feb. 28, 1955, Summit, N.J., former Asst. Corp. Counsel, City of N.Y.; Yale Class Sec., '49-'55.

°TYLER, 1855, Charles Mellen, M.A., D.D.—(*Education*)—Born Jan. 18, 1832, Limington, Me.; died May 15, 1918, Scranton, Pa. Mbr. Mass. State Legislature, 1862. Sage Prof. of hist. and philosophy of religion, Cornell Univ., 1891-1903, and Prof. emeritus, '03-'18. Trustee, Cornell Univ., 1886-1892 and '07-'18. Chaplain (Capt.), Union Army, Civil War.

TYLER, 1959, Cheever, LL.B.—(*Law*)—Born Oct. 6, 1937, Los Angeles, Calif.; Attny., Wiggin & Dana, 195 Church St., New Haven, Conn. 06510; res. 45 Lincoln St., New Haven, Conn. 06511; m. July 23, '60, Patricia Dawes Pierce; s. Cheever Pierce, John Dawes, Haven M., Nathan M.

°TYLER, 1836, George Palmer, D.D.—(*Ministry*)—Born Dec. 10, 1810, Brattleboro, Vt.; died Jan. 18, 1896, Lansingburgh, N.Y.

°TYLER, 1857, Moses Coit, M.A., L.H.D., LL.D.—(*Education*)—Born Aug. 2, 1835, Griswold, Conn.; died Dec. 28, 1900, Ithaca, N.Y. Prof. of rhetoric and English literature, Univ. of Michigan, 1867-1873, and of English language and literature, 1873-1881; Prof. of American history, Cornell Univ., 1881 1900.

°TYTUS, 1868, Edward Jefferson—(*Business*)—Born Aug. 22, 1847, Middletown, Ohio; died May 19, 1881, Saranac Lake, N.Y.

V

°VanANTWERP, 1958E, William Meadon, Jr.—(*Armed services*)—Born Feb. 27, 1937, Albany, N.Y.; died Sept. 15, 1967, near Danung, South Vietnam; Capt., USMC; m. Dec. 17, '60, Helen Marie Colosimo; two sons.

°Van deGRAAFF, 1881, Adrian Sebastian, LL.B.—(*Law*)—Born May 12, 1859, Gainsville, Ala.; died May 18, 1922, Tuscaloosa, Ala. Prof. of statutory and common law, Univ. of Alabama Law School, 1891-1897. Judge, 6th Ala. Distr., 1915-1922. Mbr., Ala State Legislature, '18-'22.

*VANDERBILT, 1899, ALFRED GWYNNE—(*Finance*)—Born Oct. 20, 1877, New York City; died May 7, 1915, at sea.

VAN DINE, 1949, VANCE, LL.B.—(*Finance*)—Born July 2, 1925, San Francisco, Calif.; Investment Banker, Managing Dir., Morgan Stanley & Co., Inc., 1251 Avenue of the Americas, New York, N.Y. 10020; res. 1165 Park Ave., New York, N.Y. 10028; Class of 1949 Exec Com., '50-'74; Chmn., 10th Reunion, '59; Chmn., 15th Reunion Special Gifts Fund Drive, '64; Co-Chmn., 25th Reunion Special Gifts Fund Drive. '73-'74; Seaman 1C, USN, '43-'46; m. Sept. 8, '56, Isabel Erskine Brewster; d. Rose M.

VAN LOAN, 1964, EUGENE MERRITT III, LL.B.—(*Law*)—Born Nov. 23, 1942, Fort Benning, Ga.; Lawyer, 95 Market St., Manchester, N.H. 03101; res. Chandler Rd., Bedford, N.H. 03102; Counsel for Senator-elect Louis C. Wyman, '75; Counsel for N.H. President Ford Campaign, '76; Pres.: Greater Manchester Mental Health Center, '75-'76, Bedford Historical Soc., '75-'76; V.P., N.H. Easter Seal Soc., '75-'76; Yale Club of New Hampshire; Capt., AUS, JAGC, '67-'71; Meritorious Service Medal; m. June 11, '66, Judith Ammon; s. Eric Schuyler; d. Ruby Anna.

*VAN NAME, 1858, ADDISON, M.A.—(*Library work*)—Born Nov. 15, 1835, Chenango, N.Y.; died Sept. 29, 1922, New Haven, Conn. Librarian, Yale Univ., 1865-1905; librarian emeritus, '05-'22.

*VAN REYPEN, 1905, WILLIAM KNICKERBOCKER, JR.—(*Law student*)—Born May 4, 1883, Brooklyn, N.Y.; died Jan. 27, 1906, New York City.

*VAN SINDEREN, 1911, HENRY BRINSMADE—(*Business*)—Born June 19, 1889, Brooklyn, N.Y.; died Jan. 15, 1968; Bd. Chmn., C. Tennant Sons & Co., N.Y.C.; Dir., Bureau of Exports War Trade Bd., '17-'18, Washington, D.C.; Chmn., Planning Comm., Washington, Conn., '55-; Sec. Washington (Conn.) Redevelopment Agency; Capt., AUS, W.W. I; Yale Alumni Bd., '52-'57; Class Sec., '51-; m. April 8, '15, Katharine Lyman White (dec.).

VAN SLYCK, 1920, DEFOREST, Ph.D.—(*Government retired*)—Born Oct. 12, 1898, New York, N.Y.; res. 3121 Chain Bridge Rd. N.W., Washington, D.C. 20016; Instr. & Asst. Prof. of History, Yale, '20-'29; Chmn., Freshman History Faculty, Yale, '27-'29; Development Com.; Assoc., Lazard Freres, New York,

'29-'37; Ptnr., Fahnestock & Co., New York, '37-'46; C.I.A., Washington, '46-'60; Mbr., Bd. of Natl. Estimates (C.I.A.), '50-'60; Internatl. Student House, Washington: Pres., '62-'65, Hon. Chmn., Bd. of Dir., '65-; W.W. I: Quartermaster 1C, USNR, July-Dec. 1918; W.W. II: Col., USAAF. Intelligence '42-'45; Legion of Merit; m. June 20, '20, Katharine W. Sneath (divorced); m. Dec. 11, '31, Katharine G. Rogers; s. DeForest, Jr., ('43), killed in action, July 8, '44, Ashley, Peter, ('49); d. Anne (*King*), Edith.

VARGISH, 1966, THOMAS, M.D.—(*Medicine*)—Born Sept. 23, 1944, Brooklyn, N.Y.; Physician, Surgery Staff, Dept. of Surgery, Naval Regional Medical Center, Oakland, Calif.; res. 3147 Lansdown Court, Pleasanton, Calif. 94566; Lieut. Cmdr., USN, '76-; m. June 22, '68, Kathryn Louise Griffin; s. Jacob Jon; d. Lisa.

*VARNUM, 1838, JOSEPH BRADLEY, M.A.—(*Law*)—Born April 4, 1818, Washington, D.C.; died Dec. 31, 1874, Astoria, Long Island. Mbr., N.Y. State Legislature, 1849, 1850, 1857, and Spkr., 1851.

*VERNON, 1881, FREDERICK RICHARDSON—(*Industrial*)—Born Oct. 31, 1858, Brooklyn, N.Y.; died Feb. 22, 1927, Freeport, N.Y.

VINCENT, 1931, FRANCIS T.—(*Business*)—Born Sept. 30, 1908, Torrington, Conn.; Supervisor of Payrolls, Southern New England Telephone Co., 300 George St., New Haven, Conn.; res. 100 Gillies Rd., Hamden, Conn. 06514; m. July 5, '37, Alice L. Lynch; s. Francis T., Jr., ('63); d. Joanna E., Barbara J.

VOGT, 1943, TOM D., M.A.—(*Education*)—Born Jan. 19, 1922, Louisville, Ky.; res. 6 Brookside, Cambridge, England CB 2 2AD; m. Feb. 12, '44, Helen Keith Ransdell; d. Ruth Hillsman, Kathleen Louise, Mary Ransdell, Emily Ransdell.

VON HOLT, 1916, HERMAN VALDEMAR—(*Business*)—Born Jan. 29, 1894, Honolulu, Hawaii; Estate Management, Box 2933 (214 Queen St.), Honolulu 96802; res. 900 Alewa Dr., Honolulu; Vestryman, Treas., St. Andrew's Cathedral Parish, '23-'48; Honolulu Recreation Comm., '26-'46, Chmn., '32-'38; Hawaii Boxing Comm., '29-'36, Chmn., '33-'36; Honolulu Parks Bd., '32-'38; Dir., Chmn., Invest. Com., Episc. Church in Hawaii, '32-'69; 2d Lieut., U.S. Tank Corps, AEF, Oct. '17-Aug. '19; m. April 26, '18, Betty Value.

*VORYS, 1918, JOHN MARTIN, J.D., LL.D.—(*Law*)—Born June 16, 1896, Lancaster, Ohio; died Aug. 25, 1968; Lawyer, Columbus; Pres., Columbus Bar Assn., '38; Distr. Delegate, Ohio State Bar Assn., '59-'60; Chmn., Com. on Status of Legal Profession, Ohio State Bar Assn., '61-'62; Dir., Columbus Chamber of Commerce, '26-'28. YMCA, '25-'65, Ohio State Univ. Assn., '63-'68; Pres., Columbus Yale Club, '20-'24; Rep., Ohio General Assembly '23-'25; Ohio State Senate, '25-'27; Dir. of Aeronautics, Ohio, '29-'31; Mbr. Congress, 12th Ohio Distr., '39-'59; m. Feb. 5, '27, Lois Isabella West; s. Martin W., ('52); d. Jeanny Esther (*Canby*), Mary (*King*).

VORYS, 1952, MARTIN W.—Add. c/o Mr. Tom Y. Canby, Box 133 C, R.F.D. 1, Brookeville, Md. 20729.

VOSE, 1945W, ELLIOTT EVANS, LL.B.—(*Business*)—Born Nov. 30, 1923, Boston, Mass.; V.P. & Treas., Grumman International Co., 111 Stewart Ave., Bethpage, N.Y. 11714; res. Old Point Rd., Quogue, N.Y. 11959; AYA; Chmn., Yale Law School Fund, '58-'59; Class Agt., 1945 Calhoun Coll., Yale Alumni Fund, '47-'76; Lawyer, Winthrop, Stimson, Putnam & Roberts, N.Y.C., '50-'55; The Singer Co.: Asst. to Pres., '55-'60, V.P. Latin America, '61-'66, Group V.P. & Dir., '67-'68, Administrative V.P., '68-'74; Village Planning Bd., Quogue: Mbr., '70-'72, Chmn., '72-'76; Lieut. (j.g.), USN, '43-'46; m. Nov. 18, '64, Pamela Daly.

*VOSE, 1851, JAMES GARDINER, M.A., D.D.—(*Ministry*)—Born Mar. 3, 1830, Boston, Mass.; died Mar. 13, 1908, Providence, R.I. Prof. of rhetoric, Amherst Coll., 1856-1864. Trustee, Andover Theological Seminary, 1886-1908.

W

*WACK, 1929, DAMON DEBLOIS—(*Finance*)—Born April 23, 1907, New York City; died Feb. 1, 1944, St. Louis, Mo.

WADDELL, 1961, GEOFFREY HAMILTON—(*Theatre*)—Born Feb. 10, 1940, Milford, Conn.; Dir., Performing Arts Programs, New York State Council on the Arts, 80 Centre St., New York, N.Y.; res. 138 Columbia Heights, Brooklyn, N.Y. 11201; Lieut., USNR, '62-'65.

°WADE, 1866, LEVI CLIFFORD—(*Law and transportation*)—Born Jan. 16, 1843, Allegheny City, Pa.; died Mar. 21, 1891, Newton, Mass. Mbr., Mass. State Legislature, 1876-1878 and Spkr., 1879.

WADSWORTH, 1927, JAMES JEREMIAH—(*Government retired*) Born June 12, 1905, Groveland, N.Y.; Bus. 1 Main St., Geneseo, N.Y. 14454; res. 3909 Avon Rd., Geneseo, N.Y. 14454; formerly U.S. Ambassador; Mbr., N.Y. State Assembly, '32-'41; Div. Chief, War Assets Admin., '45-'46; Congressional & State Gov't. Liaison, Air Transport Assn., '46-'47; Congressional & Foreign Liaison, Econ. Cooperative Admin., '48-'50; Federal Civil Defense Admin., Act. Admin., '51-'53; U.S. Deputy Rep., Ambassador, to United Nations, '53-'60; Permanent Rep., Ambassador, to United Nations, '60-'61; Mbr., Federal Communications Comm. '65-'70, retired, permanent rank of Ambassador; Mbr., College Council, State Univ. of New York, '70-; m. June 16, '27, Harty G. Tilton; m. May 22, '67, Mary Alphin; d. Alice (Strong).

°WADSWORTH, 1898, JAMES WOLCOTT, JR., LL.D.—(*Government*)—Born Aug. 12, 1877, Geneseo, N.Y.; died June 21, 1952, Washington, D.C.; Spkr., N.Y. State Legislature, '06-'10; U.S. Senate, '15-'27; Mbr., House of Representatives, '32-'50; Chmn., Natl. Security Training Comm., '50; Pvt., Spanish-American War.

°WAITE, 1888, MORISON R., LL.B.—(*Law*)—Born Dec. 13, 1866, Toledo, Ohio; died Mar. 6, 1962; Trustee, Cincinnati Public Library, '29-'38; m. 1896, Fannie Resor; d. Mary Resor (*Thomas*), Frances Resor (*Bell Geddes*) (dec.), Ione Brown (*Garvey*).

°WAITE, 1837, MORRISON REMICK, M.A., LL.D.—(*Law*)—Born Nov. 29, 1816, Lyme, Conn.; died Mar. 23, 1888, Washington, D.C. Mbr., Ohio State Legislature, 1849. Chief Justice of the U.S., 1874-1888. Mbr., Yale Corp. 1882-1888.

°WALCOTT, 1891, FREDERIC COLLIN, M.A., Sc.D.—(*Government*)—Born Feb. 19, 1869, New York Mills, N.Y.; died April 27, 1949, Stamford, Conn. Chmn., Conn. State Bd. of Fisheries and Game and of State Water Comm., '21-'29. Mbr., Conn. State Senate, '25-'29, and of U.S. Senate, '29-'49. Served with U.S. Food Admin., World War I.

°WALCOTT, 1894, WILLIAM STUART—(*Business and Farming*) —Born June 28, 1871, New York City; died Nov. 6, 1952 Daytona Beach, Fla.; former Class Treas.

WALD, 1975, STEPHEN G.—Add. 6953 Manti St., Philadelphia, Pa. 19128.

°WALDEN, 1881, HOWARD TALBOTT, LL.B.—(*Law*)—Born Aug. 19, 1859, Brooklyn, N.Y.; died Sept. 11, 1957, Rye, N.Y.; former Chmn., Yale Alumni Fund; Class Sec., '31-'57.

WALDEN, 1972, ROBERT S.—Add. 53 W. 76th St., Apt. 7, New York, N.Y. 10023.

°WALDEN, 1874, RUSSELL, LL.B.—(*Law*)—Born Dec. 8, 1851, Brooklyn, N.Y.; died Feb. 17, 1921, Brooklyn.

°WALES, 1845, LEONARD EUGENE—(*Law*)—Born Nov. 26, 1823, Wilmington, Del.; died Feb. 8, 1897, Wilmington. Judge, U.S. Distr. Court, Del., 1884-1897. Served in Union Army, Civil War.

°WALKER, 1916, CHARLES RUMFORD—(*Librarian*)—Born July 31, 1893, Concord, N.H.; died Nov. 26, 1974, Wellfleet, Mass.; Curator, Yale Technology and Society Collection, Sterling Memorial Library, Yale Univ., New Haven, Conn.; Asst. Sec., Yale, '42-'45; Dir., Technology Project, '45-'62; Sr. Research Fellow '55-'62; retired '62; Univ. Library, '62-; 1st Lieut., Heavy Artillery, Feb. '18-May '19; m. Oct. 28, '28, Adelaide George; s. C.R.W. III, ('51, LL.B. '54), Daniel S.

WALKER, 1927, GEORGE HERBERT, JR., M.A. (Hon.)—(*Finance*) —Born Nov. 24, 1905, St. Louis, Mo.; Dir., White Weld & Co., Inc., 300 Park Ave., New York, N.Y. 10022; res. 5 Perkins Rd., Greenwich, Conn.; Chmn., Yale Alumni Fund, '50-'51; Alumni Trustee of Corporation, '52-'58; Mbr., Yale Development Bd. from formation to present; Dir.: City Investing Corp., Norlin Corp., State Natl. Bank of Conn.; Dir., former V.P. & Treas., Metrpolitan Baseball Club; Trustee, Natl. Found. — March of Dimes; Maj., USAF, '42-'46; Legion of Merit; RTA: Dir., Treas.; m. Oct. 29, '27, Mary D. Carter; s. George Herbert III, ('53), Ray Carter, ('55); d. Elizabeth (*Holden*).

WALKER, 1953, GEORGE HERBERT III, J.D.—(*Finance*)—Born March 16, 1931, St. Louis, Mo.; Exec. V.P., Stifel Nicolaus & Co., 500 N. Broadway, St. Louis, Mo. 63102; res. 63 Briarcliff, St. Louis, Mo. 63124; Asst. Chmn., Yale Alumni Fund, 64-'70; Officer & Dir., Yale Club of St. Louis, '59-'62, '72-; Yale Club of Chicago: Officer & Dir., '64-'71, Pres., '70-'71; Chmn.: St.

Louis Cty. Air Pollution Appeals Bd., '72-'74, Business & Industrial Development Comm., St. Louis Cty., '74-; Civilian Aid for Eastern Missouri to Sec. of Army, '74-; 1st Lieut., USAFR, '56-'58; Commendation Medal; m. July 27, '68, Kimberly Gedge; s. George H. IV, Carter G.; d. Mary Elizabeth, ('78), Wendy W., Isabelle.

*WALKER, 1919, GEORGE NESMITH—(*Industrial*)—Born Jan. 18, 1895, Washington, D.C.; died Jan. 27, 1975, Greenwich, Conn. Formerly with Mobil Oil Corp.; Capt., F.A., 1st Div., AEF, March '17-'18; Citation from Major Gen. Summerall, Toul Sector, '17; m. May 14, '21, Sophie Pond; s. Jeffrey Pond, ('44); d. Anne Nanine, Patricia Misplee.

*WALKER, 1889, HORACE FLETCHER—(*Education*)—Born July 11, 1868, Detroit, Mich.; died Jan. 9, 1894, Honolulu, Hawaii.

WALKER, 1944, JEFFREY POND—(*Education retired*)—Born Feb. 28, 1922, New York, N.Y.; res. Lime Rock Rd., Salisbury, Conn. 06068; formerly Business Mgr. & Trustee, Salisbury School; Mbr., Bd. of Finance, Town of Salisbury; Lieut., USNR, '43-'46; m. Dec. 9, '44, Leonie K. Sullivan (divorced); m. March 7, '70, Dorothy Ritchie Pomeroy; s. Jeffrey L.; d. Sandra D., Carolyn P. (*Evans*).

WALKER, 1931, JOHN MERCER, M.D.—(*Medicine, Finance*)—Born Jan. 15, 1909, St. Louis, Mo.; Consultant, White Weld & Co., Inc., 300 Park Avenue, New York, N.Y. 10022; res. Box 225, Rt. # 2, Easton, Md. 21601; Class of 1931, Class Agt., '50-; G. H. Walker & Co.: Ptnr., '58-'64, Managing Ptnr., '64-'74; Dir., Mead Corp., '57-; Mbr.: Am. Bd. of Surgery, Am. College of Surgeons, Central Surgical Soc., Conn. Soc. of Am. Bd. of Surgeons, James Ewing Soc.; Memorial Hosp.: Bd. of Managers, '58-, Chmn. of Exec. Com. & Chief Exec. Officer, '63-'68, Pres. & Chief Exec. Officer, '68-'73; Trustee, Sloan Kettering Institute, '65-; Lieut. Col., M.C., U.S. Army, '41-'46; m. Nov. 25, '39, Louise Mead; s. John M., Jr., ('62), George M., Randolph T.; d. Elsie M.

WALKER, 1942, JOHN S., J.D.—(*Law*)—Born June 22, 1920, Cincinnati, Ohio; Attny., Ptnr., Jones, Day, Reavis & Pogue, 1100 Connecticut Ave. N.W., Suite 1200, Washington, D.C. 20036; res. 7101 Glenbrook Rd., Bethesda, Md. 20014; Com. on Atomic Energy, '51-'53; Bd. of Trustees: Experiment in Internatl. Living, '60-'75, Coserv, '68-, Washington Area Tennis Patrons, '75-; 1st Lieut., Army Air Force, '42-'46; m.

March 20, '43, Katharine Douglas Davidson; s. Christopher W. ('66), Peter C., David M., Jonathan T., ('76).

*WALKER, 1844, JOSEPH BURBEEN, M.A.—(*Farming and business*)—Born June 12, 1822, Concord, N.H.; died Jan. 8, 1913, Concord. Mbr., N.H. State Legislature, 1866-1867, and of N.H. State Senate, 1893. Mbr., N.H. State Forestry Comm., 1885, and Pres., 1889-1893; Mbr., N.H. Bd. of Agriculture. Trustee, N.H. Coll of Agriculture and Mechanic Arts.

WALKER, 1936, LOUIS—(*Finance*)—Born Apr. 14, 1912, St. Louis, Mo.; V.P., White Weld, Inc., 1 American Row, Hartford, Conn. 06103; res. "Deerbrook", Farmington, Conn. 06032; A.Y.A., '74-; Dir., Alumni Fund, '60-'65; Chmn., 25th Reunion Fund, '61; Maj. (Assimilated Rank), Psychological Warfare, SHAEF, '42-'44; m. June 17, '39, Grace Ballard White; s. James W. II; d. Suzanne (*Robinson*), Dorothy (*Stapleton*), Elizabeth (*Field*).

WALKER, 1955, RAY CARTER, M.B.A., M.D.—(*Medicine*)—*Born* Nov. 26, 1933, New York, N.Y.; Psychiatrist, 107 State St., Guilford, Conn. 06437; res. 74 Water St., Guilford, Conn. 06437; G. H. Walker & Co., '59-'64; 1st Lieut., AUS, '57-'59; m. Aug. 7, '54, s. Emily Thompson; m. Jan. 9, '71, Jean Cowan; s. Christopher, Scott, Daniel, David.

*WALKER, 1888, SAMUEL JOHNSON, M.D.—(*Medicine*)—Born Nov. 19, 1867, Covington, Ky.; died Aug. 19, 1924, Lake Forest, Ill. Asst. Prof. of neurology, Chicago Polyclinic Post-Graduate School, '00-'08, and Prof. of pediatrics, '08-'19; also Clinical Prof., Rush Medical Coll., '08-'19. Major, American Red Cross, World War I (Fgn. service).

WALKER, 1948, SAMUEL SLOAN, JR.—(*Publishing*)—Born Nov. 2, 1926, New York, N.Y.; Executive, Walker Publishing Co., Inc., 720 Fifth Ave., New York, N.Y. 10019; res. 1040 Fifth Ave., New York, N.Y. 10028; War Correspondent, N.Y. Post, Paris, '45-'46; Asst. to Research Dir., Time, Inc., '49-'51; V.P., Free Europe Com., N.Y.C., Dir., Free Europe Press, '51-'59; Pres., Walker & Co., N.Y.C., '59-; Bd. of Dir., Am. Field Service; Chmn., Bd. of Dir., Brookfield, Conn., Library; Mbr., Brookfield Historical Soc.; volunteer ambulance driver, Am. Field Service, France & Germany, '45; m. Oct. 28, '61, Beth Bready; s. Samuel Sloan, III, Randolph Ramsey, Timothy Taggart.

°WALKER, 1928, STOUGHTON—(*Business*)—Born Jan. 24, 1904, St. Joseph, Mo.; died Nov. 12, 1967; Industrial Consultant; Dir., Fifth Ave. Assn., N.Y., '41-'42; Head, Home Furnishing Div. of Retailers' Drive for Defense Bonds, '41; Lieut. Col., Ordnance Dept., Gen. Staff Corps, W.W. II; m. April 26, '30, Jean R. Brevoort; d. Janica B. (*Stettaford*), Linda B. (*Broderick*).

°WALLACE, 1903, HENRY MITCHELL—(*Industrial*)—Born Jan. 12, 1881, Ansonia, Conn.; died Jan. 2, 1965; V.P., American Brass Co.; m. Mar. 18, '38, Louise Andrews; s. Walter A.; d. Mary Mitchell (*Baum*).

°WALLIS, 1893, ALEXANDER HAMILTON, LL.B.—Born Mar. 29, 1872, Jersey City, N.J.; died July 25, 1959, Town of Chesterfield, Keesport, N.Y.; Cprl., Colchester Co., Conn. Home Guard, '17.

°WALSH, 1835, HUGH, M.A., M.D.—(*Medicine*)—Born Jan. 7, 1816, New York City; died Dec. 1, 1859, New York City.

WALSH, 1961, JOHN JOSEPH, JR., M.A., Ph.D.—(*Education*)—Born Dec. 9, 1937, Mason City, Wash.; Prof. of Art History, Barnard College & Columbia Univ., New York, N.Y. 10027; res. 600 W. 115th St., New York, N.Y. 10025; Governing Bd., Yale Univ. Art Gallery, '76-; The Frick Collection: Lecturer & Curatorial Asst., '66-'68, The Metropolitan Museum of Art, N.Y.C.: Assoc. for Higher Education, '68-'71; Assoc. Curator of European Paintings, '71-'73, Curator, '73-'75; Democratic Cty. Com., N.Y. Cty., '68-; Petty Officer 3rd Class, USNR, '57-'59; m. Feb. '62, Virginia Alys Galston; s. Peter Wilson, Frederick Matthiessen; d. Anne Galston.

°WARD, 1862, JOHN ABBOTT—(*Student*)—Born Jan. 7, 1840, Palmer, Mass.; died Mar. 4, 1862. Palmer.

WARDWELL, 1927, EDWARD ROGERS—(*Law*)—Born Sept. 15, 1904, Lawrence, N.Y.; Ptnr., Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; res. 911 Park Ave., New York, N.Y. 10021; University Council, '52-'58; Lieut. Col., USAAF, '42-'45; Legion of Merit; m. June 10, '30, Lelia Morgan; s. Allen, ('57); d. Helen (*DuBois*), Lelia (*Bullitt*).

°WARING, 1903, ANTONIO JOHNSTON, M.D.—(*Medicine*)—Born Nov. 27, 1881, Savannah, Ga.; died Oct. 8, 1951, Savannah; Capt., Medical Corps, World War I.

WARREN, 1945W, GEORGE U., M.A.—(*Education*)—Born Jan. 7, 1923, New York, N.Y.; res. Indian Trail, Cummaquid, Mass.

02637; m. Mar. 3, '45, Dorothy Harvey; s. Daniel, ('70), Caleb Thomas, Ethan Warren; d. Katherine Davis.

°WARREN, 1865, HENRY WATERMAN—(*Industrial*)—Born Mar. 18, 1838, Auburn, Mass.; died Feb. 21, 1919, Holden, Mass. Mbr., Miss. State Legislature, 1870-1875, and of Mass. State Legislature, 1882 and 1885.

°WARREN, 1927, JOHN DAVOCK—(*Finance*)—Born June 11, 1904, Buffalo, N.Y.; died Oct. 26, 1975, New York, N.Y.; Ptnr., G. H. Walker & Co., 45 Wall St., N.Y. 10005; Bd. of Athletic Control, Yale; m. May 29, '48, Helen G. Lynch; s. Thomas D., ('71).

°WARREN, 1914, WILLIAM CANDEE, JR., LL.B.—(*Law*)—Born Jan. 31, 1892, Buffalo, N.Y.; died Sept. 8, 1965; with Magavern, Magavern, Lowe & Beilewech, Buffalo; Trustee, Sec., Counsel, Buffalo Gen. Hosp.; Trustee, Treas., Fresh Air Mission; Trustee, Treas., Pres. Bd., Presbytery of Western N.Y.; Elder, Deacon, First Presbyterian Church of Buffalo, '20-; Sec., N.Y. State Dormitory Authority; Buffalo School Bd., '48-'53, Pres., '52-; Erie City Defense Council, '43; Chmn., Erie Rationing Bd., '42-'43; Mbr., Yale Alumni Bd., Yale Assn. of Western, N.Y.; Chmn., Scholarship Com., '56-'59; Capt., F.A., AEF, W.W. I; Renegotiation Bd., Rochester Ordnance Dept., '43-'46; m. Dec. 4, '20, Susan Kimberly; s. W.C.W. III; d. Emily W. (*Wettlaufer*).

°WASHBURN, 1844, WILLIAM BARRETT, LL.D.—(*Industrial and Finance*)—Born Jan. 31, 1820, Winchendon, Mass.; died Oct. 5, 1887, Springfield, Mass. Mbr., Mass. State Senate, 1850, and of Mass. State Legislature, 1853 and 1854. Mbr. of Congress, 1862-1872. Gov. of Mass., 1872-1874. Mbr. U.S. Senate, 1874-1875. Mbr., Yale Corp., 1872-1881.

°WASHINGTON, 1839, GEORGE—(*Industrial*)—Born July 3, 1818, Kingston, N.C.; died Jan. 17, 1894, Savannah, Ga.

°WASHINGTON, 1834, WILLIAM HENRY, M.A.—(*Law*)—Born Feb. 7, 1813, Wayne Cty., N.C.; died Aug. 12, 1860, Newbern, N.C. Mbr., N.C. State Legislature. Mbr. of Congress, 1841-1843.

°WATERS, 1913, WILLIAM OTIS—(*Finance*)—Born Mar. 8, 1889, Orchard Lake, Mich.; died May 1, 1940, Garden City, N.Y. 2d Lieut, Inf., World War I (AEF).

°WATKINS, 1908, CHARLES LAW—(*Education*)—Born Feb. 11, 1886, Peckville, Pa.; died Mar. 2, 1945, New Haven, Conn.

Organizer and dir., Phillips Gallery Art School, '29-'45; adjunct Prof. of social art, American Univ., '43-'45; lecturer and consultant in fine arts, Hood Coll., '37-'45. Aspirant, Artillery, French Army, World War I.

WATSON, 1927, CHARLES III—(*Business retired*)—Born Feb. 12, 1904, Philadelphia, Pa.; res. Damascus Rd., Branford, Conn. 06405; Alumni Fund Class Agt.; 1927 Class Sec.; 25th Reunion Chmn.; Managing Dir., Yale Alumni Fund, '49-'66; Ptnr., Cassatt & Co., Investment Banking, '27-'37; Pres., Dry-Pack Corp., '37-'48; m. Aug. 29, '29, Polly Fay; s. Charles G., ('54), John F.

*WATSON, 1839, JOHN MARSH—(*Law*)—Born May 23, 1819, Hartford, Conn.; died April 13, 1849, Wethersfield, Conn.

WATSON, 1940, WILLIAM BERKEY—(*Business retired*)—Born June 25, 1917, Brownsville, Pa.; res. 15 Grove Ave., Madison, Conn. 06443; formerly Chem. & Pres., Chester Electronic Laboratories, Inc., a division of General Telephone & Electronics Corp.; Lieut., USNR, '42-'46; Area Ribbons; m. Dec. 7, '40, Helen Baur; d. Catharine Whiting (*Rapp*), Sarah McDowell (*Healy*).

WEAVER, 1945, HOWARD SAYRE—(*Education*)—Born Aug. 30, 1924, Dunkirk, N.Y.; Dir., Yale Univ. Media Design Studio, Yale University, New Haven, Conn. 06520; res. 1 Broad St., Guilford, Conn. 06437; Asst. Dir., Yale Univ. Press, '59-'63; Acting Sec. of Univ., '63-'64; Asst. to President, '64-'68; School of Art & Architecture, Acting Dean, '68-'69, Dean, '69-'75; 1st Lieut., USAAF, '43-'45; Sec., RTA, '60-'67; m. July 23, '49, Deborah Drummond; s. George, Howard Jr.; d. Deborah, Sayre, ('75), Stephanie.

WEBER, 1953, JOHN WILLIAM, M.B.A.—(*Business*)—Born Dec. 12, 1931, Warren, Ohio; Management Consultant, Principal, Temple, Barker & Sloane, Inc., 15 Walnut St., Wellesley Hills, Mass. 02181; res. 12 Falmouth Rd., Wellesley Hills, Mass. 02181; Class Agent, Alumni Fund, '63-; Alumni Schools Com., '66-'69; McKinsey & Co.; Assoc., '60-'68, Principal, '68-'71; Pres., Chayes Virginia Inc., '72-'73; Asst. Administrator, Federal Energy Admin., '74; Lieut., USN, '55-'58; m. May 14, '55, Carolyn E. Rhoten (dec.); m. June 9, '72, Nancy B. Tieken; s. Bruce W.; d. Lisa J.; ss. Joseph A. Wheelock.

WEED, 1938, GEORGE HAINES—(*Business*)—Born July 29, 1916, Savannah, Ga.; Manufacturers Rep., Duluth Filter Co.,

Duluth, Minn.; bus. & res. 2245 Delaware Ave., St. Paul, Minn. 55118; Enrollment & Scholarship Chmn., N. & S. Dakota & Minn., '48-'60; former Pres., N.W. Yale Alumni Assn.; Chmn., 35th Reunion; Chmn., College Agts., '69-'73; formerly Pres., W. H. Sweney Paint Co.; Cmdr., USNR, June '41-Aug. '46; m. June 11, '48, Alice Warren Sweney; s. George Haines, Jr.; d. Virginia Gordon.

°WEEKS, 1862, ROBERT KELLEY, LL.B.—(*Literary work*)—Born Sept. 21, 1840, New York City; died April 13, 1876, New York City.

°WELCH, 1901, GEORGE ARNOLD, LL.B.—(*Law*)—Born May 29, 1879, Cleveland, Ohio; died Dec. 15, 1916, Cleveland.

°WELCH, 1870, WILLIAM HENRY, M.D., L.H.D, Sc.D., LL.D.—(*Medicine*)—Born April 8, 1850, Norfolk, Conn.; died April 30, 1934, Baltimore, Md. Prof. of pathological anatomy, Bellevue Hosp. Medical Coll., 1879-1884; Baxley Prof. of anatomy, Johns Hopkins Univ., 1884-1916 (also dean of the medical faculty, 1893-1898); dir. of the School of Hygiene and Public Health, 1916-1926; Prof. of the Hist. of medicine, '26-'31, and Prof. emeritus, '31-'34. Pres., Md. State Bd. of Health, 1898-1922 (Mbr. until '29); Pres., Bd. of Dir., Rockefeller Institute of Med Research, '10-'34; trustee, Carnegie Institution, '06-'34. Assoc. fellow, Trumbull Coll., Yale Univ., Col., Med. Corps, World War I.

°WELLES, 1899, CHARLES HOPKINS, JR.—(*Law*)—Born Aug. 6, 1876, Scranton, Pa.; died July 29, 1962; Ptnr., Welles & Mackie, Scranton; Chmn., N.E. Pennsylvania Military Training Camps Assn., W.W. I; m. Oct. 25, '20, Grace O'Malley; s. C.H.W., 3d, ('28), James D. ('31), Thomas Edward, ('44), Paul, ('49); d. Mary.

°WELLS, 1929, GEORGE II—(*Business*)—Born Aug. 24, 1907, Quincy, Ill.; died Sept. 29, 1975, Lincoln, Mass.; Exec. V.P. Sexton Can Co., 31 Cross St., Everett, Mass. 02149; Treas., Richards, Sexton & Wells, Inc.; Town Clerk, Town Hall, Lincoln Mass. 01773; Pres., Yale Club of Boston; Alumni Bd.; Class Sec. '64-; Trustee, DeCordova Museum, '54-'61; Trustee, Concord Academy, Treas. Bd., '54-'61, Pres. Bd., '61-'64; Trustee Middlesex Institution for Savings, '59-; Trustee, Philips Exeter Academy, '64-'69; Dev. Officer, Emerson Hosp., Concord, Mass. m. Oct. 30, '36, Katherine Wood; s. Edward Castle; d. Kate, Carol, Sarah, Castle.

°WELLS, 1907, HAROLD SHERMAN—(*Industrial*)—Born Jan 12, 1884, Scranton, Pa.; died Mar. 12, 1937, Stamford, Conn. Capt. Am. Red Cross, World War I (Fgn. service).

°WELLS, 1851, HENRY DORRANCE, M.A.—(*Business*)—Born Aug. 30, 1829, Charleston, S.C.; died May 30, 1870, Charleston.

°WELLS, 1889, HUBERT WETMORE—(*Ministry*)—Born Dec. 29, 1866, Madison, Wis., died Aug. 19, 1949, Chevy Chase, Md.; Assoc. Natl. Dir., U.S. Boys' Working. Res.; Instr., Army Educational Corps, World War I (Fgn. service).

°WELLS, 1882, JOHN LEWIS—(*Law*)—Born Dec. 26, 1860, Fayetteville, N.Y.; died May 31, 1953.

°WELLS, 1857, NATHAN DANA—(*Law*)—Born June 17, 1831, Northfield, N.H.; died Oct. 30, 1902 in Haverhill, Mass.

°WESSON, 1863, CHARLES HOLLAND, LL.B.—(*Law*)—Born Jan. 14, 1840, Brooklyn, N.Y.; died Nov. 21, 1873, Mexico City, Mexico.

°WETHERELL, 1844, JOHN WALCOTT, LL.B., M.A.,—(*Law*)—Born July 16, 1820, Oxford, Mass.; died Oct. 2, 1897, Worcester, Mass. Col., Union Army, Civil War.

°WETMORE, 1867, GEORGE PEABODY, LL.B., M.A.—(*Law*)—Born Aug. 2, 1846, London, England; died Sept. 11, 1921, Boston, Mass. Gov. of R.I., 1885-1887. Mbr., U.S. Senate, 1895-1913.

°WEYERHAEUSER, 1896, FREDERICK EDWARD—(*Industrial*)—Born Nov. 4, 1872, Rock Island, Ill.; died Oct. 18, 1945, St. Paul, Minn.

°WHEELER, 1923, ALFRED NEWTON—(*Finance*)—Born July 30, 1899, Milford, Conn.; died July 23, 1970; Formerly V.P., Marine Midland Grace Trust Co., of N.Y.; W.W. I; Pvt., '17-'18; served with Norton Harjes Ambulance Corps in France, then Amer. Red Cross Ambulance Corps in Italy; Italian War Cross; m. '30, Romaine Bristow; m. '51, Elizabeth Thornton; d. Louise Bristow (*Grosvenor*).

°WHEELER, 1911, LAWRENCE RAYMOND—(*Industrial*)—Born July 19, 1888, Portville, N.Y. died June 21, 1938, Portland, Oregon. Senior editor, U.S. Forest Service, '35-'38.

WHEELER. 1958, THOMAS BEARDSLEY—(*Insurance*)—Born Aug. 2, 1936, Buffalo, N.Y.; General Agent, Massachusetts Mutual Life Insurance Co., Two Center Plaza, Boston, Mass. 02108; res. 56 Page Farm Rd., Sherborn, Mass. 01770; Pres.: Boston Life Underwriters Assn., '72-'73, Mass. Assn. of Life

Underwriters, '76-'77; Dir., Boston Chapter of Chartered Life Underwriters, '69-'71; Boston Children's Service Assn.: Past V.P., Dir., '69-; Dir. Roxbury Children's Service Assn., '75-; Vice Chmn., Republican Town Com., Sherborn, '72-; Lieut., USN, '58-'60; m. Nov. 25, '61, Anne T. Robertson; d. Elizabeth C., Wendy B.

*WHEELER, 1855, WILLIAM, LL.B., M.A.—(*Law*)—Born Aug. 14, 1836, New York City; died June 22, 1864, near Marietta, Ga. Capt. Light Artillery, Union Army, Civil War.

*WHEELWRIGHT, 1897, JOSEPH STORER, M.D.—(*Medicine*)—Born Nov. 23, 1875, Bangor, Me.; died Oct. 9, 1941, Long Point, Ontario, Major, Med. Corps. World War I (AEF).

*WHITE, 1853, ANDREW DICKSON, M.A., Ph.D., D.C.L., L.H.D., LL.D.—(*Education*)—Born Nov. 7, 1832, Homer, N.Y.; died Nov. 4, 1918, Ithaca, N.Y prof. of Hist. and English literature, Univ. of Michigan, 1857-1866; Pres., Cornell Univ., 1866-1885, also Prof. of Hist., 1866-1885. U.S. Minister to Germany, 1879-1881 and 1897-1902, and to Russia, 1892-1894. Trustee, Carnegie Institute and Carnegie Endowment for Peace.

*WHITE, 1854, CHARLES ATWOOD, M.A.—(*Law*)—Born Nov. 11, 1833, New Haven, Conn.; died June 18, 1909, New Haven.

*WHITE, 1848, GEORGE, LL.B., M.A.—(*Law*)—Born Nov. 9, 1821, Quincy, Mass.; died Aug. 29, 1899, Wellesley, Mass.

*WHITE, 1866, GEORGE EDWARD, M.A.—(*Industrial*)—Born Mar. 17, 1845, New Haven, Conn.; died Dec. 19, 1908, New York City.

*WHITE, 1881, HENRY CHARLES, LL.B., LL.M.—(*Law*)—Born Sept. 1, 1856, Utica, N.Y.; died Feb. 7, 1914, New Haven, Conn.

*WHITE, 1851, HENRY DYER, M.A.—(*Law*)—Born Sept. 24, 1830, New Haven, Conn.; died May 4, 1905, New Haven.

*WHITE, 1903, JOHN RICHARDS—(*Education*)—Born Nov. 24, 1880, Providence, R.I.; died June 16, 1911, Providence.

*WHITE, 1864, OLIVER SHERMAN, LL.B., M.A.—(*Law*)—Born Nov. 2, 1842, New Haven, Conn.; died Mar. 30, 1917, New Haven.

*WHITE, 1902, PERCY GARDINER—(*Welfare*)—Born Sept. 16, 1878, Gardiner, Me.; died Feb. 22, 1906, Jamaica Plain, Mass.

*WHITE, 1859, ROGER SHERMAN, LL.B., M.A.—(*Law*)—Born Dec. 26, 1837, New Haven, Conn.; died July 9, 1924, New Haven

*WHITE, 1941, WARREN BENTON, LL.B.—(*Industrial*)—Born Nov. 8, 1918, Denver, Colo.; died Nov. 26, 1972, Oklahoma City, Ok.; Pres. and Owner, Trend Petroleum, Inc., Independence Sq., 3217 N.W. 63d St., Oklahoma City, Okla. 73116; Reg. Al. Fd. Chmn., '52-'59; Lieut., USN, '41-'45; m. Mar. 19, '41 Edith Hogan; s. W.B.W. II; d. Leslie B.

*WHITE, 1942, WILLIAM GARDNER—Born Feb. 25, 1918, St. Paul, Minn.; missing in action, Sept 2, 1944, near Chichi Jima, Bonin Islands, Asiatic Area; presumptive date of death, Sept. 3, 1945. Lt. (j.g.), USNR (Aviation), World War II.

WHITEHEAD, 1936, MATHER KIMBALL—(*Business retired*)—Born Dec. 23, 1913, Buffalo, N.Y.; res. 1555 Burr St., Fairfield, Conn. 06430; formerly V.P. & Treas., Internatl. Mining Corp., N.Y.C.; Lieut Cmdr, USN-AVS, '42-'46; m. Elisabeth Vogel Uihlein.

WHITEHOUSE, 1944, CHARLES SHELDON—(*Government*)—Born Nov. 5, 1921, Paris, France; U.S. Ambassador to Thailand; res. 2425 Foxhall Rd. N.W., Washington, D.C.; in Foreign Service since 1948, with assignments in Belgium, the Congo, Turkey, Cambodia, South Africa, Guinea and Washington; Deputy Ambassador, Saigon, '72-'73; Ambassador to Laos, '73-'75; Capt., USMCR, '42-'46; Air Medal, 2 Gold Stars; m. Feb. 1, '54, Mary C. Rand; s. Sheldon, ('78), Charles R.; d. Sarah P.

*WHITEHOUSE, 1905, EDWIN SHELDON—(*Government*)—Born Feb. 5, 1883, New York, N.Y.; died Aug. 5, 1965; Minister to Guatemala, '30-'33; Minister to Colombia, '33-'34; m. Oct. 14, '20, Mary Alexander; s. Charles L. (ex-'48); George B., ('45, killed in action, '44); d. Sylvia (*Blake*).

*WHITEHOUSE, 1899, WILLIAM FITZHUGH—(*Finance*)—Born Sept. 6, 1877, Elmhurst, Ill.; died May 27, 1955, Newport, R.I., Mbr., R.I. State Senate, '24 and '26; Maj., Inf. World War I (AEF).

WHITMAN, 1938, FRANCIS SLINGLUFF, JR.—(*Journalism*)—Born July 18, 1916, Baltimore, Md.; Assoc. Adv. Dir., The Sunpapers, 501 N. Calvert St., Baltimore, Md. 21203; res. 1423 Greenspring Valley Rd., Stevenson, Md. 21155; Maj., AUS, '40-'46.

WHITMORE, 1944, JAMES ALLEN, JR.—(*Theatre*)—Born Oct. 1, 1922, White Plains, N.Y.; Actor; res. Box 221, Mammoth Lakes, Calif. 93546; American Theatre Wing, '46-'47; m. Aug.

9, '47, Nancy R. Mygatt; s. James Allen III, Stephen Richmond, Daniel Crane.

*WHITNEY, 1878, EDWARD BALDWIN—(*Law*)—Born Aug. 16, 1857, New Haven, Conn.; died Jan. 5, 1911, Cornwall, Conn. Asst. Attny. Gen. of the U.S., 1893-1897. Justice, New York Supreme Court, 1909-1911.

*WHITNEY, 1854, EDWARD PAYSON, M.A.—(*Medical student*)—Born May 22, 1833, Northampton, Mass.; disappeared in 1858.

*WHITNEY, 1851, EMERSON COGSWELL—(*Education*)—Born Nov. 8, 1822, Winchendon, Mass.; died Dec. 1, 1851, Middletown, N.Y.

*WHITNEY, 1894, HARRY PAYNE—(*Finance*)—Born April 29, 1872, New York City; died Oct. 26, 1930, New York City.

*WHITNEY, 1856, JAMES LYMAN, M.A.—(*Library work*)—Born Nov. 28, 1830, Northampton, Mass.; died Sept. 25, 1910, Cambridge, Mass.

*WHITNEY, 1882, JOSEPH ERNEST, M.A.—(*Education*)—Born Feb. 27, 1858, Cornwall, Conn.; died Feb. 25, 1893, Colorado Springs, Colo.

*WHITNEY, 1898, PAYNE, LL.B.—(*Finance*)—Born Mar. 20, 1876, New York City; died May 25, 1927, Manhasset, N.Y.

*WHITNEY, 1863, WILLIAM COLLINS, LL.B., M.A., LL.D.—(*Law*)—Born July 5, 1841, Conway, Mass.; died Feb. 2, 1904, New York City. Sec. of the Navy of the U.S. 1885-1889.

*WHITON, 1853, JAMES MORRIS, Ph.D.—(*Ministry and literary work*)—Born April 11, 1833, Boston, Mass.; died Jan. 25, 1920, New York City. Prof. of ethics and economics, Meadville Theological School, 1893-1894.

*WICKES, 1898, FORSYTH—(*Law*)—Born Oct. 26, 1876, New York, N.Y.; died Dec. 20, 1964; Sr. Ptnr., Wickes, Riddell, Bloomer, Jacobi & McGuire, N.Y.C.; Founder and Bd. Chmn., The French Lycee in City of N.Y.; Major, Inf., AEF, W.W. I; m. April 27, '05, Marian Arnot Haven; d. Fanny (*Parsons*), Marian (*Haines*), Kitty (*Poole*), Ann (*Brewer*).

*WICKES, 1874, THOMAS PARMELEE, LL.B.—(*Law*)—Born April 15, 1853, Albany, N.Y.; died Jan. 18, 1933, Los Angeles, Calif.

*WICKWIRE, 1949E, WINTHROP ROSS—(*Business*)—Born Sept. 18, 1923, Cortland, N.Y.; died Mar. 8, 1969; V.P., operations, Wickwire Bros., Inc., 189 S. Main St., Cortland; 1st Lieut., AAF, Feb. '43-Mar. '46; Air Medal; m. June 20, '44, Ellen J. Denny; s. W.R.W., Jr.; d. Cynthia, Pamela, Margaret, Melinda.

•WIGGIN, 1904, FREDERICK HOLME, LL.B.—(*Law*)—Born Mar. 16, 1882, Litchfield, Conn.; died May 22, 1963; Capt., F.A.R.E. Artillery, W.W. I; m. Sept. '11, Ruth Parker Jackson.

WILBUR, 1933, JOHN SMITH—(*Industrial retired*)—Born June 15, 1911, East Cleveland, Ohio; bus. 1460 Union Commerce Bldg., Cleveland, Ohio 44115; res. 9935 Mitchells Mill Rd., R.D. 1, Mentor, Ohio; A.Y.A. Founding Bd.; A.Y.A. 1933 Rep.; formerly Vice Chmn., Cleveland Cliffs Iron Co.; Capt., AUS, '41-'45; m. Oct. 10, '34, Atheline Miller; s. John Smith, Jr., ('64); d. Atheline (*Nixon*), Andrea (*de Chiara*), Maren Spencer.

WILBUR, 1964, JOHN S., JR.—(*Law*)—Born July 20, 1941, Cleveland, Ohio; Asst. U.S. Attny., 3001 Dent Place, Washington, D.C. 20007.

WILBUR, 1938, RICHARD EMERY—(*Journalism*)—Born Aug. 23, 1916, Cleveland, Ohio; Reporter, Tucson Daily Citizen, P.O. 26767, Park & Irvington, Tucson, Ariz.; res. 2621 Calle Paraiso, Tucson, Ariz. 85705; Sgt., AUS, '42-'46; m. Roberta Kathleen Steger.

•WILCOX, 1859, ASHER, HENRY—(*Ministry*)—Born Nov. 16, 1837, Norwich, Conn.; died Feb. 25, 1915, Norwich.

•WILDER, 1884, AMOS PARKER, Ph.D.—(*Literary work*)—Born Feb. 15, 1862, Calais, Me.; died July 2, 1936, New Haven, Conn. U.S. Consul Gen., Hong Kong, '06-'09, and Shanghai, '09-'14.

•WILHELMI, 1903, FREDERICK WILLIAM—(*Industrial*)—Born Sept. 7, 1879, Utica, N.Y.; died July 20, 1959; Intelligence Branch, U.S. Army, World War I.

•WILHELMI, 1939, FREDERICK WILLIAM, M.A.—(*Business*)—Born Aug. 28, 1915, Cloquet, Minn.; died Sept. 16, 1973, Katonah, N.Y.; Antique Dealer, The Eagle Eye, Box 1, Whitehall Corners, R.R. 2, Katonah, N.Y. 10536; 1st Lieut., Inf., '42-'46; Combat Inf. Badge, 4 Bronze Stars; m. May 7, '55, Mary Shoemaker.

WILKE, 1945, VALLEAU—(*Education*)—Born July 3, 1923, Summit, N.J.; Exec. V.P., Sid W. Richardson Found., 2103 Fort Worth Natl. Bank Bldg., Fort Worth, Texas 76102; res. P.O. Box 12432, 4000 Pecan Lane, Fort Worth, Texas 76116; A.Y.A.; Governor Dummer Academy, Byfield, Mass.: Headmaster, '59-'72, Dir. of Development, '72-'73; Advisory Com. on Accreditation & Institutional Eligibility—U.S.O.E., '73-;

1st Lieut. U.S. Army Air Corps, '42-'45; m. Feb. 23, '46, Marjorie Hankin; s. Robert V.; d. Janice (*Fraser*).

*WILLARD, 1853, Andrew Jackson, M.D.—(*Medicine*)—Born Mar. 19, 1832, Harvard, Mass.; died Mar. 5, 1907, Swanton, Vt.

WILLARD, 1926, Charles Hastings LL.B.—(*Law retired*)—Born Apr. 7, 1905, Minneapolis, Minn.; res. 170 Bunker Hill Rd., Guilford, Conn. 06437; Alumni Bd., '52; A.Y.A., '73-'76; formerly Lawyer, Davis Polk & Wardwell, 1 Chase Manhattan Plaza, New York, N.Y. 10005; m. Oct. 20, '34, Nancy Olney; s. Albert Hastings, Richard Olney.

*WILLCOX, 1848, Giles Buckingham, D.D.—(*Education*)—Born Aug. 7, 1826, New York City; died July 22, 1922, Chicago, Ill. Stone Prof. of pastoral theology and Ch. history, Chicago Theological Seminary, 1879-1900, and Prof. emeritus, '00-'22.

WILLIAMS, 1939, Burch, LL.B.—(*Finance*)—Born July 6, 1917, Memphis, Tenn.; Investment Banker, Senior V.P., Blyth Eastman Dillon & Co., Inc., One Chase Manhattan Plaza, New York, N.Y. 10005; res. 160 Uncas Point Rd., Sachem's Head, Guilford, Conn. 06437; Class Agt., Pierson Coll., '51-'54; Comm. for Study of Yale Athletics, '75-'76; Mbr., Exec. Com., Class of 1939; Maj., USAAF, '41-'45; Purple Heart, Air Medal with Cluster, D.F.C.; RTA: Dir., '48-'50, '73-, Pres., '73-'76; m. Sept. 22, '43, Marjorie Jane Maxim; d. Suzanne Marie (*LaPrade*), Judith Holmes (*Gibbons*), Wendy Elizabeth, Elizabeth Maxim (*Houston*).

WILLIAMS, 1976, Darryl L.—Add. 17310 Judson Drive, Cleveland, Ohio 44128.

*WILLIAMS, 1837, Henry—(*Law*)—Born Sept. 12, 1818, Elizabethtown, N.J.; died July 11, 1878, Savannah, Ga., Lieut., Confederate Army, Civil War.

*WILLIAMS, 1908, James Willard—(*Education*)—Born Aug. 6, 1885, Glastonbury, Conn.; died Mar. 4, 1970; m. June 25, '16, Charlotte Welles; s. David W., ('39); d. Ruth Ellis, Charlotte Barnard, Helen Rankin (dec.).

*WILLIAMS, 1897, Norman Alton—(*Industrial*)—Born Feb. 17, 1873, Utica, N.Y.; died Nov. 4, 1910, Clayville, N.Y.

*WILLIAMS, 1861, Ralph Olmsted—(*Literary work*)—Born May 12, 1838, Palmyra, N.Y.; died July 17, 1908, New Haven, Conn. Served in Union Army, Civil War.

WILLIAMS, 1932, SAMUEL GOODE—(*Transportation retired*)—Born Dec. 15, 1909, Charleston, S.C.; res. 4737 Carlisle Rd., Jacksonville, Fla. 32210; formerly Mgr. of Pricing, Seaboard Coast Line Railroad Co., Jacksonville, Fla.; m. Sept. 9, '33, Helen Olivia McCoy; s. Samuel G., Jr.; d. Helen O. (*Sanders*), Mary C. (*Vensel*).

°WILLIAMS, 1838, THOMAS SCOTT, M.A.—(*Law*)—Born Nov. 20, 1818. Wethersfield, Conn.; drowned Sept. 17, 1842, Hartford, Conn.

WILLIAMS, 1957, WILLIAM BRUCE—(*Transportation*)—Born June 11, 1934, New York, N.Y.; Chief Pilot, Pan Am Business Jets, Pan American World Airways, Business Jets Div., Teterboro Airport, Teterboro, N.J. 07608; res. 81 Angus Rd. N., Greenwich, Conn. 06830; Lieut. Col., USMC, June 57-Dec. '67; USMCR, Commanding Officer, Headquarters & Maintenance Squadron 49 NAS, Willow Grove, Pa., Jan. '68-; m. Apr. 20, '59, Jo Anne Phillips; s. Philip, Neil; d. Karen.

°WILLIAMS, 1839, WILLIAM PERKINS—(*Student*)—Born Aug. 17, 1819, New London, Conn.; died Mar. 9, 1841, Ventnor, Isle of Wight, England.

°WILLIS, 1841, RICHARD STORRS—(*Music and literary work*)—Born Feb. 10, 1819, Boston, Mass.; died May 7, 1900, Detroit, Mich.

°WILSON, 1844, ARCHELAUS, M.A.—(*Law*)—Born May 18, 1817, Nelson, N.H.; died Feb. 26, 1862, New Britain, Conn.

°WILSON, 1906, HUGH ROBERT, LL.D.—(*Government*)—Born Jan. 29, 1886, Evanston, Ill.; died Dec. 29, 1946, Old Bennington, Vt. In U.S. diplomatic service, '12-'41; Sec. at Lisbon, Guatemala, Buenos Aires, Berlin, Berne and Washington, '11-'21; counselor at Tokyo, Mexico, and Washington, '24-'27; minister, Berne, Switzerland, '27-'37; Asst. Sec. of State, '37-'38; ambassador to Germany, '38; Spec. Asst. to Sec. of State, '39-'41; attached to Office of Strategic Services, '41-'45. Sec. Gen., Three Power Naval Arms Limitation Conf., Geneva, '27; Del., Preparatory Disarmament Comm., Geneva, '30; adviser, Naval Conf., London, '30; Mbr., Am. delegation to 54 nation disarmament parley, Geneva, '32-'37, and represented U.S. on Advisory Comm. on Manchuria, '33. Assoc. fellow, Timothy Dwight College, Yale University, '41-'46.

°WILSON, 1847, JOHN—(*Law*)—Born June 15, 1827, Huntsville, Mo.; died Dec. 2, 1867, St. Joseph, Mo.

WILSON, 1972, ZEBULON VANCE, M.A., Diploma, Trinity College, Dublin—(*Education*)—Born Aug. 8, 1950, Asheville, N.C.; Teacher, The Lovett School, 4075 Paces Ferry Rd. N.W.; Atlanta, Ga. 30327; res. 1961 River Forest Rd. N.W., Atlanta, Ga. 30327; Deer Island Staff, '72-'74.

*WINSTON, 1886, DUDLEY—(*Finance*)—Born June 10, 1865, Chicago, Ill.; died April 11, 1898, en route from Lakewood, N.J., to Chicago.

*WINSTON, 1877, FREDERICK SEYMOUR—(*Law*)—Born Oct. 27, 1856, Melrose, Ky.; died Mar. 7, 1909, Pasadena, Calif.

WINTER, 1920, DANIEL R.—(*Business retired*)—Born July 12, 1897, St. Paul, Minn.; res. Cottage 36, Sea Island, Ga. 31561; formerly with Gulf Oil Corp.; m. April 30, '21, Elizabeth Rose; d. Diana (*Payne*).

*WINTER, 1921, EDWIN WHEELER II—(*Finance*)—Born Feb. 12, 1899, St. Paul, Minn.; died Jan. 9, 1961; 2d Lieut., F.A., W.W. I; m. Aug. 16, '41, Ruth Elting; s. Wallace C. III.

*WITHERBEE, 1874, FRANK SPENCER—(*Industrial*)—Born May 12, 1852, Port Henry, N.Y.; died April 13, 1917, New York City.

*WITHERBEE, 1880, WALTER CRAFTS—(*Mining*)—Born July 1, 1856, Port Henry, N.Y.; died Sept. 28, 1922, Port Henry. Secret service work for Dept. of Justice, World War I.

*WITTER, 1944, DEAN, JR.—(*Finance*)—Born May 19, 1922, San Francisco, Calif.; died July 13, 1976, Naples, Fla.; res. 600 Admiralty Parade West, Port Royal, Naples, Fla. 33940; Yale Development Bd.; formerly Exec. V.P. & Dir., Dean Witter & Co.; Lieut. (j.g.), USNR, '43-'46; m. May 9, '66, Faith van Clief; s. Dean, III, David G., Malcolm G.; d. Helen C.

*WODELL, 1910, RUTHVEN ADRIANCE, LL.B.—(*Law*)—Born Jan. 2, 1888, Poughkeepsie, N.Y.; died Jan. 27, 1945, Millburn, N.J. Chief Yeoman, USNRF, World War I.

*WOLCOTT, 1839, ELIZUR—(*Industrial*)—Born Aug. 7, 1817, South Windsor, Conn.; died Mar. 13, 1901, Berkeley, Calif.

WOLFE, 1964, STEPHEN H., M.Div.—(*Ministry, Finance*)—Born Aug. 23, 1942, Glen Cove, N.Y.; Investment Planner, U.S. Trust Co., 45 Wall St., New York, N.Y. 10005; res. 853 7th Ave., New York, N.Y. 10019.

*WOOD, 1833, GEORGE INGERSOLL—(*Ministry*)—Born May 20, 1814, Stamford, Conn.; died Jan. 9, 1899, Washington, D.C.

*WOOD, 1874, JOHN SEYMOUR, LL.B.—(*Law*)—Born Oct. 1, 1853, Utica, N.Y.; died June 15, 1934, New York City.

*WOOD, 1868, WILLIAM CURTIS, M.A.—(*Education*)—Born April 20, 1849, Mahableshwur, India; died July 15, 1875, New Haven, Conn.

*WOODFORD, 1850, OSWALD LANGDON, M.A.—(*Ministry and farming*)—Born Oct. 31, 1827, West Avon, Conn.; died Oct. 21, 1870, West Avon. Mbr., Conn. State Legislature, 1865.

WOODLOCK, 1969, DOUGLAS PRESTON, J.D.—(*Law*)—Born Feb. 27, 1947, Hartford, Conn.; Attny., Goodwin, Procter & Hoar, 28 State., Boston, Mass. 02109; res. 57 Cunningham Drive, South Hamilton, Mass. 01982; Law Clerk to Judge Frank J. Murray, U.S. District Court for the District of Mass.; m. Aug. 30, '69, Patricia Powers.

*WOODRUFF, 1864, FRANCIS EBEN—(*Government*)—Born April 24, 1844, New York City; died June 3, 1914, Morristown, N.J. Served in Customs Service of China, 1865-1897.

*WOODRUFF, 1889, GEORGE WASHINGTON, LL.B.—(*Law*)—Born Feb. 22, 1864, Dimock, Pa.; died Mar. 23, 1934, Harrisburg, Pa. Asst. Attny. Gen. of the U.S., '07-'09; acting Sec. of the Interior, '07; Fed. judge, Hawaii, '09-'10; Attny. Gen. Pa., '23-'27; Public Service commissioner, Pa., '31-'33.

*WOODRUFF, 1879, TIMOTHY LESTER, M.A.—(*Business and finance*)—Born Aug. 4, 1858, New Haven, Conn.; died Oct. 12, 1913, New York City. Lieut.-Gov., N.Y. 1897-1903.

WOODSUM, 1953, HAROLD EDWARD, JR., LL.B.—(*Law*)—Born Aug. 13, 1931, Portland, Me.; Ptnr. & Co-founder, Drummond, Westcott, & Woodsum, 900 Maine Savings Plaza, Portland, Me. 04101; res. Two Lights Rd., Cape Elizabeth, Me. 04107; Football Advisory Com., '58-; Yale Comm. on Athletics, '75-'76; Search Com. for Athletic Dir. to succeed Delaney Kiphuth, '76-; Interviewer for Yale Applicants, '65-'74; Campaign for Yale; Portland Symphony Orchestra: Trustee, '65-'74, Pres., '72-'73; Dir., Portland Boys Club, '68-'74, '76-; Trustee Waynflete School, '70-; Dir., Quebec-Labrador Mission Found., Inc., '69-; Maine Coast Heritage Trust: Dir., '70-, Pres., '72-; Town Council, Cape Elizabeth; Mbr., '65-'75, Chmn., '73-'74; Pvt., AUS, '53-'55; m. Oct. 18, '57, Joan C. Patterson; s. Douglas H.; d. Lee, Rae, Alix.

*WOODWARD, 1883, JOHN BUTLER—(*Law*)—Born April 3, 1861, Wilkes Barre, Pa.; died Sept. 6, 1925, Glen Summit, Pa. Judge, Court of Common Pleas, 11th judicial Distr. of Pa., '13-'25.

*WOODWARD, 1867, RICHARD WILLIAM—(*Science*)—Born Dec. 8, 1846, Franklin, Conn.; died May 15, 1931, New Haven, Conn.

*WOODWARD, 1855, STANLEY—(*Law*)—Born Aug. 29, 1833, Wilkes, Barre, Pa.; died Mar. 29, 1906, Wilkes Barre. Capt., Union Army, Civil War.

WOODWARD, 1922, STANLEY, LL.D., D.C.L.—(*Government retired*)—Born March 12, 1899, Philadelphia, Pa.; res. 3009 N St. N.W., Washington, D.C. 20007; Yale-in-China Teacher, '22-'23; Endowment: Woodward Chair in American History, Yale Univ., '72; U.S. Foreign Service Officer, Geneva, Brussels, Port-au Prince, '26-'34; Commissioner, Fairmont Park, Philadelphia, '34-'37; U.S. Dept. of State: Asst. Chief Protocol, '37-'45, Chief of Protocol, '45-'50; Ambassador Extraordinary & Plenipotentiary, Canada, '50-'53; Treas., Democratic Natl. Com., '54-'55; Mbr., U.S. Delegations to U.N., '60-'62; Founding Trustee, The Woodward Found; Pres.: George Woodward Inc., Philadelphia, Washington Humane Soc.; Dir. (Emeritus), Am. Security & Trust Co.; Penn. Chamber of Commerce Ambassador Award & Germantown Community Award; Scroll of Appreciation, Dept. of State; D.C. Education Assn. Certificate for Untiring Services & Generous Acts; D.C. Humanitarian of the Year Award; donation of Thomas Jefferson statute to Dept. of State for Jefferson Room; Contributor to Chair in memory of Dean Acheson, Johns Hopkins Univ.; Bd. of Dir., Salzburg Seminar in American Studies; Fine Arts Com., Dept. of State; Trustee, Corcoran Gallery of Art; Treas., Natl. Council of Friends of Kennedy Center; Advisory Council, John Hopkins Univ. Advanced Internatl. Studies; Sgt., F.A., U.S. Army, '18; m. Oct. 20, '23, Sarah Crescentia Rutherford.

*WOODWARD, 1858, WILLIAM HERRICK—(*Industrial*)—Born May 19, 1838, Millbury, Mass.; died Sept. 27, 1893, Woodstock, Vt.

*WOOLFOLK, 1841, WILLIAM GREY—(*Farming*)—Born July 11, 1822, Augusta, Ga.; died Oct. 2, 1903, Wynnton, Ga. Served in Confederate Army, Civil War.

°WOOLLEY, 1918, JOHN ELIOT—(*Publishing*)—Born Mar. 1, 1897, Brooklyn, N.Y.; died June 26, 1966; 2d Lieut., F.A., W.W. I; Lieut. Col. USAAF, W.W. II; Alumni Fund Agt.; m. April 24, '29, Grace Maitland Brown.

WOOLLEY, 1917, KNIGHT—(*Finance*)—Born May 1, 1895, Brooklyn, N.Y.; Ptnr., Brown Brothers Harriman & Co., 59 Wall St., New York, N.Y. 10005; res., 810 5th Ave., New York 10021; presently Dir., Southern R.R. System, Merchants Sterling Corp., Orama Corp., Tiger Corp.; Trustee, Boys' Club of N.Y., '27-; Major, F.A., U.S. Army, '17-'19; Victory Medal with 4 Major Combat Stars; m. Aug. 7, '34, Sarah Currier (dec.); m. April 16, '57, Marjorie Fleming.

°WOOLSEY, 1907, HEATHCOTE MURISON—(*Architecture*)—Born June 5, 1884, Leominster, Mass.; died Feb. 7, 1957, Beaufort, S.C.; Officer's Training School, Coast Artillery, World War I; Mbr., Kent, Conn. Rehabilitation Com.

°WOOLSEY, 1872, THEODORE SALISBURY, LL.B., M.A., LL.D.—(*Education*)—Born Oct. 22, 1852, New Haven, Conn.; died April 24, 1929, New Haven. Prof. of international law, Yale Univ., 1878-1911, and Prof. emeritus, '11-'29.

°WORCESTER, 1876, EDWIN DEAN, LL.B.—(*Law*)—Born Feb. 25, 1856, Albany, N.Y.; died May 21, 1929, New York City.

°WORCESTER, 1882, FRANKLIN ELDRED, Ph.B., M.E.—(*Transportation*)—Born Sept. 12, 1860, Albany, N.Y.; died Mar. 3, 1891, Helena, Mont.

°WORCESTER, 1885, WILFRED JAMES—(*Finance*)—Born July 28, 1864, Albany, N.Y.; died Jan. 10, 1953.

°WORD, 1894, CHARLES FRANCIS—(*Law*)—Born April 3, 1871, Virginia City, Mont.; died June 10, 1911, Helena, Mont. Mbr., Mont. State Legislature, '03-'04.

°WRAY, 1836, JAMES MCALPIN, M.A.—(*Law*)—Born Nov. 1, 1817, New Orleans, La.; died April 8, 1850. New Orleans.

°WRIGHT, 1901, ALFRED PARKS—(*Student*)—Born Jan. 5, 1880, New Haven, Conn.; died May 20, 1901, New Haven.

°WRIGHT, 1898, HENRY BURT, Ph.D.—(*Education*)—Born Jan. 29, 1877, New Haven, Conn.; died Dec. 27, 1923, Oakham, Mass. Asst. Prof. of Roman Hist. and Latin Literature, Yale Univ., '07-'11, Asst. Prof. of Hist., '11-'14, and Stephen Merrell Clement Prof. of Christian methods, '14-'23; also acting Sec. of the Univ., 1899-1900. Y.M.C.A. work, World War I.

°WRIGHT, 1868, HENRY PARK, M.A., Ph.D., LL.D.—(*Education*)—Born Nov. 30, 1839, Winchester, N.H.; died Mar. 17, 1918, New Haven, Conn. Asst. Prof. of Latin, Yale Univ., 1871-1876, Dunham Prof. of Latin, 1876-1909, and Prof. emeritus, '09-'18; also dean of Yale Coll., 1884-1909. Trustee, Connecticut Coll. for Women. Sgt., Inf., Spanish-American War.

Y

°YARDLEY, 1855, HENRY ALBERT, M.A.—(*Education*)—Born Dec. 20, 1834, Philadelphia, Pa.; died April 3, 1882, Middletown, Conn. Prof. of homiletics and Christian evidences, Berkeley Divinity School, 1867-1882.

°YARNALL, 1841, THOMAS COFFIN, M.A., D.D.—(*Ministry*)—Born Dec. 10, 1815, Philadelphia, Pa.; died Nov. 28, 1911, West Philadelphia.

°YERKES, 1837, STEPHEN, M.A., D.D.—(*Education*)—Born June 27, 1817, Bucks County, Pa.; died Mar. 28, 1896, Danville, Ky. Prof. of ancient languages, Transylvania Univ., 1852-1857; Pres., Danville (Ky.) Theological Seminary (also Prof. of Biblical and Oriental literature. 1857-1866 and 1867-1896); acting Prof. of Greek, Centre Coll., Danville, 1866-1867.

°YOUNG, 1848 BENHAM DANIEL—(*Education*)—Born Oct. 16, 1822, Christian Cty., Ky.; died May 12, 1895, Huntsville, Ky.

Z

ZALLINGER, 1965, PETER FRANZ—(*Art*)—Born Nov. 29, 1943, New Haven, Conn.; Free Lance Illustrator; res. 5060 Ridge Rd., North Haven, Conn. 06473; Lieut., USNR, '66-'69.

ZIEGLER, 1972, STAN WARREN—(*Student*)—Born Sept. 29, 1950, New York, N.Y.; Graduate student, (Ph.D. candidate) Clinical Psychology: res. 2355 Washington #4, San Francisco, Calif. 94115.

ZORTHIAN, 1941, BARRY, LL.B., LL.D.—(*Business, Government*)—Born Oct. 8, 1920, Turkey; Corp. Exec. in Communications & Forest Products Co., & V.P., Government Affairs,

Time Inc., 888 16th St. N.W., Washington, D.C. 20006; res. Apt. T-7E, The Towers, 4201 Cathedral Ave., N.W., Washington, D.C. 20016; Agt., Yale Alumni Fund, '48-'61; 1941 Class Sec., '71-'76; Mbr., Yale Communications Bd., '71-'74; Chmn., Yale Communncations Bd. & Yale Alumni Publications, Inc., '74-; Newspaper work, '46-'48; Voice of America, '48-'61 (Program Mgr., '56-'61); Deputy Public Affairs Officer, U.S. Embassy, New Delhi, '61-'64; Minister-Counselor for Information, U.S. Mission, Saigon, '64-'68; Senior Corp. Exec., Time Inc., '68-'69; V.P., Time Inc., & Pres., Time-Life Broadcast, Inc., '69-'74; Bd. Mbr.: Internatl. Coll., Beirut, Murrow Center for Public Diplomacy (Fletcher School, Tufts), Overseas Development Council, Muscular Dystrophy Assn., Armenian General Benevolent Union; Col. USMC, '42-'46; USMCR, '46-'73; Campaign & Service Ribbons; m. June 6, '48, Margaret Aylaian; s. Gregory J., ('75), Stephen A.

ZORTHIAN, 1975, GREGORY JANNIG—(*Government*)—Born July 23, 1953, New York, N.Y.; Legislative Aide to Congressman, Office of Congressman Jonathan Bingham, 2241 RHOB, U.S. House of Representatives, Washington, D.C. 20016; res. 4201 Cathedral Ave. N.W., Washington, D.C. 20016.

ZUCKER, 1962, BERNARD, LL.B., M.A.—(*Gemology*)—Born Dec. 22, 1940, French Riviera; International Gem Dealer, 580 Fifth Ave., New York, N.Y.; res. 574 West End Ave., New York, N.Y.; Author of "How to Invest in Gems"; Class Sec., '62-'67; m. Sept. 7, '69, Diane Wolkstein; d. Rachel Cloudstone.

LOCALITY INDEX

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†Bingham, J. B., '36
Boasberg, E., III, '56
†Buckley, J. L., '44
Bush, G. H. W., '48
Cheney, R. L., '58
†Cirie, J. A., '64
†Cooper, J. S., '23
Deans, R. B., '18
Drain, R. D., '43
†Eden, J. W., '51
Ekfelt, R. H., '71
Finney, J. W., '45W
Gillette, H. F., Jr., '64
†Glover, C. C., III, '40
†Grayson, C. T., Jr., '42
†Grayson, J. G., '40
†Grayson, W. C., '44

†Grayson, W. C., Jr., '77
Harriman, W. A., '13
Holmes, G. B., '45W
Hoopes, T. W., '44
†Kelly, W. C., '44
†Liles, C. R., 72
Lord, W., '59
McBride, J. E., '64
†Mathews, C., '51
Mayer, C. T., '51
†Miller, T. C., '70
Moore, R. A., '36
†Moorhead, W. S., '45
Murchison, B. C., '74
Pinney, J. M., '65
Price, R. K., Jr., '51
†Roberts, G. B., Jr., '52
†Rose, J. C., '63
Ross, T. B., '51
†Searles, P. D., '55
Snell, B. C., '67
Steadman, J. M., '52
Stewart, P., '37
Sulzer, J. S., '73
Tabor, J. K., '43
VanSlyck, DeF., '20
†Walker. J. S., '42
†Whitehouse, C. S., '44
Wilbur, J. S., Jr., '64
Woodward, S., '22
Zorthian, B., '41
Zorthian, G. J., '75

FLORIDA

Coral Gables

Finley, J. G.G., '47
†Swenson, E. F., Jr., '40

Delray Beach

†Bates, E. W., '32

Gainesville

Hiers, R. H., '54

Homestead

†Capozzalo, D. D., '76

Jacksonville

Williams, S. G., '32

Key Biscayne

†Brewster, J. H., IV, '62

Miami

†Brewster, J. H., Iv, '62
Cooke, R. B., '36
†Swenson, E. F., Jr., '40

Naples

Jones, E. A., '23
Stewart, C. J., '18

Pensacola

Kelley, L. M., '37

Port Richey

Fuller, S. E., '35

Sebring

Merrill, H. R., '29

Winter Park

†Barge, R. M., '74

GEORGIA

Atlanta

†Barge, R. M., '74
Clay, A. S., IV, '64
†Cohen, K. S., '68
Early, H. E., '45
Erickson, T. F., '40
†Green, B. P., '73
McCallum, R. D., Jr., '68
†Trower, C. C., '70
Wilson, Z. V., '72

Cedar Springs

†Ernst, F. V., '60

Decatur

†Cohen, K. S., '68

Macon

Train, R., '36

Savannah

†Gordon, G. A., '34

Sea Island

Winter, D., R., '20

HAWAII

Honolulu

Somerville, J. W., '57
vonHolt, H. V., '16

Kailua

D'Avanzo, L. A., '56

ILLINOIS

Barrington

†Moseley, S. D.. '43

Chicago

†Blair, W. McC., '07
†Cowles, A., '13
†Cruikshank, P. F., Jr., '52
Dalby, M. T., '66
†Donnelley, G., '31
†Feinerman, J V., '71
†Frank, C. E., '38
†Fritzsche, P. B., '57
†Haffner, C. C., Jr., '19
†Hansen, R. A., '55E
†Hord, S. Y., '21
Kolar, B. W., '68
†Laidley, F. D., '66
Lewis, G. E., '74
†Lutz, K. E., '72
Marsh, L., '63
Mattlin, F. W., '73
†Moseley, S. D., '43
†Pyle, M. J., '61
†Ranney, G. A., '34
†Senay, E. C., '52

Deerfield

Loucks, V. R., Jr., '57

Glencoe

Jones, W. C., '25

Highland Park

Tom, C. B., III, '77

Hinsdale

†Chimenti, N. V., '62

Lake Bluff

†Blair, W. McC., '07

Lake Forest

†Cowles, A., '13
Demaree, F. E., '70
†Haffner, C. C., Jr., '19
†Hansen, R. A., '55
†Hord, S. Y., '21
†Pyle, M. J., '61E
Seaman, I., Jr., '45
†Singleton, T. H., '61

Libertyville

†Donnelley, G., '31
†Laidley, F. D., '66
†Ranney, G. A., '34

Lincolnwood

†Connors, J. J., '59

Mattoon

Lumpkin, R. A., '57

Naperville
†Chimenti, N. V., '62

Northbrook
†Frank, C. E., '38

Ottawa
Thornton, E. B., '54

Park Forest
Diller, J. C., '24
†Spitz, R. W., '62E

River Grove
†Singleton, T. H., '61

Rockford
Bassett, B. B., II, '49

Rock Island
†Eyre, L. L., '70

Wilmette
Michel, A. L., '26

Winnetka
†Connors, J. J., III, '59E
†Cruikshank, P. F., Jr., '52
†Fritzsche, P. B., '57E
†Lutz, K. E., '72

INDIANA

Chesterton
†Senay, E. C., '52

Hammond
†Spitz, R. W., '62

Indianapolis
Bockrath, R. C., Jr., '61

Madison
Schnaitter, S. J., '24

IOWA

Davenport
†Eyre, L. L., '70

Fairfield
Fulton, R. B., '32

Iowa City
Pulaski, C. A., Jr., '64

KANSAS

Tonganoxie
Hurlbut, G. B., Jr., '45W

Wichita
Blue. L. S., '58
Meyer, R. W., Jr., '54

KENTUCKY

Harrodsburg
†Trower, C. C., '70

Louisville
Caldwell, S. S., Jr., '33
McGaughey, G. E., Jr., '45
Mallon, J. H., '19
Morton, T. B., Jr., '54
Price, C. B., Jr., '41

Somerset
†Cooper, J. S., '23

LOUISIANA

New Orleans
Babst, J. A., '71

MAINE

Boothbay
Shepard, L. A., '14

Bowdoinham
†Bouscaren, M. F., '69

Cape Elizabeth
†Woodsum, H. E., Jr., '53

Kittery Point
†Hallett, J. F., '34

Mount Desert
Palmer, A., '30

Mount Vernon
Bissell, G. T., '61

Newcastle
Rowland, J. T., '11

North Edgecomb
†Hall, E. T., '41

Portland
O'Leary, J. J., Jr., '69
†Woodsum, H. E., Jr., '53

Small Point
†Terry, H. P. B., '35

Vinalhaven
Stetson, E. W., Jr., '34

MARYLAND

Baldwin
†McNamara, T. P., '51E

Baltimore
†Benninghoff, H. B., '54
Eisenberg, B. A., '74
†McPhee, S. J., '73
†Whitman, F. S., Jr., '38

Bethesda
†Allen, C. E., '58
†Bell, W. T., '42
†Cowdry, R. W., '68
†Glover, C. C., III, '40
Highfill, P. H., '73
†Walker, J. S., '42

Brookeville
Vorys, M. W., '52

Chevy Chase
†Mathews, C., '51
†Parsons, H. McI., '33
†Roberts, G. B., Jr., '52

Easton
†Walker, J. M., '31

Glen Arm
†McNamara, T. P., '51

Ruxton
†Benninghoff, H. B., '54

Silver Spring
†Parsons, H. M., '33

Stevenson
†Whitman, F. S., Jr., '38

Timonium
†Hambleton, T. E., '34

MASSACHUSETTS

Agawam

†Benoit, C. E., Jr., '65

Andover

Harrison, F. H., '42
†O'Brien, F., Jr., '44

Arlington

†Brandt, J. N. '62

Ashland

†Hart, D., '76

Belmont

†Brandt, J. H., '62
†Seeley, G. W., '61
†Stewart, Z., '43

Boston

†Belin, G. d'A., '39
†Bryan, L. T., Jr., '55
Ellis, A., Jr., '44
†Ellis, F. H., Jr., '41
†Ellis, R. W., '30
†Gallico, G. G., III, '68
†Gwin, S. L., Jr., '63
†Janeway, C. A., '30
†MacLean, K., Jr., '61
†Russell, R. W., '51
†Spaulding. J. A., '45
Thorne, D. H., '66
†Wheeler, T. B., '58
†Woodlock, D. P., '69

Braintree

†McPhee, S. J., '73

Brookline

†Parsons, L., '21
Stokes, A. P., Jr., '27

Cambridge

†Belin, G. d'A., '39
†Bronson, D. B., '44
†Lilley, R. McG., '67
†Moore, D. C., '73
†Stewart, Z., '43

Canton

Dowling. B. J., '69

Concord

†Bryan, L. T., Jr., '55

Conway

MacLeish, A., '15

Cummaquid

Warren, G. U., '45W

Falmouth

†MacLeish, W. H., '50

Groton

†O'Brien, F., Jr., '44

Harvard

Ritterbush, S. G., Jr., '72

Hingham

Holmes, J. G., '34
†MacLean, K., Jr., '61

Holyoke

O'Brien, P., Jr., '45W

Hudson

Guidotti, H. G., Jr., '55

Ipswich

Foster, M. E., '23

Lexington

†Brooke, F. H., Jr., '37
Cooke, F. J., '33

Lincoln

†Seeley. G. W., '61

Lowell

Kerry, J. F., '66

Manchester

Bundy, F. McG., '21
†Spaulding, J. A., '45W

Marblehead

†Ellis, R. W., '30
McLane, J. P., '53

Martha's Vineyard

Look, A. M., '27

Milton

†Jones, T. S., '63
Jones, T. S., '33

Needham

Curtin, F. C., '35
†Ellis, F. H., Jr., '41
Gwin, S. L., '30
†Harman, A., Jr., '45
†Russell, R. W., '51E

Newton Centre

†Parsons, L., '21

Northampton

Thorne, B. S., '68

Plymouth

Ashburn, F. D., '25

Roslindale

Gates, E. R., '76

Sherborn

†Terry, H. P. B., '35
†Wheeler, T. B., '58

Somerville

†Lavelli, A., Jr., '49

South Dartmouth

†Brooke, F. H., Jr., '37

South Hamilton

†Woodlock, D. P., '44

Sudbury

†Bronson, D. B.. '44

Vineyard Haven

†Cassel, J. A., '58

Wellesley

†Harman, A., Jr., '45
Houghton, W. E., '24

Wellesley Hills

Norton, W. B., '25
Weber, J. W., '53E

Weston

†Janeway, C. A., '30

West Tisbury

McCullough, D. G., '55

Westwood

†Gwin, S. L., Jr., '63

Woods Hole

†MacLeish, W. H., '50

MICHIGAN

Ann Arbor

†Jones, T. S., '63
Moyer, D. R., '72

Benton Harbor
†Shepard, L. M., Jr., '39

Birmingham
†Ryan, J. M., '51

Detroit
†Caulkins, J. E., '48
†Rankin, B. C., '36
†Ryan, J. M., '51
†Smith, H. F., Jr., '42

Farmington Hills
†Jackson, T. J., '70

Grosse Pointe Farms
†Caulkins, J. E., '48
†Smith, H. F., Jr., '42

Grosse Pointe Shores
†Rankin, B. C., '36

Saint Joseph
†Shepard, L. M., '39

Wixom
†Jackson, T. J., '70

Woodland
†Bates, E. W., '32

MINNESOTA
Duluth
Hartley, C., '12

Hamel
†Daniels, J. H., '43

Minneapolis
Allen, H. E., '24
†Heffelfinger, F. P., '20
†Pillsbury, J. S., '35

Minnetonka
Adams, S., '59

Saint Paul
Daniels, T.L., '14
Musser, J. M., '30
Shepard, R. B., Jr., '35
Weed, G. H., '38

Wayzata
†Heffelfinger, F. P., '20
†Pillsbury, J. S., Jr., '35

MISSOURI
Buffalo
†Kanehl. P. E., '75

Saint Louis
Walker, G. H., III, '53

Springfield
†Kanehl, P. E., '75

MONTANA
Big Timber
Smith, T., '19

Helena
Schmidt, T. C., '68

NEBRASKA
Omaha
Gibson, R. C., '76
Howe, G. W., '58
Kemp, P. S., '50E

NEVADA
Glenbrook
†Kelly, W. C., '44

Reno
Manville, H. E., Jr., '29

NEW HAMPSHIRE
Bedford
†VanLoan, E. M., III, '64

Center Harbor
Ives, G. M., '25

Francestown
Parker, R. B., '33

Hanover
Mayor, M. B., '59E

Manchester
†VanLoan, E. M., III, '64

New Boston
†Goodenough, J. B., '44

Newmarket
Peters, D. J., '70

Portsmouth
†Hallett, J. F., '34

NEW JERSEY
Atlantic Highlands
Ellis, G. C., Jr., '51
Ferguson, A. L., Jr., '26

Basking Ridge
†Blake, D. B., '37

Califon
†Straw, R. L., Jr., '64

Chatham
†Francis, S. H., '64

Englewood
Frank, V. H., Jr., '50

Fair Haven
†Kelly, B. C., '70
Lynch, D. P., '64

Far Hills
†Thomson, C. S., '24

Glen Ridge
Ashenfelter, A. T., '75

Jamesburg
Rimar, S., III, '77

Kingston
Ives, C. B., '28

Linden
†deNeufvillle, J. P., '61

Madison
†Brown, W. H., '45W

Mahwah
†Kilrea, W. C., '54

Mendham
†deNeufville, J. P., '61

Middletown
Davenport, J., '26

Montville
†Fortunato, S. J., '54

Morristown
†Blake, D. B., '37
†Fortunato, S. J., '54

Oldwick
†Lovejoy, W. M., '25

Piscataway
†Cross, R. J., '37

Princeton
†Bundy, W. P., '39
†Cross, A. W., '66
†Cross, R. J., '37
†Dilworth, J. R., '38
†Jamieson, T. C., Jr., '56
Kilborne, W. S., '35
Knapp, J. M., '36
†Morgenstern, M. J., '76
†Rulon-Miller, P., '63
Spitzer, L., Jr., '35
†Stevens, J. B., Jr., '38

Ridgewood
†Gallico, G. G., III, '68
†Kilrea, W. C., '54

Short Hills
†Lilley, R. McG., '67

Somerville
†Straw, R. L., '64

Teterboro
†Williams, W. B., '57

Trenton
†Jamieson, T. C., Jr., '56
Leverett, M. W., III, '76
†Morgenstern, M. J., '76

Upper Saddle River
Kittredge, F. D., '52E

Whippany
†Francis, S. H., '64

NEW YORK

Albany
†Doyle, T. J., '74
†Hessberg, A., II, '38
Thompson, J. R., '38

Arden
Harriman, E. R., '17

Bay Shore
Slocum, E. L., '15

Bedford
†Claude, A., Jr., '52
†Hyde, L. K., Jr., '23
†McGregor, J. E., '56
†Tighe, L. G., '41

Bethpage
†Vose, E. E., '45W

Binghampton
Back, S. H., '62

Blauvelt
Leiper, J. M., '49E

Bronx
†Bingham, J. B., '36
†Clark, R. I., Jr., '57
Devor, D. S., Jr., '41
†Fox, J. C., '38

Bronxville
†Becket. P. L., '63
Cutler, B. C., '26
†Gill, B., '36
†Turner, H. McL., '37

Brooklyn
†Capron, P., '60
†Frank, C. A., III, '63
†Madden, J. B., '41
†Reid, E. S., III, '51
Sherrill, F. G., '49
Spear. W. J., III, '74
†Waddell, G. H., '61

Buffalo
Stevenson, C. P., '41

Carmel
†Morgan, J. W., '71

Chautauqua
†Northrup. R. S., '60

Corning
Peck, A. J., Jr., 62

Delhi
Breen, J. G., '50

East Hampton
Aldrich, M. P., '22
Lord, W. G., '22

Fishers Island
†Hobson, H. W., '14

Garden City
†Fortgang, J., '71

Geneseo
Wadsworth, J. J., '27

Glen Cove
†O'Connell, T. J., '63

Huntington
†Hadley, M., '16

Irvington
Bradford, T. M., '66

Ithaca
Burtt, E. A., '15

Katonah
†Harper, H. H., Jr., '34 ('33)
Holbrook, D. D., '60

Lloyd Harbor
†Solbert, P.O.A., '41

Locust Valley
†Corey, A. L., III, '65
†Davison, D. P., '49
†Lovett, R. A., '18

Manhasset
†McCrary, J. R., '32

Massena
Baribault, R. P., '49E

Mount Kisco
†Alling, C. B., '47
†Cross, W. R., Jr., '41
Rodd, D. B., '40
Rodd, T., '35

New Rochelle
Stebbins, H. L., '33

New York
Adams, L. G., '20
†Ali, M. R., '65
†Alling, C. B., Jr., '47

Barasch, A. S., '73
†Beane, F. E., Jr., '60
†Becket, P. L., '63
†Bellis, T. L., '73
†Benoit, C. E., Jr., '65
Best, G. D. C., '64
†Bouscaren, M. F., '69
†Bowles, J. E., '35
Brewster, W. R., '21
†Brooks, T. A., '62
Brown, G. C., '66
†Brown, W. H., '45W
†Buckley, J. L., '44
Buckley, W. F., Jr., '50
Bundy, McG., '40
†Bundy, W. P., '39
†Bunnell, P. W., '27
†Burke, C. C., Jr., '37
Bush, J. J., '53
†Capron, P., '60
†Carey, J., '45
†Chittenden, G. H., '39
†Clark, R. I., '57
†Claude, A., Jr., '52
Cohen, R. L., '74
Connick, A. J., '52
Coombs, O. M., '65
Cooper, H. S.F., '17
†Corey, A. L., III, '65
†Cross, W. R., Jr., '41
†Davison, D. P., '49
†Davison, E. P., '45
Diamond, P. C., '74
†Dilworth, J. R., '38
Donaldson, W. H., '53
Duryee, S. S., '17
Eisler, C. T., '52
†Ercklentz, A. T., '59
Etra, D., '68
Evans, P. S., '72
Evans, T. B., '54
Finney, C. R., '73
†Fox, J. C., '38
†Frank, C. A., III, '63
†Gaines, E. F., '75
Galvin, M. G., '71
†Gill, B., '36
Gillespie, K. S., '29
Gillespie, S. H., '32
†Goedecke, W. S., '44
†Gordon, G. A., '34
Green, C. G., '55
Guinzburg, T. H., '50
†Hadley, M., '16
Haight, C. S., Jr., '52
Haight, G. W., '28
Haines, T. F. D., '24
†Hambleton, T. E., '34
†Harriman, E. R., '17
Healy, H. H., Jr., '43
Hodes, D. M., '70
†Holbrook, D. D., '60
Howe, H., II, '40
Jackson, W. E., '41
Jenkins, R. E., '45WE
†Jessup, J. B., '42
†Kelly, B. C., '74
†Kirchwey, G. W., '42
Klots, A. T., Jr., '43
Lambert, P. C., '50
†Lapham, L. A., '31
†Lavelli, A., Jr., '49
†Leiper, J. McC., II, '49
Levering, W. B., '33
Levin, C. H., '71
†Ligon, T. B., '62
Lindgren, R. H., '60
Lindley, F. V., '33
Lindsay, D. A., Jr., '61
Lindsay, D. A., '44
†Lippincott, D. M., '49
Little, S. W., '44
Livingston, R. H. B., '69
†Love, R. F., '51
†Lovejoy, W. M., '25
†Lovett, R. A., '18
†Lufkin, D. W., '53
Lunt, S. B., '21
†Lusk, W. T., '24
†Lydgate, W. A., '31
†McCrary, J. R., Jr., '32
Macdonald, R. H., '15
McGauley, J. M., '33
†McGregor, J. E., '56
†Madden, J. B., '41
†Messimer, R. L., Jr., '31
†Miles, R. C., '37
†Miller, A. O., '39
Moore, J. I., '45
Newton, Q., '33
†O'Connell, T. J., '63
†Ogden, A., '32
Ohene-Frempong, K., '70
†Paine, R. D., Jr., '29
†Palmer, L. G., II, '57
†Pionzio, D. J., '50
Prideaux, T., '30
†Reid, E. S., '51
Reigeluth, D. S., '75
Reilly, J. S., '15
Richards, D. A., '67
Robinson, F. F., '27
Ross, L. P., '28
†Rulon-Miller, P., '63
Ryan, A. A., III, '54
Saxon, J. M., '67
Schwarzman, S. A., '69
Scott, E. L., '60
Shattuck, J. H. F., '65
Sheffield, J. R., '59
Shepard, F. P., '17
†Solbert, P. O. A., '41
Spofford, C. M., '24
†Sprole, F. A., '42
†Stack, J. W., Jr., '40
Steadman, R. C., '55
†Stevens, J. B., Jr., '38
†Thomson, C. S., '24
†Turner, H. McL., '37
VanDine, V., '49
†Waddell, G. H., '61
Walden, R. S., '72
†Walker, G. H. H., Jr., '27
†Walker, J. M., '31
Walker, S. S., Jr., '48
Walsh, J., Jr., '61
Wardwell, E. R., '27
†Williams, B., '39
Wolfe, S. H., '64
Woolley, K., '17
Zucker, B., '62

North Tarrytown

†Love, R. F., '51

Peekskill

Polich, R. F., '54

Pelham Manor

†Henningsen, V. W., Jr., '50
†Lightfoot, R. B., '59
†Lydgate, W. A., '31
†Palmer, L. G., II, '57

Portchester

Johnson, W. J., Jr., '71

Pound Ridge

†Devor, D. S., Jr., '41
†Tighe, L. G., '41

Quogue

†Vose, E. E., '45

Riverdale

Stillman, P. G. B., '40

Rochester

†Green, B. P., '73
Stewart, J. C., '61

Rye

†Brooks, T. A., '62
†Carey, J., '45W
†Chittenden, G. H., '39
Gile, C. D., '39
†Goedecke, W. S., '44

Setauket

Brubaker, J. R., '77
†Brubaker, J. K., '76

Slingerlands
†Hessberg, A., II, '38

Somers
†Messimer, R. L., Jr., '31

Syosset
†Bryan, J. T., III, '71
†Miller, A. O., Jr., '39

Tarrytown
†Hyde, L. K., Jr., '23

Wantagh
†Bellis, T. L., '73

Water Mill
Bench, E. C., '25

West Hempstead
†Fortgang, J., '71

White Plains
†Henningsen, V. W., Jr., '50

NEW MEXICO
Albuquerque
Clay, J. L., '68
Selander, D. A., '69

NORTH CAROLINA
Asheville
†Capozzalo, D. D., '76
Stevenson, D. D., '25

Carrboro
†Bryan, J. T., III, '71

Chapel Hill
†Robinson, H. C., Jr., '45

Charlotte
Esselstyn, E. C., '59

Durham
Haas, F. P., '35
†Robinson, H. C., Jr., '45
Rowe, T. D., Jr., '64

Raleigh
Schlesinger, D. A., '77

Swannanoa
Holden, R. A., '40

Wadesboro
†Liles, C. R., '73

OHIO
Bedford
†Oberlin, J. P., '57

Chagrin Falls
†Clark, T.W., '61
†Dempsey, J. H., Jr., '38
†Hall, J. A., '36
†Ingalls, D. S., '20
†Ingalls, D. S., Jr., '56

Cincinnati
Allen, A. J., Jr., '45
Burke, J. E., '75
Davies, P., '76
†Hobson, H. W., '14
Taft, C. P., '18
Tucker, L., '31

Cleveland
†Clark, T. W., '61
†Crile, G., Jr., '29
Dempsey, A. S., '56
†Dempsey, J. H., Jr., '38
†Dunn, G. J., '57
Esselstyn, C. G., Jr., '56
†Hall, J. A., '36
†Hollister, J. B., Jr., '49
†Moseley, T. W., '45W
†Spears, R. S., '52
†Wilbur, J. S., '33
Williams, D., '76

Cleveland Heights
†Crile, G., Jr., '29
†Dunn, G. J., '57E

Gates Mills
†Hollister, J. B., Jr., '49

Hudson
†Oberlin, J. P., '57

Jackson
Preston, J. L., '58

Marietta
Case, P. B., Jr., '71

Mentor
†Wilbur, J. S., '33

Perrysburg
†McIntosh, H., '27
†Menton, J. D., '53

Shaker Heights
†Ingalls, D. S., '20
†Ingalls, D. S., Jr., '56
†Moseley, T. W., '45
†Spears, R. S., '52E

Toledo
†McIntosb, H., '27
†Menton, J. D., '53

OKLAHOMA
Oklahoma City
Boren, D. L., '63

OREGON
Lake Oswego
†Schollander, D. A., '68

Portland
Hewitt, H. H., '63
†Schollander, D. A., '68

Sisters
Thompson, S. E., Jr., '68

PENNSYLVANIA
Bethel Park
Connors, D. M., '74
Huey, M. C., '73

Bryn Mawr
†Kee, C. A., '77

Erie
Traphagen, P. A., '56E

Friendsville
Downing, E. S., '71

Gladwyne
Malloy, T. R., '56

Glenshaw
†Connelly, W. J., Jr., '45

Greensburg
Mitinger, J. B., '53

Media
†Mathias, P. H., '55

Monongahela
†Goldberg, R. J., '77

Narberth
Lonsdorf, D. B., '73

Norristown
†Orr, A. A., '56

Ottsville
Fetner, P. J., '65

Penn
Struzzi, T. A., '75

Philadelphia
†Burr, C. B., II, '62
†Costikyan, G. K., '29
Finney, G. S., '52
†Giegengack, R. F., Jr., '60
†Howard, J. E., '66
McLean, R., III, '50
†Scott, L. G., '77
†Stewart, J., '21
Wald, S. G., '75

Pittsburgh
Ahlbrandt, R. S., Jr., '62E
Blattner, R. W., '76
†Connelly, W. J.. Jr., '45
Durfee, C. G., Jr., '56E
†Heinz, H. J., II, '31
Hemphill, J. T., Jr., '59
†Moorhead, W. S., '45
Sumner, W. S., '45

Radnor
†Burr, C. B., II, '62

Rosemont
†Stewart, J., '21

Sewickley
†Heinz, H. J., II, '31

State College
†Austin, R. L., '68
†Lewis, M. S., '72

Swarthmore
†Howard, J. E., '66

University Park
†Austin, R. L., '68

Upper Darby
†Mathias, P. H., '55

Villanova
†Costikyan, G., '29

Wallingford
†Giegengack, R. F., Jr., '60

Wayne
†Orr, A. A., '56E

York
†Eden, J. W., '51

PHILIPPINES

Ermita, Manila
Connick, L., '45

PUERTO RICO

Mayaguez
Bartholemy, A. E., '42

RHODE ISLAND

East Greenwich
†Chafee, J. H., '44

North Kingston
†Doolittle, D. H., '43

Providence
†Chafee, J. H., '44
Sauber, R. A., '72
Scattergood, T. B., '70

Wakefield
†Doolittle, D. H., '43

SOUTH CAROLINA

Aiken
Goodyear, R. M., '49

Camden
†Daniels, J. H., '43
Buckley, F. R., '52

Dillon
†Cooper, C., '77

TENNESSEE

Knoxville
Ashe, V. H., II, '67
Blakely, M., '77

Maryville
Novkov, D. A., '53E

Memphis
Blanchard, J. G., '39
†Fort, D. K., '76
McLaren, M. G., '72
Mallory, B. L., Jr., '28
Smith, F. W., '66

Nashville
†Brubaker, J. K., '76
Inman, R. D., '71
†Lufkin, P. W., '49E

Smyrna
†Lufkin, P. W., '49E

TEXAS

Austin
Johanson, S. M., '55E

Brenham
Grove, M. J., '29

Corpus Christi
Durham, E. A., '53
†Gonzalez, T. F., '74
†Thompson, W. McI., Jr., '69

Dallas
Ardrey, R. L., '25
Barr, R. J., Jr., '36
Coke, H. C., Jr., '26
†Gonzalez. T. F., '74
Lynch, R. V., '45
McElroy, B. T., '45
Mallon, H. N., '17
Terry, W., III, '62

Fort Worth
Green, R. H., '75
Wilkie, V.. Jr., '45

Houston
Bush, G. W., '68
Dyess, A. D., Jr., '39
Gow, R. H., '55E
Kaminsky, R. I., '64

Smith, L. H., '29
Stanberry, W. B., Jr., '66
†Thompson, W. McI., Jr., '69

Mission

Greene, W. W., '30

San Antonio

Lalley. P. W., '77

UTAH

Salt Lake City

Allison, R. S., Jr., '30

VERMONT

East Fairfield

†Cassel, J. A., '58

Grafton

Holbrook, J. Jr., '59

Hartland-Four Corners

Cushman, C. W., '54

Manchester

Peltz, W. L., '31
Scott, H. C., '25

Manchester Center

Bradford, A. H., '34

Middlebury

Eddy, M. H., '29

Saint Albans

Smith, J. G., '12

Sharon

Ladd, L. W., Jr., '30

Weston

Laundon, M. H., Jr., '32

VIRGINIA

Alexandria

Cunningham, H. T., '34
Hoxton, A. R., Jr., '39
Oler, W. M., '16
†Rose, J. C., '63

Annandale

†Miller, T. C., '70

Arlington

Guthrie, R. K., '68

Charlottesville

†Casscells, C. D., '76
†Morgan, R. M., '70
Ritchie, W. P., Jr., '57

McLean

†Cowdry, R. W., '68
Quarles, J. P., '65
†Searles, P. D., '55

Middleburg

†Ellis, G., McC., '51
Mills, J. P., '32

Millwood

†Ellis, G. McC., '51

Norfolk

†Meek, J. B., Jr., '60E

Portsmouth

†Meek, J. B., Jr., '60E

Richmond

Davenport, B. W., '38

Staunton

†Giesen, A. R., Jr., '54

Upperville

†Grayson, C. T., Jr., '42
†Grayson. J. G., '40
†Grayson, W. C., '44
†Grayson, W. C., Jr., '77

Verona

†Giesen, A. R., Jr., '54

Vienna

†Morgan, R. M., '70

WASHINGTON

Bainbridge Island

†Pelly, B. B., '23

Bellevue

†Biglow, L. H., Jr., '45W
Carlsen, R. A., '57
†Kimball, W. S., '34

Olympia

†Lufkin, C. F., '51

Seattle

Andrews, E. W., Jr., '45W
†Biglow, L. H., Jr., '45W
Boulos, W. M., '47
DeForest, S. E., '55
Fehr, G. F., '55E
Ketcham, H. H., '14
†Kimball, W. S., '34
†Pelly, B. B., '23
Root, R. D., '26

Tacoma

†Lufkin, C. F., Jr., '51

Yakima

Bronson, J. D., '26

WISCONSIN

Milwaukee

†Bender, K. A., '75
Thomas, W. D., '41

Neenah

Shepard, D. C., Jr., '50

New Berlin

†Bender, K. A., '75

Saint Germain

Robertson, A. C., '28

AUSTRALIA

Victoria

Price, R. E., '54E

AUSTRIA

Vienna

DesJardins, P. E., '65E

BELGIUM

Brussels

Foster, D. J., '67

BOTSWANA

Gaberones

†Hall, E. T., '41

BRAZIL

Sao Paulo

Bush, D. G., '67

CANADA

Kingston

MacDonald, S. J., '73
Scott, W. I., '73

Nova Scotia

†Harper, H. H., Jr., '33

Rexdale

MacDonald, R. J., '72

Saint Johns

Fuller, H. W., '69

Sault Sainte Marie

MacKenzie, K. M., '75

Toronto

Gill, M. G., '63

Vancouver

Bisaro, L. R., '74

COLOMBIA

Bogota

Hernandez, C. A., '71

ENGLAND

ASCOT

Berkshire

Lagercrautz, B. M., '65

Beaconsfield, Buckinghampshire

Holland, H. T., '62

Cambridge

Vogt, T., '43

Farnham, Surrey

†Reponen, R. G., '54

London

Dale, E. L., Jr., '45
Galbraith, E. G., '50
†Kilcullen, J. M., '34
†Reponen, R. G., '54
Stewart, D. O., '16

Oxford

†Gallico, G. G., III, '68
†Goodenough, J. B., '44

Woking Surrey

Lagercrautz, B. M., '65

FRANCE

Biarritz

†Kilcullen, J. M., '34

Paris

Clay, T. J., '65
†Moore, D. C., '73
Preston, J. M., '67
Raymond, G. T. P., '49

GERMANY

Berlin

†Cooper, J. S., '23

GREECE

Piraeus

†Kilcullen, J. M., '34

HONG KONG

Cushman, R. E., Jr., '58
†Doyle, T. J., Jr., '74

INDIA

New Delhi

†Mehta, A. S., '76

Rajasthan

†Mehta, A. S., '76

INDONESIA

Yogyakarta

†Northrup. R. S., '60

KENYA

Nairobi

†Cross, A. W., '66

REPUBLIC OF PANAMA

Panama City

Arras, R. E., Jr., '69

SCOTLAND

Saint Andrews

Barras, H., '32

SOUTH AFRICA

Cape Town

†Swil, R. A., '67

Parow, Cape

†Swil, R. A., '67

SWITZERLAND

1814 La Tour de Peilz

Adams, F. B., Jr., '32

YALE CLASSES

1833

*Bates, S. H.
*Beach, J. C.
*Bishop, N.
*Crump, J.
*Davis, B. F.
*Hart, R. E.
*Lewis, A. H.
*Marshall, S. D.
*Mather, F. E.
*Miller, P. T.

——— ———

*Roberston, R.
*Russell, W. H.
*Taft, A.
*Wood, G. I.

1834

*Beaumont, G. A. O.
*Burr, W. S.
*Coffing, C.
*Emerson, A.
*Foster, E. K.
*Gordon, A. B.
*Hall, D. E.
*Houston, J. W.
*Kendall, J. N.
*Kingsley, H. C.
*Lea, J. N.
*Southmayd, S. G.
*Spencer, G. G.
*Tweedy, J. H.
*Washington, W. H.

1835

*Anderson, E. A.
*Davis, J.
*Howard, O. R.
*Johnston, F.
*McLellan, W.
*Mills, E. S.
*Rafferty, J. C.
*Seeley, J. E.
*Seymour, J. F.
*Sheffey, H. W.
*Strong, C.
*Stubbs, A.
*Sturges, T. B.
*Thacher, T. A.
*Walsh, H.

1836

*Darling, T.
*Deming, H. C.
*Dent, H. H.
*Dunwody, J. B.
*Harris, H. R.
*Hurd, J. C.
*Martin, J. G.
*Marvin, G. L.
*Pierson, W. S.
*Preston, H. K.
*Rowland, W. S.
*Sherman, F. R.
*Swift, J. M.
*Tyler, G. P.
*Wray, J. M.

1837

*Carter, E. O.
*Coit, W.
*Day, T. M.
*Evarts, W. M.
*Hatch, W. T.
*Hyatt, R. U.
*Law, W. F.
*Lyman, C. S.
*Owen, A. F.
*Robeson, A. B.
*Scarborough, W. S.
*Silliman, B.
*Waite, M. R.
*Williams, H.
*Yerkes, S.

1838

*Bartlett, J. K.
*Cooper, W. F.
*Dodd, A.
*Fleming, W. S.
*Jones, S. A.
*Key, T. M.
*Law, W. L.
*Lynde, C. J.
*Ribeiro, C. F.
*Rich, C.
*Spalding, E.
*Talcott, T. G.
*Thompson, J. P.
*Varnum, J. B.
*Williams, T. S.

1839

*Beach, J. S.
*Biddle, T. B.
*Chandler, W. H.
*Eldredge, C. St.J.
*Faulkner, E.
*Hubbard, R. D.
*Jackson, H. R.
*Norris, W. H.
*Putnam, J. O.
*Stille, C. J.
*Trotter, S. F.
*Washington, G.
*Watson, J. M.
*Williams, W. P.
*Wolcott, E.

1840

*Beirne, C. J.
*Benedict, T. H.
*Burnham, C. F.
*Chauvenet, W.
*Fisk, S. W.
*Hoppin, J. M.
*Hoyt, J. G.
*Hudson, W. W.
*Jesup, J. R.
*McCall, H.
*March, D.
*Perkins, J.
*Perkins, W.
*Richards, G.
*Tiffany, W. H.

1841

*Barry, W. T. S.
*deSa, P. A.
*Emerson, J.
*Eustis, W. T.
*Field, D. I.
*Gillett, A. C.
*Helfenstein, C. P.
*Leaf, E.
*Learned, W. L.
*Mitchell, D. G.
*Raymond, H. H.
*Sturges, H.
*Willis, R. S.
*Woolfolk, W. G.
*Yarnall, T. C.

---

*Deceased

1842

*Benton, J. A.
*Brown, J. V.
*Buttles, A. B.
*Edwards, N.
*Gready, W. P.
*Halsey, J.
*Hennen, W. D.
*Huggins, W. S.
*Lewis, H.
*MacWhorter, A.
*Mathews, A.
*Miller, F. W.
*Perkins, N. S.
*Peters, J. A.
*Pratt, J. H.

1843

*Baratte, J. A.
*Chambers, W. L.
*Eames, B. T.
*Gachet, C. N.
*Grammar, C.
*Granger, G.
*Hart, R.
*Havens, D. W.
*Lambert, A.
*Lane, W. G.
*Lent, J. A.
*Moody, T. H.
*Robb, J. H.
*Robinson, L. F.
*Stevens, H.

1844

*Bell, R. D. S.
*Breed, E. A.
*Elliott, W. H.
*Felder, J. H.
*Ferry, O. S.
*FewSmith, W.
*Fish, S. A.
*Foote, T.
*Lanier, A. C.
*Lovell, J.
*Robb, J. M.
*Walker, J. B.
*Washburn, W. B.
*Wetherell, J. W.
*Wilson, A.

1845

*Brickell, J. N.
*Conner, L. P.
*Conner, W. G.
*Cushman, I. L.
*Esty, C. C.
*Gould, J. G.
*Harding, J. W.
*Hill, G. C.
*Hyde, A. P.
*Kennedy, T.
*Metcalfe, O.
*Nickerson, S. D.
*Rankin, R.
*Taylor, R.
*Wales, L. E.

1846

*Backus, J. W.
*Brisbin, J. B.
*Eakin, W. S.
*Harrison, H. B.
*Hawley, D.
*Kellogg, S. W.
*Linton, S. D.
*Mulford, D. H.
*Nelson, R. R.
*Nevins, W. R.
*Phinney, E.
*Savage, J.
*Steele, H. T.
*Stiles, J.
*Trask, C. H.

1847

*Allison, S. P.
*Baldwin, R. S.
*Bayne, T. L.
*Coon, J.
*Fitch, J.
*Haight, D. C.
*Hayden, W. H.
*McLallen, P. F.
*Mills, A.
*Moore, W. E.
*Munn, J.
*Olmsted, J. H.
*Sanford, C. F.
*Smith, J. D.
*Wilson, J.

1848

*Abbe, F. R.
*Atchison, W.
*Blake, H. T.
*Colton, H. M.
*Condit, C.
*Emerson, S.
*Foster, D.
*Hitchcok, H.
*Kinne, W.
*Mesick, R. S.
*Pinckard, T. C.
*Strickler, S. A.
*White, G.
*Willcox, G. B.
*Young, B. D.

1849

*Brandegee, A.
*Came, C. G.
*Campbell, J.
*Clarke, W. B.
*Dwight, T.
*Finch, F. M.
*Fisk, F. W.
*Hough, E. C.
*Hurlbut, J.
*Kirby, J. B.
*Miles, J. B.
*Morris, E. D.
*Richardson, W.
*Rockwell, J.
*Metcalfe, H. L.

1850

*Bentley, E. W.
*Bliss, R.
*Bliss, W. R.
*Camp, C.
*Chase, H.
*Colton, W. S.
*Condit, A. P.
*Converse, G. S.
*Dechert, H. M.
*Foote, J. F.
*Ludden, W.
*Manross, N. S.
*Roberts, E. H.
*Storrs, C.
*Woodford, O. L.

1851

°Alexander, W. F.
°Beman, H. DeW.
°Brinsmade, H. W.
°Crampton, R. C.
°Dana, W. B.
°Evans, E. W.
°Halderman, R. J.
°Hebard, A.
°Little, R.
°Manice, W. DeF.
°Slade, J. M.
°Vose, J. G.
°Wells, H. D.
°White, H. D.
°Whitney, E. C.

1852

°Bigelow, A.
°Blakeslee, H. C.
°Bliss, C. M.
°Cooper, J.
°Crapo, W. W.
°Gilman, D. C.
°Helmer, C. D.
°Houghton, E.
°Johnston, W. P.
°McCormick, H.
°Marmaduke, V.
°Ross, W. B.
°Safford, G. B.
°Sill, G. G.
°Stanley, W.

1853

°Aiken, W. P.
°Babcock, H. H.
°Baldwin, G. W.
°Capron, S. M.
°Colt, J.
°Davies, T. F.
°Gleason, W. H.
°Grout, A.
°Heard, A. F.
°Jack, T. M.
°Johnson, G. A.
°Kent, A. E.
°White, A. D.
°Whiton, J. M.
°Willard, A. J.

1854

°Blackman, S. C.
°Cutler, C.
°Denny, T.
°Fenn, W. H.
°Hooker, J. W.
°Lambert, E. W.
°Lombard, J. K.
°Lord, G. DeF.
°Morris, L. B.
°Potwin, L. S.
°Purnell, C. T.
°Slade, F. H.
°Twombly, A. S.
°White, C. A.
°Whitney, E. P.

1855

°Alexander, W. D.
°Barnes, W. H. L.
°Bumstead, N. W.
°Child, L. M.
°Cobb, H. N.
°Granger, J. A.
°Johnson, C. F.
°Kittredge, G. A.
°Lampson, G.
°Mulford, E.
°Spring, A. J.
°Tyler, C. M.
°Wheeler, W.
°Woodward, S.
°Yardley, H. A.

1856

°Arnot, M. H.
°Barker, G. P.
°Brown, J. M.
°Campbell, W. H.W.
°Condit, S.
°Depew, C. M.
°Dickinson, A.
°Eakin, E. A.
°Fisher, L. C.
°Magruder, B. D.
°Nettleton, E. P.
°Packard, L. R.
°Paine, L. L.
°Robinson, G. C.
°Whitney, J. L.

1857

°Blackman, C. S.
°Blake, E. W.
°Buckland, J. P.
°Butler, F. E.
°Croxton, J. T.
°Day, J. C.
°Edwards, A. L.
°Green, J. P.
°Holmes, J. M.
°Jackson, J. C.
°Northrop, C.
°Pratt, G.
°Seymour, S. O.
°Tyler, M. C.
°Wells, N. D.

1858

°Blake, E. F.
°Eichelberger, M. S.
°Grant, E. D.
°Haskell, R. C.
°Heermance, E. L.
°Hollister, A. N.
°Kimball, J. E.
°Lee, S. H.
°MacLellan, G. B.
°Perkins, T. A.
°Porter, E. C.
°Scott, E. G.
°Stevens, F. W.
°VanName, A.
°Woodward, W. H.

1859

°Bristol, I. H.
°Brodhead, H.
°Carpenter, R.
°Clay, G.
°Dunham, G. E.
°Hall, W. K.
°Hannahs, D. C.
°Harrison, B. N.
°Robertson, C. F.
°Schuyler, E.
°Smith, E.
°Stiles, W. A.
°Taylor, A. J.
°White, R. S.
°Wilcox, A. H.

1860

°Beckley, J. W.
°Boies, C. A.
°Boltwood, E.
°Daniels, J. L.
°Davis, L. H.
°Davis, R. S.
°Fowler, W.
°Furbish, E. B.
°Hebard, D.
°Johnston, W. C.
°Jones, L. M.
°Owen, C. H.
°Phelps, W. W.
°Seely, J. F.
°Smith, W. T.

1861

°Baldwin, S. E.
°Brown, H. S.
°Chamberlain, R. L.
°Dexter, F. B.
°Fuller, W. H.
°Higgins, A.
°Kernochan, F. E.
°Mitchell, J. H.
°Newell, S.
°Park, W. E.
°Peck, T.
°Root, A. P.
°Shearer, S.
°Sill, E. R.
°Williams, R. O.

1862

°Adams, F.
°Chamberlain, D. H.
°Coe, E. B.
°Day, M. C.
°Eaton, S. B.
°Johnston, H. P.
°Kitchel, C. L.
°Lampson, W.
°MacVeagh, F.
°Ripley, G. C.
°Seely, W. W.
°Stebbins, H. H.
°Taylor, J. P.
°Ward, J. A.
°Weeks, R. K.

1863

°Allen, W.
°Arms, C. J.
°Bingham, E. B.
°Bull, C. W.
°Butler, J. H.
°Chamberlain, L. T.
°Dimock, H. F.
°Fowler, H. W.
°Kernochan, J. F.
°Perry, D. B.
°Sheffield, G., St. J.
°Southworth, G. C. S.
°Sumner, W. G.
°Wesson, C. H.
°Whitney, W. C.

1864

°Boltwood, T. K.
°Borden, M. C. D.
°Boyden, H. P.
°Clark, A. B.
°Hewitt, T. B.
°MacLean, C. F.
°Merriam, G. S.
°Miller, A. D.
°Owen, H. E.
°Palmer, W. H.
°Pratt, W. H. B.
°Pugsley, I. P.
°Sterling, J. W.
°White, O. S.
°Woodruff, F. E.

1865

°Bent, J. A.
°Brooks, J. E.
°Brown, H. A.
°Bulkley, T.
°Bushnell, W. B.
°Caskey, T. F.
°Charnley, C. M.
°Ewell, J. L.
°Ford, G. T.
°Merrill, P.
°Riggs, B. C.
°Smith, C. E.
°Stimson, H. A.
°Stone, W.
°Warren, H. W.

1866

°Adams, C. H.
°Brand, J.
°Coffin, E.
°Cole, H.
°Farnam, W. W.
°Foote, H. W.
°Hall, J. M.
°Hincks, E. Y.
°Holt, G. C.
°Judson, F. N.
°Lampman, L.
°Sloane, H. T.
°Southgate, C. M.
°Wade, L. C.
°White, G. E.

1867

°Bissell, A. D.
°Dexter, M.
°DuBois, J. J.
°Dunning, A. E.
°Harding, W. B.
°Hartshorn, J. W.
°Hedge, T.
°Lamb, A. E.
°Libbey, F.
°Merriam, J. F.
°Seymour, H.
°Spencer, J. M.
°Taft, P. R.
°Wetmore, G. P.
°Woodward, R. W.

1868

°Berry, C. D.
°Brewster, C. B.
°Coffin, J.
°Colt, L. B.
°Dixon, W. P.
°Farnam, C. H.
°Lewis, J.
°McKinney, W. A.
°Sloane, T. C.
°Thacher, J. K.
°Tinker, A. P.
°Tweedy, S.
°Tytus, E. J.
°Wood, W. C.
°Wright, H. P.

1869

- °Bannard, H. C.
- °Beers, H. A.
- °Bissell, W. S.
- °Brown, A. L.
- °Eno, J. C.
- °Foster, J. P. C.
- °Freeman, H. V.
- °Heaton, E.
- °Hooker, T.
- °Isham, J. B.
- °Lear, H.
- °Perrin, B.
- °Raymond, H. W.
- °Richardson, R. B.
- °Shirley, A.

1870

- °Andrews, J. W., Jr.
- °Gulliver, W. C.
- °Johnston, R.
- °Learned, D. W.
- °McClure, J. G. K.
- °McCutchen, S. St.J.
- °Mason, H. B.
- °Miller, G. D.
- °Perry, J. H.
- °Selden, E. G.
- °Shattuck, J. W.
- °Stearns, E. R.
- °Strong, C. H.
- °Tilney, J. J.
- °Welch, W. H.

1871

- °Clark, C. H.
- °Collin, F.
- °Elliott, H. R.
- °Hine, C. D.
- °Kinney, H. E.
- °Lea, R. B.
- °Mansfield, H.
- °Mason, A. B.
- °Mead, F.
- °Perry, W. W.
- °Sperry, W. R.
- °Strong, G. A.
- °Smeet, E. F.
- °Thacher, T.
- °Townsend, W. K.

1872

- °Coe, R. E.
- °Cushing, W. L.
- °Deming, C.
- °Deming, C. C.
- °Deming, H. C.
- °Dennis, F. S.
- °Hincks, J. H.
- °Hoppin, B.
- °Merriam, A. R.
- °Moore, G. F.
- °Owen, E. T.
- °Payson, H. S.
- °Ramsdell, C. B.
- °Spalding, G. A.
- °Woosley, T. S.

1873

- °Alexander, E.
- °Allen, A. H.
- °Beebe, W.
- °Daniels, R. W.
- °Denslow, H. M.
- °Elder, S. J.
- °Flagg, W. W.
- °Grubb, C. R.
- °Johnes, E. R.
- °Judson, I. N.
- °Lathe, H. W.
- °Ord, J. P.
- °Prentice, S. O.
- °Tarbell, F. B.
- °Thomas, C. H.

1874

- °Aldis, O. F.
- °Barnes, P.
- °Bushnell, S. C.
- °Farnam, H. W.
- °Grover, T. W.
- °James, H. A.
- °Munroe, G. E.
- °Parkin, W.
- °Robbins, E. D.
- °Stapler, H. B. B.
- °Townsend, J. M.
- °Walden, R.
- °Wickes, T. P.
- °Witherbee, F. S.
- °Wood, J. S.

1875

- °Avery, C. H.
- °Brooks, J. W.
- °Chester, C. T.
- °Clarke, T. S.
- °Day, R. W.
- °Gulliver, H. S.
- °Hotchkiss, W. H.
- °Jenks, A. F.
- °Jones, D. A.
- °Jones, F. H.
- °Patton, J.
- °Seymour, J. S.
- °Smith, E. C.
- °Southworth, E. W.
- °Tillinghast, C. T.

1876

- °Allen, J. D. H.
- °Andrews, J. W.
- °Bannard, O. T.
- °Blaine, W.
- °Bottum, E. S.
- °Cook, R. J.
- °Dawes, C. M.
- °Fowler, C. N.
- °Hadley, A. T.
- °Howe, E. P.
- °Hyde, W. W.
- °Marvin, J. H.
- °Russell, P. G.
- °Smith, R. B.
- °Worcester, E. D.

1877

- °Barnum, W. M.
- °Bigelow, W. I.
- °Brooks, W.
- °Chapin, C. F.
- °Collin, W. W.
- °Cooke, E. C.
- °Eaton, S. L.
- °Gould, A.
- °Hoysradt, A.
- °Kimball, A. R.
- °Percy, F. B.
- °Sears, J. M.
- °Thacher, J. S.
- °Tuttle, G. M.
- °Winston, F. S.

1878

- °Campbell, T.
- °Carter, C. F.
- °Curtis, G. L.
- °Edwards, G. B.
- °Foster, R.
- °James, W. K.
- °Jenks, T.
- °Kelsey, C. H.
- °Knott, G. T.
- °Pollock, G. E.
- °Seely, E. H.
- °Spencer, C. L.
- °Stone, C. M.
- °Taft, W. H.
- °Whitney, E. B.

1879

- °Bowers, L. W.
- °Burpee, L. F.
- °Foster, G. F.
- °Green, H. S.
- °Hitchcock, H.
- °Hyde, F. E.
- °James, W. B.
- °Livingston, H.
- °Perrin, J.
- °Platt, L. A.
- °Rodman, R. S.
- °Swinburne, L. J.
- °Thompson, O. D.
- °Tighe, A.
- °Woodruff, T. L.

1880

- °Allen, W. P.
- °Amundson, J. A.
- °Bentley, E. M.
- °Camp. W.
- °Green, E. F.
- °Jennings, W.
- °Nichols, A. B.
- °Ordway, H. C.
- °Parker, W.
- °Partridge, S. C.
- °Peters, W. A.
- °Scudder, D.
- °Spencer, E. C.
- °Taft, H. W.
- °Witherbee, W. C.

1881

- °Aiken, E. E.
- °Barney, D. N.
- °Bartlett, P. G.
- °Burrell, J. D.
- °Coleman, J. C.
- °Evarts, S.
- °Fuller, P. C.
- °Ives, H.
- °Leighton, J.
- °Osborne, T. B.
- °Thompson, N. F.
- °VandeGraff, A. S.
- °Vernon, F. R.
- °Walden, H. T.
- °White, H. C.

1882

- °Badger, W. I.
- °Brewster, B.
- °Campbell, J. A.
- °Eno, W. P.
- °French, A. P.
- °Johnson, B.
- °Knapp, H. H.
- °Lyman, C. W.
- °McBride, W.
- °Osborne, A. S.
- °Platt, H. B.
- °Pollock, W.
- °Wells, J. L.
- °Whitney, J. E.
- °Worcester, F. E.

1883

- °Burpee, C. W.
- °Deming, L. C.
- °Folsom, H. T.
- °Foote, C. S.
- °Frost, E. B.
- °Hillard, L. B.
- °Hull, L. K.
- °Kellogg, F. W.
- °McLaughlin, E. T.
- °Moore, E. H.
- °Palmer, H. H.
- °Parrott, J. R.
- °Taft, H. D.
- °Thacher, S. D.
- °Woodward, J. B.

1884

- °Blodgett, G. R.
- °Booth, S. A.
- °Booth, W. F.
- °Evarts, M.
- °Foster, R.
- °Gruener, G.
- °Jenks, P. E.
- °Jones, F. S.
- °Lambert, A.
- °Lawrence, T. G.
- °McMillan, W. C.
- °Painter, H. M.
- °Tompkins, R.
- °Twombly, H. B.
- °Wilder, A. P.

1885

- °Arnot, J. H.
- °Baldwin, H. deF.
- °Bertron, S. R.
- °Brandegee, F. B.
- °Bridgman, J. C.
- °Brooks, H. S.
- °Flanders, H. R.
- °Hidden, E.
- °Hobbs, C. B.
- °McHenry, J.
- °Mallon, G. W.
- °Richards, E. L.
- °Robinson, L. F.
- °Terry, W.
- °Worcester, W. J.

1886

- °Anthony, B. H.
- °Brenner, S. K.
- °Cowles, A.
- °Crapo, S. T.
- °Day, T. M.
- °Knapp, W. P.
- °Lewis, C. M.
- °Peters, F. G.
- °Phelps, E. J.
- °Phelps, S.
- °Pierson, C. W.
- °Schwab, J. C.
- °Shipman, A. L.
- °Stewart, P. B.
- °Winston, D.

1887

- °Bennetto, J.
- °Corwin, R. N.
- °Cowles, W. H.
- °Coxe, A. B.
- °Douglass, W. R.
- °Hare, C. L.
- °Haven, G. G.
- °Jennings, O. G.
- °Kendall, W. B., Jr.
- °Kent, W.
- °Knight, S.
- °Pomeroy, J. N.
- °Rogers, J.
- °Sheppard, W. B.
- °Thacher, W. L.

1888

- °Cooley, H. W.
- °Fisher, I.
- °Gill, G. M.
- °Hurd, R. M.
- °Isbell, O. S.
- °McMillan, J. H.
- °Morison, D. W.
- °Roby, S. S. B.
- °Seward, W. H.
- °Solley, F. P.
- °Stagg, A. A.
- °Stevenson, F. A.
- °Stimson, H. L.
- °Waite, M. R.
- °Walker, S. J.

1889

- °Buchanan, T. W.
- °Corbin, W. H.
- °Donnelley, T. E.
- °Fisher, S. H.
- °Gil, C. O.
- °Griggs, J. C.
- °McQuaid, W. A.
- °Pinchot, G.
- °Reed, H. L.
- °Robinson, H. S.
- °Smith, H. A.
- °Stokes, H. S.
- °Walker, H. F.
- °Wells, H. W.
- °Woodruff, G. W.

1890

- °Bayard, T. F.
- °Corwith, J. W.
- °Crosby, J.
- °Day, A. P.
- °Farnham, J. D.
- °Harrison, F.
- °Haslam, L. S.
- °James, N.
- °Kellogg, C. P.
- °Kneeland, Y.
- °Morse, S. N.
- °Sage, H. M.
- °Simmons, W. D.
- °Stewart, P. H.
- °Tracy, E.

1891

- °Calhoun, G.
- °Cox, J. J.
- °Doane, J. W.
- °Estill, J. G.
- °Graves, W. P.
- °Isham, E. S.
- °Kenerson, V.
- °McClintock, N.
- °Morison, S. B.
- °Poole, W. F.
- °Simms, W. E.
- °Thompson, S. C.
- °Townsend, J. B.
- °Tweedy, H. H.
- °Walcott, F. C.

1892

- °Bayne, H. A.
- °Boltwood, E.
- °Cheney, H.
- °Cheney, K. D.
- °Crosby, B. L., Jr.
- °Day, C.
- °Graves, H. S.
- °Husted, J. W.
- °Ingersoll, J. W. D.
- °Jay, P.
- °Kitchel, W. L.
- °McClung, L.
- °Morison, S. N.
- °Price, F. J.
- °Ryle, E.

1893

- °Begg, W. R.
- °Cooke, J. B.
- °Dwight, W. E.
- °Gallaudet, E. F.
- °Hay, L.
- °Ives, S. B.
- °Jones, A. H.
- °Lambert, A. V.
- °Martin, G. G.
- °Parker, W. W. W.
- °Parsons, F.
- °Robinson, J. T.
- °Roby, J.
- °Rogers, D.
- °Wallis, A. H.

1894

- °Case, G. B.
- °Cochran, T.
- °Davies, T. F.
- °Hall, J. L.
- °Hare, M.
- °Holter, E. O.
- °Howland, J.
- °James, R. C.
- °McMillan, P. H.
- °Paine, R. D.
- °Stewart, W. E., Jr.
- °Stilman, L. S.
- °Walcott, W. S.
- °Whitney, H. P.
- °Word, C. F.

1895

- °Beard, A. M.
- °Buckner, M. N.
- °Butterworth, F. S.
- °Cable, B. S.
- °Carter, W. F.
- °Clark, A. R.
- °Cooke, W. E.
- °Davis, B.
- °Denison, L.
- °Harrison, F. B.
- °Hinkey, F. A.
- °McKee, L.
- °Phelps, Z. B.
- °Shepley, A. B.
- °Sloane, W.

1896

- °Beard, W. M.
- °Brown, A.
- °Cheney, W.
- °Cross, W. R.
- °deSibour, J. H.
- °Griggs, M. F.
- °McKee, McK. D.
- °Neale, J. B.
- °Smith, W. D.
- °Stokes, A. P.
- °Thorne, S.
- °Thorne, S. B.
- °Treadway, R. B.
- °Trudeau, E. L., Jr.
- °Weyerhaeuser, F. E.

1897

- °Bailey, P. H.
- °Brooke, G. C.
- °Coffin, H. S.
- °Fincke, C. M.
- °Garrison, E. E.
- °Gerard, S.
- °Gillette, C.
- °Kerr, A. B.
- °Kitchel, C. P.
- °Pinchot, A. R. E.
- °Sage, D.
- °Smyth, N. A.
- °Sumner, G.
- °Wheelwright, J.S.
- °Williams, N. A.

1898

- °Cheney, C. D.
- °Fearey, M. L.
- °Gallaudet, H. D.
- °Hale, E.
- °Hinsdale, F. G.
- °Kernochan, F.
- °Lord, F. A.
- °Montgomery, G. D.
- °Parker, G.
- °Rogers, D. F.
- °Simmons, F. H.
- °Wadsworth, J. W., Jr.
- °Whitney, P.
- °Wickes, F.
- °Wright, H. B.

1899

- °Adams, M. T.
- °Ames, S. D.
- °Bowles. H. T.
- °Brooke, F. H.
- °Brown, J.
- °Callahan, H. A.
- °Day, D. H.
- °Griswold, W. E. S.
- °Maffitt. T. S.
- °Magee, J. M.
- °Preston,O.
- °Sweet,C. F.
- °Vanderbilt, A. G.
- °Welles, C. H., Jr.
- °Whitehouse, W. F.

1900

- °Adams, F. B.
- °Allen, F. W.
- °Camp, S. B.
- °Cheney, F. D.
- °Coffin, W. S.
- °Cross, J. W.
- °Douglas, M.
- °Greenway. J. C.
- °Hopkins, J. M.
- °Leavitt, A. D.
- °Lyon, G. A.
- °Paddock, B. W.
- °Rockefeller, P. A.
- °Sullivan, C. A.
- °Taft, H.

1901

- °Allen, A. D.
- °Carlisle, J. M.
- °Cheney, P.
- °Cheney, T. L.
- °Christian. H. H.
- °Coy, S. L.
- °Edwards, R. H.
- °Eels, J. S.
- °Hixon, R.
- °Hoysradt, W. J.
- °Keppelman, J. A.
- °Morris, R.
- °Richardson, A. H.
- °Welsh, G. A.
- °Wright, A. P.

1902

- °Carpenter, G. B.
- °Cressler, A. M.
- °Cushing, C. C. S.
- °Day, W. E.
- °Ferguson, A. L.
- °Guernsey, R. G.
- °Potter, R.
- °Rumsey, B. C.
- °Sincerbeaux, F. H.
- °Stebbins, E. A.
- °Stone, H.
- °Swan, J. R.
- °Taylor, A. McL.
- °Trowbridge, M.
- °White, P. G.

1903

- °Chadwick, G. B.
- °Clark, H. T.
- °Corning, E.
- °Dreisbach, J. M.
- °Hamlin. C. J.
- °Hewitt, B.
- °Holt, H. C.
- °Lamb, A. R.
- °Moore, F. W.
- °Sutphin, S. B.
- °Thompson, D.
- °Wallace, H. M.
- °Waring, A. J.
- °White. J. R.
- °Wilhelmi, F. W.

1904

- °Adams, C. E.
- °Adams, G. W.
- °Cheney, R.
- °Crane, W. M., Jr.
- °Cross, W. S.
- °Dodge, F. T.
- °Jennings, P. H.
- °Kittle, J. C.
- °Metcalf, H. G.
- °Miller, J. E.
- °Pierce, F. E.
- °Reed, L. P.
- °Soper, W. B.
- °Thacher, T. D.
- °Wiggin. F. H.

1905

°Bradford, A. H.
°Ellsworth, J. S.
°Fish, S.
°Hogan, J. J.
°Hollister, B.
°Hughes, B.
°Lathrop, J. H.
°Richardson, G.
°Rogers, E. P.
°Sargent, M.
°Sloane, J.
°Tilney, R. F., 2d
°Turner, H. M.
°Van Reypen W. K., Jr.
°Whitehouse, E. S.

1906

°Bruce, D.
°Dousman, L. deV.
°Ely, G.
°Flinn, A. R.
°Hoyt, L.
°McClure, J. K. G., Jr.
°McGee, D. A.
°Magee, J. G.
°Moorhead, W. S.
°O'Brien, F.
°Perrin, L. J.
°Rockwell, F. H.
°Smith, B. D.
°Turner, S.
°Wilson, H. R.

1907

°Barnes W. D.
Blair, W. McC.
°Camp, A. G.
°Daniels, F. L.
°Danielson, R. E.
°Dixon, T. P.
°Dodge, P. L.
°Glaenzer, G. B.
°Knox, H. S.
°Little, M. S.
°Morse, S. F. B.
°Truesdale, C.
°Tuttle, G. C.
°Wells, H. S.
°Woolsey, H. M.

1908

°Biglow L. H.
°Dahl, G.
°Davis W. G.
°Dines, T.
°Foster, J. T.
°Griswold, D. T.
°Perrin, L. W.
°Seymour, C.
°Shepard, R. B.
°Stanley, H.
°Thornton, J. C.
°Townsend, G. H.
°Townsend, J. M.
°Watkins, C. L.
°Williams, J. W.

1909

°Bundy, H. H.
°Burch, R. B.
°Campbell, C. S.
°Clark, A. A.
°Dominick, G. G.
°Howard, J. M.
°Howe, H. A.
°Jefferson, E. F.
°Klots, A. T.
°Lippitt, H.
°Perrin, J. B.
°Rand, S. C.
°Sanderson, B. B.
°Seabury, M. A.
°Stokes, H. P.

1910

°Bayne-Jones, S.
°Coy, E. H.
°DeSilver, A.
°Franchot, C. P.
°French, R. D.
°Harrison, G. L.
°Heron, J.
°King, L. M.
°Knight, A.
°Logan, W. S.
°Lohmann, C. A.
°Murphy, F. J.
°Philbin, S. H.
°Taft, R. A.
°Wodell, R. A.

1911

°Badger, P. B.
°Corey, A. L.
°Daly, F. J.
°Davis, C. W.
°Day, S. S.
°Dempsey, J. B.
°Gammell, A. A.
°Hyde, F. W.
°Lombardi, C. E.
°McDonnell, J. V.
°Randolph, F. F.
Rowland, J. T.
°Soule, L.
°Van Sinderen, H. B.
°Wheeler, L. R.

1912

Boyd, F. T.
°Gardner, R. A.
Hartley, C.
°Howe, A.
Hyde, D. R.
°McClure, A.
°Merritt, H. N.
°Mullins, F. P.
°Murphy, G. C.
°Paul, C. H.
Smith, J. G.
°Street, H. A.
°Strout, E. A., Jr.
°Tener, A. C.
°Twombly, E. B.

1913

°Allen, C. D.
°Allen, C. E., Jr.
°Baker, R. W.
°Colgate, H. A.
°Cortelyou, G. B., Jr.
Cowles, A., 3d
°Harman, A.
Harriman, W. A.
Lovett, S.
°McAndrew, A.
°Philbin, J. H.
°Sawyer, H. E., Jr.
°Schwab, L. vonP.
°Shelden, A.
°Waters, W. O., Jr.

1914

•Avery, B. F.
•Cornish, P. G., Jr.
Daniels, T. L.
•Gile, C. M.
Hobson, H. W.
•Jenks, A. F.
•Jones, G.G.
Ketcham, H. H.
•King, S.
•Lippincott, W. J.
•Osborn, R.
•Patterson, G. W.. Jr.
•Rogers, H. L.
Shepard, L. A.
•Warren, W. C., Jr.

1915

Burtt, E. A.
•Carter, L.
•Cornell, T. H.
Davenport, S. R.
•Denegre, T. B.
Macdonald, R. H.
MacLeish, A.
•Middlebrook. L. S.
•Paris, I., 2d
•Pumpelly. H. A.
Reilly, J. S.
•Shedden, W. M.
Slocum, E. L.
•Stackpole, E. J., Jr.
•Swift, W. E.

1916

•Darling, A. B.
•Gaillard, S. G., Jr.
Hadley, M.
•Johnstone, H. W.
•Knapp, F.
Oler. W. M.
•Porter, G. E., 3d
•Putnam, P.
•Roberts, C. H., Jr.
•Shepard, D. C.
Stewart, D. O.
•Tener, K. J.
•Tighe, L. G.
VonHolt, H. V.
•Walker, C. R.

1917

Bellinger, A. R.
•Bush, P. S.
Cooper, H. S. F.
•Cunningham. O. B.
Duryee, S. S.
Harriman, E. R.
•Isham, H. P.
•James, E. S.
•LeGore, H. W.
Mallon, H. N.
•Olsen, A. W.
•Overton, J. W.
Shepard, F. P.
•Simpson, K. F.
Woolley, K.

1918

•Ames, A. W.
Baldrige, H. M.
•Clay, C. M.
•Davison, F. T.
Deans. R. B.
•Farrar, J. C.
•Garfield, N.
•Gates, A. L.
•Gould, J.
Lovett, R. A.
Snell, R. F.
Stewart, C. J.
Taft, C. P.
•Vorys, J. M.
•Woolley, J. E.

1919

Allen, P. B.
•Baldwin, S.
•Campbell, A. B.
•Carter, F. D.
•Depew G. G.
Gaillard, E. M.
•Hadley, H.
Haffner, C. C., Jr.
•McCormick,
A. A., Jr.
McKee, E. M.
Mallon, J. H.
•Mead, W.
•Otis, J. S.
Smith, T.
•Walker, G. N.

1920

Adams, L. G.
•Davison, H. P.
•Hadden B.
Heffelfinger. F. P.
•Hincks, J. M.
•Hobson, F. T.
Ingalls, D. S.
•Luce, H. R.
•McHenry, J.
•Patterson, M.
•Safford, T. L.
•Sargent, J. W.
•Schermerhorn, A. C.
VanSlyck, DeF.
Winter, D. R.

1921

•Acosta, J. S.
•Bradley, C. H., Jr.
Brewster W. R.
Bundy, F. McG.
Cowles, W. S., Jr.
•Hemingway, B. L.
Hord, S. Y.
•Jenckes, M.
•Litt, W. D.
Lunt, S. B.
Neville, J. E.
Parsons, L
•Shevlin, E. L.
Stewart, J.
•Winter, E. W.. 2d

1922

Aldrich, M. P.
Bush, J. S.
•Cheney, W.
•Crosby, A. H.
•Frost, A. C., Jr.
•Hilles, F. W.
•Larner, R. J.
Lord, W. G.
•Page, R. G.
Root, W.
Solley, R. F.
•Strong, H. B.
•Thomas. J. A. M.
•Townsend,
F. deP., Jr.
Woodward, S.

1923

Becket, G. C.
°Bulkley, J. O.
Cooper, J. S.
°Davenport. R. W.
Day, H. T.
Foster, M. E.
Hyde, L. K., Jr.
Jones, E. A.
°Jordan, R. E.
°Luckey, C. P.
°Matthiessen, F. O.
°Norton, G. W.
Pelly, B. B.
°Tighe, R. L.
°Wheeler, A. N., Jr.

1924

Allen, H. E.
°Appel, G. F. B.
°Blair, E. F.
Diller, J. C.
°Ewing, S.
Haines, T. F. D.
°Heffelfinger, G. W. P.
°Hilles, C. D., Jr.
Houghton, W. E.
Lusk, W. T.
McCallum, R.
°Mallory, W. N.
°Melton, W. D., Jr.
Spofford, C. M.
Thomson, C. S.

1925

Ardrey, R. L.
Ashburn, F. D.
Bench, E. C.
Bissell, W. T.
°Blair, J. G.
Gage, C. S.
Ives, G. M.
Jones, W. C.
Lovejoy, W. M.
°Lufkin, E. M.
°Luman, R. J.
Norton, W. B.
Scott, H. C.
Stevens, M. A.
Stevenson, D. D.

1926

°Allen, D.
Bronson, J. D.
Coke, H. C., Jr.
°Crosby, H. S.
Cutler, B. C.
Davenport, J.
Ferguson, A. L., Jr.
Hoysradt, J. McA.
Kingsbury, H. T.
Lord, O. B.
Michel, A. L.
°Poore, C. G.
Root, R. D.
°Russell, F. F.
Willard, C. H.

1927

Bunnell, P. W.
Look, A. M.
McIntosh, H.
Noble, L. M.
°Patterson, T. C.
°Post, R. L.
°Ritchie, W. P.
°Robbins, W. W.
Robinson, F. F.
Stokes, A. P., Jr.
Wadsworth, J. J.
Walker, G. H., Jr.
Wardwell, E. R.
°Warren, J. D.
Watson, C., 3d

1928

Bartholomew, D. T.
°Berger, G. B., Jr.
Bingham, C. T.
°Fishwick, D. B.
°Griggs, H. S., Jr.
Haight, G. W.
Ives, C. B.
°Lapham, R. W.
Mallory, B. L., Jr.
°Prentice, J. R.
Robertson, A. C.
Ross, L. P.
°Scott, S. P.
°Stewart, P. H.
°Walker, S.

1929

°Ashforth, A. B.
Costikyan, G. K.
Crile, G., Jr.
°Decker, E. L., Jr.
°Dodge, W.
Eddy, M. H.
°Garvey, J. J.
Gillespie, K. S.
Grove, M. J.
Manville, H. E., Jr.
Merrill, H. R.
Paine, R. D., Jr.
Smith, L. H.
°Wack, D. deB.
°Wells, G., 2d

1930

Allison, R. S., Jr.
°Ellis, H. M.
Ellis, R. W.
°Erskine, A. DeW.
Garnsey, W. W.
Greene, W. W.
Gwin, S. L.
Hall, R. A.
Janeway, C. A.
Ladd, L. W., Jr.
Longstreth, G. B.
°Look, F. B.
Musser, J. M.
Palmer, A. E.
Prideaux, T.

1931

Austen, D. E.
Donnelley, G.
Heinz, H. J., 2d
Lapham, L. A.
Loeser, F. W.
Lydgate, W. A.
Messimer, R. L., Jr.
Peltz, W. L.
°Rathborne, J. C.
°Stewart, J. R.
°Sutherland, R. O.
°Swoope, W. M.
Tucker, L.
Vincent, F. T.
Walker, J. M.

1932

Adams, F. B., Jr.
Barres, H.
Bates, E. W.
Fitch, G. H.
Fulton, R. B.
Gillespie, S. H.
Hodges, W. V., Jr.
Laundon, M. H., Jr.
°Lindenberg, J. T.
McCrary, J. R., Jr.
Mills, J. P.
Ogden, A.
°O'Neill, E. G., Jr.
°Savage B.
Williams, S. G.

1933

Caldwell, S. S., Jr.
Cooke, F. J.
Davis, R. M.
Fletcher, A. C.
Garnsey, W. S.
°Hall, F. B., Jr.
Jones, T. S.
Levering, W. B.
Lindley, F. V.
McGauley, J. M.
Newton, J. Q., Jr.
Parker, R. B.
Parsons, M.
Stebbins, H. L.
Wilbur, J. S.

1934

Bradford, A. H.
Cunningham, H. T.
Gordon, G. A.
Hallett, J. F.
Hambleton, T. E.
Harper, H. H.. Jr.
Holmes, J. G.
°Jackson, J. H.
Kilcullen, J. M.
Kimball, W. S.
Mills, E. E.
Morse, J. B.
Nichols E.
Ranney, G. A.
Stetson, E. W., Jr.

1935

Bowles, J. E.
°Collier, S. C.
Curtin, F, C.
Fuller, S. E.
Haas, F. P.
Johnson. J. H.
Kilborne, W. S.
Pillsbury, J. S., Jr.
Rodd, T.
Seymour, C., Jr.
Shepard R. B., Jr.
Spitzer, L., Jr.
°Stillman, G. S.
Terry, H. P. B.
°Tufts, B. C.

1936

Barr, R. J., Jr.
Bingham, J. B.
Cooke, R. B.
°Davis, H. W., 2d
Gill, B.
Hall, J. A.
Hersey, J.
Knapp, J. M.
Moore, R. A.
°Pillsbury, E. P.
Rankin, B. C.
°Shepard, B.
Train, R.
Walker, L.
Whitehead, M. K.

1937

Blake, D. B.
Brooke, F. H. Jr.
Burke, C. C., Jr.
Cross, R. J.
Draper, A. J.
Field, J. W.
Kelley, L. M.
°McLemore, B., Jr.
Miles, R. C.
Orrick, W. H., Jr.
Robinson, J. T.
°Runnals, J. F. B.
Stewart, P.
°Stone, L. T., Jr.
Turner, H. M.

1938

Davenport, B. W.
Dempsey, J. H., Jr.
Dilworth, J. R.
Dunham L. B., Jr.
Ecklund, J. E.
Fox, J. C.
Frank, C. E.
°Gordon, McG.
Hessberg, A., 2d
°Shermerhorn, A. E.
Stevens, J. B., Jr.
Thompson, J. R.
Weed, G. H.
Whitman, F. S., Jr.
Wilbur, R.

1939

Belin, G. deA.
Blanchard, J. G.
Bundy, W. P.
Chittenden, G. H.
Clucas, L. M.
Dyess, A. D., Jr.
Gile, C. D.
Hoxton, A. R., Jr.
Kellogg, W. W.
Miller, A. O., Jr.
Miller, C. L., Jr.
Mitchell, H. H.
Shepard, L. M.
°Wilhelmi, F. W., Jr.
Williams, B.

1940

Bundy, McG.
Erickson, T. F.
Glover, C. C., 3d
Grayson, J. G.
Holden, R. A.
Howe, H., 2d
Orrick, A. D.
Rodd, D. B.
Stack. J. W., Jr.
Stevens, A. B.
Stillman, P. G. B.
°Stucky, W. McD.
Swenson, E. F., Jr.
°Thorne, P. B.
Watson, W. B., Jr.

1941

Cross, W. R., Jr.
Devor, D. S., Jr.
Ellis, F. H., Jr.
Hall, E. T.
Jackson, W. E.
Kiphuth, D.
Madden, J. B.
Pickett, L. K.
Price, C. B., Jr.
Solbert, P. O. A.
Stevenson. C. P.
Thomas, W. D.
Tighe, L. G.
°White, W. B.
Zorthian, B.

1942

°Aycrigg, W. A., 2d
Bartholemy, A. E.
Bell, W. T.
°Chouteau, R. A.
Ford, W.
Grayson, C. T.
Halsey, R. W., Jr.
Harrison, F. H.
Jessup, J. B.
Kemp, F. A.
Kirchwey, G. W.
Smith, H. F., Jr.
Sprole, F. A.
Walker, J. S.
°White, W. G.

1943

Acheson. D. C.
Caulkins, G. P., Jr.
Daniels, J. H.
Doolittle, D. H.
Drain, R. D.
Healy, H. H., Jr.
Hoagland, D. W.
Klots,A. T., Jr.
°Lilley, F. W., Jr.
°Maclean, J. H.
°Miller, D. L.
Moseley, S. D.
Stewart, Z.
Tabor, J. K.
Vogt, T.

1944

Brown, S. T. G.
Buckley, J. L.
Elebash, S. D.
Ellis, A., Jr.
Ferguson, J. L.
Goodenough, J. B.
Grayson, W. C.
Holden, J. M.
Hoopes, T. W.
Kelly, W. C. 2D
Lindsay, D. A.
Little, S. W.
Walker, J. P.
Whitmore, J. A., Jr.
°Witter, D., Jr.

1945

Allen, A. J., Jr.
°Blake, G. D., Jr.
Connick, L.
Dale, E. L., Jr.
Davison, E. P.
Early, H. E.
°Elwell, F. B., Jr.
Harman, A., Jr.
Lynch, R. V.
McElroy, B. T.
McGaughey, G. E., Jr.
Moorhead, W. S.
Seaman, I., Jr.
Spaulding, J. A.
Sumner, W. S.

1945W

Brown, W. H.
Carey, J.
Finney, J. W.
Holmes, G. B.
Hurlbut, G. B., Jr.
°Mallon, T. R.
O'Brien, P., Jr.
Twichell, C. P.
Vose, E. E.
Warren, G. U.

1947

Alling, C. B., Jr.
Andrews, E. W., Jr.
Boulos, W. M. (formerly Bouliaratis)
Bronson, D. B.
Chafee, J. H.
Finley, J. G. G.
Goedecke, W. S.
Leavenworth, D. L.
Moore. J. I.
O'Brien, F., Jr.
°Palmer, C. E.
°Read, R. R.
Robinson, H. C., Jr.
°Tucker, C., Jr.
Whitehouse, C. S.

1948

Ashley. T. L.
Biglow, L. H., Jr.
Bush. G. H. W.
Caulkins, J. E.
Clark, W. J.
Connelly, W. J., Jr.
°Cook, G., 3d
Grimes, D. C.
Jenkins, R. E.
Mack, R. G.
Moseley, T. W.
Pfau, G. H., Jr.
Walker, S. S., Jr.
Weaver H. S.
Wilkie, V., Jr.

1949

Baribault, R. P.
Bassett, B. B., 2d
Coffin, W. S, Jr.
Davison, D. P.
Goodyear, R. M.
Hollister. J. B., Jr.
Lavelli, A., Jr.
Leiper, J. McC.
Lippincott, D. McC.
Lord, C. E.
Lufkin, P. W.
Raymond G. T. P.
Sherrill, F. G.
Van Dine, V.
°Wickwire, W. R.

1950

Breen, J. G.
Buckley, W. F., Jr.
Draper, W. H., III
Frank, V. H., Jr.
Galbraith, E. G.
Guinzburg, T. H.
Henningsen, V. W., Jr.
Kemp, P. S.
Lambert P. C.
Lovett, S.
*Luckey, C. P., Jr.
MacLeish, W. H.
McLean, R., 3d
Pionzio, D. J.
Shepard, D. C., Jr.

1951

*Anderson, T. H.
Eden, J. W.
Ellis, G. C., Jr.
Ellis, G. McC.
Love, R. F.
Lufkin, C. F., Jr.
McNamara, T. P.
Mathews, C.
Mayer, C. T.
Price, R. K., Jr.
Reid, E. S., III
Ross. T. B.
Russell, R. W.
Ryan, J. M.
Shepard, C. R. S.

1952

Aberg, D. V., Jr.
Buckley, F. R.
Claude, A., Jr.
Connick, A. J.
Cruikshank, P. F., Jr.
Eisler, C. T.
Finney, G. S.
Haight, C. S., Jr.
Hincks, J. W.
Kittredge, F. D.
Roberts, G. B., Jr.
Senay, E. C.
Spears, R. S.
Steadman, J. M.
Vorys, M. W.

1953

Bulkley, J. D.
Bush, J. J.
Donaldson, W. H.
Durham, E. A.
Emerson, C. P.
Lufkin, D. W.
*Marshall, J. B.
McLane, J. P.
Menton, J. D.
Mitinger, J. B.
Noble, L. M., Jr.
Novkov, D. A.
Walker, G. H., III
Weber, J. W.
Woodsum, H. E., Jr.

1954

Benninghoff H. B.
Evans, T. B.
Fortunato, S. J.
Giesen, A. R., Jr.
Gifford, R. C.
Hiers, R. H.
Kilrea, W. C.
Meyer, R. W., Jr.
Morton, T. B., Jr.
Polich, R. F.
Price, R. E.
Reponen, R. G.
Ryan, A. A. III
Schnaitter, S. J.
Thornton, E. B.

1955

Bryan, L. T., Jr.
DeForest, S. E.
Fehr, G. F.
Gow, R. H.
Green, C. G.
Guidotti, H. G., Jr.
Hansen, R. A.
Hudson, F. D.
Johanson, S. M.
McCullough, D. G.
Mathias P. H.
Searles, P. D.
*Shugart, T. M.
Steadman, R. C.
Walker, R. C.

1956

Banks, H. D.
Boasberg, E., III
D'Avanzo, L. A.
Dempsey, A. S.
Durfee, C. G., Jr.
Esselstyn, C. B., Jr.
Gaines, M. J.
Ingalls, D. S., Jr.
Jamieson T. C., Jr.
McGregor, J. E.
Malloy, T. R.
*Menton, J. P.
Orr, A. A.
Speed, J. B.
Traphagen, P. A.

1957

Ackerman, S. H.
Bowman, R. D.
Carlsen, R. A.
Clark, R. I., Jr.
Cushman, C. W.
Dunn, G. J.
Fritzsche, P. B.
Loucks V. R., Jr.
Loughran, A. H.
Lumpkin, R. A.
Oberlin, J. P. (formerly Owseichik)
Palmer, L. G., II
Ritchie, W. P.
Somerville, J. W.
Williams, W. B.

1958

Allen, C. E.
Blue, L. S.
Cassel, J. A.
Cheney, R. L.
Cushman, R. E., Jr.
Embersits, J. F.
Howe, G. W.
Morey, R. W., Jr.
Pendexter, J. F.
Phelan, H. T.
Post, R. L., Jr.
Preston, J. L.
*Shackleford, R. C.
*Van Antwerp, W. M., Jr.
Wheeler, T. B.

1959

Adams, S.
Bodman, W. C.
Connors, J. J., III
Cooke, J. P.
Ercklentz, A. T.
Esselstyn, E. C.
Hemphill, J. T., Jr.
Holbrook, J., Jr.
Kingsley, C. C.
Lightfoot, R. B.
Lord, W.
Mayor, M. B.
Sheffield, J. R.
Thorson, P. A.
Tyler, C.

1960

Ball, D. G.
Beane, F. E., Jr.
Capron, P.
Dominick, D. D.
Ernst, F. V.
Garnsey, W. H.
Giegengack, R. F., Jr.
Holbrook, D. D.
Lindgren, R. H.
Lusk, P. A.
McCarthy, C. E., Jr.
Meek, J. B., Jr.
Northrup, R. S.
Scott, E. L.
Smith, B. D., III

1961

Bissell, G. T.
Bockrath, R. C., Jr.
°Bowles, W. C., Jr.
Clark, T. W.
Cogswell, J. M.
de Neufville, J. P.
Hamlin, C.
Lindsay, D. A., Jr.
MacLean, K., Jr.
Pyle, M. J.
Seeley, G. W.
Singleton, T. H.
Stewart, J. C.
Waddell, G. H.
Walsh, J. J., Jr.

1962

Back, S. H.
Brandt, J. H.
Brewster, J. H., IV
Brooks, T. A.
Burr, C. B.
Childs, H. C.
Chimenti, N. V.
Hamilton, W.
Holland, H. T.
LeFevre, R. E.
Ligon, T. B.
Peck, A. J., Jr.
Spitz, R. W.
Terry, W., III
Zucker, B.

1963

Ahlbrandt, R. S.
Becket, P. L.
Boren, D. L.
Clay, J. L.
Frank, C. A. III
Gill, M. G.
Gwin, S. L., Jr.
Hewitt, H. H.
Jones, T. S.
Marsh, L.
Moser, R. E.
Nordhaus, W. D.
O'Connell, T. J.
Rose, J. C.
Rulon-Miller, P.

1964

Best, G. D. C.
Cirie, J. A.
Clay, A. S., IV
Francis, S. H.
Gillette, H. F., Jr.
Kaminsky, R. I.
Lynch, D. P.
McBride, J. E.
Prindle, T. H.
Pulaski, C. A., Jr.
Rowe, T. D.
Straw, R. L., Jr.
Van Loan, E. M.
Wilbur, J. S., Jr.
Wolfe, S. H.

1965

Ali, M. R.
Benoit, C. E., Jr.
Clark, G. H.
Clark, S. E.
Clay, T. J.
Coombs, O. M.
Corey, A. L., III
DesJardins, P. E.
Fetner, P. J.
Lagercrantz, M. B.
Pinney, J. M.
Pond, J. C.
Quarles, J. P.
Shattuck, J. H. F., III
Zallinger, P. F.

1966

Bockstoce, J. R.
Bradford, T. M.
Brown, G. C.
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Lawler, Q. J.
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Scott, L. G.
Tom, C. B., III

THE FEDERAL RESERVE CONSPIRACY



by **Antony C. Sutton**



About the Author:

Antony C. Sutton, D.Sc. was born in London, England in 1925, spent most of his life in the United States and has been a citizen for 40 years.

With an academic background in economics and engineering, Sutton has worked in mining exploration, iron and steel industries before graduate school at UCLA. In the 1960s he was Professor of Economics at California State University, Los Angeles, followed by seven years as a Research Fellow at Stanford University.

While at the Hoover Institution (Stanford), Sutton wrote the three volume definitive work on Soviet technology, ***Western Technology and Soviet Economic Development*** (still in print after 25 years). This was followed by ***National Suicide: Military Aid to the Soviet Union*** (Arlington House) which accused the Establishment of killing Americans in Vietnam with our own technology. Hoover Institution, under pressure from the White House, arbitrarily converted Sutton to a "non-person" by removing his Fellowship.

Intrigued by the powerful forces behind this assault, he then researched and wrote another three volumes on the financial and political support given by Wall Street international bankers to three variants of socialism. These were published as ***Wall Street and the Bolshevik Revolution, Wall Street and the Rise of Hitler*** and ***Wall Street and FDR*** (all in the 1970s).

After leaving Stanford, Sutton edited ***The Phoenix Letter,*** a monthly newsletter on the Abuse of Power (still published today) and in 1990 started another newsletter, ***Future Technology Intelligence Report,*** covering suppressed technology.

In philosophy a strong constitutionalist, the author freely expresses his contempt for Washington usurpation of political power...but always based on the facts.

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Chapter One:

THE BANKERS' BANK

Since 1913 politicians and media have treated the Federal Reserve Bank as a kind of untouchable off limits semi-God...no one except certified crackpots and kooks criticizes the Fed. Conventional wisdom dictates that *anyone* who attacks the Federal Reserve System is doomed and Congressional investigation of the Fed would result in economic chaos and a disastrous plunge in the stock market.

Recently President Clinton got to appoint Alan Blinder to a seat on the seven-member Board of Governors. Blinder launched into criticism of Fed actions, i.e., interest rates are too high and differed from the policy laid down by Chairman Alan Greenspan.

Poor Blinder was blindsided by the establishment press and no doubt received advice to keep quiet because since this initial speech, Blinder has repeatedly stated there are no differences between himself and Chairman Greenspan and *refuses to go* beyond this curious mea culpa.

There is a vast misconception about the Fed. The President and the Congress have very little, if any, influence on policy. The Congress handed over all monetary powers to the Fed in 1913. The Fed is *a private* bank, owned by banks, and pays dividends on its shares owned only by banks. The Fed is a private Bankers' Bank.

Yet Fed policy, not *Government* policy, is the dominant factor in economic growth. The Fed can create jobs by loosening credit. The Government talks a lot about creating jobs but in fact can only create bureaucracies which restrict rather than promote enterprise. The private sector creates productive jobs and the private sector is heavily dependent on Fed policy to do this.

The Congress has never investigated the Fed and is highly unlikely to do so. No one sees Fed accounts; they are not audited. No balance sheets are issued. No one, *but no one*, ever criticizes the Fed and survives.

Why all the secrecy and caution? Simply because the Fed has a *legal monopoly of money* granted by Congress in 1913 proceedings that were unconstitutional and fraudulent. Most of Congress had no idea of the contents of the Federal Reserve Bill signed by President Woodrow Wilson who was in debt to Wall Street.

The Federal Reserve has the power to create money. This money is fiction, created out of nothing. This can be money in the form of created credit through the discount window at which other banks borrow at the discount rate of interest or it can be notes printed by the Treasury and sold to the Fed and paid for by Fed-created funds

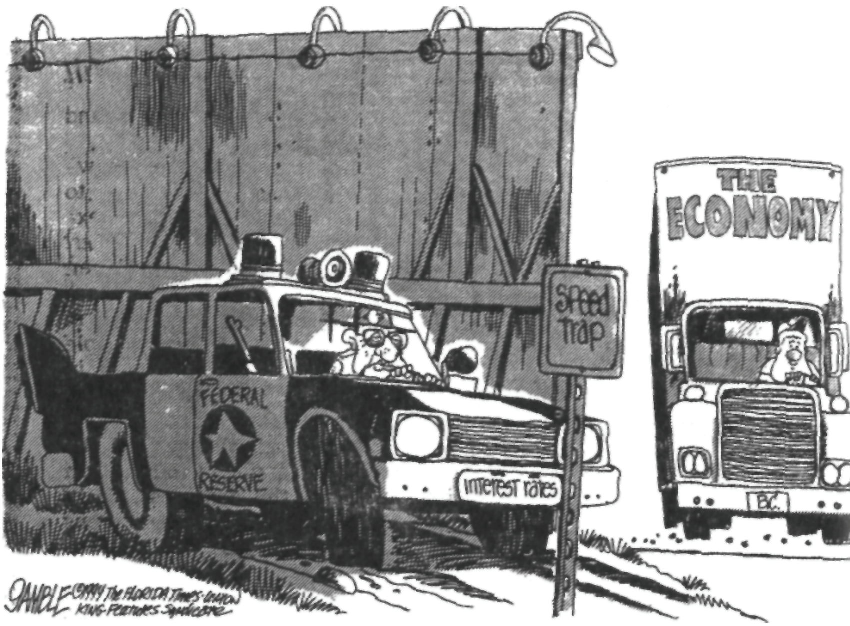
In brief, this private group of bankers has a money machine monopoly. This monopoly is uncontrolled by anyone and is guaranteed profit. Further, the monopoly doesn't have to answer questions or produce books or file annual statements.

It is an unrestricted money monopoly.

This book explains how this money monopoly came about. Obviously, Congress and the general public were misled and lied to when the Federal Reserve Bank was in discussion. Why the monopoly has continued is that the public is lazy, and so long as their individual world is reasonably fulfilling, has no reason to question Fed actions.

Even if they do they will find few books that surface the real facts. Academicians are too interested in protecting the Fed monopoly. An academic book criticizing the Fed will never find a publisher and the economist author would probably find tenure denied.

This is the first book that details hour by hour the events that led up to passage of the Federal Reserve Act of 1913 - and the many decades of work and secret planning that private bankers had invested to obtain their money monopoly.



ED GAMBLE, Florida Times-Uni

Los Angeles Times Cartoon by Ed Gamble, 1994

Chapter Two

THOMAS JEFFERSON AND THE MONEY POWER

It is fashionable in our contemporary academic world to ignore the powerful arguments of the Founding Fathers: the arguments of Presidents Thomas Jefferson, James Madison, and Andrew Jackson in particular. These arguments are that the Republic and the Constitution are always in danger from the so-called "money power," a group of autocrats, an elite we would call them today, who have manipulated the political power of the state to gain a monopoly over money issue.

Our modern academics even ignore Thomas Jefferson's chief reason for remaining in politics, i.e., to save the newly born United States from those elitists Jefferson called "monocrats" and "monopolists." It was the banking monopoly that Jefferson considered to be the greatest danger to the survival of the Republic.

The Jeffersonian ideal, one that contemporary elitists and Marxists sneer at, was a Republic comprising small property owning citizens (Marx would later call them bourgeoisie and Nelson Rockefeller used to call them "peasants") with a sense of civic awareness and a regard for the rights of their neighbors. The best government for Jefferson was the least government, where individual

citizens take it upon themselves to protect the rights of neighbors. While Jefferson rejected socialist ideas he equally rejected the monopoly power of banking interests and feared what elitist banking power would do to American liberties. Said Jefferson:

> *If the American people ever allow the banks to control the issuance of their currency, first by inflation and then by deflation, the banks and corporations that will grow up around them will deprive the people of all property until their children will wake up homeless on the continent their fathers occupied. The issuing power of money should be taken from the banks and restored to Congress and the people to whom it belongs. I sincerely believe the banking institutions are more dangerous to liberty than standing armies.*[1]

The First Private Banking Monopoly

The Founding Fathers' discussion of banks and the money power reflect the clash of political philosophies among early Americans with Alexander Hamilton on one side and Jefferson, Madison and Franklin on the Jeffersonian side. Hamilton represented the autocratic tradition prominent in Europe that figured on winning through a banking monopoly what could not be won politically. It was Hamilton who introduced a bill in December, 1790 into the House of Representatives to grant a charter for the privately owned Bank of the United States, thus creating the first private money monopoly in the U.S., a predecessor to the privately owned Federal Reserve System. And it was Alexander Hamilton who just a few years before wrote the charter for the Bank of New York, the first bank in New York City. Isaac Roosevelt, great-great-grandfather

of Franklin Delano Roosevelt, was its second president, from 1796-1791.

The Hamiltonian proposal for a national bank was a charter for private monopoly, a Congressional grant for a privileged few. The Bank of the U.S. had the sole right to issue currency, it was exempt from taxation, and the U.S. government was ultimately responsible for its actions and debts. As described by George Bancroft:

> *Hamilton recommended a National Bank with a capital of ten or fifteen million dollars, to be paid one-third in hard money and the other two-thirds in European funds or landed security. It was to be erected into a legal corporation for thirty years, during which no other bank, public or private, was to be permitted. Its capital and deposits were to be exempt from taxation, and the United States, collectively and particularly, were to become conjointly responsible for all its transactions. Its sources of profit were to be the sole right of issuing a currency for the United States equal in amount to the whole capital stock of the bank.*(2)

Public reaction to Congressional grant of a private banking monopoly for a group of private citizens was caustic. Declared James Madison:

> *In case of a universal circulation of the notes of the proposed bank, the profits will be so great that the government ought to receive a very considerable sum for granting the charter.*

> *There are other defects...and the right to establish subordinate banks ought not to be delegated to any set of men under Heaven.*(3)

In the Senate, William McClay made a strong denunciation:

> *Jan. 17 (1790) Monday. I told them plainly that I was no advocate of the banking system; that I considered them machines for promoting the profits of unproductive Men;...that the whole profit of the bank ought to belong to the public, provided it was possible to advance the whole stock on her account.*
>
> *But I must remark that the public was grossly imposed upon in the present instances. While she* (Ed: the public,) *advanced all specie; individuals* (Ed: the bank organizers) *advanced three-fourths in certificates, which were of no more value in the support of the bank than so much stubble. Besides, the certificates were all under interest already, and it was highly unjust that other paper (money) should be issued on their credit which bore a premium and operated as a further tax on the country.*[4]

Hamilton's proposal was referred to a Senate Committee. But this Committee included Philip Schyler (Hamilton's father-in-law) and all its members shared Hamilton's political views. In brief, the Committee was stacked.

President Washington then referred the bill to Thomas Jefferson (Secretary of State) and Edmund Randolph (Attorney General). Both found it to be unconstitutional. Jefferson's opinion on the unconstitutionality of the bank included the following powerful argument:

> I *consider the foundation of the Constitution as laid on this ground; That "all powers not delegated to the United States by the Constitution nor prohibited by it to the states, are reserved to the states, or to the people."*

> *To take a single step beyond the boundaries thus specifically drawn around the powers of Congress is to take possession of a boundless field of power no longer susceptible of any definition.*
>
> *The Bill delivers us up bound to the National Bank, who are free to refuse all arrangements, but on their own terms, and the public not free, on such refusal, to employ any other bank.*(5)

The Bank of New York

This was not Alexander Hamilton's first proposal for a self-interested bank charter: five years earlier, in 1784, Hamilton joined with Isaac Roosevelt and others to create the Bank of New York.

It is remarkable that academics have not emphasized the association of the Roosevelt family with the Bank of New York, the first bank founded in New York City and New York State and also one of the very first banks founded in the United States. Only the Bank of North America and the Pennsylvania Bank organized during the Revolutionary War preceded the Bank of New York.

The initial meeting of the Bank of New York was held March 15, 1784 and the following directors were present:(6)

Alexander McDougal (President)
Samuel Franklin
Robert Bowne
Comfort Sands
Alexander Hamilton
Joshua Waddington
Thomas B. Stoughton
Wlliam Maxwell
Nicholas Low
Daniel McCormick
Isaac Roosevelt
John Vanderbilt
Thomas Randall

Alexander Hamilton, who as we have seen, staunchly opposed Thomas Jefferson and the Jeffersonian democratic tradition in American politics, was connected with the Bank of New York from the start. The constitution of the Bank of

New York was in fact written by Alexander Hamilton. And as most of the newly elected officers of the bank were not familiar with banking business it was Alexander Hamilton who provided a letter of introduction to the Bank of North America which supplied the necessary information and guidance.

The first president of the Bank of New York was Jeremiah Wadsworth. His tenure was brief and in May, 1786 Isaac Roosevelt was elected president, with William Maxwell as vice president. The bank offices were in the old Walton House with the Roosevelt sugar refinery just across the street at number 159 Quinn Street.

Conflict of interest is more than obvious on the part of Alexander Hamilton, who became Secretary of the Treasury when the Constitution of the United States went into effect in 1789. While Hamilton did not take a daily active part as director of the Bank of New York, Hamilton advised its cashier William Seaton, and in 1790 the bank of New York was made an agent of the United States government for the sale of *200,000* guilders. Simultaneously Hamilton laid before Congress the idea of the Bank of the United States -a private banking monopoly.

Furthermore Hamilton used his cabinet influence to prevent the Bank of the United States from establishing a branch in the City of New York, in competition with the Bank of New York.

It also appears that Hamilton tried to make the Bank of New York the exclusive agent of the United States government in New York. In January, 1791 Alexander Hamilton wrote to William Seaton as follows:

> *I shall labor to give what has taken place a turn favorable to another union the propriety of which is to say clearly illustrated by the present state of things. It is my wish that the Bank of New*

> *York may by all means continue to receive deposits from the collection in the paper of the Bank of the United States and that they may also receive payment for the Dutch bills in the same paper.*[7]

Later in the same letter, Hamilton writes as follows:

> *Be confidential with me if you are pressed whatever support may be in my power shall be afforded. I consider the public interest as materially involved in aiding a valuable institution like yours to withstand the attacks of a confederated host of frantic and I fear in too many instances unprincipled gamblers.*

Alexander Hamilton was also overly protective when in 1791 a rival bank was proposed for New York City. When Hamilton heard of the project he expressed strong disapproval in a letter to William Seaton dated January 18, 1791:

> I *have learned with infinite pain the circumstance of a new bank having started up in your city. Its effects cannot but be in every way pernicious. I sincerely hope that the Bank of New York will listen to no coalition with this newly engendered monster, a better alliance I am strongly persuaded will be brought about for it and the joint force of two solid institutions will without effort or violence remove the excrescence just appeared. I express myself in these strong terms to you confidentially not that I have any objection to my opinion in being known as to the natural tendency of the thing.*[8]

According to Myers' *History of the Great American Fortunes*[9] the Bank of New York "injected itself virulently into politics and fought the spread of democratic ideas with sordid but effective weapons." It is Myers' contention that the bank and its founders in the Hamiltonian tradition fully

understood the danger to their financial interests in the Jeffersonian principle.

Even in 1930 the Bank of New York contained a representative of the Roosevelt interests - W. Emlen Roosevelt was on the 1930 board as was Cleveland Dodge, the backer of Woodrow Wilson for president (see below), and Allen Wardwell, the J. P. Morgan partner influential in the Bolshevik Revolution of 1917.[10]

The Second Bank of the United States

On March 4, 1809 James Madison, a quiet, unassuming man, entered the office of President. In 1776 Madison was a member of the Virginia Convention and served on the committee which framed the Constitution and the Bill of Rights. In 1787 Madison became a member of the Virginia delegation to the Philadelphia Convention and made specific constitutional suggestions, assembled in the so-called 'Virginia Plan." In many ways Madison can be termed the "master builder of the Constitution." Consequently Madison's views on the constitutionality of private banking monopolies are fundamental. The charter of the First Bank expired in 1811 and Congress refused to grant a new charter on the grounds of unconstitutionality. President Madison's message repeated the argument on the unconstitutionality of the bank and made the following comment:

> *On the whole it is considered that the proposed establishments will:*
>
> *1. enjoy a monopoly of the profits of a National Bank for a period of twenty years;*
>
> *2. that the monopolized profits will be continually growing with the progress of the national population and wealth;*
>
> *3. and that the nation will, during the same period, be dependent on the notes of the bank for the*

species of circulating medium whenever the precious metals may be wanted; and

4. at all times (will the nation be dependent on the notes of the bank) for so much thereof as may be an eligible substitute for a specie medium; and

5. that the extensive employment of the notes (bank) in the collection of the augmented taxes will, moreover, enable the banks greatly to extend its profitable issues of them (bank notes) without the expense of specie capital to support their circulation;

It is as reasonable as it is requisite that the government, in return for these extraordinary concessions to the bank, should have a greater security for attaining the public objects of the institution than is presented in this Bill....(11)

The War of 1812 presented bank supporters with a new argument - financial distress brought about by the war required financial relief in the form of a new national bank.

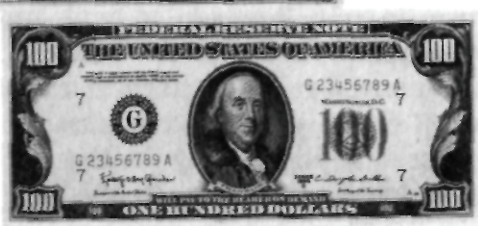
Under these pressing circumstances the House and Senate passed a bill creating the Second Bank of the United States. James Madison signed the bill into law April 10, 1816.

The Money Trust Honors Woodrow Wilson

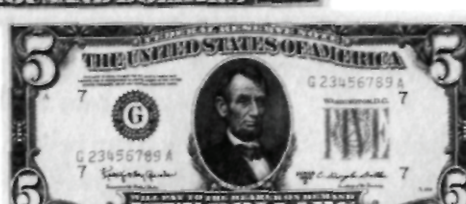
Federal Reserve Notes have a curious matchup of denominations with Presidents. The highest value Federal Reserve Note of $100,000 bears the portrait of Woodrow Wilson, a real friend of the money trust. The next highest value of $10,000 bears the portrait of Samuel Chase, Lincoln's Treasury Secretary who pushed through the National Bank bill for the money interest.

Ben Franklin gets the $100 bill and Abe Lincoln the $5.00 bill. The only note in the 1934 Series that bears the inscription "payable in gold" is the $100,000 note which is only used for transfers between the various Federal Reserve regional banks.









Endnotes to Chapter Two

(1) The Writings of Jefferson, vol. 7 (Autobiography, Correspondence, Reports, Messages, Addresses and other Writings) (Committee of Congress: Washington, D.C., 1861) p. 685.

(2) *The History of the Constitution of the United States,* (D. Appleton & Co., New York, 1893) p. 31.

(3) Gaillard Hunt, *Writings of James Madison,* (Geo. P. Putnam's Sons, New York) vol. 6, p. 371.

(4) *Journal of Wm. McClay, United States Senator from Pennsylvania, 1789.* Edited by Edgar S. McClay, (D. Appleton & Co., New York, 1890) p. 371.

(5) *The Writings of Jefferson*, vol. 7, Joint Committee of Congress, *op cit.*

(6) Henry W. Dommett, *Bank of New York 1784-1884,* (Putnam's Sons, New York, 1884) p. 9.

(7) H. W. Dommett, *op. cit*, p. 41.

(8) *Ibid.,* p. 43.

(9) *Ibid.,* p. 125.

(10) Antony Sutton, *Wall Street and the Bolshevik Revolution,* (New York, Arlington House, 1974).

(11) Gaillard Hunt, *The Life and Writings of James Madison,* (New York, Putnam's Sons, 1908), vol. 8, p. 327.

Chapter Three:

ANDREW JACKSON: THE LAST ANTI-ELITIST PRESIDENT

The original charter for the Second Bank of the United States was limited in time, unlike the present Federal Reserve System. A new charter for the (Second) Bank of the United States to replace the expiring grant was passed by Congress in July 1832, and President Andrew Jackson promptly vetoed the charter, with an emphatic message of major historical interest.

According to modern academic opinion the Jackson veto is "legalistic, demagogic and full of sham."[(1)] In fact, on reading the message today Andrew Jackson was clearly prophetic in his warnings and arguments to the American people. In the first inaugural address in January 1832, Jackson stated his position on the bank and renewal of the charter:

> *As the Charter of the Bank of the United States will expire in 1836, and its stockholders will most probably apply for a renewal of their privileges; in order to avoid the evils resulting from precipitancy in a measure involving such important principles and such deep pecuniary interests, I feel that I cannot in justice to our constituents and to the parties interested too soon present it to the*

> *deliberate consideration of the Legislature and the people.*
>
> *The constitutionality of this law has been well questioned...because it grants to those who hold stock exclusive privileges of a dangerous tendency. Its expediency is denied by a large portion of our citizens...and it is believed none will deny that it has failed in the great end of our establishing a uniform and sound currency throughout the United States.*[(2)]

Andrew Jackson's personal view on the Second Bank of the United States is contained in a memorandum in Jackson's own handwriting written in January, 1832.[(3)]

The opinion shows how far present constitutional interpretation has diverged from the intent of our founding fathers. Jackson's opening argument is that all "sovereign power is in the people and the states," and then argues that in cases, such as the power to grant corporations, where the power is not expressly given to the general (Federal) government, then "no sovereign power not expressly granted can be exercised, by implication." The key is "implied power." There are no implied powers in the Constitution.

Jackson goes on to argue that it may be possible for "necessity" to give power to grant charters to banks and corporations, but this must be a "positive necessity not a fained one." And then only within the ten mile square of Washington, DC itself does Congress have such sovereign power. Jackson argues as follows:

> *It is inconsistent with any of the powers granted that our government should form a corporation and become a member of it. The founders were too well aware of the corrupting influence of a great moneyed monopoly upon government to legalize such a corrupting monster*

by any grant either expressed or implied in the Constitution.

The extraordinary difficulty and massive political power that Jackson faced in fighting the "money monopoly" and its influence is shown in his letter to Hugh L. White, dated April 29, 1831 (Vol. 4, page 271):

> *The great principles of democracy which we have both at heart to see restored to the federal government cannot be accomplished unless by a united cabinet who labor to this end. The struggles against the rechartering of the United States Bank are to be met. The corrupting influence of the Bank upon the morals of the people and upon Congress are to be fearlessly met....*
>
> *Many who you would not have supposed have secretly enlisted in its ranks and between bank men nullifiers and internal improvement men it is hard to get a cabinet who will unite with me heart and hand in the great task of democratic reform in the administration of our government.*[4]

By 1833 the struggle over the rechartering of the Bank of the United States had degenerated into a conflict between Andrew Jackson and his secretary of the treasury, William J. Duane and ultimately led to dismissal of Duane. Jackson wanted to withdraw all government deposits from the private Bank of the United States while Duane refused to order removal of the deposits.

In a letter dated June 26, 1833 (Vol. 5, page 111) Andrew Jackson expands on his demand for withdrawal of government deposits from the Bank of the United States, and proposes that one bank be selected in each of various cities to receive government deposits. State banks with good credit would be preferable to the concentration of

government funds in one bank which was a private monopoly.

The letter was accompanied by a paper explaining Jackson's views on possible government relations with the Bank of the United States and the future. Included was this straightforward statement:

> *The framers (of our Constitution) were too well aware of the corrupting influences of a great moneyed monopoly upon government to legalize such a corrupting monster by any grant either express or implied in the constitution.*
>
> *Bank corporations are brokers on a large scale, and could it be really urged that the framers of the Constitution intended that our Government should become a Government of Brokers? If so, then the profits of the National Brokers Shop must enure to the benefit of the whole people, and not a few privileged moneyed capitalists, to the utter rejection of the many.*(5)

The opinion recalled that in December 1831 Congress petitioned for a renewal of the bank charter and Jackson had vetoed the bill. As Jackson was then a candidate for reelection this in effect brought the veto directly before the electorate and in approving the president the public also condemned the bill as both "inexpedient and unconstitutional."

In other words Jackson argued that his veto had already received public approval. Therefore, Jackson continued, "the duty of the bank was to wind up its concerns in such a manner that will produce the least pressure upon the money market."

Jackson recalled the extraordinary and rapid increase of government debt to the bank which had grown by $28

million or *66* percent in a period of 16 months. Jackson commented as follows:

> *The motive of the enormous extension of loans can no longer be doubted. It was unquestionably to gain power in the country and force the government through the influence of the debtors to grant it a new charter.*

This must be the first and last statement from an American President declaring what many now suspect: that certain banks (but not all bankers) use debt as a political weapon for control. We cannot include all bankers because bankers in Catholic countries, for example, are forbidden on grounds of religion from using debt for control. This would amount to usury.

Jackson goes on to outline the reasons for his wish to sever connections between the bank and the government:

> *a leading objection is that the Bank of the United States has the power and in that event will have the disposition to crush the state banks particularly those which may be selected by the government as the depositories of its funds and thus cause wide spread distress and ruin throughout the United States.*

Then Jackson makes an argument strange to the ears of those reading in the 20th century:

> *The only currency known to the Constitution of the United States is gold and silver. This is consequently the only currency which that instrument delegates to Congress the power to regulate.*

This suggests that Andrew Jackson would have considered the present Federal Reserve System, a private

bank-owned monopoly, to be unconstitutional and in fact "the money monster" in new form.

President Andrew Jackson's final message on March 4, 1837 was unbelievably prophetic in its content - and the last time an American President was sufficiently independent of the elitist powers behind the scenes to publicly warn American citizens of the dangers to their freedoms and livelihood. Here is an extract from Jackson's final message to the American people:

> *The distress and alarm which pervaded and agitated the whole country when the Bank of the United States waged war upon the people in order to compel them to submit to its demands cannot yet be forgotten. The ruthless and unsparing temper with which whole cities and communities were oppressed, individuals impoverished and ruined, and a scene of cheerful prosperity suddenly changed into one of gloom and despondency ought to be indelibly impressed on the memory of the people of the United States.*
>
> *If such was its power in a time of peace, what would it not have been in a season of war, with an enemy at your doors? No nation but the free men of the United States could have come out victorious from such a contest; yet, if you had not conquered, the government would have passed from the hands of the many to the few, and this organized money power, from its secret conclave, would have dictated the choice of your highest officials and compelled you to make peace or war, as best suited their own wishes.*[6]

Even while Jackson wrote this message to the American people our government had passed "from the hands of the many to the hands of the few." Moreover, the few "from its

secret enclave" was already dictating political choices, boom and slump and war and peace.

In the United States the Jacksonian Democrats, the Whig tradition in American politics, were the last remnant that knew and understood the power behind the scenes. Across the Atlantic in England the Cobdenites under Richard Cobden and John Bright tried to maintain a similar torch of individual freedom. They also failed.

As Jackson wrote his last message, socialist manifestos were being weighed and put to paper. Not to improve the lot of the common man as they would have us believe, but as devices to gain political power for the elite.

Endnotes to Chapter Three

(1) Bray Hammond, *Banks and Politics in America*, (Princeton University Press, Princeton, 1957) p. 405. It is noteworthy that Princeton, one of the Ivy League schools, is a scholastic base of the "establishment" and helps perpetuate this onesided historical interpretation.

(2) James A. Hamilton, *Reminiscences*, p. 149.

(3) John Spencer Bassett, ed., *Correspondence of Andrew Jackson*, (Carnegie Institution, Washington, D.C., 1929-32) vol. 4, p. 389.

(4) *Ibid.*, p. 271. Jackson was not a skilled writer. He was a man of action and principle rather than a man of letters. However, his points are clearly there for those with eyes to read.

(5) *Ibid.*, p. 92.

(6) *Richardson's Messages*, Vol. 4, p. 1523.

Chapter Four:

ROOSEVELT'S SOCIALIST MANIFESTO

The forces of "the few," i.e., the establishment elite, have been in the ascendancy since Jackson's last message of 1837. President Martin Van Buren tried briefly and failed to stem their power. Abraham Lincoln tried, and also failed. Every president since Lincoln has neglected even to try to curb the power of the elite.

On the one hand is the "money monopoly" controlling the status quo and the ruling establishments. On the other hand is the "revolution of rising expectations" superficially created by socialist revolutionaries, but in fact socialism in theory and practice is created, supported and controlled with debt and political power created by the "money monopoly."

In this chapter we will look at an American socialist manifesto, the forerunner of FDR's New Deal, written by Clinton Roosevelt in 1841. Clinton Roosevelt, one of the lesser known Roosevelt cousins was descended from the New York banking Roosevelts and linked by his socialist writings to the 20th century Roosevelts. Then in Chapter Five we will describe a more well known manifesto, that of Karl Marx, also financed from the United States.

The "money monopoly" creates and nurtures socialism. Let's start to probe this idea with the Roosevelts, who have been both bankers and socialists simultaneously.

While one branch of the Roosevelt family developed the Bank of New York and the sugar refining industry, another branch of the family worked its way into practical politics and even theoretical political philosophy.

For example, long before Franklin Delano Roosevelt became President, James J. Roosevelt was a member of the New **York** State Legislature in 1835, 1839, and 1840, a member of the Loco Focos and distinguished himself by opposition to Whig attempts to eliminate "ballot stuffing."(1)

Roosevelt was not only powerful within Tammany Hall's inner circle but according to one biographer, "he was in effect liaison officer between the Hall and Wall Street, one who carried orders from the bankers to the politicians and dictated nominations and elections in a ruthless manner."(2)

James Roosevelt was the 1840s link between the inner circles of Tammany Hall and Wall Street banking including the Roosevelts' own Bank of New York. But it was Clinton Roosevelt, born in 1804, son of Elbert Cornelius Roosevelt, who provided a socialist manifesto some years before Marx plagiarized his more famous Communist Manifesto from French Socialist Victor Considerant (see Chapter Five).

Clinton Roosevelt was a 19th-century cousin to Franklin Delano Roosevelt, and incidentally also related to President Theodore Roosevelt, John Quincy Adams, and President Martin Van Buren. Clinton Roosevelt's only literary effort is contained in a rare booklet dated 1841.(3) In essence it is a Socratic discussion between the author Roosevelt (i.e., the few) and a "Producer" presumably representing the rest of us (i.e., the many).

Roosevelt proposes a totalitarian government much like Karl Marx's, where all individuality is submerged to a collective run by an elitist aristocratic group (i.e., the few, or

the vanguard in Marxist terms) who design and enact all legislation. Roosevelt demanded abandonment of the Constitution to achieve his goals:

> *P. (Producer): But I ask again: Would you at once abandon the old doctrines of the Constitution?*
>
> *A. (Author): Not by any means. Not any more than if one were in a leaky vessel he should spring overboard to save himself from drowning. It is a ship put hastily together when we left the British flag, and it was then thought an experiment of very doubtful issue.*(4)

The Rooseveltian system depended "First, on the art and science of cooperation. This is to bring the whole to bear for our mutual advantage." It is this cooperation, i.e., the ability to bring the whole to bear for the interest of the few, that is the encompassing theme of writings and preachings from Marx to the present Trilateral Commission. In the Roosevelt schema each man rises through fixed and specified grades in the social system and is appointed to a class of work to which he is best suited. Choice of occupation is strictly limited. In the words of Clinton Roosevelt:

> *Whose duty will it be to make appointments to each class?*
>
> *A. The Grand Marshal's.*
>
> *P. Who will be accountable that the men appointed are the best qualified?*
>
> A. *A Court of physiologists, Moral Philosophers, and Farmers and Mechanics, to be chosen by the Grand Marshal and accountable to him.*
>
> *P. Would you constrain a citizen to submit to their decisions in the selection of a calling?*

A. No. If any one of good character insisted, he might try until he found the occupation most congenial to his tastes and feelings.[(5)]

Then Roosevelt invented the Marshal of Creation, whose job it is to balance production and consumption, much like a master planner:

P. What is the duty of the Marshal of the Creating or Producing order?

A. It is to estimate the amount of produce and manufactures necessary to produce a sufficiency in each department below him. When in operation, he shall report excesses and deficiencies to the Grand Marshal.

P. How shall he discover such excesses and deficiencies?

A. The various merchants will report to him the demand and supplies in every line of business, as will be seen hereafter.

P. Under this order are agriculture, manufactures and commerce, as I perceive. What then is the duty of the Marshal of Agriculture?

A. He should have under him four regions, or if not, foreign commerce must make good the deficiency.

P. What four regions?

A. The temperate, the warm, the hot region and the water region.

P. Why divide them thus?

A. *Because the products of these different regions require different systems of cultivation, and are properly subject to different minds.*[(6)]

Seventy-five years later, in 1915, Bernard Baruch was invited by President Woodrow Wilson to design a plan for a defense mobilization committee. This Baruch plan subsequently became the War Industries Board, which absorbed and replaced the old General Munitions Board. The War Industries Board as a concept was similar to cooperative trade associations, a device long desired by Wall Street to control the unwanted rigors of competition in the marketplace, and much like Clinton Roosevelt's 1841 Plan. Committees of industry, big business and small business, both represented in Washington, and both with Washington representation back home ... this was to be the backbone of the whole structure.

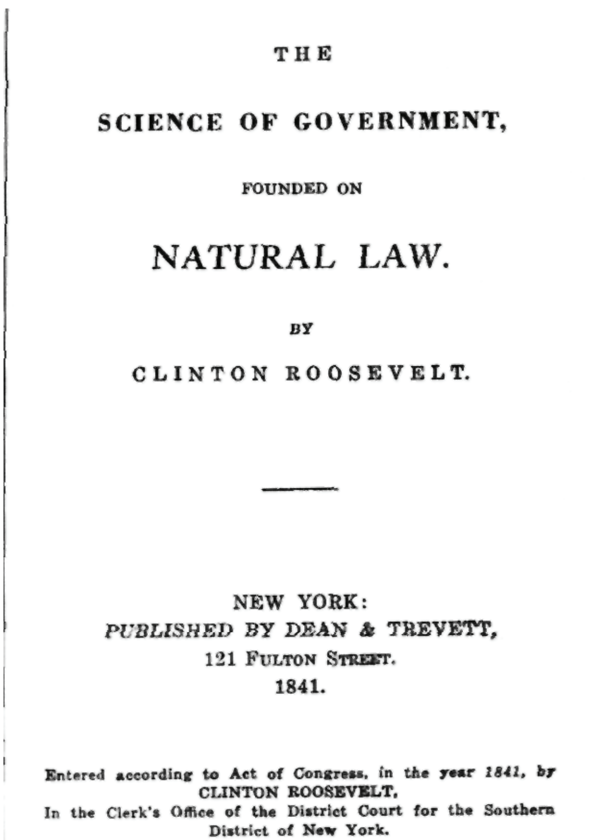
By March, 1918, President Wilson, acting without Congressional authority, had endowed Baruch with more power than any other individual had been granted in the history of the United States. The War Industries Board, with Baruch as its chairman, became responsible for building all factories and for the supply of all raw material, all products, and all transportation, and all its final decisions rested with chairman Baruch.

The War Industries Board was the organizational forerunner of the 1933 National Recovery Administration and some of the 1918 WIB corporate elite appointed by Baruch - Hugh Johnson, for example - found administrative niches in Roosevelt's NRA Plan. Comparison of Roosevelt's New Deal, actually written by Gerard Swope of General Electric, with Clinton Roosevelt's early 1841 scheme shows a remarkable similarity.

Clinton Roosevelt - The Science of Government

(New York 1841)

This is a proposal for a totalitarian government without individual rights run by an elitist establishment. Clinton Roosevelt was a cousin of Franklin Delano Roosevelt. The book has been removed from the current Library of Congress catalog although it was listed in the earlier 1959 edition.



THE

SCIENCE OF GOVERNMENT,

FOUNDED ON

NATURAL LAW.

BY

CLINTON ROOSEVELT.

NEW YORK:
PUBLISHED BY DEAN & TREVETT,
121 FULTON STREET.
1841.

Entered according to Act of Congress, in the *year 1841*, by
CLINTON ROOSEVELT,
In the Clerk's Office of the District Court for the Southern
District of New York.

Endnotes to Chapter Four

(1) Karl Schriftgiesser, *The Amazing Roosevelt Family, 1613-1942* (New York: Wilfred Funk, 1942) p. 143.

(2) *Ibid., p.* 142. Examination of the charts on pages xi and xii of Schriftgiesser show that Franklin Delano Roosevelt, the so-called anti-bank candidate in 1932, also descends in direct line from New York Bank founder Isaac Roosevelt.

(3) Clinton Roosevelt, *The Science of Government Founded on Natural Law* (New York: Dean & Trevett, 1841). There are two known copies of this book: one in the Library of Congress, Washington D.C. and another in the Harvard University Library. The existence of the book is censored (i.e., omitted) in the latest edition of the Library of Congress catalog, but was recorded in the earlier 1959 edition (page 75). A facsimile edition was published by Emanuel J. Josephson, as part of his *Roosevelt's Communist Manifesto* (New York: Chedney Press, 1955).

(4) Ibid.

(5) Ibid.

(6) *Ibid.*

Chapter Five:

KARL MARX AND HIS MANIFESTO

The modern welfare state such as we have in the United States has a remarkable resemblance to the Communist Manifesto supposedly written by Karl Marx in 1848. The ten points of the Marxian Manifesto, a program designed to overthrow the middle class bourgeoisie (not the big capitalists) have been implemented by successive Democrat and Republican governments since Woodrow Wilson under guidance of a self-perpetuating establishment.

Marx's big enemy was the middle class, the bourgeoisie. Marx wanted to seize property from this middle class in a revolution led by the so-called working class, or the proletariat. Unfortunately for Marx the working class has never had too much liking for communist revolution, as we saw in the Revolutions of the 1980s. In practice, communist revolution is led by a handful of communists. How can a revolution be made and kept in power by a small group? Only because communists have always had help from the so-called ruling class - capitalists and bankers. This aid and assistance has been consistent from financing Marx's Manifesto in 1848 down to the late 20th century when a David Rockefeller-dominated Administration is helping Communist revolution and revolutionaries in Central America, Angola and Mozambique.

Let's start with the 1848 Manifesto. Marx wanted to seize middle class property. In the Manifesto, Marx phrased the objective like this:

> *In the first instance, of course, this can only be effected by despotic interference with bourgeois methods of production; that is to say by measures which seem economically inadequate and untenable, but have far-reaching effects, and are necessary as means for revolutionizing the whole system of production.*[(1)]

To bring about this "despotic" seizure of middle class property, Marx laid out a ten-point program of "measures" as follows:

> *These measures will naturally differ from country to country. In the most advanced countries they will, generally speaking, take the following forms:*
>
> *1. Expropriation of landed property, and the use of landrents to defray State expenditure.*
>
> *2. A vigorously graduated income tax.*
>
> *3. Abolition of the right of inheritance.*
>
> *4. Confiscation of the property of all emigres and rebels.*
>
> *5. Centralisation of credit in the hands of the State, by means of a national bank with State capital and an exclusive monopoly.*
>
> *6. Centralisation of the means of transport in the hands of the State.*
>
> *7. Increase of national factories and means of production, cultivation of uncultivated land, and*

improvement of cultivated land in accordance with a general plan.

8. Universal and equal obligation to work; organisation of industrial armies, especially for agriculture.

9. Agriculture and urban industry to work hand-in-hand, in such a way as, by degrees, to obliterate the distinction between town and country.

10. Public and free education of all children. Abolition of factory work for children in its present form. Education and material production to be combined.(2)

As we shall see later, Marx's ten points for destruction of the middle class have almost been completed in the United States. The 16th Amendment, for example (the income tax) is an archaic political concept that goes back some 4,000 years in history to the time of the Pharaohs in Egypt.

The Pharaohs and their elitist advisors had the notion that the entrepreneur, the businessmen, and the workers of Egypt who produced the wealth of that civilization somehow were not competent to manage that wealth.

These elitist advisors and Pharaoh said, "Look, we're going to force you people to do what we know you should. Because after all, were omnipotent, we are standing up here looking down on all of you and we can decide what is best for all. Much better than each of you can individually decide for yourselves. We're going to force you to have a government retirement program, so that when you reach retirement age you can retire with some dignity. We're going to force you to do what we know you should do, because we know you won't do it if left to your own devices. Also, we're going to force you to have a government food storage program. We're going to

store grain in the government granaries because we know that you are not competent - you are not capable of storing food by yourselves.

"Furthermore, we know you can't take care of your health so we're going to force you to have a government medical program. We know health is important and we know that you don't have the responsibility or capability for looking after yourselves. We're going to force it on you for your own best interests.

"The method used to accomplish these objectives was to withhold a fifth part of the production of Egypt. If you go back and read the Old Testament it says, "That the Pharaoh had decided to take up a fifth power of the production of Egypt and to store it in granaries for the benefit of all."

The modern day proponent of the Pharaoh's philosophy is none other than Karl Marx and the Communist Manifesto. The Manifesto has become the most significant economic document of the 20th Century. The significance lies in the unfortunate fact that the Manifesto is the economic guiding light of our leadership today, of the executive branch of our government and in most cases the leadership of both parties in this country who work to support and bring about the measures of the manifesto.

Basically what the Manifesto states is that when you have implemented these 10 programs in any free enterprise system, "capitalism" will have been destroyed and a communist state established in its place. This is what Marx wrote:

> *Strictly speaking, political power is the organized use of force by one class in order to keep another class in subjection. When the proletariat, in the course of its fight against the bourgeoisie, necessarily consolidates itself into a class, by means*

of a revolution makes itself the ruling class, it forcibly sweeps away the old system of production.

Item 2 of Marx's Manifesto reads as follows: *A heavy, progressive, or graduating income tax"*

This became the 16th Amendment of the United States Constitution, the law of the land in our country since 1913.

Later on in 1913 we saw the passage of the Federal Reserve Act. Interestingly enough the idea for that program is in Karl Marx's program in the Communist Manifesto as Item 5 and is possibly the most important point in the Communist Manifesto. Item 5 reads as follows: *Centralization of Credit in the hands of the state by means of a National Bank with state capital and exclusive monopoly.*

In other words Marx proposed a scheme exactly like the First Bank of the United States and the Federal Reserve Act with establishment of a fractional reserve central banking system on the model of the earlier European central banks.

Karl Marx as a Plagiarist

Marx was a brilliant fellow. He was no fool. Marx knew that if he could place under the control of a small group of men the ability to control the supply of money and credit of any nation, he could boom or bust those economies almost at will. By having foreknowledge of economic and monetary policies, billions of dollars of wealth could be transferred from one group to another, from the suffering middle class to the ruling elite. To do this required propaganda and in the mid-19th century the pamphlet was an effective means of propagandizing.

A most interesting feature of the brief Manifesto has been almost universally ignored by academics, i.e., that the Manifesto doesn't favor the working class at all and it certainly doesn't favor the middle class which is targeted for elimination.

The Manifesto is a blueprint for elitist control. The Manifesto favors takeover of political and economic power by an elite. And when we look at the source of the assistance given to Marx, it is clear that the benefits to the elite were obvious even in the 1840s.

Marx was certainly paid to write the Manifesto, as we shall see later. Furthermore, the Manifesto was plagiarized from an obscure French socialist named Victor Considerant, and his work, *Principes du Socialisme: Manifeste de la Democratie au Dix Neuvieme Siecle,* published in 1843. The second edition of Considerant's work was published in Paris in 1847, a year before the Manifesto and while Marx and Engels were living in Paris.

The plagiarism was spotted by an even more obscure writer, W. Tcherkesoff, and published in precise detail in his *Pages of Socialist History* (Cooper, New York, 1902).

Let Tcherkesoff explain Marx's plagiarism in his own words:

> *I felt myself stupefied, indignant, even humiliated, when, about a year ago, I had occasion to read the work of Victor Considerant, "Principles of Socialism: Manifesto of the Democracy of the Nineteenth Century," written in 1843, second edition published in 1847. There was reason for it. In a pamphlet of 143 pages, Victor Considerant expounds with his habitual clearness all the bases of Marxism, of this "scientific" Socialism that the parliamentarians desire to impose upon the whole world. Properly speaking, the theoretical part, in which Considerant treats of questions of principle, does not exceed the first 50 pages; the remainder is consecrated to the famous prosecution that the government of Louis Philippe brought against the journal of the Fourierists, "La Democratic*

pacifique," and which the jurors of the Seine quashed. But in these 50 short pages the famous Fourierist, like a true master, gives us so many profound, clear, and brilliant generalizations, that even an infinitesimal portion of his ideas contains in entirety all the Marxian laws and theories -including the famous concentration of capital and the whole of the "Manifesto of the Communist party." So that the whole theoretical part, that is chapters one and two, which Engels himself says "are on the whole as correct today as ever," is simply borrowed. This "Manifesto," this Bible of legal revolutionary democracy, is a very mediocre paraphrase of numerous passages of the "Manifesto" of V. Considerant. Not only have Marx and Engels found the contents of their "Manifesto" in the "Manifesto" of V. Considerant, but the form and the titles of the chapters have also been retained by the imitators.

Paragraph two in the second chapter with V. Considerant bears the title: "The present Situation and '89; the Bourgeoisie and the Proletarians." "The Bourgeois and the Proletarians," is the title of the first chapter with Marx and Engels.

V. Considerant examines different Socialist and revolutionary parties under the name of Democracy and his paragraphs bear the titles:

Stagnant Democracy;

Retrograde Democracy;

The Socialist Party in the Retrograde Democracy;

The titles with Marx and Engels are:

Reactionary Socialism

Conservative and Bourgeois Socialism

Critical Utopian Socialism and Communism

> *Would not one think all these titles belonged to the selfsame work? When comparing the contents we shall see that in reality these two manifestos are identical.*[3]

Line by line Tcherkesoff demonstrates Marx to be a common thief. The great Marx, the adored Marx, rates no more than a third-rate school boy!

There can be no argument concerning the massive influence of Karl Marx and Frederick Engels on world history. Yet, by contrast, the secondhand nature of Marxist ideas and arguments have always been overlooked.

How about Marx's collaborator - Frederick Engels? The sloppiness of Engels' work has been documented in the introduction to *Condition of the Working Class in England* by W. O. Henderson and W. H. Chaloner (Basil Blackwell, Oxford, 1958).

As far back as 1848 Bruno Hildebrand compiled a detailed criticism of Engels' book and particularly his biased interpretation of British government reports. Engels wanted to prove a case and distorted the facts to make the case. Further pointed out by Henderson and Chaloner, "Engels' vivid imagination was sometimes used in lieu of facts." For example, on page 118 of Henderson we find:

> *In evidence before a Parliamentary enquiry the Nottingham coroner stated that one druggist had admitted using 13 cwt. of treacle in a year in the manufacture of Godfrey's Cordial. But in the 1887 edition of Engels this became "used thirteen hundredweight of laudanum in one year in the preparation of Godfrey's Cordial."*

Laudanum is of course tincture of opium and far different from treacle. The implication is that the children of the working class were being drugged.

Marx's Financial Backers

Where did Karl Marx get his money? How did he live? On investigation we find that funds came mainly from four sources, and each of these four sources can be linked to the ruling elite in Germany and the United States.

The conduit for financing the printing of the Manifesto was none other than Louisiana pirate Jean Laffite, who was, among his later occupations, a spy for Spain and a courier for a group of American bankers.

The evidence for this twist in modern history has been ignored by modern historians although the documents, authenticated by Library of Congress and other sources, have been available for some 30 years.

It is extraordinary that the first academics to report this source of financing for Marx were writing in French, not English! It was a French book by Georges Blond entitled *Histoire de la Filibuste* that contains the remarkable story of Karl Marx as a friend of Jean Laffite the pirate who "financed the printing of the Manifesto of the Communist party." Where did Blond get his information? It originated in two privately printed books published in New Orleans by Stanley Clisby Arthur, *Jean Laffite, the Gentleman Rover* and *The Journal of Jean Laffite.* These books contain original documents describing meetings between Marx and Laffite and the method used to finance the Manifesto.

Now of course if you look up the name Jean Laffite in the *Encyclopedia Britannica*, you will learn that Laffite died in 1823 and therefore could not possibly have financed Marx in 1847 and 1848. Unfortunately the *Britannica* is wrong, as it is on many other points. Laffite went underground about

1820 and lived a long and exciting life as courier for American bankers and businessmen.

Laffite's courier and underground work for American bankers is noted in *The Journal:*

> *We employed four men as secret officers to spy and report every pertinent conversation and to make verbal reports about any new happenings. We carried out our secret missions very well. We had only two ships operating under private contract with banking interests in Philadelphia. We decided, and took our oath, never to visit saloons or travel the same route twice, or ever go back to Louisiana, Texas or Cuba or any of the Spanish speaking countries.*(4)

In the same Journal under date of April 24, 1848 we find the note:

> *My interviews were brief, but direct. I lived at the home of Mr. Louis Bertillon in Paris and sometimes hotels. I met Mr. Michel Chevreul, Mr. Louis Braille, Mr. Augustin Thierry, Mr. Alexis de Tocqueville, Mr. Karl Marx, Mr. Frederic Engels, Mr. Daguerre and many others.*(5)

Then Laffite goes on to the eye-opening statement:

> *Nobody knew the real facts about my mission in Europe. I opened an account in a bank in Paris, a credit in escrow to finance two young men, Mr. Marx and Mr. Engels to help bring about the revolution of working men of the world. They are now working at it.*(6)

So here we have it. Jean Laffite was the agent of American banking interests and arranged for the financing of the Manifesto. In *The Journal* the reader will find other prominent names, i.e., Dupont, Peabody, Lincoln and so on.

While Jean Laffite was in Brussels he wrote at length to his artist friend De Franca in St. Louis, Missouri about financing Marx. Here's the translation of the letter dated September 29, 1847:

> I *am leaving Brussels for Paris, in three or four weeks I will go to Amsterdam, then enroute for America. I have had a number of conversations with Mr. Marx and Mr. Engels, but have refused to participate in the conferences with the other debaters to compose the manifest, because I do not wish to be identified with the other men.*
>
> *Mr. Engels is going with me to Paris so that I may prepare a schedule to finance Mr. Marx and him, for a long time in advance, to proceed with their manuscripts, and to put in texts "Capital and Labor." From the beginning it seemed to me that the two young men are themselves gifted and endowed, I firmly believe, with the highest intelligence and that they merit this is justified by the statistic research in the discovery on "La Categorie du Capital," Value, Price and Profit.*
>
> *They have penetrated a forgotten time in the exploitation of man by man without halt. From the Serf, of the Feudal Slave, and the Salaried Slave, they discover that exploitation is at the base of all evil. It has taken a long time to prepare "The manifests for the workers of the world." A great debate took place between the two young men and others from Berlin, Amsterdam, Paris, and others from the Swiss Republic.*
>
> *I am enthused in regard to the manifests and other prospects for the future, as I heartily support the two young men. I hope and I pray that the*

projects may become joined in a strong doctrine to shake the foundations of the highest dynasties and leave them to be devoured by the lower masses.

Mr. Marx advises and warns me not to plunge into all America with the manifests because there are others of the same kind for New York. But I hope that Jean or Harry will show the manifests to Mr. Joshua Speed, and he, in his turn, can show them to Mr. Lincoln. I know that nothing else can confuse it, as it would have the same chance. Its reception at Washington would be a sacred promise that the path that I am on is in conformity with the policy at present pursued in the Republic of Texas.

Mr. Marx accepts some of my texts on the communes that I was forced to abandon some time ago, weighing carefully rules and regulations not based on a strong foundation, as so-called pure and simple Utopia, without preamble or body, without an apparent base to build on. I was in accord with the two young men at this date, apropos of my Utopian dreams of the past.

The sacrifice was made to preserve the great manuscript that was composed and its constitution, to endure forever with the radiance of the stars, but not for those in power to abuse or exploit.

Oh! to my dismay; I have agreed to the abuses practiced in the last part of the same year after the Dragon was eradicated and utterly abolished. I have described my second commune which I was forced to break up and abandon to the flambeau *March 3, 1821, I then took the resolution to withdraw without convert. I am no longer aiding those who are opposed to my principles.*

> I *must stop. I will bring several manuscripts and the manifest. I hope that Jules and Glenn are progressing at school with Miss Wing and Miss Burgess. I know they have much patience as teachers. Glenn is not as strong as Jules.*[(6)]

The second source of American financing for Karl Marx came from Charles Anderson Dana, Editor of the New York Tribune owned by Horace Greeley. Both Dana and Greeley were fraternally associated with the Clinton Roosevelt we cited in Chapter Three and with his Roosevelt Manifesto for dictatorial government. Dana hired Marx to write for the New York Tribune. This Marx did, in over 500 articles spread over ten years from 1851 to 1861.

Marx's prime source of German funds came from his associate Frederic Engels, son of a wealthy Bremen cotton manufacturer and subsidy provider to Marx for many years.

More surprising is the subsidy to Marx from the Prussian elite. Karl Marx married Jenny von Westphalen. Jennys brother Baron Ferdinand von Westphalen was Minister of the Interior in Prussia (overseeing the police department) while Karl was under "investigation" by this same Prussian department.

In other words, Marx's brother-in-law was in charge of investigating subversive activities. Over the years the von Westphalen family strongly supported Marx. For 40 years the Marx's maid, Demuth, was paid by the Westphalens and in fact Demuth was personally selected for the job by Baroness Caroline von Westphalen. Two of Karl Marx's early essays were actually written in the von Westphalen estate at Kreuznach, and money from the estate was left to Marx.

In brief, between the American bankers and the German aristocracy Marx was well funded for the Manifesto and later writings. Why would the elite fund Marx? Simply

because the entire Marxist philosophical battery is aimed at extermination of the middle class and the supremacy of the elite. Marxism is a device for consolidating power by the elite. It has nothing to do with relieving the misery of the poor or advancing mankind: it is an elitist political device pure and simple.

Endnotes to Chapter Five:

(1) Ryazinsky, *Communist Manifesto,* (New York: Russell & Russell, Inc., 1963) p. 52.

(2) *Op. Cit.*

(3) W. Tcherkesoff, *Pages of Socialist History,* p. 56

(4) *The Journal of Jean Laffite* (The Pirateer - Patriot's own story) (Vantage Press, New York, 1958) p. 126

(5) *Op. Cit.* p. 132-33

(6) *Ibid.*

(7) From the translation in Stanley C. Arthur's *Jean Laffite, Gentleman Rover* (Harmanson, New Orleans, 1952) pp. 262 and 265.

Chapter Six

ABRAHAM LINCOLN: LAST PRESIDENT TO FIGHT THE MONEY POWER

Abraham Lincoln was the last of several populist presidents to fight against the money monopoly. Lincoln from the very beginning of his Administration faced a heavy burden of financing the Civil War with a monetary system under private control. During the Civil War the Union government was hardpressed to raise sufficient funds to pay troops, there was a shortage of coin and the private banking system was unwilling to meet the needs of the Union Army without personal gain.

Lincoln was in the Jeffersonian-Jacksonian tradition. This tradition reserved the right to issue currency to the Federal Government and argued that this right could not lawfully be transferred to a private monopoly. In 1862 Lincoln presented to Congress a bill to make United States notes full legal tender and so enable the Federal Government to print sufficient paper money to finance the Civil War. Presumably while Lincoln did not envisage the inflationary potential in expanding the government's spending power there is little question that his financial program was intended as a means of paying off debts and

government expense without allowing the private money monopoly to profit from the public purse.

Unfortunately, Lincoln's Secretary of the Treasury, Samuel Portland Chase, was an ally of the banking interests. During the Civil War Chase supported Lincoln's monetary policy but later presented legislation to Congress favorable to the banking interests. Similarly Senator John Sherman, responsible for Senate passage of financial legislation, added even more financial power to that already granted the money monopoly in the form of National Bank legislation.

Lincoln's legal tender bill was reported on February 25, 1862. This was to issue $150 million of legal tender United States notes. At that time Secretary Chase commented:

> *I have a greater aversion to making anything but coin a legal tender in payment of debt;...it is however at present impossible in consequence of the large expenditure entailed by the war to procure sufficient coin for disbursements: And it has therefore become indispensably necessary that we should resort to the issue of United States notes.*[1]

In similar manner Senator John Sherman of Ohio advocated the measure on the grounds, "in no other way could the payment of the troops and the satisfaction of other just demands be so economically or so well provided for."

However this program of a national currency was opposed by the New York banking interests and Senator John Sherman's advocation did not, as we shall see later, reflect his true intent. (To be repeated in 1913 by Senator Owen and Congressman Glass who misrepresented their true positions to the public on the Federal Reserve Act.)

The idea of a national currency was opposed by banking interests, the money power, because it would obviously remove from bankers the privilege of issuing an effective

substitute for money (defined in the Constitution as gold and silver). What bankers wanted the government to undertake was transfer the right to issue money to banking interests, i.e., to allow bankers to act as agents of the Federal Government. The U.S. Government would then be a perpetual borrower required to borrow funds at interest from a private money monopoly - which had obtained the monopoly power from the government itself. Given the restrictions of the Constitution, banking interests had to tread carefully.

The Clinton Roosevelt (Bank of New York) proposal was to remove the Constitution, shadowed in the late 20th century by the Trilateral Commission pleas that the Constitution is outdated.

Moreover the public itself, apart from Constitutional limits, would hardly agree to a private money monopoly if the truth were to be widely known. So we find from the time of Jefferson to the 1990s that any discussion of a private money monopoly is quickly and thoroughly suppressed. *Nothing is more dangerous to the power of the elite than the public discovery and understanding of the private control of money supply.*

What the bankers wanted in the 1860s was for the government to issue interest-bearing bonds. These bonds were to be used as the basis of bank credit. While Lincoln pushed his legal tender act the bankers met to draft what became the National Bank Act of 1863.

The purpose of the National Bank Act was to give control of the money issue to bankers. This monopoly could be used for profit and with the Civil War, profits would be substantial.

The difference between Lincoln and the money power was essentially whether the medium of exchange (convertible bank notes and inconvertible bank credit transferred by check) was to be created and issued by

private monopoly or government monopoly. In other words, whether the power of government is subordinate to a banking elite or bankers subject to the power of government which, if Congress did its job honestly, also means subordinate to the power of the people.

An extraordinary letter from Senator John Sherman to Rothschild Brothers in London dated June 25, 1863 (and leaked on Wall Street in 1863) demonstrates the double dealing of even "prominent" and "well regarded" politicians.

Sherman saw a chance to curry favor with the preeminent world bankers of the time and personally brought the possibilities of the proposed National Banking Act to the attention of international bankers.

On the following pages we reproduce a letter from Rothschild Brothers (London) to Ikleheimer, Morton and Vandergould (Wall Street, New York) acknowledging receipt of a Sherman letter and relaying its contents. These bankers reply to Rothschild Brothers on July 6, 1863, with details of the National Banking Act and some insights into the character of Senator John Sherman.

London, June 25, 1863;

Messrs. Ikleheimer, Morton and Vandergould No. 3, Wall St., New York, U.S.A.

Dear Sirs:

A Mr. John Sherman has written us from a town in Ohio, U.S.A., as to the profit that may be made in the National Banking business, under a recent act of your Congress; a copy of this act accompanies this letter.

Apparently this act has been drawn up on the plan formulated here by the British Bankers Association, and by that Association recommended

to our American friends, as one that if enacted into law, would prove highly profitable to the banking fraternity throughout the world.

Mr. Sherman declares that there has never been such an opportunity for capitalists to accumulate money as that presented by this act. It gives the National Bank almost complete control of the National finance. "The few who understand the system," he says, "will either be so interested in its profits, or so dependent on its favors that there will be no opposition from that class, while on the other hand, the great body of people, mentally incapable of comprehending the tremendous advantages that Capital derives from the system, will bear its burden without complaint, and perhaps without even suspecting that the system is inimical to their interests....

Your respectful servants Rothschild Brothers

New York City
July 6, 1863
Messrs. Rothschild Brothers,
London, England.
Dear Sirs:

We beg to acknowledge receipt of your letter of June 25, in which you refer to a communication received of Honorable John Sherman of Ohio, with reference to the advantages and profits of an American investment under the provisions of the National Banking Act.

Mr. Sherman possesses in a marked degree the distinguishing characteristics of a successful

financier. His temperament is such that whatever his feelings may be they never cause him to lose sight of the main chance.

He is young, shrewd and ambitious. He has fixed his eyes upon the Presidency of the United States and is already a member of Congress (he has financial ambitions, too). He rightfully thinks that he has everything to gain by being friendly with men and institutions having large financial resources, and which at times are not too particular in their methods, either of obtaining government aid, or protecting themselves against unfriendly legislation.

As to the organization of the National Bank here and the nature and profits of such investment we beg leave to refer to our printed circulars enclosed herein, vis:

"Any number of persons not less than five may organize a National Banking Corporation.

"Except in cities having 6000 inhabitants or less, a National Bank cannot have less than $1,000,000 capital.

"They are private corporations organized for private gain, and select their own officers and employees.

"They are not subject to control of State Laws, except as Congress may from time to time provide.

"They may receive deposits and loan the same for their own benefit. They can buy and sell bonds and discount paper and do a general banking business.

"To start a National Bank on the scale of $1,000,000 will require purchase of that amount (par value) of U. S. Government Bonds.

"U. S. Government Bonds can now be purchased at 50% discount, so that a bank of $1,000,000 capital can be started at this time for only $500,000.

"These bonds must be deposited in the U.S. Treasury at Washington as security for the National Bank currency, that will be furnished by the government to the bank.

"The United States Government will pay 6% interest on the bonds in gold, the interest being paid semi-annually. It will be seen that at the present price of bonds the interest paid by the government itself is 12% in gold on all money invested.

"The U.S. Government on having the bonds aforesaid deposited with the Treasurer, on the strength of such security will furnish National currency to the bank depositing the bonds, at an annual interest of only one per cent per annum.

"The currency is printed by the U.S. Government in a form so like greenbacks, that the people do not detect the difference although the currency is but a promise of the bank to pay.

"The demand for money is so great that this money can be readily loaned to the people across the counter of the bank at a discount at the rate of 10% at thirty to sixty days time, making it about 12% interest on the currency.

"The interest on the bonds, plus the interest on the currency which the bonds secure, plus inciden-

tals of the business, ought to make the gross earnings of the bank amount to from 28% to 33-1/3%.

"National Banks are privileged to increase and contract their currency at will and, of course, can grant or withhold loans as they may see fit. As the banks have a National organization and can easily act together in withholding loans or extending them, it follows that they can by united action in refusing to make loans cause a stringency in the money market, and in a single week or even a single day cause a decline in all products of the country.

"National Banks pay no taxes on their bonds, nor on their capital, nor on their deposits."

Requesting that you will regard this as strictly confidential....

Most respectfully yours,

Ikelheimer, Morton and Vandergould (3)

It was particularly important to international bankers that they succeed with Lincoln. If Lincoln implemented public control of finance in the United States then other nations would pluck up courage to strip financial power from their bankers.

European bankers, especially those in England, organized against Abraham Lincoln and used commercial banking channels to pressure bankers in the U.S. for support. The Legal Tender Bill wanted by Lincoln was subjected to intense lobbying in Washington and so loaded with amendments as to become useless. One amendment required that interest on bonds and notes - mere pieces of paper - was to be paid twice a year in gold coin. Suffocation by ridiculous amendments was successful. Defeat of the Legal Tender Bill was followed in 1862 by a bill to allow banks to issue private bank notes less than $5.00 within the

pistrict of Columbia, a first step towards a privately controlled fiat money supply.

On July 23, 1862 Lincoln vetoed the Private Bank Note Bill on grounds that it was the responsibility of the Federal Government to provide a circulating medium and that United States notes could equally fulfill the function of small private notes. This veto was Lincoln's challenge to the banking interests.

Lincoln was a caustic critic of bankers. A delegation of New York bankers came to Washington to lobby in favor of the Legal Tender Bill. The Secretary of the Treasury introduced the delegation as follows:

> *These gentlemen from New York have come to see the Secretary of the Treasury about our new loan. As bankers they are obliged to hold our national securities. I can vouch for their patriotism and loyalty, for, as the Good Book says, "for where the treasure is, there will the heart be also."*

Lincoln replied: *There is another test that I might apply, "Wherever the carcass is, there will the eagles be gathered together."*[4];

Lincoln's national currency scheme was in direct opposition to the international bankers who at that time planned to extend the Bank of England gold standard private money to the United States. Later in the 20th century bankers went for fiat money not backed by gold but in the mid-19th century the gold-silver system offered more opportunities for personal gain.

Lincoln was proposing that instead of the Federal Government borrowing paper or created money from the bankers that the bankers borrow coin or gold from the Treasury. In this way the banking interest would be unable to create fictional wealth from the printing press.

The National Bank Act was presented to the United States as a device to raise money to run the Civil War and achieve financial stability. Under the Act any five persons could form a bank with a capital of $50,000 or more. After deposit in the United States Treasury of interest-bearing bonds equal to one-third of the paid-in capital, the Government would print National Bank certificates on behalf of the bank to the amount of 90 percent of the part value of the bonds printed.

These National Bank certificates could then be used by the bank to carry on banking business and receive full profit on them as though they were the bank's own notes. Furthermore the bank received from the Federal Government interest payments in gold coin on bonds deposited in the Treasury.

In other words the bankers had a double profit. First, interest on government guaranteed money issues and second, interest paid on bonds in gold. The National Banking Act was a guaranteed profit making machine for anyone who wanted to get into banking.

Once again the Jeffersonian-Jacksonian tradition raised its voice. It claimed that the National banking system would create an even greater centralization of the money power than the Bank of the United States - which Andrew Jackson had vetoed.

This time around the money power was much more organized. The National Banking Bill was in the Senate only three or four days and in the House only two days before it was rushed through at a particularly critical time in the Civil War. The Bill was signed into law by President Lincoln on February 25, 1863.

Endnotes to Chapter Six

(1) Letter from Secretary of the Treasury Chase to Elbridge, G. Spaulding, January 29, 1862. Quoted in *American Nation History Series, 1861-1863* by Hosmer, vol. 20, pg. 169.

(2) John R. Elsom, *Lightning Over the Treasury Building* (or an expose of our banking and currency monstrosity, Americas most reprehensible and un-American racket), (Boston: Meador Publishing Co., 1941), pp. 51-52.

(3) *Op. cit.* pp. 53-55.

(4) *Ibid.*

Chapter Seven:

THE MONEY TRUST CREATES THE FED

How would you like to have the *Wall Street Journal* one week ahead of publication?

Some people do have this privilege, not advance issues of *Wall Street Journal;* but advance knowledge of Federal Reserve policies... what they will be tomorrow, next week, next month and next year.

From time to time the Fed makes pronouncements and before the pronouncement they have to decide what to pronounce. They get together, they discuss, they make plans and then they issue statements.

The meetings are always secret, known only to the Fed Directors. However, if *we* knew what Chairman Alan Greenspan was going to announce on monetary and credit policies, what the discount rate will be, or what the prime rate will be, we could quickly make a fortune, because that knowledge has impact on Treasury bill rates, on metals markets, on the stock market and on real estate markets.

The Federal Reserve system is a *private* system owned by the banks and gives only banks this advance information.

The idea for the Fed was conceived on a small island in the Atlantic Ocean off Glynn County, Georgia. Back in 1910 Jekyl Island was a private club used by an elitist group of

Wall Street financiers as a hideaway to discuss extra private business away from prying public ears. It was on Jekyl Island that the money trust designed its plan for Congressional approval of a private money monopoly.

American public opinion at the turn of the century was hostile to the idea of a central bank and generally opposed any further power for Wall Street interests. Yet a central bank along European lines offered vast secure profits for any financial group that could persuade Congress to enact central bank legislation. An elastic fiat and credit system offered power not possible with gold and silver as rigid disciplines on the financial system.

The clandestine Jekyl Island meeting was to design a plan to bring a central bank to the United States disguised as a regional banking system....while the bankers publicly opposed what they privately proposed.

This dissimulation was so successful that, according to private secretary Joseph Tumulty, Woodrow Wilson, in signing the Federal Reserve Act actually believed he was removing financial power from Wall Street interests.

President Wilson when governor of New Jersey in 1911 had declared:

> *The greatest monopoly in this country is the money monopoly. So long as that exists, our old variety of freedom and individual energy of development are out of the question.*
>
> *A great industrial nation is controlled by its system of credit. Our system of credit is concentrated. The growth of the nation, therefore, and all our activities are in the hands of a few men....*
>
> *This is the greatest question of all: and to this statesmen must address themselves with earnest*

determination to serve the long future and the true liberties of free men.[1]

Wilson may actually have believed his own statement that the Federal Reserve System was "the keystone of the great arch of the Democratic Administration."[2] What then is the reality behind this financial power known 100 years ago as the "money trust" or the "money power" and today as an elite group that can profit from a central bank?

To answer this question we have to go back in history and look at the 19th century trusts and the financial tip of the trust pyramid as it existed in the first decade of the twentieth century.

Between 1870 and the onset of World War One, American industry was concentrated under the control or influence of a handful of financiers, mostly in New York. John Moody, editor of the standard reference, *Moody's Manual of Corporation Securities,* recorded the trustification of American industry in a monumental volume of statistics and evidence.[3] Moody was a sympathetic observer and like Clarence Barron[4] another acute observer, considered trusts to be both useful and inevitable.

Criticism of the industrial trusts was widespread. John Moody's *The Truth About Trusts* with its wealth of detail demonstrated the pervasive money powers dominating the steel, non-ferrous metals, oil, tobacco, shipping, sugar and railroad industries - specifically the power of J. P. Morgan, the Rockefeller brothers, Edward Harriman, John McCormick, Henry Havemeyer and Thomas F. Ryan.

In tracing the early history of the drive for an American central bank by the "money power," two historical episodes stand out:

(l) the 1907 financial panic used by the bankers and their allies to urge the necessity for a central bank (although

the panic was precipitated by Wall Street, this was not proven until many years later.)

(2) the meteoric rise of German banker Paul Warburg with his missionary zeal to promote a carbon copy of the German Reichsbank in the United States.

In 1907 there were still a few capitalists willing to challenge Wall Street and dispute its iron grip on financial power. Among these outsiders was Montana copper millionaire Frederick Augustus Heinze, who was selected as the key target for the 1907 panic. Heinze brought his copper fortune to New York and joined with C. W. Morse of the Ice Trust. Jointly they acquired control of Mercantile National Bank, using the assets of the Bank of North America already dominated by Morse.

Heinze and Morse then acquired control of the Knickerbocker Trust Company, allied with the Trust Company of America and Lincoln Trust. They then incorporated a speculative vehicle, the United Copper Company. It was stock market games with United Copper that precipitated the 1907 crisis. Banks under control of the "money trust" called their loans to United Copper and began a run on the Heinze-Morse Mercantile National Bank. It is now generally agreed "that the 1907 panic was precipitated by the struggle to get rid of Heinze."(5)

In 1913 the money trust and the 1907 panic were investigated by the Pujo Committee, which recorded the enormous power of the J. P. Morgan firm.(6)

During the years 1900 to 1920 the money trust was effectively controlled by the banking firm of J. P. Morgan, comprising Morgan himself until his death in 1913, then his son, J. P. Morgan, Jr. and the firm's dozen to 15 partners in association with their Rockefeller, Harriman and Kuhn Loeb allies. After an extended documented inquiry, the 1912 Pujo Committee concluded that the "money trust" was

> *Far more dangerous than all that has happened to us in the past in the way of elimination of competition in industry, is the control of credit through the domination of these groups over banks and industries.*
>
> *It is impossible that there should be competition with all the facilities for raising money or selling large issues of bonds in the hands of these few bankers and their partners and allies, who together dominate the financial policies of most of the existing systems....*
>
> *The acts of this inner group, as here described, have, nevertheless, been more destructive of competition than anything accomplished by the trusts, for they strike at the very vitals of potential competition in every industry that is under their protection, a condition which if permitted to continue, will render impossible all attempts to restore normal competitive conditions in the industrial world.*(7)

In the public debate over creation of a Federal Reserve System in the United States, the 1907 crash was repeatedly used as the reason to install a central bank in the United States. The Fed was put forward as a way to stop financial panics. However, the 1907 panic was deliberately created by the "Standard Oil crowd" and the Morgan firm.

In other words, the same group that *stood to benefit from a central bank created the panic used to persuade the electorate that a central bank was vital.*

How well this private monopoly has maintained its power over the intervening decades since 1913 is the conclusion of a 1976 Congressional staff report. After identifying the closed shop directors of the Federal Reserve

System in the mid-1970s this Congressional investigation concludes:

> *In summary the Federal Reserve directors are apparently representative of a small elite group which dominates much of the economic life of this nation.*[8]

What is important to note is that the Federal Reserve is a private system with private stockholders. The money trust of the 19th century has been granted a legal monopoly while almost all other industry is subject to the Sherman Antitrust Act. It is monopoly, and monopoly requires political power to keep in place. It is also noteworthy that writing on the Federal Reserve glosses over the private ownership, yet the very aspect of the Federal Reserve that needs to be publicly discussed is its private nature, who owns what and what advantages accrue to ownership.

Where J. P. Morgan sat on the councils of New York City finance in 1907, David Rockefeller sat in the 1970s and Alan Greenspan sits today. *Wall Street Journal* in 1977 showed how these insiders used privileged Fed information for personal advantage. In 1907 it was J. P. Morgan who summoned the Treasury Secretary for an interview. In 1980 David Rockefeller summons Henry Kissinger for a meeting.

How did the Money Trust pull off this coup -establishment of a central bank under their control in a country that strongly opposed the idea? Justice Brandeis describes the process as follows:

> *The development of our financial oligarchy, ...with which the history of political despotism has familiarized us - usurpation proceeding by gradual encroachment rather than by violent acts; and by "subtle and often long concealed concentration."*
>
> *It was by processes such as these that Caesar Augustus became master of Rome. The makers of*

> *our Constitution had in mind like dangers to our political liberty, when they provided so carefully for the separation of governmental powers.*[10]

The J. P. Morgan firm which dominated the Money Trust understood this process of "subtle" and "gradual encroachment" to perfection. The firm even *publicly* opposed the Federal Reserve bill which they had *privately* put together.

The Morgan partners understood this process and were carefully chosen. In exchange for absolute loyalty they received guaranteed opportunities to make personal fortunes from the political and financial power of the monopoly. While Morgan was nominally only senior partner he held final and absolute powers within the firm.

Few Morgan partners entered politics. Most partners preferred to work quietly behind the scenes. In the period 1900 - 1930, four partners were exceptions to this rule and by tracing their political moves we can today identify how they used duplicity to bring about objectives.

These four partners were E. P. Davison, Dwight Whitney Morrow, Edward R. Stettinius and George W. Perkins. In an earlier book we described how the firm of Morgan manipulated the Bolshevik Revolution so the Morgan firm would profit whoever won in Russia.

Morgan partner Davison was head of the Red Cross War Council in 1917-1919 and worked with W. Boyd Thompson, another Morgan ally who aided the Bolshevik side of the Revolution with funds. Dwight W. Morrow used his influence to get arms and diplomatic support for the Bolsheviks (we reprinted a Morrow memorandum on this in *Bolshevik Revolution).* Thomas Lamont used his influence in London to soften the British position against the Bolsheviks.

Yet the Morgan firm and other partners gave help to the White Russians fighting the Bolsheviks and was prominent in the Siberian intervention.

Morrow retired from his Morgan partnership in the 1920s and after a year as Chairman of the Aircraft Board became U.S. Ambassador to Mexico (1927-1930) and a United States Senator in 1931. Stettinius supervised *all* war purchases for the United States in World War One - to the considerable advantage of Morgan-dominated firms.

George Perkins was a founder in 1912 and then Chairman of the Executive Committee of the Progressive Party - a Morgan political vehicle to split the Republican Party and ease Woodrow Wilson into the White House. David Rockefeller used the same tactic with John Anderson in the 1980 election.

The device used by the Morgan firm to control American finance and industry was the voting trust. The handful of directors, usually three in a voting trust, was selected by J. P. Morgan personally. These directors, members of the Morgan inner group, and the voting directors in turn selected directors of banks and firms.

Thus the voting trust for Guaranty Trust had two Morgan partners: Thomas W. Lamont and William H. Porter, plus George F. Baker, who was president of Morgan-controlled First National Bank. This group selected other outside Guaranty Trust directors, and Guaranty Trust in turn controlled numerous firms, lesser banks and financial institutions.

This Morgan complex was, in 1912, able to dominate Wall Street banks, and so the "Money Trust." Morgan control was simplicity itself, based on a pyramid of power principle. Morgan partners selected directors of major financial institutions, and in return for the privileges of directorship, the loyalty of these outside directors to the Morgan firm was guaranteed. In turn these financial

institutions controlled industrial and railroad trusts and combinations. The system worked well in the late 19th century and the early 20th century. This is how Woodrow Wilson and Colonel House saw this "Money Trust":

> I *think Woodrow Wilson's remark that the "money trust" was the most pernicious of all trusts is eminently correct...a few individuals and their satellites control the leading banks and trust companies in America...they also control the leading corporations...*[12]

The Money Trust was legalized in 1913 as the Federal Reserve System, a suitably innocuous name that disguises the fact that it is a private central bank.

The history of the system can be traced through three stages: the original plan created secretly in 1910, the promotion of Woodrow Wilson for President by the Money Power and then finally by what we can only describe as illegal passage of the Federal Reserve bill through the Congress.

Representative Lindbergh from Minnesota, father of the world famous flier, was one of the most consistent and ardent critics of the Morgan group during his ten years in the House of Representatives. He is said to be the only man in Congress who read the entire 20 volumes of the Aldrich Monetary Commission. Such a Niagara of words poured over Congressmen raised the suspicion among reasonable people that those interests responsible for it are purposely making it impossible for Congressmen to digest it. Of the Aldrich Banking and Currency Plan, Lindbergh said:

> *The Aldrich Banking and Currency Plan is a monstrous scheme to place under one control all the finances of the country, public and private. It would create one great central association with fifteen branches to encompass all the states....It would admit of no membership except banks and trust*

companies, and exclude the smaller ones of these. The rest of the world would not only be excluded from holding stock, but by the nature of the association, powers and relations of finances to commerce, it would dictate the terms on which business should be done. With that power centered in the great city banks and these banks controlled by the trusts and money powers, the politics as well as the business of the country would be under its dictation.[13]

Endnotes to Chapter Seven:

(1) Louis D. Brandeis, *Other People's Money; and How Bankers Use It,* (New York: Frederick A. Stokes Co.) p. 1.

(2) Joseph P. Tumulty, *Woodrow Wilson as I Knew Him* (New York: Doubleday, 1921).

(3) John Moody, *The Trust About The Trusts* (New York: Moody Publishing Company, 1904).

(4) Clarence W. Barron, *They Told Barron* (New York: Harper & Brothers, 1930).

(5) *Dictionary of American Biography,* Frederick Heinze. The Engineering and Mining Journal commented, "This was the beginning of the panic of 1907."

(6) U.S. Congress, House of Representatives, Committee on Banking and Currency. *Money Trust Investigation* (Washington, D.C., 1913) and Committee to Investigate the Concentration of Control of Money and Credit, *Report.* (62nd Congress, 3rd session. House Report No. 1593), known as the Pujo Committee Report.

(7) *The Story Of Our Money,* p. 187.

(8) U.S. Congress, House of Representatives, Committee on Banking, Currency and Housing. *Federal Reserve Directors: A Study of Corporate and Banking Influence.* August, 1976. (94th Congress, 2nd session). Washington, U.S. Government Printing Office, 1976.

(9) See *Wall Street Journal,* August 29, 1977.

(10) *The Story of Our Money, op. cit.*, pp. 188-89.

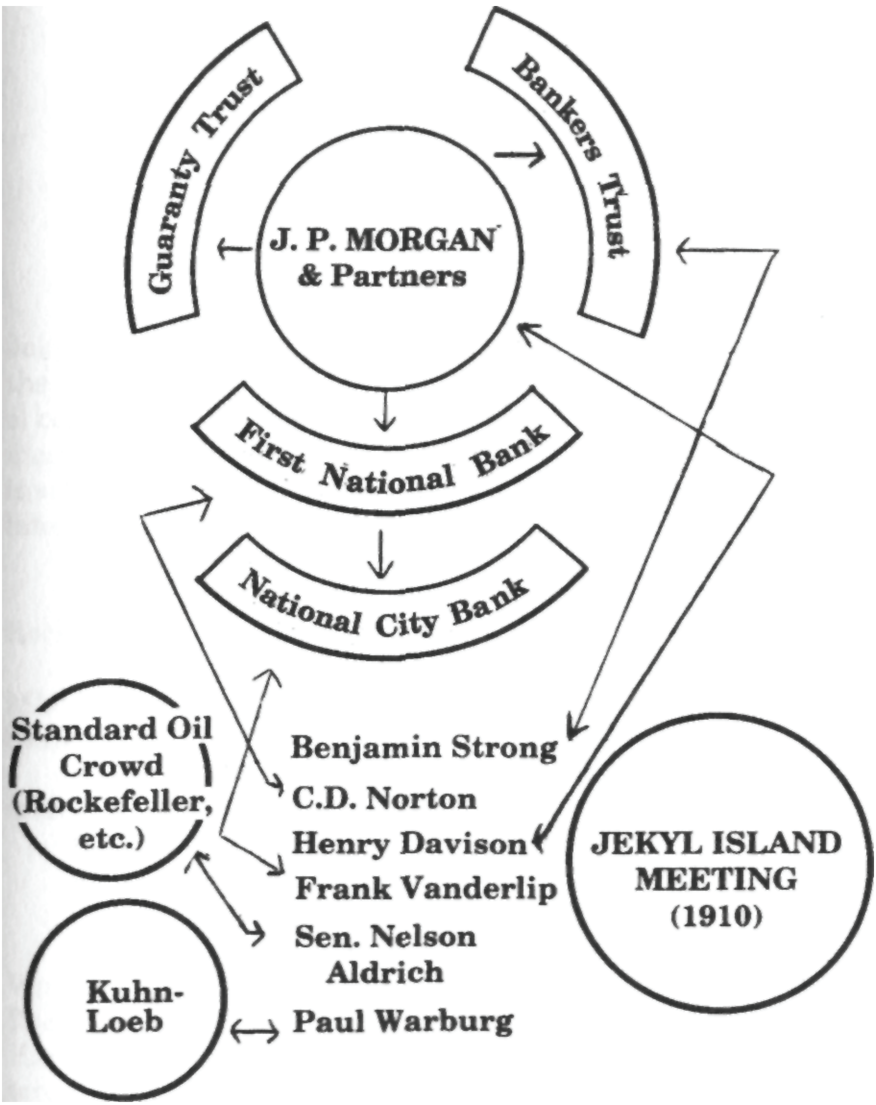
(11) Antony Sutton, *Wall Street and the Bolshevik Revolution* (New Rochelle, New York: Arlington House, 1974). See particularly pages 89-100 and the chapter, "J. P. Morgan gives a little help to the other side."

(12) Colonel E. M. House to Senator Culbertson (July 26, 1911); Charles Seymour, *The Intimate Papers of Colonel House*, (Boston and New York: Houghton Mifflin Co., 1926-28), I. 159.

(15) Cited in *The Story of Our Money, op. cit.*, p. 189.

Chart 7-1:

STAGE ONE: THE ORIGINAL PLAN FOR A FEDERAL RESERVE SYSTEM



Chapter Eight:

THE JEKYL ISLAND CONSPIRACY

In 1910 six prominent Wall Street financial men met on Jekyl Island to map plans for a central banking system in the United States. The Federal Reserve System originated in a conspiracy. A "conspiracy" is defined legally as a *secret* meeting for an *illegal* purpose. The meeting was secret, it involved six persons and it was illegal...as we shall show later.

The six conspirators were:

Senator Nelson Aldrich, father-in-law of John D. Rockefeller, Jr.

German banker Paul Warburg, of the German bankers MM Warburg of Hamburg and Kuhn Loeb in the United States;

Henry P. Davison, partner in J. P. Morgan and Chairman of Bankers Trust Company;

Benjamin Strong, Vice President of Bankers Trust;

Frank Vanderlip, Chairman of National City Bank;

Charles D. Norton, President of First National Bank.

The last three banks were in the Morgan group; Warburg represented Kuhn-Loeb and Aldrich represented Rockefeller interests and the "Standard Oil crowd." The Harriman interest in Guaranty Trust had been absorbed into the Morgan group after the death of Harriman.

These six dominated wealth and financial power and had considerable political influence.

The secret Jekyl Island meeting was actually described in *conspiratorial* terms by one of the participants:

> *Despite my views about the value to society of greater publicity for the affairs of corporations, there was an occasion, near the close of 1910, when I was as secretive, indeed as furtive, as any conspirator. None of us who participated felt that we were conspirators; on the contrary we felt we were engaged in a patriotic work. We were trying to plan a mechanism that would correct the weaknesses of our banking system as revealed under the strains and pressures of the panic of 1907. I do not feel it is any exaggeration to speak of our secret expedition to Jekyl Island as the occasion of the actual conception of what eventually became the Federal Reserve System.*(1)

After the 1907 panic plans were formulated to convince the public of a "need" for a central bank. The key at this point was Senator Nelson Aldrich, a wealthy businessman linked to the Rockefeller family through marriage of his daughter Abby to John D. Rockefeller Jr. Former Vice President Nelson Rockefeller was a direct descendent of this branch of the Rockefeller family.

In the post-1907 panic era, Senator Aldrich headed a Senate Monetary Commission which toured Europe to discuss and study European central banks and especially the German Reichsbank system. From this junket Aldrich emerged as *the* Congressional expert on bank planning. Few spotted his close links with the banking interests.(2) Herbert L. Satterlee was Morgan's son-in-law and, from the inside, comments on Aldrich's close relations with the Money Trust

and planning for the Federal Reserve System. Aldrich, according to Satterlee,

> *...turned to Mr. Morgan for advice and then during the next two years they were to spend many hours together working out an orderly pattern for the banking world of this country from coast to coast.*(3)

Again, according to Satterlee, J. P. Morgan "lent him (Aldrich) Harry Davison (Morgan partner) to help with details while Paul M. Warburg, the Kuhn Loeb partner, also "put his service at Senator Aldrich's disposal."(4) This triad -Morgan-Aldrich-Warburg - was the focal point for planning the introduction of central banking to the United States.

The remaining Jekyl Island conspirators came on the scene later. Frank Vanderlip (whom we have already quoted) of National City Bank was linked to the Rockefeller family by marriage and came into the group in early 1910 after receiving a letter from Stillman, founder and chairman of National City Bank. This letter referred to a meeting between Stillman and Aldrich in Europe on the central bank question. From this letter we learn that the conspirators used a code and that Aldrich's code name was "Zivil." In his book, Vanderlip states:

> *Mr. Stillman wrote me that I should make everything else subservient to giving my whole time and thought to a thorough consideration of the subject (i.e., the currency plan) and to draft a bill for the new Congress without a Wall Street tag.*(5)

Above all the conspirators knew they had to maintain absolute secrecy. If any Wall Street name ever became attached to a central banking Federal Reserve bill it would be the kiss of death. Not only were code names adopted but individuals went to great lengths to avoid public knowledge of their meetings and discussions.

Without any question if the public in 1913 had known what we know today the Federal Reserve Act would have no possibility at all of becoming law. On the question of public suspicions of the close family links in the group, for which the group claimed disinterested impartiality, Vanderlip noted:

> *But would the electorate have believed that? I question their ability to do so. Just to give you a faint idea: Senator Aldrich was the father-in-law of John D. Rockefeller, Jr., and himself a very rich man.Once I had written to Woodrow Wilson at Princeton, inviting him to speak at a dinner. Wishing to impress him with the importance of the occasion, I had mentioned that Senator Aldrich also had been invited to speak. My friend Dr. Wilson had astonished me by replying that he could not bring himself to speak on the same platform with Senator Aldrich. He did come and make a speech, however, after I had reported that Mr. Aldrich's health would prevent him from appearing. Now then, fancy what sort of head-lines might have appeared over a story that Aldrich was conferring about new money legislation with a Morgan partner (Davison) and the president of the biggest bank (Vanderlip).*[6]

The National City Bank founded by Stillman is significant because one of its directors was Cleveland Dodge, the financial powerhouse and influence behind Woodrow Wilson.

Woodrow Wilson, who was to sign the Federal Reserve Act into law, was a deliberate creation of the Money Power, who was approved in the spring of 1912 at a weekend meeting at Beechwood, the Vanderlip estate at Scarborough on Hudson. According to one observer, Wilson passed the test because Vanderlip and William Rockefeller discussed the

role of American capital abroad in front of Wilson.[7] This we shall describe in more detail later.

The central intellectual figure in the creation of the Federal Reserve System was not an American but a German banker - Paul Moritz Warburg, a banker born in 1868 into the Hamburg Oppenheim family. Warburg's father was a partner in the M. M. Warburg banking house founded in 1798. Warburg's early career was with Samuel Montagu & Co. in London and the *Banque Russe Pour he Commerce Etranger* in Paris. In 1891 Warburg went to work at the family bank in Hamburg and became a partner in 1895. In 1902 he came to the United States as a partner in Kuhn Loeb, and in spite of defective English, began a campaign for a Federal Reserve System. The plan may be found in his pamphlets, "Defects and Needs of our Banking System since 1907" and "A plan for a modified central bank" (1907). In 1910 Warburg proposed a plan for a United Reserve Bank and much of this plan was embodied in the Federal Reserve System.

These were the men who met in secret on Jekyl Island to put together the initial draft of the Federal Reserve Act.

The secret meeting was recorded by Frank Vanderlip:

> *Since it would be fatal to Senator Aldrich's plan to have it known that he was calling on anybody from Wall Street to help him in preparing his report and bill, precautions were taken that would have delighted the heart of James Stillman. We were told to leave our last names behind us...that we should avoid dining together on the night of our departure to come one at a time and as unobtrusively as possible to the railroad terminal on the New Jersey littoral of the Hudson, where Senator Aldrich's private car would be in readiness, attached to the rear end of a train for the South.*

> *When I came to that car the blinds were down and only slender threads of amber light showed the shape of the windows. Once aboard the private car we began to observe the taboo that had been fixed on last names. We addressed each other as "Ben," "Paul," "Nelson," and "Abe." Davison and I adopted even deeper disguises, abandoning our own first names. On the theory that we were always right, he became Wilbur and I became Orville, after those two aviation pioneers, the Wright brothers.*
>
> *The servants and the train crew may have known the identities of one or two of us, but they did not know all, and it was the names of all printed together that would have made our mysterious journey significant in Washington, in Wall Street, even in London. Discovery, we knew, simply must not happen, or else all our time and effort would be wasted. If it were to be exposed publicly that our particular group had gotten together and written a banking bill, that bill would have no chance whatever of passage by Congress.*[8]

The last sentence says it all from the vantage point of an insider - *this was a planned conspiracy.* The American public would never hand over a monopoly of the money supply to a small group. After all, the Sherman Antitrust Act had just made monopoly in restraint of trade illegal and a money monopoly was even less acceptable.

To avoid public knowledge, these bankers went skulking off to a remote island in the dead of night using code names and disguises!

Vanderlip goes on to describe the secret meeting itself and that Vanderlip and Strong actually wrote the so-called Aldrich report and the bill presented to the Senate. What is interesting is the utter assurance on the part of Vanderlip

that the bankers were acting in the interests of the country as a whole rather than in their own selfish interests.

What this group proposed to do - and actually did do in 1913 - was replace gold and silver with a paper factory which they controlled. How this could be presented as a public-spirited act is probably beyond most readers.

> *We were taken by boat from the mainland to Jekyl Island and for a week or ten days were completely secluded, without any contact by telephone or telegraph with the outside. We had disappeared from the world onto a deserted island. There were plenty of colored servants but they had no idea who Ben and Paul and Nelson were; even Vanderlip, or Davison, or Andrew, would have meant less than nothing to them.*
>
> *There we worked in the club-house - We returned to the North as secretly as we had gone South. It was agreed that Senator Aldrich would present the bill we had drafted to the Senate. It became known to the country as the Aldrich Plan. Aldrich and Andrew left us at Washington,and Warburg, Davison, Strong, and I returned to New York.*
>
> *Congress was about to meet; but on a Saturday we got word in New York that Senator Aldrich was ill, too ill to write an appropriate document to accompany his plan. Ben Strong and I went on to Washington and together we prepared that report. If what we had done then had been made known publicly, the effort would have been denounced as a piece of Wall Street chicanery, which it certainly was not. Aldrich never was a man to be a mere servant of the so-called money-interests. He was a con-*

> *scientious, public-spirited man. He had called on the four of us who had Wall Street addresses because he knew that we had for years been studying aspects of the problem with which it was his public duty to deal.*

The Aldrich plan written by Vanderlip and Strong did not get through Congress. It was shot down. An ailing Senator Aldrich retired and the Money Trust was forced to look elsewhere to get its plans through Congress.

National City Bank director Cleveland Dodge was a classmate (1879, Princeton) of Woodrow Wilson. McCormick of the Harvester Trust was in the same Princeton Class. By the early 1900s, Wilson, with help from Cleveland Dodge, had become President of Princeton University and Dodge let it be known that Wall Street considered Wilson "presidential material."

A flattered Woodrow Wilson wrote journalist George Harvey in December, 1906 to identify "the influential men who considered him as presidential material." Harvey replied, "naming some of the most influential bankers, utility executives and conservative journalists in the country."[9]

Wilson, for all his public image of a teetering, owlish professor, had one lesson down by heart, that to get along, one has to go along. In March, 1907 George Harvey introduced Wilson to Thomas Fortune Ryan, member of the copper trust and a prominent financier. After this meeting, Wilson wrote a brief for the Wall Street establishment in which he provided academic support for the Trusts -incidentally, in total contradiction to his public statements.

This Wall Street cabal, with the aid of New Jersey political bosses, pushed for Woodrow Wilson to become Governor of New Jersey in November, 1910.

Within a few months, Cleveland Dodge opened a bank account in New York and an office at 42 Broadway to boom

Wilson into the Presidency. The campaign bank account was opened with a check for $1,000 from Cleveland Dodge. Dodge then provided funds to mail out the *True American of Trenton, New Jersey* to 40,000 subscribers throughout the United States, followed by a regular two pages a week of promotional material on Wilson For President.

Two-thirds of Wilson's campaign funds for the presidency came from just seven individuals, all Wall Streeters and linked to the very trusts Wilson was publicly denouncing. Wilson's election slogans promoted him as a man of peace and against trusts and monopoly. These were the very sources financing his campaign:[10]

Cleveland H. Dodge (Director: National City Bank, etc.);	$51,300
Henry Morgenthau (financier)	$20,000
Cyrus PL McCormick (Harvester Trust)	$12,500
Abram I. Elkus (Wall Street lawyer)	$12,500
Frederick C. Penfield (Philadelphia real estate)	$12,000
William F. McCombs	$11,000
Charles R. Crane (Crane Co., Chicago)	$10,000

Wilson received the nomination and wrote to "dear Cleve" (Dodge) to exult, "I am so happy I can hardly think!"[11] Wilson's acceptance speech was written on board the *Corona*, Dodge's yacht, while they planned strategy for the coming campaign.[12]

In brief, Woodrow Wilson was in the hands of the Money Trust, had lied to the American public about his true position on the trusts and Wall Street and betrayed the Jef-fersonian-Jacksonian tradition of the Democratic Party.

Wilson was elected President. And the ballots had hardly been counted when Wall Street bustled about to arrange "currency reform." By early December, 1912, Colonel House had already talked with key members of Congress to

get them behind Wilson, and when Paul Warburg telephoned House on December 12, 1912, the Colonel told him that the plan was ready. Added House in his memoirs: "I knew the President-elect thought straight concerning the issue."[13]

In March, Frank Vanderlip talked with House, and two weeks later a group of bankers arrived at the White House with a printed "currency reform" bill for Wilson to present to Congress. House suggested that it would not be wise to flaunt the power of the House of Morgan with a pre-printed reform bill - so the Federal Reserve Act was taken back to Wall Street and a typewritten copy made from the printed plan.[14] It now only remained to get the Federal Reserve Bill through Congress.

Endnotes to Chapter Eight

(1) Frank A. Vanderlip, President, First National City Bank, *From Farm Boy to Financier* (New York: Appleton, 1935), p. 210.

(2) See Ferdinand Lundberg, *America's 60 Families* (New York: Vanguard Press, 1937).

(3) Herbert L. Satterlee, *J. Pierpont Morgan: An Intimate Portrait* (New York: Macmillan, 1939), p. 493.

(4) *Ibid.*, p. 550.

(5) Frank Vanderlip, *op. cit.*, p. 211.

(6) *Ibid.*, p. 212.

(7) John K. Winkler, *The First Billion*, (New York: Vanguard Press, 1934), pp. 209-211.

(8) Frank Vanderlip, *op. cit.*, p. 213.

(9) Ray Baker, *Woodrow Wilson: Life and Letters* (New York, Doubleday, Page & Co., 1927-39) vol 3, p. 365.

(10) Louise Overacker, *Money in Elections* (New York: Macmillan, 1932).

(11) Ray Baker, *Ibid.*

(12) op *cit.* p. 372.

(13) Charles Seymour, *The Intimate Papers of Colonel House* (Boston, New York: Houghton Mifflin Co., 1926-28), vol. I, p. 161.

(14) Seymour, op *cit.* p. 161.

Chapter Nine

THE MONEY TRUST CONS CONGRESS

Congressional passage of the Federal Reserve Act in December, 1913, must count as one of the more disgraceful unconstitutional perversions of political power in American history.

Certainly it is hard to think of any Act that has had greater effect and illegally transferred more monopoly power to a conspiratorial clique. These are harsh words. The reader may judge if they are accurate after reading this chapter: an almost hour by hour detail of the passage of the Act and signature by President Wilson.

The Act transferred control of the monetary supply of the United States from Congress to a private elite. Paper fiat currency replaced gold and silver. Wall Street financiers were able now to tap an unlimited supply of fiat money at no cost.

Yet, as Senator Townsend stated: "This bill did not originate in any party platform. The people have not expressed themselves on it anywhere and at any time."[1] An extraordinary lobbying effort surrounded the bill just as today in the 1990s an extraordinary amount of lobbying is brought forth by any attempt to curtail or even investigate the Fed. In 1913 the Democratic Party leadership came

under strong pressure from Woodrow Wilson and New York banking lobbyists to ensure that opposition did not water down the currency bill and allow other private interests to become stockholders.

Witness the complaint of Senator Gilbert Minell Hitchcock, an independent-minded gentleman from Nebraska and publisher of the *Omaha World Herald.* The Bill had come to the Senate from the House:

Mr. HITCHCOCK: "Sacred document" as it came from the House, of which, as I have said, we were forbidden to dot an "i" or to cross a "t."

Mr. OWEN: By whom?

Mr. HITCHCOCK: And which we were commanded to pass without a hearing and without much investigation.

Mr. POMERENE: Mr. President, I have been around these hallowed precincts for some time, and I have not heard that anybody has forbidden anybody else to change his views or to criticize any bill that came from the House, or any bill that originated here. Anyone has a right to change his view. The Senator himself has changed his view a number of times. I say that not to his discredit, but simply for the purpose of showing that he has been a free moral agent all these weeks.

Mr. HITCHCOCK: Mr. President...

Mr. OWEN: The Senator from Nebraska did not tell us by whom he had been ordered not to dot an "i" nor cross a "t," and I would be glad if the Senator would disclose that valuable information, unless it is confidential with the Senator.

Mr. HITCHCOCK: I think I will leave that for the country to judge. I will take my chances on it.

Mr. OWEN: If the Senator is content to leave that as an insinuation, it is for the Senator to do so.

Mr. HITCHCOCK: I will take that liberty.[(2)]

On September 18, 1913 the Glass Bill, the house version of the Morgan central banking bill, passed the House of Representatives by an overwhelming margin of 287 to 85. *Most Congressmen had no idea what the bill was about.* There were no amendments. Members voted for or against, and only the brave voted against. This Glass bill was named after Congressman Carter Glass of Virginia (1858-1946) - a banker (a director of the United Loan and Trust and the Virginia Trust Company).

The Glass Bill then went to the Senate and became the Owen Bill after Senator Robert Latham Owen (1856-1947) of Oklahoma, Chairman of the Senate Finance Committee -and a banker (a major stockholder in the First National Bank of Muskogee).

The Senate took exactly 4 1/2 hours to debate and adopt the Owen Bill, 43 to 25. The Republicans did not even see the conference report. This is normally read to the floor. No member of the Senate could have known of its contents and some Senators even stated on the floor of the Senate that they had no knowledge of the contents of the Owen Bill.

At 6:02 p.m. on the same day the Bill was hurried through the Senate without discussion. President Woodrow Wilson signed the Federal Reserve Act of 1913 into law.

A detailed review of the Senate debate indicates the Senators had no details to discuss and every criticism went unanswered. Republican Senator Bristow (1861-1944) made bitter comments on the obvious conflict of interest:

> *My allegation is that this bill has been drawn in the interests of the banks; that the Senator from Oklahoma, as the chairman of the committee, is largely interested in banks; that the profits which will accrue to those banks directly will add to his personal fortune; that he has voted to increase the dividends on the stock of the regional banks, which will be paid to the member banks, from 5 per cent to 6 per cent; that he has voted against permitting the public to hold the stock of these regional banks and has insisted that it shall be held by the member banks; and that he has voted against giving the Government the control of the regional banks and in favor of the banks controlling the regional banks, and it is for him to say whether he has violated the rule laid down in Jefferson's Manual.*[3]

The Senate debate, for what it was worth without a conference report, culminated in a test of political strength on Monday, December 15, 1913. At this vote the amendments proposed by Senator Hitchcock - the only Democrat working against the bill - were tabled by a vote of 40 to 35.

Hitchcock's amendments were aimed to make the Federal Reserve System a government rather than a private monopoly, i.e., the control of the Money Trust would be placed in the Department of the Treasury.

It is interesting that the Senate would overwhelmingly refuse to place control of the money supply within the Treasury and prefer to hand it over to the House of Morgan. Colonel House had done his work well.

On rereading the lengthy rambling debate, the likelihood of price inflation was recognized. The argument was a common sense approach that without the discipline of limited gold and silver, the pressure of unlimited flat money would lead to price inflation. The only argument against was

a rather weak "sound bankers would not allow price inflation."

Note that we use the term price inflation. In 1913 the term inflation always referred to "currency inflation," i.e., expansion of the note issue. In the intervening decades the meaning has changed entirely. Today when the term inflation is used it *always* refers to price inflation, i.e., an increase in prices.

The key Senator warning of inflation (currency inflation) ahead was Senator Root, who oddly accused Bryan, the pro-silver populist, as the dominating influence behind the Federal Reserve Act (most unlikely, and a probable red herring).

However, Root did warn of currency inflation and financial panic but then defended the Glass-Owen bill on the grounds that no inflation could come about "unless the sound money men who run the banks brought it about."

Once again we have the Money power controlling the opposition, i.e., proclaiming arguments that can be easily countered while ensuring that the really potent criticisms do not see the light of day.

Today the irrefutable link between currency inflation and price inflation is buried in a confusion of academic double-talk and algebraic manipulation. Today's academic economists are so beholden to mathematical manipulation (with the deluding plea of rigorousness) that they have entirely overlooked fundamental economic truisms. With very few exceptions (Hillsdale College, Ludwig von Mises Institute at Auburn University), academic economic departments are willing pawns of the modern money trust or the Federal Reserve System. (This author can speak first hand of the abysmal ignorance of the UCLA Economics Department in the early 1960s).

The reply to Reed came from Senator Hitchcock, who pointed out that under the Bill, "the control of the currency

system of the country would have to be turned over to the bankers." Others like Senator Weeks were unconcerned on the grounds that "the United States has the most competent bank men in the world." But then, Weeks was a banker himself.

The last speech on this Monday afternoon came from Congressman Mann of Illinois, the Republican floor leader who made the rather odd assertion that the U. S. was in the midst of a financial and industrial panic which demanded passage of the Federal Reserve Act.

Tuesday, December 16, 1913

In Tuesday's Senate debate, Senator Root again emphasized the danger of inflation from the proposed Federal Reserve Act. Constant interruptions, according to the *New York Times* (December 17), suggest that supporters of the bill were publicly worried. They argued in reply that inflation was not possible if the securities issued were good government securities - to which Root replied:

> *That is neither here nor there so far as my criticism of the bill is concerned. My objection is that the bill permits a vast inflation of our currency and that inflation can be accomplished just as readily and just as certainly by loans of the Government paper on good security as upon bad security...*

emphasizing the point that;

> *no one denies that in the past from time to time great commercial nations have found themselves moving along a tide of optimism which, with the facilities of easy money has brought them to a point of most injurious and serious collapse.*

Root reinforced his "tide of optimism" argument as follows,

> *...judgement becomes modified by the optimism of the hour and grows less and less effective in checking the expansion of business as the period of expansion goes on.*

He clinched the argument:

> *...instead of doing our duty as the responsible legislative branch of the Government of the United States, we are shirking that duty and throwing it upon a subordinate agency of the government.*

Unfortunately, Root did not push his argument to the limit, i.e., that this "subordinate agency of government" as he called it, was in effect going to be a private money monopoly of national bankers.

The general response to warnings of inflation was to cite the existence of a gold reserve backing for the money supply: proposed at 33 1/3 percent. For example, Senator Williams of Mississippi claimed that the great inflation feared by Senator Root was only a "bare mathematical possibility." Why? Because, argued Senator Williams, "no President conceivably would appoint one member of the board who believed in fiat money." Eighty years later, Senator Williams to the contrary, *every* single member of the Federal Reserve Board and its Regional Banks is an ardent believer in fiat money and an adversary of gold! In President Wilson's era it was impossible to conceive that the role of gold could ever cease. In President Clinton's era it is impossible for policy makers to visualize that gold has any role at all.

Wednesday, December 17, 1913

On Wednesday the powerful behind-the-scenes pressure for the Federal Reserve Act surfaced when the White House

announced that it expected the Senate to pass a currency bill before Saturday, that the House would accept this Senate version of the bill without changes and the bill would then go to the President for signature on Christmas eve. The flaw with this hurry-up scenario was that on Wednesday Senator Root's warnings about price inflation had some effect and a Democratic Party caucus was called, during the short dinner recess in the evening, to consider two of Root's proposals: (a) that the note issue should be limited by law and (b) that the gold reserve should be increased to 50 percent with a heavy tax on "depletions" below this level.

After discussion the note limitation amendment was rejected, but the caucus did adopt a proposal to increase the gold reserve to 40 percent while requiring that a portion of regional reserve bank earnings be set aside as a gold reserve. It is interesting to note that the Democratic majority was well aware of the discipline of gold and it was not the intent of Congress in 1913 in any way to reject, or even limit this discipline. In brief, the present day attempt to demonetize gold by phasing it out of the monetary system was not only rejected by the Congress of 1913 but the dangers of any such demonetization were recognized as ominous for the welfare of the United States.

Even after the caucus, criticism was to be heard from a few Senators. Senator Crawford of South Dakota didn't like the private monopoly aspects at all:

> *...you are simply creating a bank of big bankers, a bank to help big banks, but for which you assess the little banks to get the capital. The little banks are simply commanded to carry wood and water for the big banks. You say to the Vanderlips and the Hepburns and the Morgans and the Reynoldses, "come in with your short term paper and get the money" but you say to the Smiths and*

the Browns and the Joneses from the small country districts, "go somewhere else with your long term farmers paper; we cannot discount it."

The intriguing aspect of the Wednesday evening is that while a majority of Congress understood more or less the idea that the system would be inflationary, they were apparently unwilling to bring themselves to vote against the bill.

Thursday, December 18, 1913

By Thursday effective opposition had crumbled, and to speed passage the Senate operated under a 15-minute rule. By this device half a dozen Hitchcock amendments were disposed of and others proposed in the previous night's Democratic Party caucus given little attention. The debate records serious doubts and differences of opinion coupled with predictions that the bill would become law before Christmas and signed on Monday or Tuesday of the following week. The opposition was sidetracked. Problems were overlooked. Fundamental questions, including the possibility of inflation, were bypassed by the leadership. One senses almost an air of panic - to pass a "currency bill," at whatever cost. Consequently, although the bill was known to be defective, the *New York Times* for Friday, December 19 ran its reporting under the head, **"Near end of tight on currency bill."** The White House promptly announced that it was considering names for Governor of the Federal Reserve Board. The first name to be floated out of the White House was that of James J. Hill of the Great Northern Railroad. It was proposed by international banker James Speyer - confirming the behind-the-scenes activity of bankers.

Friday, December 19, 1913

On Friday, December 19, the Friday before Christmas when Congressional thoughts were more on Christmas trees than money trees, the Senate passed President Wilson's currency bill without further ado by an overwhelming vote of 54 to 34. Every Democrat in the Senate, plus six Republicans and one Progressive Republican, voted for the Federal Reserve system. Against the Federal Reserve were 34 Republicans. As a sop to criticism, the bill included a so-called "radical amendment," i.e. that Congressmen could not serve on Federal Reserve Boards.

Bankers, not unexpectedly, were reported to be "relieved" by the passage of the bill - but not fully satisfied and still pressed for changes in committee. William A. Gaston, President of the National Shawmut Bank, spent some days in Washington in conference with members of the House and Senate Currency Committees and commented: *"...The prospective conference changes will make the bill more workable for the banks.-"*

Edmund D. Hulbert, Vice President of Merchants Loan and Trust Company, added to this: *"...on the whole it is a sound bill and will do much toward putting banking and currency on a sound footing."*[4]

W. M. Habliston, Chairman of the First National Bank of Richmond, stated, *"It will result in an elastic currency which will avert panics,"* and Oliver J. Sands, President of the American National Bank, commented that

> *The passage of the currency measure will have a beneficial effect upon the country at large and its operation will help business. It seems to me the beginning of an era of general prosperity....*

The only reported objection from bankers came from Charles McKnight, President of National Bank for Western Pennsylvania: *"It will do the country no good...."*

Saturday, December 20, 1913

After passage of the Owen bill in the Senate the measure was sent to a joint House-Senate conference to iron out the major differences between the Glass bill from the House and the Owen bill from the Senate. This conference excluded all Republican members. The conference then met for four hours on Saturday evening, December 20, at which time at least 20 (some say 40) major points of difference in the two versions were uncovered, in addition to minor disagreements in language requiring over 100 corrections. In most of these minor items the Senate yielded to the House. However, *none of the 20 (40) major differences were discussed in this Saturday evening conference, and it was generally agreed that Monday passage of the joint bill was extremely unlikely.* As reported by the *New York Times* (December 21, 1913), "The points seriously at issue embody practically all the substantial Senate amendments."

In an effort to work out some of the major differences, the conferees agreed to meet all day Sunday. Further, on this Saturday the full House met and refused to accept the Senate version of the bill by a vote of 294 to 59 and then proceeded to pass amendments binding on the House conferees.

By Saturday evening, December 20, 1913, the following were some of the principal major points of dispute between the House and the Senate and reflected significant, fundamental differences in the approach to a currency bill:

First - the number of regional reserve banks,

Second - the question of guarantee of deposits,

Third - the amount of gold reserve to be required against the circulating notes,

Fourth - the changes with respect to domestic acceptance in the case of domestic and foreign trade,

Fifth - the changes in the reserve provisions,

Sixth - the right of member banks to use the notes of the Federal reserve banks for reserve purposes,

Seventh - the status of the two percent Government bonds used as security for national bank notes,

Eighth - the Senate's provision with respect to an increase in national bank circulation.

This was the legislative position late Saturday night.

Sunday, December 21, 1913

Quite what happened on this Sunday in Washington, D.C. we shall never know for sure.

What we *do* know is that on Sunday morning the Senate-House conferees were faced with more than 20 (some say 40) fundamental differences on a critically important bill - a bill to affect the lives of every American then and in the future. Yet, the following Monday morning the *New York Times* (December 22) reported on the front page, "Money Bill may be law today." The *Times* reported that in some undisclosed way the House-Senate conferees had adjusted their differences. The "newspaper of record" put it this way:

> *With almost unprecedented speed, the conference to adjust House and Senate differences on the currency bill practically completed its labors early this morning (Monday 22nd). On Saturday the conferees did little more than dispose of the preliminaries, leaving forty essential differences to be thrashed out Sunday.*

The "almost unprecedented" speed in the conference probably occurred at a most unlikely time - between 1:30 a.m. and 4 a.m. Monday, December 22. Let's look at that critical Monday in more detail.

Monday, December 22, 1913

At midnight Sunday, December 21, either 20 or 40 (depending on the source) major points of disagreement required resolution. At 11 p.m. Monday, 23 hours later, the House voted 298 to 60 and passed the Federal Reserve Act. During this brief 23 hours the major differences were reconciled, worded, sent to the printer, set up in type, proofread, printed, distributed, read by every member of the House, discussed, pondered, weighed, deliberated, debated -and voted upon. This miracle of speediness, never equaled before or after in the U.S. Congress, is ominously comparable to the rubber stamp lawmaking of the banana republics.

Mon. Dec. 22, 1913	1:30a.m. - 4:30a.m.	House-Senate conferees adjust 20 (40) major differences in the two bills.
	4:30 a.m	Report handed to printers
12 1/2 hours from conference to printed report		
	7:00 a.m	Proofs read
	1:00 p.m.	Printed copies delivered from printers
	2:00 p.m	Printed report on Senate desks with notification of a meeting at 4 p.m.

	4:00 p.m.	Republican members of conference go to Conference room -to be told that a bill had already been concluded.
5 hours from printed final report to House vote.	6:00 p.m.	Printed conference report submitted to the House by Congressman Glass - most House members go to the restaurant for dinner while the bill is read (1 1/2 hours).
	7:30 p.m	Debate begins with a 20 minute speech by Glass.
	11:00 p.m.	The House votes 298 to 60 in favor of the Federal Reserve Act.

The manner in which the Federal Reserve bill was handled by the Democratic majority and specifically by banker-politician Senator Owen and banker-politician Carter Glass is reflected in a complaint on the Senate floor

by Senator Bristow of Kansas, the Republican leader, in which he explains why he would not sign the conference report:

> *Mr. LA FOLLETTE: Would it disturb the Senator to inform us who did participate in this conference and whether any Senator declined to participate?*
>
> *Mr. BRISTOW: As to those who participated in the conference I am not advised. I was a member of the committee of conference appointed by the President of the Senate, but I had no knowledge as to the meeting of the conferees until after the report as it is before us had been made, printed, and placed upon the desks of Senators. I was then notified by the chairman of the committee that there would be a meeting of the committee of conference at 4 o'clock, two hours after this report of the committee of conference of the two Houses of Congress on the bill (H.R. 7837) to provide for the establishment of Federal reserve banks, for furnishing an elastic currency, affording means of rediscounting commercial paper, and to establish a more effective supervision of banking in the United States, and for other purposes, had been placed upon my desk. I, in company with the Senator from Minnesota (Mr. Nelson), visited the room where we were invited to appear. We found the chairman of the committee and the Democratic members of the committee of conference there, and were given to understand that they had perfected the conference report. We were then invited to express our opinion of it, but I preferred to express my opinion where it might appear in the* Record, *rather than in the*

privacy of the committee room, and that I shall undertake to do this morning.

I see this report is signed by the Democratic members of the committee. Of course, I did not sign it because I was not invited to sign it, and I should not have done so, anyway, for I did not know at the time the report was prepared what it contained, and I had no opportunity of ascertaining what it contained.[(5)]

In brief, the Republican leader did not know what was in the Act nor was he given the opportunity to find out what was in the Act. Later in debate Bristow directly accused Owen of inserting provisions for the profit of his own bank.

There were major abuses of the legislative process in the passage of the Federal Reserve Act - sufficient to void the act. If we have a society that lives by rules then there is no Federal Reserve Act.

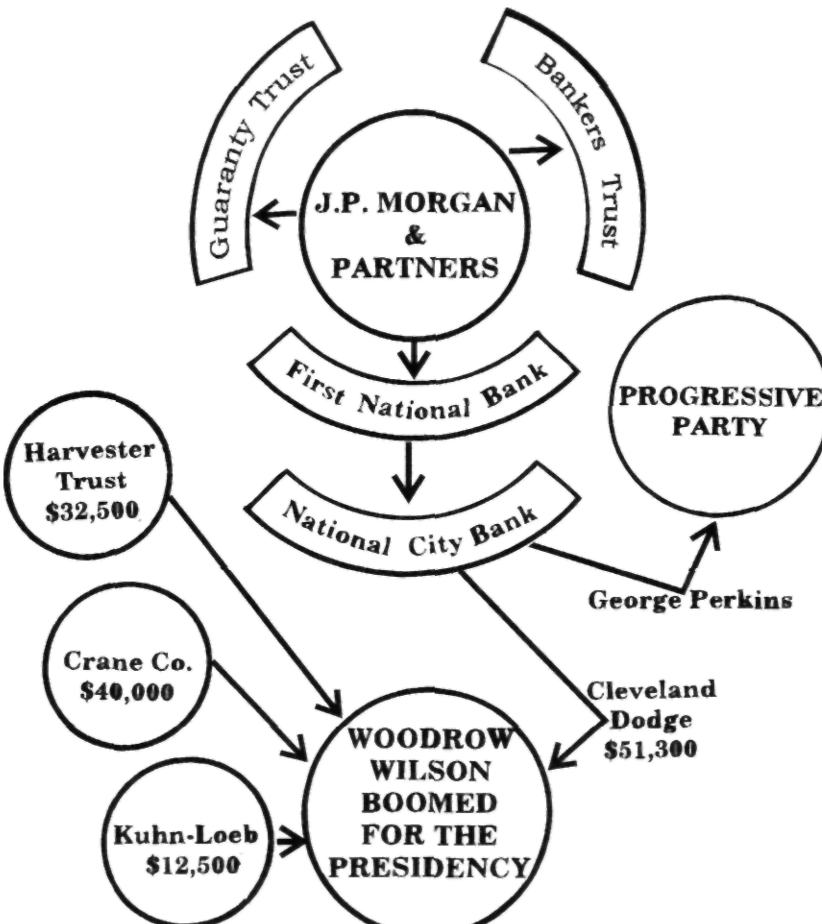
Both Finance Committee Chairmen, Congressman Glass and Senator Owen, had conflict of interest with personal banking interests and stood to gain from the bill. Meetings to discuss the bill were held without knowledge of committee members. Decisions were arrived at and established without the knowledge and agreement of members. Major sections of the bill were settled without consultation and railroaded into final form. There is indisputable evidence of outside banking influence upon Congress.

The Federal Reserve Act is, even from our superficial investigation, *suspect legislation.* Most of Congress had no idea of the contents of the final bill and certainly none had the opportunity to reflect and consult with the broad base of the electorate. A private money monopoly was granted to a few national bankers under suspect circumstances.

As Congressman Lindbergh stated on December 23, 1913:

This Act established the most gigantic trust on earth. When the President signs this bill, the invisible government by the Monetary Power will be legalized. The people may not know it immediately but the day of reckoning is only a few years removed....

Chart 9-2: STAGE TWO: WOODROW WILSON IN DEBT TO THE MONEY TRUST



Endnotes to Chapter Nine:

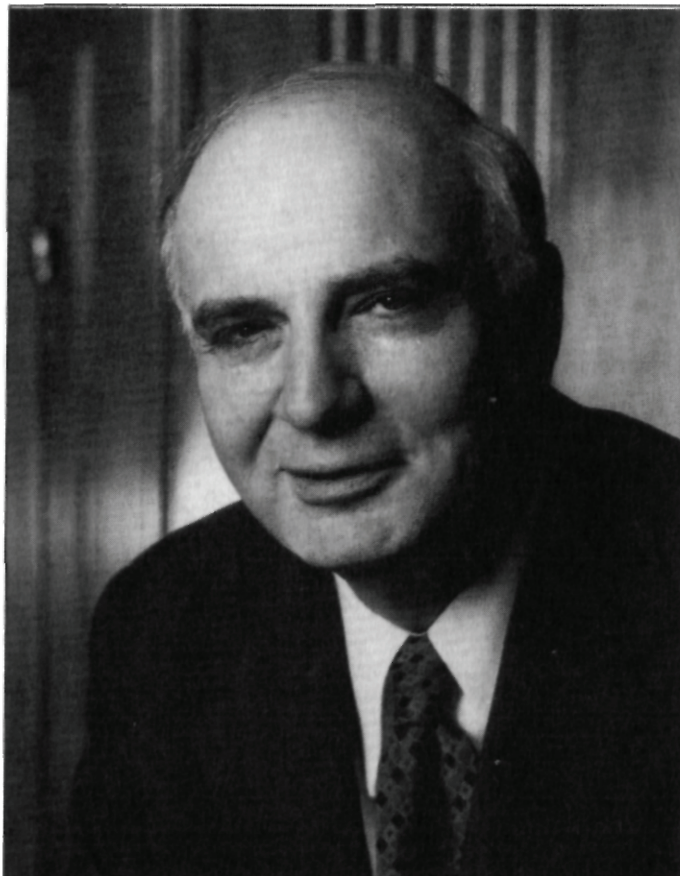
(1) *Congressional Record:* Senate, February 8, 1915.

(2) *op. cit.*

(3) *op. cit.*

(4) *New York Times*, December 20, 1913.

(5) *Congressional Record:* Senate, December 23, 1913, p. 1468.



Paul Volcker, employee of Chase Manhattan Bank and Chairman of the Federal Reserve System in the 1970s.

Chapter Ten:

THE FEDERAL RESERVE TODAY

Today in the 1990s the Federal Reserve quietly, and protected from any public examination or accounting, continues its never challenged monopoly of the money supply.

Its twofold function is: (a) to regulate the flow of credit and money for specific economic objectives, and (b) to supervise commercial banks, i.e., mostly itself.

The central policymaking body of the FRS is the Board of Governors appointed by the President and confirmed by the Senate. Each of the 12 regional banks has its own directors. These are divided into three classes. Class A directors represent the banking system, Class B directors represent industry and Class C, the public, supposedly.

In fact, Class C directors have *never* represented the public. It is not at all unusual for a banker to serve a term as a Class A director then go on and serve another term as a Class C director.

The Federal Reserve is a private system owned by the banks (see figure below). Fed control over money is a private monopoly granted by Congress.

It's so powerful that no Congressman dare ask simple questions.

Of course, there is good reason why the Fed doesn't want citizens poking around asking questions. It is a moneymaking machine *literally* — and this is freely admitted by the U. S. Government. Here is an official statement:

> *Where does the Federal Reserve get the money with which to create bank reserves'?*
>
> *It doesn't "get" the money, it creates it. When the Federal Reserve writes a check it is creating money. This can result in an increase in bank reserves - a demand deposit or in cash. If the customer prefers cash he can demand Federal Reserve Notes and the Federal Reserve will have the Treasury Department print them. The Federal Reserve is a total moneymaking machine. It can issue money or checks. And it never has a problem in making its checks good because it can obtain $5 and $10 bills necessary to cover its checks simply by asking the Treasury Department to print them.* (Source: Money Facts, published by the Committee on Banking and Currency, 1964, U. S. Congress.)

Back in 1913 when the Federal Reserve Act was passed, the idea of a Federal Reserve System - in effect a central bank - was promoted to the American people by both bankers and President Woodrow Wilson as an institution *outside the control and influence of bankers* - on the grounds that monetary policy was too important to be left in the hands of private interests. However, in fact, the institution is completely dominated, and always has been, by major New York bankers.

The Fed lied!

The very first meeting of the Federal Reserve Bank of New York on October 5, 1914, was held in the offices of the Bank of Manhattan, 40 Wall Street, New York. Bank of

Manhattan later merged with Chase National to become Chase Manhattan Bank.

Skipping intervening history for lack of space, we also find that in the mid-1970s, the leading Class A director of the New York Fed was none other than Chairman of the Trilateral Commission - David Rockefeller. David's term expired in 1976 and he was replaced by the chairman of Morgan Guaranty Trust. However, David's influence was perpetuated in two ways: by appointment of Trilateral Paul Volcker as president of the New York Federal Reserve Bank, a permanent position not subject to the necessity of re-election at periodic intervals and appointment of G. William Miller (member of the Chase Advisory Board) as Chairman of the Federal Reserve System, replacing Trilateralist Arthur Burns.

Moreover, others (of the nine) Federal Reserve Bank of New York directors had links to Chase Manhattan Bank. For example, the three Class B directors were Maurice F. Granville, Chairman of the board of Texaco; William S. Sneath, Chairman of the Board of Union Carbide; and John R. Mulhearn, President of New York Telephone.

Let's look briefly at the career of Paul Volcker, former president of the New York Federal Reserve Bank. In 30 years, Volcker has divided his time almost equally between the Federal Reserve Bank, Chase Manhattan Bank and sub-cabinet positions in Washington, D.C. - a perfect example of the so-called "revolving door" and the Trilateral objective of "blurring the distinctions between public and private institutions" for Trilateral advantage.

Paul Volcker was born in 1927 in New Jersey. His first degree is from Princeton, his M. A. from Harvard and his post-graduate work from the London School of Economics -that well known home of British socialism. In 1952, straight from the London School of Economics, Volcker joined the Federal Reserve Bank of New York as an economist. He stayed for five years, until 1957, at which time Volcker moved

from Liberty Street to become an economist for Chase Manhattan Bank, where he stayed for four years, until 1961. In 1961, Volcker went to the Treasury Department in Washington, thus completing the first round of his three stop "revolving door." Appointed as Deputy Undersecretary for Monetary Affairs, he held that job just long enough to learn the ropes in Washington, and returned to New York, to Chase Manhattan Bank, as Vice President in charge of Planning. After three years in that post, Volcker left in 1969 to become Undersecretary for Monetary Affairs at the U. S. Treasury Department. After five years, Volcker completed the second round of his "revolving door" with an appointment as President of the Federal Reserve Bank of New York.

Volcker is also a member of the Council on Foreign Relations, the Rockefeller Foundation and the American Friends of the London School of Economics.

If Paul Volcker was a solitary phenomenon, we could make no case for Trilateral control of the Federal Reserve System. In fact, the Volcker phenomenon is one of a dozen parallel situations.

The Revolving Door Career of Trilateral Paul Volcker

1952-57 Economist, Federal Reserve Bank of New York 1957-61 Economist, Chase Manhattan Bank 1962-63 U.S. Treasury 1963-65 Deputy Undersecretary for Monetary Affairs,
U.S. Treasury 1965-68 Vice President for Planning,
Chase Manhattan
Bank 1969-74 Undersecretary for Monetary Affairs,
U.S. Treasury 1975 President, Federal
Reserve Bank of New York

The Federal Reserve Board itself is appointed by the President.

The original Federal Reserve Board represented those very interests that Woodrow Wilson assured the American public would *not* be represented in the Federal Reserve System. The Chairman of the Board was William G. M'Adoo, a prominent Wall Street figure, former Secretary of the Treasury - and Woodrow Wilson's son-in-law. A key appointment was Paul M. Warburg, the German banker brains behind the Federal Reserve System. The Warburg family controlled the Manhattan Bank. Also on the Board was Charles S. Hamlin, of the Carnegie Endowment for International Peace. Another member of the original board was banker W. P. G. Harding. Franklin D. Roosevelt's uncle, Frederic A. Delano, was Vice Governor of the board - very appropriate because the "liberal" Roosevelts came from an old-time New York banking family. John Skelton Williams, President of the Richmond Trust Company was another member. Thus, the initial makeup of the original Board of Governors reflected the elite and the banking interests and from that time on the Federal Reserve System has continued to reflect those interests.

Trilateral Arthur M. Burns was Chairman of the Board from 1970 to 1978, a dominant voice who pretty much dictated Federal Reserve policy. According to Board member and Trilateral Andrew Brimmer, *"Arthur Burns has had a direct hand in selecting every board member."*

Trilateral dominance of the domestic monetary system suggests we examine Trilateral world order objectives for a possible linkage.

Trilateral policy makers and analysts fully realize that the world monetary system, with created money as reserve assets, is in a state of collapse. The *Triangle Papers* dealt with the world monetary systems *(Towards a Renovated World Monetary System),* and was authored by Richard N. Cooper

(later Undersecretary of State for Economic Affairs). Motoo Kaji, Professor of Economics at Tokyo University (author of a book in Japanese, *Gendai No Kokusai Kinyu - Contemporary International Monetary Affairs)* and Claudio Segre, a French banker with *Compagnie Europeenne de Placements.*

Triangle Paper No. 1 identified two world problems: (a), how to achieve full employment without "rapid" inflation, and (b), how to combine "managed" national economies into a "mutually beneficial world economy."

It is vital to hold Trilateralist assumptions in mind. Trilateralists are not looking for a solution to the world monetary problems: Trilateralists are looking for a "solution" consistent with, and which will promote, their own objectives. These objectives are: (a), a managed economy, i.e., managed by Trilaterals; and (b), a "new world order" of these managed economies.

Once again we find manipulation of a problem to achieve Trilateral objectives. Almost on a daily basis we find reflections of the struggle to keep a hold on the U.S. monetary system in order to achieve a world federal reserve system.

Fed Monetizes Foreign Debt

In the early 1980s the Fed, through Paul Volcker, conned Congress into another vast expansion of monetary credit through monetization of *foreign* debt instruments.

The so-called Depository Institutions Deregulation and Monetary Control Act of 1980 is a total misnomer. In practice it brings all banks under Fed control whether they like it or not and gives the Fed power to vastly increase fiat money by monetizing foreign debt, much of it worthless (see attached reproduction from the Bill).

Once again the Fed did everything possible to avoid publicity. Only one Congressman, Dr. Ron Paul, spotted the clause to monetize foreign debt. To avoid any publicity, the

Chairman of the Banking Committee quickly agreed to Paul's request to remove the clause: "You want it removed? We'll take it out."

Then we get a repeat of the unconstitutional conduct surrounding the 1913 FRS Act. The House voted for the Bill *without* the clause - but in Conference Committee it was quietly re-inserted *and became part of the Act as finally approved by both Houses.* We doubt any Congressman knew what was included in the bill as finally passed - that's the influence of the Fed today.

Quietly, without fanfare - and with the vast bulk of citizens unaware - the world bankers have been building an international money machine: an international Federal Reserve System with power to control the world's financial and economic system.

The elements of this global money machine can be traced back to the League of Nations and the Bank of International Settlements in the 1920s. After World War Two the International Money Fund and the World Bank were instituted to globalize credit and loans.

Then in the late 1950s came the Eurodollar market, now a vast international market dealing in deposits and credits denominated in dollars outside the United States. The Eurodollar system may in the light of history come to be seen as a first step in a global dollar system. Eurodollars are dealt in by banks not resident in the U.S. and by institutions not subject to U.S. banking regulations and restrictions.

Paul A. Volcker, former Fed Chairman, has made the role of appointments to the Federal Reserve Board clear, - to support the Chairman's policy.

In reference to Clinton appointment Alan Blinder, Volcker commented:

> *I think a vice chairman has a responsibility for supporting policy in public statements. If he has*

> *any real difference of opinion at the end of the day that shouldn 't be disguised but as much as possible he should support the institution.*

In brief, the policy created by New York bankers should prevail, whatever the personal opinions of the Vice Chairman of the Board or any lesser Director. *Which is about as close to a closed shop monopoly as one can get.*

In replying to criticism that he spoke out too much, Alan Blinder made a revealing comment: *"When we take actions, they are not reversible by any other body of government..." New York Times*, September 26, 1994.

So here we have it. The Federal Reserve is a private monopoly of money credit created by Congress under highly questionable circumstances which is beholden to the Chairman of the Board and whose decisions cannot be changed by Government or anyone else.

A free society under the rule of law? The United States has quietly become a hostage to a handful of international bankers. And just dare any Congressman challenge Fed authority!

Federal Reserve Bank of San Francisco Claims ***"Some people think we're a branch of the Government. We're not. We're the banks' Bank."***

This confirms our discussion in this book.

July 16, 1979 COMPUTERWORLD p - 139

position announcements | position announcements

Programmers

The Federal Reserve Bank of San Francisco. Some people still think we're a branch of the Government. We're not. We're the banks' Bank.

At the San Francisco Fed, our Computer Services Group continues to be a model for the National Federal Reserve System. We are using 2 IBM System 370/158's running under MVS/MP. Our software installed includes IMS DB/DC, TSO CICS. Our branch data centers all run DOS/VS on IBM System 370/135's & 370/145's.

How can the San Francisco Fed impact your computer career? Since the Fed is where all the bank regulations begin, our positions will provide you with operating perspective and financial application exposure not available anywhere else.

Applications Analyst Programmer

You'll assume responsibility for design through implementation of small to medium scale automation projects. You should have 2+ years in systems development, working knowledge of OS, JCL, COBOL and IMS and good oral and written communication skills.

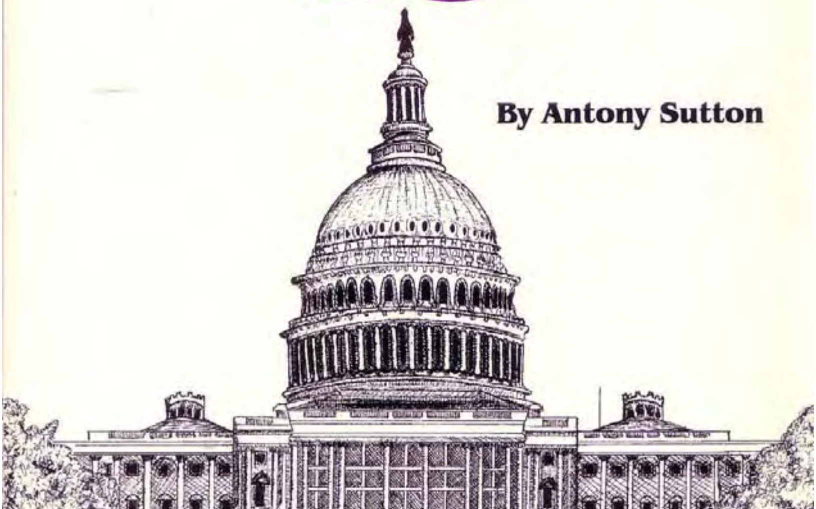
Systems Programmer/Database Analyst

You will work with application development teams performing database design and administrative functions. You should have 8+ years in data processing, with 3+ years as a database analyst, experience working with OS/MVS-SNA-IMS DB/DC software equipment. You should be aware of IMS/VS facilities productivity aids, programming languages, knowledge of performance, recoverability and security factors in database design.

If you recognize this opportunity for advancement in your career, we'll be pleased to receive your resume addressed to K. Campbell, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco, CA 94120. An equal opportunity employer m/f/h.

Federal Reserve Bank of San Francisco

TRILATERALS OVER AMERICA



By Antony Sutton

CONTENTS

CHAPTER ONE:
WHAT IS THE TRILATERAL COMMISSION?

The Trilateral Commission was founded in 1973 by New York banker David Rockefeller, then Chairman of Chase Manhattan Bank, and Harvard University academic Zbignieuw Brzezinski, later to become National Security Assistant to President Jimmy Carter.

What it is depends on one's viewpoint. According to the Trilateral Commission itself:

> The Trilateral Commission was formed in 1973 by private citizens of Western Europe, Japan and North America to foster closer cooperation among these three regions on common problems. It seeks to improve public understanding of such problems, to support proposals for handling them jointly, and to nurture habits and practices of working together among these regions.

However, in populist political circles the Trilateral Commission is a transparent device to achieve New World Order, which sound suspiciously like other dictatorial "World Orders." From this viewpoint Trilaterals are enemies of freedom and intent on gaining a monopoly of world political power for their own benefit.

Twenty years ago the Trilateral Commission had very little history; one could not track its intentions from its actions.

Today, in 1994, one can look at 20 years of Trilateral history and more accurately assess their objectives in the light of past political actions and member appointments to various Administrations.

The original 1972 membership chosen by Rockefeller and Brzezinski comprised about 200 members worldwide of whom about one-third were North Americans, one-third Europeans and one-third Japanese. In 1993 this had expanded to about 325 members worldwide, termed "distinguished citizens" by the Trilateral Commission but in fact representing an extremely narrow spectrum of world opinion and culture and completely unelected or representative of anything but David Rockefeller's personal views.

From the start the Commission has been termed "private" and "unofficial" with the stated objective to "draw together the highest level unofficial group possible to look together at the common problems facing our three areas" and to "foster cooperation."

Throughout Trilateral Commission's reporting one finds a consistent confusion between "private" and "public." The Commission is promoted as a private group founded by a private citizen. David Rockefeller. Yet its objectives and operations are public policy oriented.

In the words of the Trilateral Commission:

> The full Commission gathers once each year—in Lisbon in 1992, in Washington in 1993, in Tokyo in 1994. In addition to special topical sessions and reviews of current developments in our regions, a substantial portion of each annual meeting is devoted to consideration of draft reports to the Commission. These reports are generally the joint product of authors from each of the three regions who draw on a range of consultants in the course of their work. Publication follows discussion in the Commission's annual meeting. The authors are solely responsible for their final text. A separate publication contains the principal presentations at the annual meeting. Occasionally informal papers appear from regional activities.

> Each regional group has a Chairman and Deputy Chairman, who all together constitute the leadership of the Commission. The Executive Committee draws together a further 36 individuals from the wider membership.

In brief, this group of private citizens is precisely organized in a manner that ensures its collective views have significant impact on public policy. They meet, they review, they discuss, they report and after this discussion make their recommendations public.

For what purpose? The Trilateral Commission would hardly expend all this energy and funding for an academic exercise. . the objective has to be to establish public policy objectives to be implemented by governments worldwide.

Further, the members are not elected. . they are chosen. The Chairman of the Executive Committee, the committee that chooses members, is David Rockefeller, who is also founder and Chairman of the overall Trilateral Commission. The entire structure reflects Rockefeller choices, not impartial or representative choices.

This phenomenon of a David Rockefeller front organization has not been lost on observers. On July 27,1979, radio station KLMG, Council Bluffs, Iowa, ran an interview of George Franklin, then Coordinator of the Trilateral Commission. This author was a guest on the program. Here from the transcript is how Franklin answered the question of Rockefeller influence.

> COMMENTATOR: Why is it, in the Trilateral Commission that the name David Rockefeller shows up so persistently, or [the name of] one of his organizations?
>
> FRANKLIN: Well, this is very reasonable. David Rockefeller is the Chairman of the North American group. There are three chairmen: one is [with] the North American group, one is [with] the Japanese group, and one is [with] the European group. Also, the Commission was really David Rockefeller's original idea.

Franklin is aware of the Rockefeller criticism and tries to pass it off as unimportant, as "reasonable." The fact that Rockefeller is personally involved with member selection suggests that the Commission was formed to advance family or personal objectives. If not, then Rockefeller would have allowed others to make such choices.

The commentator then switches the discussion to the then current Carter Administration, in which co-founder Zbignieuw Brzezinski is National Security adviser to Carter and numerous other Trilaterals had been appointed. COMMENTATOR: On President Carter's staff, how many Trilateral Commission members do you have?

FRANKLIN: Eighteen.

COMMENTATOR: Don't you think that is rather heavy?

FRANKLIN: It is quite a lot, yes.

COMMENTATOR: Don't you think it is rather unusual? How many members are there actually in the Trilateral Commission?

FRANKLIN: We have 77 in the United States?

COMMENTATOR: Don't you think it is rather unusual to have 18 members on the Carter staff?

FRANKLIN: Yes, I think we chose some very able people when we started the Commission. The President happens to think well of quite a number of them.

This author then pursued with Franklin the question of membership choice and Rockefeller influence. Franklin denies the obvious. It is obvious to any reasonable person that the Trilateral Commission is a Rockefeller organization formed to advance his interest and that it most certainly has significant influence. Influence is the raison d'etre for the Trilateral Commission.

SUTTON: DO you believe that the only able people in the United States are Trilateralists?

FRANKLIN: Of course not.

FRANKLIN: Well, when we started to choose members, we

did try to pick out the ablest people we could and I think many of those that are in the Carter Administration would have been chosen by any group that was interested in the foreign policy question.

SUTTON: Would you say that you have an undue influence on policy in the United States?

FRANKLIN: I would not, no.

SUTTON: I think any reasonable man would say that if you have 18 Trilateralists out of 77 in the Carter Administration you have a preponderant influence. FRANKLIN: These men are not responsive to anything that the Trilateral Commission might advocate. We do have about two reports we put out each year and we do hope they have some influence or we would not put them out.

SUTTON: May I ask another question?

FRANKLIN: Yes.

SUTTON: Who financed the Trilateral Commission originally?

FRANKLIN: Uhh. . . The first supporter of all was a foundation called the Kettering Foundation. I can tell you who is financing it at the present time, which might be of more interest to you.

SUTTON: IS it not the Rockefeller Brothers' Fund?

FRANKLIN: The Rockefeller Brothers' Fund? The North American end of the Commission needs $1.5 million over the next three years. Of this amount, $180,000 will be contributed by the Rockefeller Brothers' Fund and $150,000 by David Rockefeller.

COMMENTATOR: Does that mean that most of it is being financed by the Rockefellers?

FRANKLIN: NO, it means that about one-fifth of the North American end is being financed by the Rockefellers and none of the European and Japanese end

Moreover, the Rockefeller family had long-standing interests

in several public policy organizations of highly significant influence. The Trilateral Commission only extended the work and influence of the Council on Foreign Relations chaired for many years by the self-same David Rockefeller.

Another Rockefeller family-sponsored and financed group was the Commission on Critical Choices whose task was to identify the "critical choices" facing the United States at the turn of the 21st Century. Once again we have a commission appointed by the Rockefellers, to decide what is best for all Americans.

> THE COMMISSION ON CRITICAL CHOICES FOR AMERICANS is a nationally representative, bipartisan group of 42 prominent Americans, brought together under the chairmanship of Nelson A. Rockefeller. Their assignment: To identify the critical choices which will confront America as it embarks on its third century as a nation and to determine the realistic and desirable objectives this nation can achieve by 1895 and the year 2000.
>
> The Commission was established in the American tradition of voluntary effort. It is 42 citizens who have joined together to help determine the facts about the future of America.
>
> Because of the complexity and interdependence of issues facing the world today, the Commission organized its work into six study panels, which emphasize the interrelationships of the critical choices rather than studying each one separately.
>
> The six study panels are:
>
> Panel I — Energy and Its Relationship to Ecology, Economics and World Stability;
>
> Panel II — Food, Health, World Population and Quality of Life;
>
> Panel III — Raw Materials, Industrial Development, Capital Formation, Employment and World Trade.
>
> Panel IV — International Trade and Monetary Systems, Inflation and the Relationships Among Differing Economic Systems;
>
> Panel V — Change, National Security and Peace, and

Panel VI — Quality of Life of Individuals and Communities in the U.S.A.

In brief, the Commission is a Rockefeller study group, funded in large part by a Rockefeller organization.

> The Third Century Corporation, a New York not-for-profit organization, was created to finance the work of the Commission. Since the start of its activities in the fall of 1973, the Corporation has received contributions and pledges from individuals and from foundations well-known for their support of public interest activities.

The Drive for New World Order

While publically portrayed as a high level discussion group, the Trilateral Commission is dedicated to New World Order. The most comprehensive statement of New World Order is to be found in Trilateral co-founder Brzezinski's book, Between Two Ages: America's Role in the Technetronic Era, published just before the Trilateral Commission was founded.

This book is the blueprint for a "more just and equitable world order." In one sense it is not much different to scores of other plans for political control that go back to Greek times and include More's Utopia, Karl Marx, V.I. Lenin, Adolf Hitler, Mao... all are schemas for political control.

The only document in history that has rigidly defined and restrained government control is the Constitution of the United States, unique because it limits government power. Brzezinski's book dismisses the Constitution... for the same reasons that all other political documents have dismissed freedom, i.e. because it is "inadequate." However, Brzezinski's rejection of the Constitution is on unique grounds—"the age cannot bear the problems of assimilating the old into the new"—yet many of the problems are created by the self-same Trilateral members who now propose solutions.

According to Brzezinski mankind has moved through three states of evolution and we are now in the middle of the fourth

and final state. In some ways the secular Brzezinski analysis is parallel to Jose Arguelles' The Mayan Factor, a mystical calendar of the world divided into periods. According to The Mayan Factor, our world is also presently in the final stages of dissolution, culminating in 2012 when it passes to higher levels of consciousness.

Back to Brzezinski, co-founder of the Trilateral Commission. The first global stage is described as "religious" and combines "a heavenly universalism provided by acceptance of the idea that man's destiny is essentially in God's hands" with an "earthly narrowness derived from massive ignorance, illiteracy and a vision confined to the immediate environment."

The second stage is nationalism, and defined as "another giant step in the progressive redefinition of man's nature and place in our world." In Arguelles this is paralleled as "materialism."

The materialist philosophy of Marxism comprises the third stage. For Brzezinski "this represents a further vital and creative stage in the measuring of man's universal vision." Neither David Rockefeller nor Zbignieuw Brzezinski cite the technological and moral weaknesses and excesses of Marxism. They view it as "creative" and a significant factor in man's maturity.

In reality, — and history has now demonstrated what some of us argued for years — Marxism is a hollow sham, a gigantic con job, a device for New York capitalists to control a country through technology and debt while pretending the opposite.

It was American trade unions, especially under Samuel Gompers and George Meany, that recognized the phoniness of Marxism. Wall Street and many academics who should have known better were the promoters, allies and apologizers for Marxism. Capitalists, because a monopoly state offers the opportunity of monopoly markets and monopoly profits without any uncomfortable criticism from the street. Academics, because Wall Street-financed Universities offer opportunities for self-advancement and self-aggrandisement.

After Marxism, according to Brzezinski, comes the fourth and final stage, the Technetronic Era or the idea of rational

humanism on a global scale, the result of American-Communist cooperation. Here is the Brzezinski view of the contemporary structure which is a tortured framework to present a supposed requirement for a New World Order political structure:

> Tension is unavoidable as man strives to assimilate the new into the framework of the old. For a time the established framework resiliently integrates the new by adapting it in a more familiar shape. But at some point the old framework becomes overloaded The new input can no longer be redefined into traditional forms, and eventually it asserts itself with compelling force. Today, though, the old framework of international politics — with their spheres of influence, military alliances between nation-states, the fiction of sovereignty, doctrinal conflicts arising from nineteenth century crises — is clearly no longer compatible with reality.

Interestingly the Brzezinski estimate of change is significantly in error and this error will undoubtedly affect the nature of the world to come. New World Order is not inevitable.

Firstly, the current trend is towards small political units reflecting ethnic and national groups. Within the United States we have proposals for independent States and to divide States into two or three segments as large units become ungovernable and "overloaded." The framework is "overloaded" but the reaction is smaller units, not larger, ungovernable units. This is precisely the opposite reaction proposed by the Trilateral Commission.

Secondly, when it comes to "rational humanism" Brzezinski is again way off contemporary evolvement. Religion is coming back and in a more spiritual form. The older churches, institutionalized churches, are suffering losses, particularly the 2000-year-old Catholic church. However, there is a revival of religion through modern technology, i.e. radio churches and TV evangelists. Further there is a spiritual evolvement of extraordinary proportions in non-traditional forms such as

meditation and communal groups. Some of these groups, such as the Church Universal and Triumphant in Montana, are now established and accepted by traditional areas.

This is a far cry from "humanism" and non-religion! However, it is in technology that we find departures from the "new world" proposed by Brzezinski and adopted by David Rockefeller and the Trilateral Commission. The technology of the future has an emerging spiritual component. The physics of the future, post-high energy physics and the vacuum energy physics of the 21st century is also a spiritual technology. The Eastern concepts of Buddhism and the material world are to an extent merging with the vacuum physics of the West, Zen and western physics are merging in a manner that confounds the ideas of the Trilateral Commission. Agreed that this new input cannot be defined in traditional terms, in this limited manner Brzezinski is correct but the new framework is not a rigid New World Order. Paradoxically. New World Order turns out to be a reflection of the old traditional framework! Brzezinski and Rockefeller propose to replace the old framework with a new framework. . but one under their control.

CHAPTER TWO: MEMBERSHIP OF THE TRILATERAL COMMISSION

The interesting aspect of Trilateralism is that it brings together the Administrators of power rather than the Holders of power.

David Rockefeller is essentially the only power center in the entire Trilateral catalog. Politicians, lawyers, bureaucrats, media types, trade unionists come and go in the Trilateral halls of power — they are transient administrators. They retain administrative positions only as long as they are successful in using political power to gain political objectives. Operators do not, by and large, create objectives — this is an important point. One should label this group of operators "the hired hands." As Senator Mansfield once said of Congress, "To get along, you must go along." Trilateral operators are at the pinnacle of success in "going along."

In the 1970's, nine of the American Trilateral commissioners were Establishment lawyers, from highly influential major law firms. The "revolving door" area between so-called public service and private gain, where attorneys alternate between private practice and the federal payroll, clouds more precise identification. For some reason, two of the nine lawyers were partners in the Los Angeles law firm O'Melveny & Myers: senior partner, William T. Coleman Jr. (also a director of David Rockefeller's Chase Manhattan Bank and a

former Transportation Secretary): and Warren Christopher, who was a partner from 1958-67 and from 1969 until joining Carter's regime as Deputy Secretary of State, and Clinton's as Secretary of State in 1993.

In 1994 William T. Coleman Jr., now a senior partner in O'Melveny & Myers, had already been Secretary of Transportation, was still a Trilateralist and indeed a member of the exclusive Trilateral Executive Committee.

From the same law firm of O'Melveny & Myers in 1994 Warren Christopher had become Secretary of State after serving as Co-Director of President Clinton's Transition team, amid strong protests that he was not looking for any personal appointment. Christopher did an outstanding job for the Trilaterals, appointing no fewer than 22 fellow members to the Clinton Administration that emphasized the "old way of doing business" could not continue. No doubt Christopher will return to O'Melveny & Myers after his term as Secretary of State, to continue the wheeling and dealing business.

Moreover, this political influence duo is now joined in 1994 by yet another partner in O'Melveny & Myers, Ko-Yung-Tung, Chairman of the firm's New York-based Global Practice Group.

So this almost unknown Los Angeles law firm is in reality an influence-peddling outfit of the first category. This Trilateral trio highlights the cozy revolving door political influence game that makes a mockery of a free society.

O'Melveny & Myers together with Kissinger & Associates and the Carlyle Group have a lock on political influence — and all just happen to be linked to the Trilateral Commission. George Franklin, former Executive Secretary of the Commission, avers, this is a mere statistical accident, all talent just accidentally happens to be within the Trilateral Commission, that we shouldn't be concerned; in fact, according to Franklin, we should be grateful that such eminent ladies and gentlemen are willing to accept the burdens of "public service."

So how does this political influence game work? We'll suppose you're out there in Zaire or the Argentine and you want some U.S. taxpayer dollars — to build a bridge or "fight

drugs," anything in fact that gives you opportunity to skim a little gravy off the top for your own hardworking self — what do you do?

You head for Trilateral Mr. Ko-Yung-Tung, the O'Melveny & Myers man in New York, or Trilateral Henry Kissinger at Kissinger Associates, or former Secretary of Defense Trilateral Frank Carlucci at The Carlyle Group — all with excellent Trilateral connections and — for a substantial, very substantial, fee — they will take your case to Washington.

And do you believe for one minute that some small time Deputy Assistant Secretary of State who makes routine $100 million aid decisions is going to look the other way when Henry, or Frank, or Yung-Tung telephone about the pitiful needs of Zaire or the Argentine?

After all, a Deputy Assistant Secretary has ambitions one day of becoming a full-fledged Assistant Secretary and will need a few kind words from prominent persons. So the decisions on Zaire or the Argentine are not made with the interests of the United States taxpayer in mind but by what is termed elegantly as "political factors."

Now contrast this con game with the many thousands of American citizens who suffered from U.S. radiation experiments in the 1940's and 1950's. They want compensation but have to go to court to try to get just compensation from the Department of Energy. The American in the street can't call up Henry Kissinger or Frank Carlucci or Ko-Yung-Tung (as can the Zairian Embassy or an Argentinian Senator). Poor Joe Blow has to use his limited funds to challenge a Department of Energy with unlimited taxpayer funds to fight its own citizens.

This is what Trilateralism is all about. It's not about the Technetronic Age which is a long word about nothing and indeed if Brzezinski couldn't see the coming downfall of the Soviet Union, he can't be relied upon to for see the nature of the coming era. Trilateralism may be clothed in fancy language but it boils down to the exercise of political power in the interests of the Trilaterals and their associates. If you swallow the coy phrase "public service" then you shouldn't be reading

this book. It's more like institutionalized ripoff.

So you complain to Congress? Good luck! The Majority Leader, Thomas Foley Jr., is a Trilateral, as are many other Congressmen and Senators. Now you know why laws to restrict lobbying always have gaping loopholes.

Here are the prominent law firms with Trilateral partners, and so linked into the political influence network:

CENTER FOR LAW AND SOCIAL POLICY:

Paul C. Warnke (pre-1994)
Philip H. Trezise (pre-1994);

CLIFFORD, WARNKE, GLASS, MCILWAIN & FINNEY:

Paul C. Warnke (pre-1994);

COUDERT BROTHERS:

Sol M. Linowitz (pre-1994)
Richard N. Gardner (1973-1994);

O'MELVENY & MYERS:

Warren Christopher (1973-1994),
William T. Coleman, Jr. (1973-1994)
Ko-Tung-Yung (1994)

SIMPSON, THACHER & BARTLETT:

Cyrus R. Vance (pre-1994)

WILMER, CUTLER & PICKERING:

Gerard C. Smith (1973-1994)
Lloyd N. Cutler (pre-1994)

AKIN, GUMP, STRAUSS, HAUER & FELD:

Vernon C. Jordan (1994).

Propagandists and Technicians

Quite distinct from the political operators, although their functions often overlap, are the propagandists (the media) and the technicians (academicians and research controllers). These groups provide the intellectual linkage between the power holders and the power administrators (the operators). Technicians design the plans needed to promote and implement objectives. They explain ideas to the public and even conceive ideas — within limits. Technicians and propagandists achieve personal success only insofar as they have ability to conceive and promote plans within the overall

framework welcome to the power holders. A media source distributing unwelcome news or a researcher developing unwelcome conclusions is politely so informed — and usually takes the hint. Trilateralist technicians are experts at "getting the message."

We find the following "think tanks" linked to Trilateralism:

ASPEN INSTITUTE FOR HUMANISTIC STUDIES:
- Maurice F. Strong
- Robert S. Ingersoll

BROOKINGS INSTITUTION:
- William T. Coleman, Jr.
- Henry D. Owen
- Gerard C. Smith
- C. Fred Bergsten
- Graham T. Allison, Jr.
- Philip H. Trezise
- Bruce K. MacLaury

CENTER FOR DEFENSE INFORMATION:
- Paul C. Warnke

COLUMBIA UNIVERSITY
- Richard N. Gardner

GEORGETOWN UNIVERSITY, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES:
- David M. Abshire
- William E. Brock, III
- William V. Roth, Jr.
- Gerard C. Smith

HARVARD UNIVERSITY
- Graham Allison
- Robert R. Bowie

HOOVER INSTITUTION ON WAR, REVOLUTION AND PEACE
- David Packard
- George Schultz

HUDSON INSTITUTE
- J. Paul Austin

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)
- Carroll L. Wilson

MITRE CORPORATION

Lucy Wilson Benson

RAND CORPORATION

J. Paul Austin

Graham Allison

William T. Coleman, Jr.

WORLD WATCH INSTITUTE

C. Fred Bergsten

These "think" tanks are financed by foundations which are also linked to Trilateralism:

ROCKEFELLER FOUNDATION

Cyrus R. Vance

W. Michael Blumenthal

Robert V. Roosa

Lane Kirkland

John D. Rockefeller IV

TWENTIETH CENTURY FUND RUSSELL SAGE FOUNDATION

J. Paul Austin

FORD FOUNDATION

Andrew Brimmer

John Loudon

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

William A. Hewitt

Hedley Donovan

Thomas L. Hughes

BORDEN FOUNDATION

Zbigniew Brzezinski

ROCKEFELLER BROTHERS FUND

David Rockefeller

ROCKEFELLER FAMILY FUND

David Rockefeller

John D. Rockefeller IV

WOODRUFF FOUNDATION

J. Paul Austin

WORLD PEACE FOUNDATION

Robert R. Bowie

The Media

Trilateralist media representation, although not large in numbers, is highly influential. In the 1970's, of five media commissioners, three were relatively insignificant: Doris Anderson, editor of Chatelaine Magazine; Carl Rowan, columnist, and Arthur R. Taylor, formerly head of the CBS network, dismissed in October 1976.

Two media Trilaterals were highly influential: Emmett Dedmon, editorial director of the Chicago Sun-Times, published by Field Enterprises. The chairman of Field Enterprises, Inc., Marshall Field V, also a director of First National Bank of Chicago, operates Field Enterprises under an exhaustive agreement with his half brother, "Ted," Frederick W. Field; and Field ownership is significant because of Trilateral connections with the First National Bank of Chicago. In any event, Chicago Sun Times is the sixth largest newspaper in the U.S. (daily circulation 687,000).

Another influential media Trilateralist was Hedley Donovan, editor-in-chief of Time, member of the Council on Foreign Relations and director of the Carnegie Endowment for International Peace. According to the U.S. Labor Party:

> Donovan played a central role in the "faking of the President, 1976." Under his Trilateral direction, Time functioned as a black propaganda vehicle throughout the campaign and post-election period, painting Carter as an "outsider" with no connections with the corrupt politics of Washington, D.C. and Wall Street This "image building" provided the crucial cover for the planned vote fraud, and Time played a crucial coverup role as widespread evidence of the Nov. 2 fraud surfaced.

Trilateral disdain for the First Amendment is a factor working strongly against generally sympathetic media attention. On the other hand, Trilateralist intervention in day-to-day media operation, by use of the traditional telephone call, is probable, given the numerous Trilateral corporate directors in the media: Henry B. Schacht is a

director of CBS; Sol Linowitz, a director of Time; J. Paul Austin, a director of Dow Jones; Harold Brown, a director of Times-Mirror Corporation; Archibald K. Davis, a director of Media General, Inc.; Peter G. Peterson, a director of Great Book Foundation and National Education TV; William M. Roth, a director of Athenum Publishers; and Cyrus Vance, a director of the New York Times. Their presence is ominous. However, any persistent intervention to kill or re-orient stories will backfire. Most media people are professionals rather than propagandists.

The Corporation for Public Broadcasting, supposedly a public institution, has always had a heavy Trilateral bias. This reflects the blurring of public and private which Trilaterals exercise so well for their own advantages.

Sharon Percy Rockefeller, wife of Commissioner John D. Rockefeller IV, former Governor, now Senator from West Virginia, is an example of this link. More emphatic is the funding of the PBS heavyweight programs which mold public opinion by Trilateral-oriented and Trilateral-represented firms.

Robert C. Wenks, a Trilateral in 1994, is also Chairman of Prudential Securities, Inc. and finances "Wall Street Week with Louis Rukeyser," and you will never hear Rukeyser criticize the Federal Reserve private banking monopoly or argue gold as the only stable basis for a monetary system.

"Tony Brown's Journal" on PBS is funded by Pepsi-Cola, a major Trilateral-linked firm with at least one or two directors always on the Trilateral Commission. Pepsi is one of the gung ho New World Order firms and as you will remember, was first into Communist China and only second after Coca Cola into Soviet Russia.

The famous MacNeil-Lehrer Newshour is financed by Archer Daniels Midland, a global corporation with Trilateral Dwayne Andreas as Chairman. Pepsi Cola also finances MacNeil Lehrer.

General Electric is another long-time Trilateral firm; Paolo Fresco is the current Trilateral Chairman, and finances the McLaughlin group.

So — how impartial do you think PBS can be when it comes

to New World Order? And this government-backed organization is supposed to be a "public" institution. Instead it illustrates how Trilaterals have a flair for quietly influencing public institutions.
The following media outlets are also linked to Trilateralism:

NEW YORK TIMES:
- Cyrus R. Vance (1978);
- Flora Lewis (1994)

CBS:
- Arthur R. Taylor (1970s)
- Henry B. Schacht (19702)

LOS ANGELES TIMES
- Harold Brown (1979)
- Robert Erburn (1994)

TIME, INC.
- Hedley Donovan

FOREIGN POLICY MAGAZINE
- Samuel P. Huntington
- Thomas L. Hughes
- Richard N. Cooper
- Elliot L. Richardson
- Marina von Neumann Whitman
- Richard Holbrooke
- Zbigniew Brzezinski

FOREIGN AFFAIRS
- William M. Roth
- C. Fred Bergsten

CHICAGO SUN-TIMES
- Emmett Dedmon

CNN
- V. Thomas Johnson (1994)

WASHINGTON POST
- Katherine Graham (1994)

Politics and Government

Trilaterals are often politicians. In 1977, 27 out of 77 U.S. Trilateralists were also professional politicians and professional bureaucrats. In 1993 the number had increased to 39 politi-

cians and bureaucrats.

In 1977 President Jimmy Carter and Vice President Walter Mondale were Trilaterals. In 1993 President Bill Clinton and Vice President Albert Gore were Trilaterals. It should be emphasized that selection by the Trilateral Commission was long before they became residents of the White House.

Interestingly, President Jimmy Carter was selected and promoted by none other than Trilateral President David Rockefeller. In 1992 the Trilateral backing was more discreet for Bill Clinton because of previous public criticism of the Trilateral Commission for its dominant influence.

Here's how THE TIMES (London) reported the Rockefeller-Carter linkup:

> Governor Jimmy Carter, the 1976 Democratic Presidential candidate, has for reasons known only to himself professed to be an innocent abroad, but the record is somewhat different. As Governor of Georgia, a state aspiring to be the centre of the New South, he led the state trade missions abroad. While in London in the autumn of 1973 he dined with another American visitor, but by no means an innocent, Mr. David Rockefeller of Chase Manhattan Bank.
>
> Mr. Rockefeller was then establishing, with the help of Professor Zbigniew Brzezinski of Columbia University, an international study group now known as the Trilateral Commission, He was looking for American members outside the usual catchment area of universities, corporation law firms and government, was impressed by the Governor, if only because he had ventured abroad, and invited him to join. Governor Carter, perhaps because he was already eyeing the White House from afar, was only too happy to accept.

This enlightening statement in THE TIMES has one significant error. The Trilateral Commission is no "international Study group" — it is clearly a group that generates policies and tries to ensure that its own Trilateral Commissioners have a role in implementing the policies. A study

group would not place one-third of its members in Administration after Administration, both Republican and Democrat. This is, THE TIMES to the contrary, an operating group working towards specific self-centered objectives.

The Congress

Senators and Congressmen are members of the Trilateral Commission, which, given the negative belittling Trilateral view of the Congress, is somewhat surprising. On the other hand, modern politicians in the "Best Congress that money can Buy" have little trouble accommodating inconsistent policies providing the price is right — for them.

Trilateralists also occupy key posts in the House, i.e., chairman of the House Republican Conference, majority whip, chairman of the Democratic Conference, and chairman of the House Democratic Caucus. In sum, Trilaterals have a lock on the legislative process.

The significance of this lock on the legislative process is brought into focus when we examine the political ideology of Trilateralism as expressed by Crozier, Huntington, and Watanuki in THE CRISIS OF DEMOCRACY.

- The democratic political system no longer has any purpose.
- The concepts of equality and individualism give problems to authority.
- The media is not sufficiently subservient to the elite.
- Democracy has to be "balanced" (i.e. restricted).
- The authority and power of the central government must be increased

Weighing these totalitarian ideas which form the political philosophy of the commission against congressional membership in the Trilateral Commission, the reader will be tempted to ask, were these the political policies espoused by these politicians when elected to office?

In any event, five senators also were Trilateral commissioners in 1978:

LAWTON CHILES, Democrat, Florida

ALAN CRANSTON, Democrat, California, Senate majority whip

JOHN C. CULVER, Democrat, Iowa

JOHN C. DANFORTH, Republican, Missouri

WILLIAM V. ROTH, JR., Republican, Delaware

In 1994, Senators DIANE FEINSTEIN, CHARLES ROBB, JOHN CHAFEE, and WILLIAM S. COHEN were added.

This neatly reflects the Democratic majority in the Senate, three Democrats and two Republicans; and it is notable that the Senate majority whip — a key Senate post — is a Trilateralist.

The following six Congressmen were Trilateralists in 1978:

JOHN B. ANDERSON, Republican, Illinois, chairman, House Republican Conference

JOHN BRADEMAS, Democrat, Indiana; majority whip

WILLIAM S. COHEN, Republican, Maine

BARBER B. CONABLE, JR., Republican, New York

THOMAS S. FOLEY, Democrat, Washington; chairman, House Democratic Caucus

DONALD M. FRASER, Democrat, Minnesota; chairman, Democratic Conference and Americans for Democratic Action.

In brief, top administration jobs — Republican and Democrat — are filled from a talent pool dominated by the Trilateral Commission. This selective process of filling top Executive Department slots with Trilateralists has been deliberate and ruthless. Before President Carter formally took office, numerous Trilateralists were appointed as follows:

ZBIGNIEW BRZEZINSKI — assistant to the president for national security affairs

CYRUS VANCE — secretary of state

HAROLD BROWN — secretary of defense

W. MICHAEL BLUMENTAL — secretary of the treasury

ANDREW YOUNG — ambassador to the United Nations

WARREN CHRISTOPHER — deputy secretary of state

LUCY WILSON BENSON — undersecretary of state for security affairs

RICHARD COOPER — undersecretary of state for economic affairs

RICHARD HOLBROOKE — undersecretary of state for East Asian and Pacific affairs

W. ANTHONY LAKE — undersecretary of state for policy planning

SOL LINOWITZ — co-negotiator on the Panama Canal Treaty

GERALD SMITH — ambassador-at-large for nuclear power negotiations.

Trilaterals in the Clinton Administration

All Administrations since the Carter Administration have contained an unusually large number of Trilateral members. Nominally they resign on enterng government but as most promptly rejoin the Trilateral Commission on leaving government, "resignation" is a farce — part of the government/ private revolving door that retains influence in a small, like-thinking elitist group.

President Bill Clinton is a "former member in Public service." When he leaves the White House, Clinton will undoubtedly rejoin the Commission and indeed could not have attained the Presidency without Trilateral approval and support.

On the 1993 (July) membership list of Cabinet positions we find as Trilateral members:

BILL CLINTON, President of the United States

WARREN CHRISTOPHER, co-director of the transition with VERNON C. JORDAN (also a Trilateral). Thus the transition process was entirely controlled by Trilaterals.

BRUCE BABBITT, U.S. Secretary of Labor

DONNA E. SHALALA, U.S. Secretary of Health and Human Services

HENRY CISNEROS, U.S. Secretary of Housing and Urban Development

Cabinet positions in 1994 are:

GRAHAM ALLISON, Assistant Secretary of Defense for Plans & Policy

LYNN E. DAVIS, Under-Secretary of State for International Security Affairs

JOHN M. DEUTCH, Under-Secretary of Defense for Acquisition

DAVID GERGEN, Assistant to the President for Communications

WINSTON LORD, Assistant Secretary of State for East Asian and Pacific Affairs

ALICE M. RIVLIN, Deputy Director, Office of Management and Budget

JOAN EDELMAN SPERO, Under-Secretary of State for Economic and Agricultural Affairs

STROBE TALBOTT, Deputy Secretary of State, formerly Ambassador to Russia

PETER TARNOFF, Under-Secretary of State for Political Affairs

CLIFTON R. WHARTON, Deputy Secretary of State 1991-93, followed by Strobe Talbott.

Other Government positions in the Clinton administration

WILLIAM J. CROWE, JR., U.S. Ambassador to Britain

ALAN GREENSPAN, Chairman, Board of Governors, Federal Reserve System

JAMES R. JONES, U.S. Ambassador to Mexico

JOSEPH S. NYE, JR., Chairman, National Intelligence Council, Central Intelligence Agency.

As Executive Director George Franklin Jr. stated back in 1978, the Trilateral Commission invites only members with New World Order viewpoints and goals.

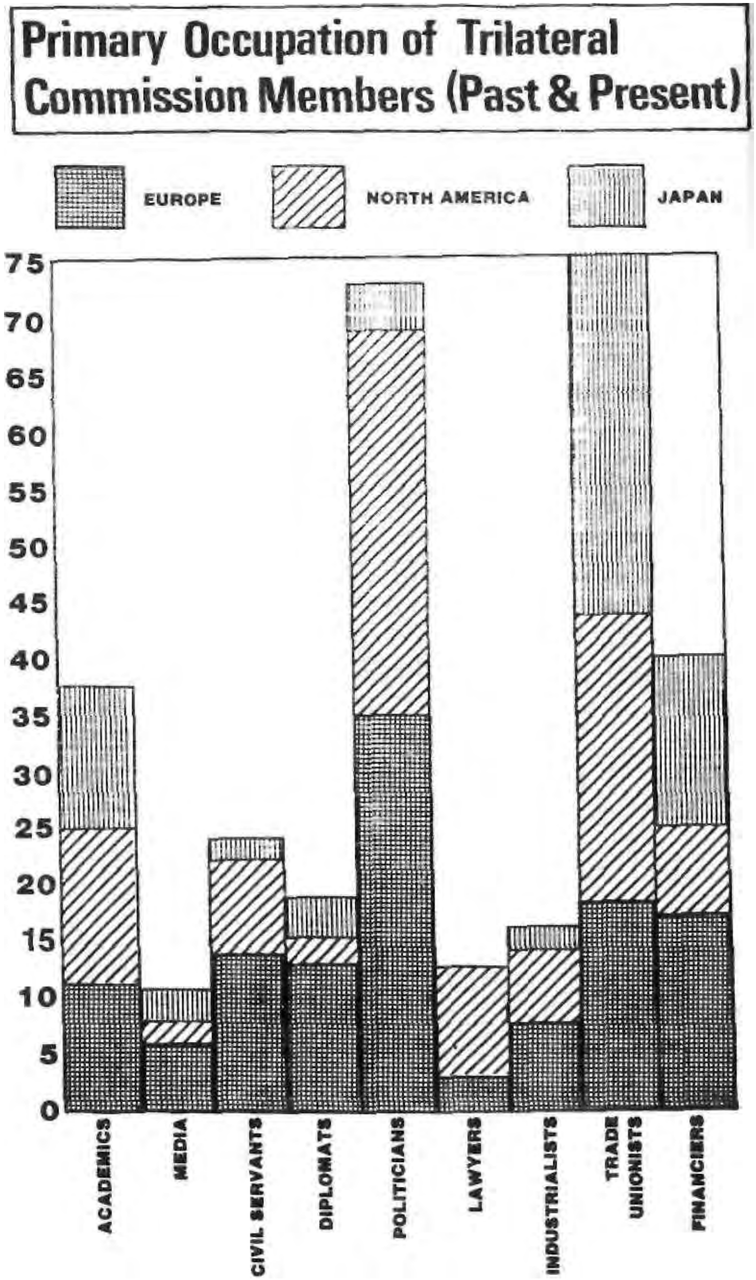
President Bill Clinton then is an ideal member, unusually so because his entire career has been formed under tutelage and guidance of New World Order advocates. (See JBS Bulletin, October 1992).

Clinton has a B.S. in International Affairs from Georgetown University in 1968, where he studied under Carroll Quigley, whose famous Tragedy and Hope had been published in 1966. Quigley broke the story of an elitist British group financed by the Rothschilds and Cecil Rhodes, whose ambition was to run the world. Rhodes founded the Rhodes

scholarships at Oxford University — and Clinton, a devout disciple of the New World Order message, was given a Rhodes scholarship to Oxford University.

There is another side to the Quigley story which is little known, and we are aware of it because this author had some correspondence with Quigley about Tragedy and Hope. Quigley sincerely believed in New World Order but was not aware of the darker side of the globalist types until they refused to reprint his book and destroyed the plates; Quigley was alerting too many honest academics and citizens to the dark side of New World Order. The difference between Quigley and Clinton is morality. We know that Quigley was an honest academician, a little naive, genuinely puzzled why the Establishment wanted the secrets in Tragedy and Hope kept secret. Clinton, on the other hand, quickly learned the political power profit lessons of the New World Order, in the tradition of Rothschild and Rhodes. Consequently, while Quigley died a puzzled man, Bill Clinton has been supported at every turn of the road (until early 1994) by the Trilaterals and their fellows to gain a reputation of deceit and deviousness unequalled by any past President of the United States.

As we write this (January 1994) Clinton is in trouble. We even hear rumors that he is targeted for political destruction and will be succeeded by another Trilateralist, former Mayor of San Francisco, now Senator Dianne Feinstein. But make no mistake, the Trilaterals have a firm hold on the Presidency and will continue to bring their influence to bear on its occupant.


Primary Occupation of Trilateral Commission Members (Past & Present)
EUROPE
NORTH AMERICA
JAPAN
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
ACADEMICS
MEDIA
CIVIL SERVANTS
DIPLOMATS
POLITICIANS
LAWYERS
INDUSTRIALISTS
TRADE UNIONISTS
FINANCIERS

CHAPTER THREE:
NEW WORLD ORDER AS THE OBJECTIVE

Run your eye down the list of executive committee members:* who is the most powerful individual among them?

There is no doubt that David Rockefeller dominates the executive committee, and thus the commission itself. Even if we are generous (or naive) and see the executive members as equals, then David would surely be primus inter pares. It is, however, naive to see David Rockefeller as an omnipotent dictator or the Rockefeller family as an all-powerful monarchy. This is a trap for the unwary. Our world is much more complex. We are looking at a family of families, a collective of power holders with at least several hundred, perhaps several thousand, members, who collectively aim to divert the world, not just the United States, to their own collective objectives.

Let's start at the beginning. The Trilateral Commission was David Rockefeller's idea and promoted with David's funds. (Leave aside for the time being the U.S. Labor party theory that Trilateralism uses the Rockefellers as a "cover" for a "British conspiracy.")

An interview with George S. Franklin, former commission coordinator, by Michael Lloyd Chadwick, editor of The Freemen Digest, published in Provo, Utah, is the most authentic version of the founding process which has yet

* See Appendix A, p. 142

surfaced. This portion of the interview follows:

MR. CHADWICK: Mr. Franklin, you were a participant with Mr. David Rockefeller, Robert Bowie, Zbigniew Brzezinski and Henry Owen in forming the Trilateral Commission. Would you provide us with a brief history of how it came into existence?

MR. FRANKLIN: David Rockefeller, in the winter and spring of 1972, gave several speeches to the Chase Bank forums in London, Brussels, Montreal and Paris. He recommended the establishment of an international commission on peace and prosperity which in fact is now the Trilateral Commission. He didn't receive an enthusiastic response in these meetings and he dropped the idea. He thought, "If the Chase Bank Forums don 't respond favorably to my suggestion then it's probably a lousy idea."

He then went to a Bilderberger meeting. Mike Blumenthal was there (now Treasury Secretary), and he said, "You know, I'm very disturbed. . . Cooperation between these three areas — Japan, the United States and Western Europe — is really falling apart, and I foresee all sorts of disaster for the world if this continues. Isn't there anything to be done about it? "David then thought, "I'll present the idea once more," which he did, and he aroused great enthusiasm. The next eight speakers said that this was a marvelous idea; by all means, somebody get it launched

David wasn't quite sure whether these were all his friends. He wasn't quite sure if they were being polite or if they really thought it was a good idea. So he took Zbig Brezinski back on the plane with him. Zbig thought it was a very good idea and had done some writing on it. Bob Bowie had done some writing on it too. When he got back, David asked me if I would go back to Europe and talk to some people more at leisure and see if they really thought this was a good idea They truly did

David and I went to Japan in June of 1972 and he talked to a lot of people there. They thought it was a good

> idea, so we had a meeting of 13-15 people at his place in Tarrytown (ed: New York).
>
> It was decided to go ahead and try to organize and form it

There is no reason to doubt that formation came about in any other way — at least we have no evidence that Franklin is hiding anything. But note that the way the Trilateral Commission was founded suggests a loose power coalition, sometimes in competition, sometimes in cooperation, rather than a small, tight, iron-fisted conspiracy run by the Rockefellers.

But even the establishment Washington Post has found unsettling features about the Trilateral Commission in its current seemingly non-interested packaging.

Consequently it is not surprising that Trilateral objectives are not shouted from the rooftops but inferred from policy statements, papers and positions as well as the personal philosophies of those chosen as members of the Commission.

Here's the Washington Post observation:

> Trilateralists are not three-sided people. They are members of a private, though not secret, international organization put together by the wealthy banker, David Rockefeller, to stimulate the establishment dialogue between Western Europe, Japan and the United States.
>
> But here is the unsettling thing about the Trilateral Commission. The President-elect is a member. So is Vice-President-elect Walter F. Mondale. So are the new Secretaries of State, Defense and Treasury, Cyrus R. Vance, Harold Brown and W. Michael Blumenthal. So is Zbigniew Brzezinski, who is a former Trilateral director and, Carter's national security adviser, also a bunch of others who will make foreign policy for America in the next four years.

No doubt this Washington Post observation was brought to the attention of David Rockefeller because by the 1990s the publisher of the Washington Post, Katherine Graham (Chairman of the Board of Washington Post Companies) had been appointed to the Trilateral Commission!

Even though Trilateral control has continued, the Washington Post has made no more remarks about "unsettling things."

This was the White House composition in the early 70s. It remains the same today, in 1994, a heavily Trilateral membership.

President Bill Clinton is a Trilateral as was President Jimmy Carter. Secretary of State Warren Christopher is an original member of the Trilateral Commission. So are 22 other members of the Clinton Cabinet and sub-cabinet Administration.

The personal philosophies of Carter appointees are similar to that of Clinton. . . they all adhere more or less to a global New World Order. Where, for example, President Truman was non-imperialist, these are imperialist Presidents. From speeches and letters written by Trilateralists we know their New World Order position.

When the Trilateral Commission met in Tokyo, Japan, in January 1977. Carter and Brzezinski obviously could not attend as they were still in the process of reorganizing the White House. They did, however, address personal letters to the meeting, which were reprinted in Trialogue:

> It gives me special pleasure to send greetings to all of you gathering for the Trilateral Commission meeting in Tokyo. I have warm memories of our meeting in Tokyo some eighteen months ago, and am sorry I cannot be with you now.
>
> My active service on the Commission since its inception in 1973 has been a splendid experience for me, and it provided me with excellent opportunities to come to know leaders in our three regions.
>
> As I emphasized in my campaign, a strong partnership among us is of the greatest importance. We share economic, political and security concerns that make it logical we should seek ever-increasing cooperation and understanding. And this cooperation is essential not only for our three regions, but in the global search for a more just and equitable world order (emphasis added). I hope to see you on the occasion of your next meeting in

Washington, and I look forward to receiving reports on your work in Tokyo."

Jimmy Carter

Brzezinski's letter, written in a similar vein, follows:

The Trilateral Commission has meant a great deal to me over the last few years. It has been the stimulus for intellectual creativity and a source of personal satisfaction. I have formed close ties with new friends and colleagues in all three regions, ties which I value highly and which I am sure will continue.

I remain convinced that, on the larger architectural issues of today, collaboration among our regions is of the utmost necessity. This collaboration must be dedicated to the fashioning of a more just and equitable world order (emphasis added). This will require a prolonged process, but I think we can look forward with confidence and take some pride in the contribution which the Commission is making.

Zbigniew Brzezinski

The key phrase in both letters is "a more just and equitable world order."

Does this emphasis indicate that something is wrong with our present world order, that is, with national structures? Yes, according to Brzezinski; and since the present "framework" is inadequate to handle world problems, it must be done away with and supplanted with a world government.

In Brzezinski's Technetronic Era, the "nation state as a fundamental unit of man's organized life has ceased to be the principal creative force: International banks and multinational corporations are acting and planning in terms that are far in advance of the political concepts of the nation-state."

Understanding the philosophy of and monitoring the Trilateral commission is the only way we can reconcile the myriad of apparent contradictions in the information filtered through to us in the national press. For instance, how is it

that the Marxist regime in Angola derived the great bulk of its foreign exchange from the offshore oil operations of Gulf Oil Corporation? Why did Andrew Young insist that "Communism has never been a threat to Blacks in Africa"? Why did the U.S. funnel billions in technological aid to the Soviet Union and Communist China? Why does the U.S. apparently help its enemies while chastising its friends?

These questions, and hundreds of others like them, cannot be explained in any other way: the U.S. Executive Branch (and related agencies) is not anti-Marxist or anti-Communist — it is, in fact, pro-Marxist. Those ideals which led to the abuses of Hitler, Lenin, Stalin, and Mussolini are now being accepted as necessary inevitabilities by our elected and appointed leaders.

This hardly suggests the Great American Dream. It is very doubtful that Americans would agree with Brzezinski or the Trilateral Commission. It is the American public who is paying the price, suffering the consequences, but not understanding the true nature of the situation.

One of the most important "frameworks" in the world, and especially to Americans, is the United States Constitution. It is this document that outlined the most prosperous nation in the history of the world. Is our sovereignty really "fiction"? Is the U.S. vision no longer compatible with reality? Brzezinski further states:

> The approaching two-hundredth anniversary of the Declaration of Independence could justify the call for a national constitutional convention to re-examine the nation's formal institutional framework. Either 1976 or 1989 — the two-hundredth anniversary of the Constitution — could serve as a suitable target date culminating a national dialogue on the relevance of existing arrangements. . . .Realism, however, forces us to recognize that the necessary political innovation will not come from direct constitutional reform, desirable as that would be. The needed change is more likely to develop incrementally and less overtly. . . in keeping with the American tradition of blurring distinctions between public and

private institution.

Obviously Brzezinski, and global capitalists have no use for national sovereignty or the Constitution. Their interests are global — and much as they may protest we see no difference between Trilateral globalism and, for example, British and French imperialism of the 19th Century. Or the Holy Roman Empire for that matter.

But this New World Order objective would not pass an electorate. Outside the globalists, the New World Order fanatics, we doubt that many in the United States are interested in a planned world economy under the dominance of Wall Street.

In conclusion, the Trilateral Commission when pressed makes no secret of its unrepresentative nature nor its New World Order objectives.

Back in 1978 in the previously cited radio interview with George Franklin Jr., then Executive Director of the Trilateral Commission, these objectives emerged under questioning from the author:

> SUTTON: Mr. Donovan, of Time-Life, has just been appointed Special Assistant to President Carter. Mr. Donovan is a member of your Commission.
>
> FRANKLIN: That is correct.
>
> SUTTON: Does this not emphasize the fact that the Carter Administration is choosing its administration from an extremely narrow range. In other words, the Trilateral Commission?
>
> FRANKLIN: I do not think that that needs any confirmation. That is a matter of fact that he has chosen most of his main foreign policy people, I would have to say, from the people he got to know while he was on the Trilateral Commission.
>
> SUTTON: Well, I can only make the statement that this leaves any reasonable man with the impression that the Carter Administration is dominated by the Trilateral Commission with your specific ideas which many people do not agree with.
>
> FRANKLIN: Well, I would certainly agree that people who were members of the Commission have predominant

places in the foreign policy aspects of the Carter Administration. They are not, because they are members of the Commission, controlled in any sense by us. I do think that they do share a common belief that is very important that we work particularly with Europe and Japan or we are all going to be in trouble.

SUTTON: But this common belief may not reflect the beliefs of the American people. How do you know that it does?

FRANKLIN: I do not know that it does. I am no man to interpret what the people think about.

SUTTON: In other words, you are quite willing to go ahead (and) establish a Commission which you say does not necessarily reflect the views of the poeple in the United States? It appears to me that you have taken over political power.

FRANKLIN: I do not think this is true at all. Anybody who forms a group for certain purposes obviously tries to achieve these purposes. We do believe that it is important that Europe, Japan, and the United States get along together. That much we do believe. We also chose the best people we could get as members of the Commission. Fortunately, nearly all accepted The President was one of them and he happened to have thought that these were very able people indeed, and he asked them to be in his government, it is as simple as that. If you are going to ask me if I am very unhappy about that, the answer is no. I think that these are good people.

The reader can make his or her own interpretation. We hold the view today in 1994 that we held in 1973 and 1978 (the date of the radio program) — that the Trilateral Commission is not representative of the United States, has clearly by its actions demonstrated that it is a group intent on manipulating power for personal advantage and that these actions or objectives are not those of American citizens — and the Trilateral Commission has no intention of putting the matter to a vote. Quod etat demonstrandum.

CHAPTER FOUR:
POLICIES FOR MONOPOLY CONTROL

The unstated concealed Trilateral policy is global power and influence, a policy best achieved by financial control. The dedicated interest of the Rockefeller family and international bankers in world order, world planning, global problems is the sure indicator that they understand how political control can be translated into dollars and cents.

Trilaterals, one of several elitist organizations for global control, have organized influence peddling companies headed by their own Trilateral buddies. These grease the way more or less legally between government contracts and corporate contracts.

Anti-lobbying laws are so deviously written and so easy to circumnavigate that in practice they do no more than convince the public that government contracts are intended to be influence free.

The reality is that the revolving door is significantly controlled by Trilaterals and completely controlled by elitists, if we include the influence of such organizations as Council on Foreign Relations (long-time Chairman was David Rockefeller) and Yale Skull and Bones (with members such as George Bush, Averell Harriman and other government movers and shakers).

One well-known conduit for government business using insider influence is Kissinger Associates. Trilateral Henry

Kissinger, founder and Chairman of Kissinger Associates, is former Assistant for National Security Affairs and a former U.S. Secretary of State. As such, Kissinger was able to acquire and use worldwide contacts and a thorough knowledge of the contact-contract world.

Kissinger & Associates charges global corporations substantial fees to act on their behalf within and without the United States. Kissinger uses his influence, earned and gained at US. taxpayer expense, to push the cause of his clients. This is, of course, influence peddling, but apparently legal because the loopholes written into the laws are big enough to drive a truck through and will remain that way until the voting public demands that politics be separated from personal finance.

A more recent influence peddling outfit is the Carlyle Group, subject of a scathing and well-written article in the New Republic (October 18, 1993). According to this article, the Carlyle Group was founded by David Rubenstein, a minor league former merchant banker, and named after the New York Hotel Carlyle.

The Hotel Carlyle is a long-time corporate hangout. (We once visited one of the suites and found it to be a dismal, solidly-furnished building used by global wheeler dealers for private business.)

The Carlyle Group according to New Republic holds a majority stake in firms that do business with the United States Government. Day-to-day operations are conducted by former Secretary of Defense Frank Carlucci, a Trilateralist whose entire stock of expertise consists of whom he knows in Governent and how Government wheels mesh together.

Among members of the Carlyle Group are former Secretary of State James Baker, a close friend of former President George Bush, former Budget Director Richard Darman, Treasury Secretary Donald Regan, Bush Campaign Chairman Fred Malek, George Bush Jr., former CIA Director Robert Gates, the current SEC Chairman Arthur Levitt, Clinton transition team co-director Vernon Jordan, and politician Bob Strauss.

These are former Cabinet-level politicians who have noth-

ing to sell but their access in Government, i.e. their personal telephone books. All are directly or indirectly Trilateral connected.

Frank Carlucci openly lists himself in the Trilateral biographies as "Vice Chairman, the Carlyle Group, former US Secretary of State." Vernon Jordan is listed as Partner Akin, Gump, Strauss, Hauer & Feld."

As New Republic author Michael Lewis describes the scene:

> The Carlyle Group in short has become a kind of salon des refusees for the influence peddling class. It offers a neat solution for people who don't have a whole lot to sell besides their access, but who don't want to appear to be selling their access.

So the "access capitalist" joins the perennial "Washington lobbyist" — roads to instant wealth for the not-so-fussy lawyer. One of the first successful Carlyle operations is known as "The Great Eskimo Tax Scam of 1987." This well-organized and well-thought out loophole enabled Alaskan companies to sell their losses for hard cash to other companies. These losses were used to reduce the tax load of the companies and so everyone gained — except the U.S. taxpayer. Carlyle, of course, was in the business of matching Alaskan losses to corporate tax avoidance. Eskimos were flown to Washington, D.C. and shown how to organize some dubious losses — for which the high-toned Carlyle Group took a fancy fee of one percent.

According to New Republic, Carlyle has excellent expertise to enable firms to buy Government property cheap — as Carlucci had spent billions of tax dollars in contracts to large military industrial firms, these same firms were no doubt willing to look kindly on his efforts to organize a private auction of assets.

According to Carlucci, "everyone in our business is trying to figure out ways to avoid getting into an auction. Get into auctions, that's a way to lose a lot of money." The idea was "private auctions" for a few invited buyers. We call it a

conspiracy to defraud taxpayers — but Department of Justice hasn't yet lifted a finger to go into court.

Trilateral Frank Carlucci, whose efforts are described by Jack Anderson as "the bureaucratic havoc wrought by Frank Carlucci, a human windstorm out of Washington" is a perfect example of the market value of political contact. . . Carlucci has worked in every administration from Kennedy to Bush, in numerous departments without any momentous contribution to public welfare.

According to Carlyle Chairman Rubenstein, "I get resumes from some of the biggest names in town, lawyers who are making $800,000 a year. They call and say they'll come and work for free. It's almost embarrassing." Now why would any Washington lawyer want to work for free, in New York too? Obviously because Carlyle has a reputation for making money, lots of money, at public expense and is apparently untouchable. Yet one senses a certain uncertainty because the last words to the New Republic writer were "How do I keep it from being a cover story?"

Global Money Monopoly

Trilaterals want monopoly, world monopoly. Therefore, you must hold a key fundamental proposition in mind: Trilaterals are not interested in what monetary system works best, or most equitably, or whether gold is a more effective monetary device than paper, or what monetary system will support a higher standard of living for the world's poor.

The overriding drive for Trilaterals is to manage the world economy, "manage" being a euphemism for control. This control is exercised through so-called coordination of macroeconomic policy, in spite of the dismal results from attempted macroeconomic direction. It is argued that the prime desideratum for this control device is to keep world peace. Nowhere is there any recognition of the historical fact that such control has always led to conflict: that denying national and ethnic independence is a sure road to strife and bloodshed.

Trilaterals by their own words are interested in political power: all objectives are subordinate to the political power

needed to order the world as the Trilateralists see fit. So you will not find rational consideration of alternatives, or the weighing of options in Trilateral dogma. You can, however, expect an irrational drive, come what may, to control the world in the name of globalism and New World Order.

Triangle Paper 14, "Towards a Renovated International System," concludes that the 1944 Bretton Woods system has already "come under increasing strain," and events have forced traumatic changes, that is, the periodic assault on the dollar and floating exchange rates. The current Trilateral objective is to build an international system, a world order based on cooperation and focusing on two aspects which require such cooperation:

- International lending, and
- The creation of international reserves.

The Trilateral proposal is to involve five to ten leading core countries in establishing the new system. The rest of the world will have to go along as best it can. Some ideas to this end have already been implemented: for example, a new man-made artificial international money, the Special Drawing Rights (SDRs) has been created for central banks. As the SDR is introduced, gold will (supposedly) be phased out of the international reserve system.

International Bankers and Bancor (Paper Money)

The benefits of Bancor will accrue to international bankers more than to anyone else. The interlock between New York international bankers, the Trilateral Commission, and thus, Trilateral proposals in Bancor can be traced precisely.

The earnings that major banks receive from overseas is a matter of public record and is a measure of the division between their domestic interests in the United States and a global economy. The degree of domestic control over the economy by international banks has been identified in a report published by the late Senator Lee Metcalf, "Voting Rights in Major Corporations." Also a matter of public record are the names of international bankers who are Trilateral

Commissioners. When we integrate these three statistics, (a) source of bank earnings, (b) control of domestic companies, and (c) Trilateral membership, we identify a highly significant interlock between international banks and the Trilateral push for a global economy.

Table 4-1 ranks 12 international banks in order of their 1976 earnings from overseas; that is, the bank with the highest percentage of its earnings from overseas is ranked Number 1, and the bank with the least percentage from overseas is ranked Number 12 (columns 1 and 2). This percentage is compared with the equivalent 1970 figures to demonstrate that foreign earnings have ballooned since 1970 (columns 3 and 4). Column 5 is the Metcalf Index of domestic control by these same bankers, defined as the number of the 122 companies examined by a congressional committee in which the bank is among the top five shareholders. Column 6 lists Trilateral commissioners who are also directors of these banks.

Chase Manhattan is the bank with the highest percentage of earnings from abroad: a remarkable 78 percent, compared to 22 percent in 1970. In brief, David Rockefeller's international merchandising has made Chase a global bank, not an American bank, and we might call David a de facto world citizen, not an American citizen. At the same time, Chase has a very low rating on the Metcalf Index. The bank is among the largest five stockholders in only eight of the 122 companies studied by the subcommittee (compared to Citibank's 25 and J.P. Morgan's 56).

No fewer than six Chase Manhattan directors (Kissinger is on the Chase International Advisory Board) were represented in 1976 on the Trilateral Commission. In sum, Chase is heavily, almost totally, oriented outside the United States. Its pecuniary interest in promoting a New World Order is slightly more than obvious.

Contrast Chase to J.P. Morgan where 53 percent of income is from overseas (up from 25 percent in 1970) with only one Trilateral representative. Banks like Charter New York (formerly Irving Trust) and Chemical Bank do not appear on the Metcalf Index at all and have no Trilateral representation,

that is, they are not apparently involved in creating a New World Order.

This pattern is dramatized if we rearrange the data in Table 4-1 with the highest Trilateral representation first.

In a few words: the Trilateral Commission is dominated by a very few international banks, essentially Chase Manhattan, and is an institution focused outside the United States. At the same time, the Trilateral Commission has taken over the United States executive branch. We have not been taken over by communists or Russians or Martians but by a group which wants to "revise" the Constitution (to organize more political power) but is without majority financial and economic ties to the United States.

Table 4-1
International Banks and the Trilateral Commission (1976)

1976 Rank in Foreign Earnings	International Banks	% of Earnings International Operations 1970	1976	Metcalf Index	No. of Trilateral Commissioners as Directors (1976)
1	Chase Manhattan	22	78	8	6 Rockefeller, Coleman, Hewitt, Haggarty, Jamieson, Kissinger
2	Citicorp	40	72	25	0
3	First Nat'l Bank of Boston	8	65	10	0
4	Banker's Trust	14	64	11	0
5	Charter New York	12	58	—	0
6	Manufacturers Hanover	13	56	12	1 Whitman
7	J.P. Morgan	25	53	56	1 Austin
8	Chemical Bank	10	44	—	0
9	Bank of America	15	40	15	2 Clausen, Wood
10	Continental Illinois	0	23	8	3 Hewitt, Perkins, Wood
11	First Chicago	2	17	11	3 Ingersoll, Morgan, Peterson
12	Wells Fargo	9	12	—	1 Arbuckle

Table 4-2
Banks with Trilateral Representation (1976)

Name of Bank	Percent of Earnings From International Operations, 1976	Metcalf Index	Number of Trilateral Commissioners as Directors
Chase Manhattan	78	8	6
Continental Illinois	23	8	3
First Chicago	17	11	3
Bank of America	40	15	2
Manufacturers Hanover	56	12	1
J.P. Morgan	53	56	1
Wells Fargo	12	0	1

Banks with No Trilateral Representation

Citicorp	72	25	0
First National of Boston	65	10	0
Bankers Trust	64	11	0
Charter New York	58	0	0
Chemical Bank	44	0	0

Table 4-3
International Banks and the Trilateral Commission (1993)

Chase Manhattan	David Rockefeller Thomas G. Labreque, CEO Wm. T. Coleman Henry Kissinger
World Bank	Jessica P. Einhorn, Vice President Robert McNamara, former Chairman
Salomon, Inc.	John H. Gutfreund, former Chairman
Goldman Sachs Int'l.	Robert D. Hormats, Vice Chairman
Federal Reserve Bank	Paul A. Volcker, former Chairman, Board of Governors E. Gerald Corrigan, President, Federal Reserve Bank of New York Alan Greenspan, Chairman, FRS.

* See Appendix A; Executive Committee members are marked with an asterisk.

However, SDRs have proven no match for gold. Attempts to hold the price of gold at an artificially low "official price" proved elusive and ultimately demonstrated that even Trilateral power is subject to world market forces — and market forces are the sum of individual marketing decisions.

The task ahead for the Trilateral Commission world managers is to integrate these monopoly ideas into the world monetary system and make them work. The immediate and most compelling task is to operate the floating rate system to dampen erratic movements in exchange rates, which are, of course, damaging to international trade. Such erratic movements do not occur in fixed rates tied to gold. However, gold moves the world away from the "cooperative" international arrangements needed by Trilaterals, and gold, therefore, is a bigger problem than floating rate disorder. Following this is the task of world reserve management. The Trilaterals want "wider cooperation since the key to world reserve management is restraint in the additions to central bank holdings of gold and of course currencies such as the U.S. Dollar, the German Mark, the British Pound and the French Franc."[1]

The sinking dollar is also a problem, and an unforeseen one, particularly as it inevitably leads to lesser use of dollars as a world reserve unit. Trilaterals with their vague views on gold were not able to foresee that the 1971 suspension of gold convertibility would be a millstone around the neck of dollar and "international cooperation."

The out-of-date views on gold held by the U.S. Treasury, under Trilateral control, are well exemplified by a letter from Gene E. Godley, assistant secretary for legislative affairs at the treasury to Congressman J. Kenneth Robinson — a letter which incidentally illustrates clearly why the treasury has been able to lose billions of dollars for the U.S. taxpayer.

> There is, moreover, a high degree of uncertainty about the usefulness of gold as money. Its monetary role has greatly diminished in recent years,and its market price has varied widely. Thus, our gold stocks no longer represent an assured source of financing for our imports.

The principal objective in 1944, when Keynes proposed a universal money, was much narrower than current proposals: the system was to be one of multilateral clearing, a universal currency valid for trade transactions throughout the world. According to Keynes:

> It is not necessary in order to attain these ends that we should dispossess gold from its traditional use. It is enough to supplement and regulate the total supply of gold and of the new money taken together. The new money must not be freely convertible into gold, for that would require that gold reserves should be held against it, and we should be back where we were, but there is no reason why the new money should not be purchasable for gold."

When it came to christening this new money, Keynes said, "What shall we call the new money? Bancor? Unitas? Both of them in my opinion are bad names, but we racked our brains without success to find a better." Even "Bezant" was proposed, interestingly the name of the last international coin (a gold coin) that circulated throughout the then known world for 800 years because it was a gold coin and never debased.

Actually the two proposals, Bancor (British) and Unitas (United States), had different features. The adopted American plan, Unitas, deposited part of the U.S. gold reserves with the IMF together with a specific amount of domestic currency but created no international currency. By contrast, the Keynesian plan, Bancor, provided an international currency with overdraft facilities at the clearing union. In other words, today the Trilaterals have taken us back to the Keynesian Bancor plan rejected in 1944.

A comparison of the two monetary schemes clarifies their major differences:

Keynes Bancor Scheme (not adopted in 1944)	Trilateral-modified Bancor Scheme of 1978 (used today)
Universal money - Bancor	Universal money — SDRs (Special Drawing Rights)
Gold accepted as a reserve	Gold not accepted as reserve
No gold convertibility	No gold convertibility

National currencies not held as reserves	National currencies not held as reserves
Public approval necessary	Public approval not necessary

Bancor was not adopted in 1944. It's now a matter of history that the related Harry Dexter White Unitas plan which was adopted led the U.S. into bankruptcy: the dollar weaknesses of today are directly traceable to the Bretton Woods Unitas plan.

Today's Trilaterals are political animals, with New World Order objectives, not interested in orderly world trade but in a specific future world structure under their control. The question is not to design a workable system to facilitate trade and improve human welfare, but to design a system that will enhance and preserve power for the Trilaterals. The Trilateral answer is to reinvent the system not used in 1944, the Keynesian Bancor, but modified this time as a universal currency divorced completely from gold and national currencies.

The extent of insider willingness to disregard, and even distort, widely held progold views of others is exemplified by an extraordinary statement in Robert Solomon's book, which is aptly subtitled An Insider's View. This is Solomon's interpretation of the motivation of gold-oriented economists:

> Those who are worshipful of gold (gold bugs or, more politely, chrysophilites) are usually motivated by one or more of these concerns: particular economic theories now held by a small minority of economists, distrust of government, (and) international political objectives.

The rationale for paper money, to quote Robert Solomon again:

> Just as there is a need in each country for economic policies aimed at high employment and price stability, there is a need, at the international level, for a similar effort to make the policies of individual countries compatible with the well-being of the world economy. Since there exists no international authority that can directly

> perform this function, it can be done only by means of consultation and cooperation among representatives of independent nations meeting together in established international form.

This European episode and the later creation of the European Currency Unit (ECU) exemplifies the Trilateral weakness in historical precedent. Why did the Germans refuse to go along with Keynesian demand stimulation? Because two factors are locked into the German psyche and ignored by American planners. First, the unparalleled rise of the German economy from the ashes of 1946 was due to plain old laissez faire free enterprise, not artificial Keynesian locomotives. Second, Germany has had two recent devastating price inflations (1923 and 1946), and both times the Mark went to zero. Germans know the consequences of inflation and Keynesian-type stimulation.

In sum, a combination of factors — German refusal to adopt Keynesian stimulation, the French political scene, and the collapse in the leading indicators (signaling a depression in 1979) — has reduced international cooperation and coordination.

One can perceive in the background a central reason why the Trilaterals, essentially the big New York banking powers, must move ahead with Bancor. . . why they must develop the so-called Witteveen facility. . . why they must create elastic international reserves, to be expanded at the push of a computer key.

The central unstated propellant for global fiat money is that the international monetary system is on a precarious merry-go-round: borrow — generate a deficit — be unable to repay — reschedule — borrow some more. The world debt balloon must be kept inflated If the balloon goes bust, so do the New York banks (remember Chase receives 78 percent of its earnings from abroad). If one of the world players decides he's had enough, if a New York bank says no to Zaire, if Turkey or anyone of a dozen other LDCs default, the whole pack of monetary cards will come tumbling down.

Monopolists Plot Their Course

The 1993 Annual Meeting of the Trilateral Commision held very appropriately in Washington, D.C. on March 27-29 focused on the new Clinton Administration.

Trilateral Secretary of State Warren Christopher spoke to the group and read a letter from fellow Trilateral, President Bill Clinton.

However, the most enlightening feature came from the Chairman's Report (page 75 in the Report) entitled "An Agenda for Trilateral Leadership." The title itself negates the propaganda that the Trilateral Commission is a "study group." This title claims "leadership" and an "agenda," i.e. a plan. And indeed the speech, presumably expected to be kept semi-secret, did spell out an agenda for a New World Order and the need for definite action and planning to bring this about:

> A future order based on sustained cooperation will not happen without the conscious planning and steering of political leadership and without a fuller sense among our citizens of the needs of this new era. ...

Trilaterals are right in believing that citizens are unenthusiastic about "the needs of the new era."

The "needs" are largely chosen and exploited by the Trilaterals themselves for self interested reasons. Furthermore Trilaterals have no legal validity. They are not elected. They are not subject to any citizen review. They apparently can do what they want without consulting any citizen. No wonder citizens are uninterested. And if enough read this book (a most unlikely event) citizens might even start to think that their sovereignty has been usurped — and start to look for the rope to hang the perceived creators of contemporary misery. When GATT and NAFTA reduce even further American standards of living, citizens will be looking for a scapegoat. When crime and phony "wars" on drugs, crime, poverty and everything else evolve into street bloodshed — this author would not want to be in a Trilateralist's shoes. Nor in those of an international banker sitting in New York.

FRONT PAGE OF 1979
TRILATERAL COMMISSION MEMBERSHIP LIST
Note David Rockefeller, Chairman of Chase Manhattan Bank is the founder and North American Chairman as well as Chairman of the Executive Committee that selects Trilateral members.

The Trilateral Commission

GEORGES BERTHOIN
European Chairman

EGIDIO ORTONA
European Deputy Chairman

MARTINE TRINK
European Secretary

TAKESHI WATANABE
Japanese Chairman

NOBUHIKO USHIBA
Japanese Deputy Chairman

GEORGE S. FRANKLIN
Coordinator

TADASHI YAMAMOTO
Japanese Secretary

DAVID ROCKEFELLER
North American Chairman

MITCHELL SHARP
North American Deputy Chairman

CHARLES B. HECK
North American Secretary

North American Members

David M. Abshire, Chairman, Georgetown University Center for Strategic and International Studies
Gardner Ackley, Henry Carter Adams University Professor of Political Economy, University of Michigan
Graham Allison, Dean, John F. Kennedy School of Government, Harvard University
Doris Anderson, President, The Canadian Advisory Council on the Status of Women; former Editor, Chatelaine Magazine
John B. Anderson, U.S. House of Representatives
J. Paul Austin, Chairman, The Coca-Cola Company
George W. Ball, Senior Partner, Lehman Brothers
Michel Belanger, President, Provincial Bank of Canada
Robert W. Bonner, Q.C., Chairman, British Columbia Hydro
Robert R. Bowie, Harvard Center for International Affairs
John Brademas, U.S. House of Representatives
Andrew Brimmer, President, Brimmer & Company, Inc.
Arthur F. Burns, Distinguished Scholar in Residence, The American Enterprise Institute for Public Policy Research; former Chairman of Board of Governors, U.S. Federal Reserve Board
Philip Caldwell, Vice Chairman and President, Ford Motor Company
Hugh Calkins, Partner, Jones, Day, Reavi's & Pogue
Claude Castonguay, President, Fonds Laurentien; Chairman of the Board, Imperial Life Assurance Company; former Minister in the Quebec Government
Sol Chaikin, President, International Ladies Garment Workers Union
William S. Cohen, United States Senate
*William T. Coleman, Jr., Senior Partner, O'Melveny & Myers; former U.S. Secretary of Transportation
Barber B. Conable, Jr., U.S. House of Representatives
John Cowles, Jr., Chairman, Minneapolis Star & Tribune Co.
John C. Culver, United States Senate

CHAPTER FIVE: TWO DECADES OF TRILATERAL SCHEMING IN AGRICULTURE

In a previous volume, TRILATERALS OVER WASHINGTON, we pointed out that a Trilateral objective is to exaggerate and exacerbate world problems so that Trilateral power to control and order a new world may be magnified.

We pointed out that such magnified problems appear to be selected according to the following criteria:

- The problem must be important from a global viewpoint;
- The problem must be one that can be solved by some degree of Trilateral-Communist cooperation following a presumed unstated objective to merge the U.S. with a socialist structure.
- The venture must be one that can be pursued without undue intrusion into the internal affairs of the participating states.

An important problem area that fits the criteria for selective manipulation is that of world food. Food supplies are inadequate, people need food to live, and the technological and financial abilities for food production are heavily within Trilateral countries. As Triangle Paper No. 13 puts it:

> Prospects are somewhat more substantial for cooperation in the realm of increasing food production. Production increases require both more effective domestic

> agricultural policies on the part of developing countries and enlarged provision of outside capital and technology to them for agricultural development.

In particular, Triangle Paper 13 claims:

> The prospects for cooperation are more promising with regard to the third objective: the development of adequate food (particularly grain) reserves. A reserve stock policy that could keep cereal price changes within a less disruptive range than in the recent past could make a considerable contribution not only to restraining inflation in the developed and developing worlds, but also to ensuring that adequate food supplies are available to developing nations at prices that will not impose an undue drain on foreign exchange...

In considering Trilateral targets for international food reserves and world agriculture, we need to consider what the Trilaterals say they want and compare it to what they really want. Fascinated by the idea of "food power" and "contrived shortages," the Trilaterals intend to use food as a weapon to bring about the New World Order. One stated objective is to create an "international system of national food reserves" by massive manipulation of recently acquired political power against private markets and initiatives. It is proposed, for example:

- To keep grain prices in a "less disruptive range,"
- Restrain inflation,
- Ensure adequate food reserves for lesser developed countries (LDCs) and
- Overcome periodic food imbalances.

Trilateral intentions for a world grain storage program are published by the Trilateral Commission and the Brookings Institution, headed by Trilateral Commissioner Bruce K. MacLaury. Other Trilateralists on the Brookings Board of Trustees include Robert V. Roosa (partner in Brown Brothers, Harriman), Lucy Wilson Benson, and Gerard C. Smith (ambassador at large for non-proliferation matters.) In 1976

Brookings Institution Senior Fellow Philip H. Trezise, with the assistance of former Assistant Secretary of Agriculture Carroll Brunthaver, published Re Building Grain Reserves: Toward An International System. Brunthaver had previously been involved in a conflict of sworn testimony, investigated by the Senate Permanent Subcommittee on Investigations. (See Report, Russian Grain Transactions, 93rd Congress, 2nd Session, p. 33). In the Trezise book, the problems for multi-lateral agreement on grain reserves are considered to be "formidable." Going ahead is "compelling" because of the following: upward moves in grain prices have a "pervasive influence" on all food prices; they mean more worldwide hunger; and grain stocks can be used in periods of famine.

More specifically, Trezise proposed:

- An initial reserve of sixty million tons of grain, rising to between seventy-five and eighty million tons by 1981,
- Contributions from all industrial countries, including Argentina and South Africa,
- A program cost of $6 billion plus $640 million in annual storage costs,
- That stocks should be "national," bought at 10 percent above floor prices and sold at 10 percent below ceiling prices,
- That twenty million tons be set aside for famine reserve.

As in most Trilateral writings, Trezise includes only evidence in favor of proposed Trilateral policy. Trilaterals typically use an ideological procedure of gathering facts and opinion supporting their argument, never allowing a hint of serious counterargument. Two glaring unstated consequences in Trezise's book are:

1. Any such massive stockpiling will raise the long-term price of grain, negating the objective of "restraining inflation";
2. The only way to stop the resulting inflation is through rigid government price controls and regimented farming.

The choice of food products as a means of reducing national sovereignty is emphasized in the following paragraph:

There are several reasons why commodities are treated differently than other products that enter into trade. Probably the most basic reason is that commodity supplies are linked to land, tying them to the concept of territory, over which nation-states exercise sovereignty. As a general proposition, the demand for, and the supply of, most commodities are rather unresponsive to changes in price over short periods of time, so that quite sharp fluctuations in price can be generated by fairly modest changes in overall market conditions. Moreover, the time required to expand supplies is often lengthy, although this property varies widely among individual commodities. Although the value of all commodity consumption represents no more than about ten percent of annual economic activity in industrialized nations, and even though substitutes exist for any particular commodity, commodities are sometimes distinguished as "core products."

The Trilateral elite, through control of the U.S. executive branch, will be calling the shots on a world basis to reduce producer control and indirectly national sovereignty. The amount of political power possessed by world grain producers can be measured by comparing the area devoted to 1976 wheat production in Trilateral regions:

	Thousand Hectares
European Economic Community	11,232
Japan	89
United States	28,700
U.S.S.R. (for comparison)	59,462

This U.S./Trilateral dominance is further reflected in world export figures of wheat plus flour for 1975-76:

	Metric Tons
United States	31,522,000
Canada	12,136,000
Australia	8,072,000
EEC	7,729,000
Argentina	3,111,000
Japan	38,000

If it were possible for other countries to substantially increase their wheat production, the quickest way to do so would be to raise government price support levels. However, except for Argentina, the U.S. already has the lowest support levels among the 30 or so wheat-producing countries in the world. Thus, one can see how the U.S. has acreage, yield, and production efficiency all working for it at the bargaining table.

This discussion of "food power" is not academic — it has major significance for any grain trader, farmer, firm, or individual in any way connected with grain products.

The Trilaterals propose international sanctions against any government, private firm, or producer (in or out of an association) that interferes with Trilateral objectives. These sanctions will not be applied in any principled way, but will be used pragmatically to achieve Trilateral goals. The key to this plan and associated sanctions is in Triangle Paper 10, "Seeking a New Accommodation in World Commodity Markets." Therein, the concept of "contrived shortages" is floated. A contrived shortage is any non-Trilateralist action in the market place that interferes with Trilateral objectives. For example, a farmer withholding grain from the market and waiting for a higher price, is guilty of contrived shortage. The paper further states that these contrived shortages can be informal, rather than brought about by a formal association of producers.

While all offenders are to be subject to effective international investigation and action, the penalties are not to be applied equally. A non-Trilateral developed country such as Argentina or South Africa will be dealt harsher penalties (i.e. sanctions) than underdeveloped Zaire or Zambia (phrased subtly as ". . . in the case of non-industrialized countries, however, it is necessary to consider this issue from a broader political perspective").

Consequently, any informal or formal farmers group in the U.S. protesting price levels — and such protest will be inevitable when Trilateral objectives surface — will be subject to penalties. When can these individual firms and nonfavored

governments anticipate Trilateral hostility? Probably under the following conditions:

- If they attempt to stabilize or move market prices to non-Trilateral levels,
- If they respond to market imperfections or undertake any systematic withholding of supplies from the market,
- If they make any information exchange for these purposes.

Trilaterals are well aware that market fluctuations in agriculture are highly sensitive to supply changes, and that whoever controls the supply controls the market.

In Triangle Paper 14, "Toward a Renovated International System," two additional and interesting caveats relating to international grain reserves appear:

1. That the Soviet Union can benefit from fixed prices and guaranteed sources of supply, and
2. That if the U.S.S.R. doesn't see the wisdom of joining the Trilateral plan, the Trilaterals will go it alone.

> On the other hand, the paper comments: We have not sought ventures that would exacerbate Sino-Soviet rivalry. We have thus focussed, for the most part, on projects that would involve either the USSR or China, but not both. This does not mean that cooperation with the Soviet Union and China cannot be pursued simultaneously — only that it should not focus on the same projects.

The chances of Soviet or Chinese agreement are, of course, uncertain; our assessments are tentative, based on such limited evidence as exists. Only by seeking cooperation can its feasibility be ascertained Looking at the period since 1976 when these ideas were floated, agriculture has been used to promote New World Order, in some ways not too obvious.

The Soviet Union dictatorship was kept alive for decades by American wheat sold at below market rates—and butter and cheese subsidized by the American taxpayer. Furthermore Trilateral writer Philip Trezise was one of the most vocal Washington policy makers, promoting the downright false

view that the Soviet Union was technically viable — all the while American grain companies and multinationals were preparing to exploit the Russian market.

When it came to Somalia however, a minor pawn on the New World Order scene, some two million Somalis were allowed to starve before U.S. came to offer help — then the help was a comic opera military excursion (network TV cameras were on Somali beaches filming U.S. Marines wading ashore — presumably the network crews got there first with dry feet). The Somali fiasco demonstrated that Trilateral objectives are political, not humanitarian. The humanitarian is merely an excuse for the military.

And while Trilaterals say they will not "exacerbate Sino-Soviet rivalry" they most certainly condone Chinese persecution of dissidents. Every time the Chinese demonstrate brutality towards their own people and the Western world calls for sanctions, the Trilateral forces urge restraint and caution. For what reason? Obviously, to protect investments in China.

Crisis Politics in Agriculture

As Trilateral policies are implemented, unrest among farmers surfaces — mostly in Europe, especially among French and Belgian farmers but also from time to time in the United States.

A nationwide farm strike was well underway in mid-1978, with participating farmers from all areas of agriculture. Demonstrations like "tractorcades" were common events covered on national T.V. While some farmers in winter areas were not sure if they would be planting spring crops, others were already pressed to the wall with bankruptcy: they had no choice but to refrain from planting as long as prices remained relatively low. Once again the banks were in danger of becoming owners of real estate — farms. Since banks do not want that responsibility, every effort was made to support shaky farms and ranches. Recently, the Federal Land Bank (where most farmers have found an easy and inexpensive source of credit for decades) announced it would not foreclose on farmers in default. The implications of this are

far-reaching, especially since no one knows just how many farmers are in serious trouble.

Big changes cannot be implemented only during periods of crisis. It appears the Trilateralists are pushing for a major farming crisis in the U.S. within the next year or so, one that can be manipulated for Trilateral ends. If the farming industry becomes bankrupt, the government's only choice will be to "institutionalize" the nation's food production in the same manner that Amtrak was "nationalized." On the other hand, if the government chooses to let prices rise to the point where farmers can realize a profit, it will be only with additional and far-reaching controls over the farmer. Government-induced prosperity has always resulted in a trade-off: Profits for Controls.

The current situation in the U.S. plays directly into Trilateral hands. The grain or "cereal snake" will be a foregone conclusion when the Trilaterals find themselves caught in the vise between farmers crying for higher prices and consumers demanding lower food prices. But, of course, it will have been a "contrived" crisis in the first place.

How then will a national grain reserve — keyed to the international grain plan of the Trilateral Commission — affect the American farmer?

The carrot offered by the Carter administration, under Trilateral control, was stable and "high" prices. Farmers, suffering from four years of low prices, were eager listeners. Secretary of Agriculture Bergland (a Trilateral nominee) vowed "to even out the booms and busts" in agriculture. (To this, former Secretary of Agriculture Earl Butz responded, ". . . you'll notice he's going to even out the boom first.") In practice, the Carter grain storage program produced the following:

- A narrow grain price snake. The government supported the floor of the snake, while whipped-up consumer pressure, through a captive media, created a lid on the ceiling of the snake, making an ultimate government price ceiling inevitable.
- More — and more — government control.

If the government determines quantities produced and

market prices, then ultimately, it will decree who plants what, and where. Farmers have yet to learn they cannot have traditional freedoms and security at the same time.

The summer of 1977 was favorable for grain farmers, due to increased yields and stocks; and then, worried over production and low prices, farmers asked for acreage cutbacks. By August 1977, Secretary of Treasury Blumenthal and Secretary of State Vance wanted no cutbacks: they argued increased production was needed for the storage program. It is not clear if this was a dispute between Trilateralists and non-Trilateralists in the cabinet, but it is not likely. Former Minnesota Congressman Bergland is not a Trilateral member, but he was sponsored by Vice President Walter Mondale — and Bergland has a longtime image to maintain of being "the farmer's friend."

President Carter made a contradictory decision by calling for Congress to legislate a 20 percent acreage cutback plus adding 30 to 35 million tons of grain for the national stockpile.

By 1994 the grassroots reaction by farmers could be identified but had not reached crisis proportions.

Finally American trade unions at the local level sensed they were being betrayed at the national level. In the days of Samuel Gompers and George Meany, American workers were represented with honesty in their struggle with management. The coming of Trilateralism changed that and it took many years for the unions to recognize they had been sold out. Lane Kirkland, boss of the AFL-CIO, was a long time Trilateral member (not in 1993). His place was taken on the Commission by Glen E. Watts, former President of the Communications Workers of America, and Albert Shanker, President of the American Federation of Teachers.

A remarkable article, "DDT in the Baby Food — and other threats posed by GATT" appeared in the San Francisco Examiner (February 2, 1994) by Jay Hopkins, a writer on labor affairs. Remarkable, because the article not only reflected labor's sense of betrayal, but that it appeared in a major city newspaper.

Here's a couple of quotes from Hopkins: "U.S. workers are

being told by their own governing elite that they must compete in the world market against the poor masses in the Third World."

The article points out that recent GATT sessions received delegations from "major corporations like DuPont, Monsanto, and Cargill, alongside U.S. government officials. There were virtually no representatives from small businesses, farms, churches, unions, environmental groups. Obviously the economic interests of multinational corporations including those based in the United States are frequently at odds with the welfare of average Americans."

Hopkins stated bluntly, "should the US Government defend American sovereignty, jobs and economic independence?" or "throw American workers and consumers into a downward spiraling global competition with nations that have nowhere near our quality of life?"

What is happening in many industries and certainly in agriculture and food processing, is that the American standard of living is being pulled down deliberately by the Trilateral process.

Whether enough American workers, who are notoriously sparse readers, will read these words and spread the message is unlikely. In all probability, we shall see the old time high standard of living of the American worker go by the wayside. The unions should be watching out for their members, but union leaders are too interested in the trappings of power. Why American Federation of Teachers, Communications Workers of America, and International Ladies Garment Workers Union would want to be represented on the Trilateral Commission can only be explained in terms of the limited vision and self-advancing greed of union leaders. We cannot imagine that Samuel Gompers or George Meany would give the Trilateral Commission even the time of day.

Trilateral Agriculture Under Clinton

By the early 1990s Trilateral policies had further reduced the small family farmer and magnified the global power of large

multi-national agricultural corporations.

We find these global food firms heavily represented on the Trilateral Commission:

DWAYNE O. ANDREAS, Chairman of the Board and Chief Executive Officer of Archer-Daniels-Midland Company, a global agricultural giant, which has featured a joint merged U.S.A.-Soviet Union in its Russian advertising.

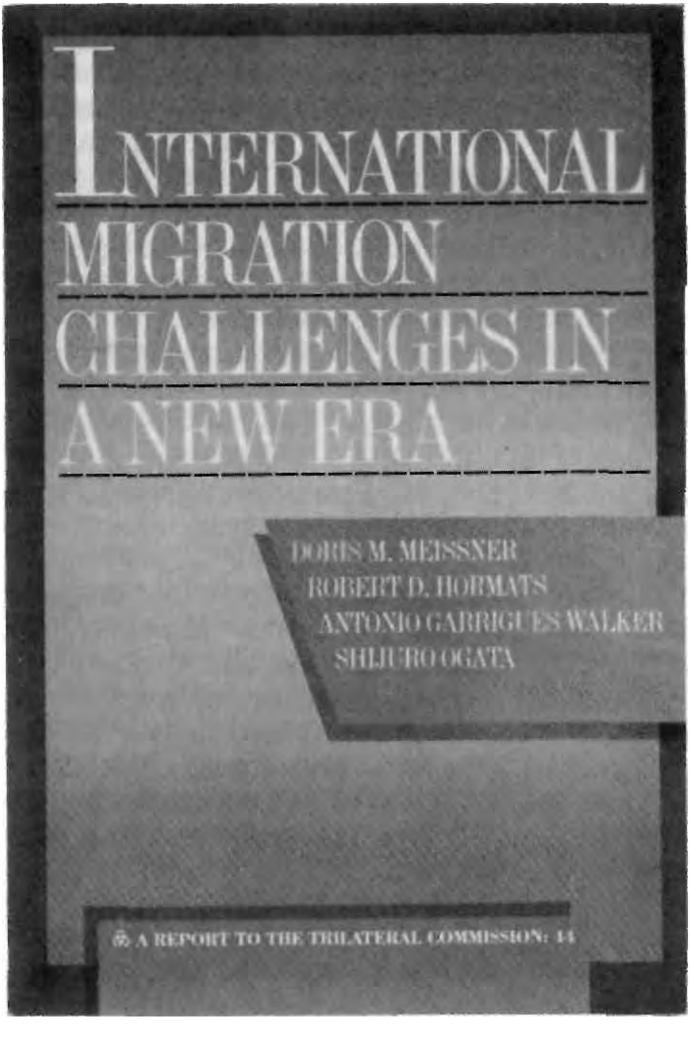
The formerly cited ROBERT MCNAMARA and JESSICA EINHORM of the World Bank, heavily involved in development of global agriculture.

WHITNEY MACMILLAN, Chairman of the Board and CEO of Cargill Inc., the largest grain operators in the world.

With the passage of NAFTA, where Clinton placed his total effort and prestige on the line, the doors were opened for U.S. global control of agriculture. The American consumer will not find lower prices but will see lower quality products in many cases (for example, in imported meat) and a loss of jobs in labor-intensive agricultural and food processing operations. Canning and meat processing plants are closing by the score in the United States and their operations moved overseas to lower wage costs.

The original objective of world "cooperation" in agriculture stated in Triangle Paper No. 13 had been heavily implemented by 1994. However, the impact on American jobs can only be generally estimated because so much low-paying labor in the U.S. has come from illegal immigrants.

Within another 20 years we project that all global agriculture and food processing will be under control of the international giants. This will give Trilaterals the power to create abundance or famine at will.


INTERNATIONAL
MIGRATION
CHALLENGES IN
A NEW ERA
DORIS M. MEISSNER
ROBERT D. HORMATS
ANTONIO GARRIGUES WALKER
SHIJURO OGATA
A REPORT TO THE TRILATERAL COMMISSION: 44

CHAPTER SIX: TRILATERALS DON'T LIKE TAXATION.. FOR THEMSELVES

Oddly, while there are Trilateralist papers on almost every major policy issue, there are none at all on taxation. After some research, we discovered a possible reason for the silence. Taxation is not a pressing problem for Trilateralists; it is only a pressing problem for you and me. Research unearthed an interesting paradox: Trilaterals emphatically favor more taxes for the common man, but do very well avoiding taxation for themselves and their corporate vehicles.

When we were able to identify Trilateral public statements on Proposition 13, for example, they were not unexpectedly strongly against reducing California property taxes. For example,

- Bank of America (Trilaterals Clawson and Wood were directors) contributed $25,000 to defeat Jarvis-Gann (Proposition 13).
- Governor Thompson of Illinois, who is making appropriate presidential noises, rejected a similar tax reduction program in Illinois.
- Carter said Proposition 13 is an "aberration" that will not sweep the country.
- The Los Angeles Times (a director is Commissioner Harold Brown) was described by Jarvis himself as "the vindictive paranoiac, schizophrenic Los Angeles Times" for the vitriolic nature of its opposition to 13.

In sum, Trilateral put their weight against Jarvis-Gann and tax reduction.

Trilateral opposition to tax reduction most emphatically did not apply to their own taxes nor to those of their corporate affiliations. Trilateral multinationals have successfully avoided paying taxes in the United States and have made some headway in tax avoidance in England and possibly elsewhere.

The United States picture was publicized by Congressman Charles A. Vanik (on 26 January 1978) after a congressional study of the taxes paid by major multinational corporations. Reported Congressman Vanik:

> This study, covering tax year 1976, examines 168 companies. These include 108 industrial, 7 mining, 8 airline, 9 railroad, 5 trucking, 13 utility, 8 retailing, and 10 commercial bank companies. Because a few did not furnish data adequate for computation, some categories of taxes or rates could not be computed
>
> Where sufficient data made computations possible, the average effective U.S. tax rate on worldwide income of the corporations was approximately 13.04 percent, down significantly from the 21.3 percent rate in tax year 1975. In order to qualify for a tax rate this low, an average family of four could only have earned $20,000. The companies listed in this study had a pretax income of more than $38.7 billion.
>
> The figures show that 17 companies paid nothing in effective Federal income taxes in tax year 1976 — 6 more than tax year 1975 — despite combined total worldwide net incomes of more than $2,594,060,000 — table 1. The 17 companies accumulated tax credits of more than $375 million. In some cases, however, companies paid no taxes because they sustained net losses. In other cases, some companies will claim to have "paid"Federal taxes, but their credits exceed taxes, resulting in no effective payment and an effective tax rate of zero.—

Included in this tax avoidance group of multinationals we

find numerous corporations with Trilateral connections.

Having assumed the burden of deciding the future for American society and the New World Order, one would at least expect that Trilaterals pay their full share of the costs. We therefore examined the Vanik study from the viewpoint of identifying the taxes paid by multinationals represented in the Trilateral Commission by company directors.

The lowest income tax bracket for an individual U.S. taxpayer is 14 percent. On the other hand, Chase Manhattan, Continental Illinois, and First Chicago, the power houses behind Trilateralism, all pay far lower rates. In fact, Chase Manhattan Bank paid no U.S. taxes at all in 1976.

On the one hand, David Rockefeller (chairman of Chase and the largest individual shareholder in Chase,) wants to decide the future of American society and the world; on the other hand, his bank is totally unwilling to make a contribution to the new American society and a New World Order.

Given these facts, we have every right to be skeptical about announced Trilateral intentions and objectives. We have every right to assume that the Trilateral Commission may be a gigantic rip-off on American society.

Unfortunately no study of multinational taxation rates has been made by Congress since 1978, the Vanik study was the last comprehensive study which revealed the low rates paid by multinationals. However, we believe that the rates paid in the late 1970s and included here have not changed dramatically in the last decade.

As we all know, personal income tax rates are much higher than the rates paid by the tax-avoiding multinationals. In the U.S. the starting individual tax rate is 14 percent and the highest rate is 70 percent. In Canada, the rate starts at 17 percent and ranges to 43 percent. Other European countries have even higher rates up to a confiscatory 98 percent in Britain. If you are a Trilaterally-connected international bank, your effective rate in 1976 was much lower than the lowest individual bracket. In order of their success in avoiding taxes, Trilateralist banks rank as follows:

Bank	U.S. Taxes in 1976
Chase Manhattan	0.0%
Manufacturers Hanover	3.8%
First Chicago	6.3%
Continental Illinois	10.5%
Bank of America	14.9%

This success in avoiding U.S. taxation is carried abroad by these same multinationals. Take, for example, a report in the London Economist (14 January 1978) from the British viewpoint, under the scathing headline:

"No Tax Please, We're Banks"

> American and other foreign banks in London could end up paying little or no British tax if their huge claims for relief which are now being examined by the Inland Revenue are accepted Even the British clearing banks could have their tax bills dramatically reduced
>
> ... the MNC is also a source of concern to some governments, since from its wide base it is often able to circumvent national monetary, fiscal, and exchange policies. The possibility of distortions arising from intracorporate pricing practices to take advantage of national variations in tax laws has also been cited with concern.

A check of multinational corporations and their 1976 U.S. tax rates on world income turns up some multinationals that did pay significantly high U.S. tax rates.

Company	U.S. Taxes in 1976
Getty Oil	21.14%
R. J. Reynolds Ind.	41.0 %
Greyhound	46.8 %
Textron	40.1 %

Generally, however, those MNCs with Trilateral connections appear to pay significantly lower rates. This is only an approximation. It could be a spurious correlation, but there is sufficient evidence to warrant a closer look.

Company	1976 tax Paid
EXXON (controlled by Rockefeller interests)	8.0%
STANDARD OIL OF CALIFORNIA (Rockefeller and Packard)	17.1%
EASTERN AIRLINES (controlled by Rockefeller interests) (now defunct)	0.0%
ARCO (Ingersoll)	11.4%
OCCIDENTAL PETROLEUM (Armand Hammer, one-time friend of Lenin, was chairman of the board of Occidental In 1919 Julius Hammer, father of Armand, was secretary of the Communist Party U.S.A. Hammer has been probably the most active western capitalist in building the military power of the Soviet Union.)	4.2%
GULF OIL (Gulf provides almost $1 billion a year in oil concession revenues to the Marxist Neto regime. Gulf's Cabinda oil wells were protected by Cuban troops, thus releasing Angolans to support the SWAPO forces invading South-West Africa.	7.0%

We can push this argument a little further. Trilateralists in government are protecting fellow capitalists from taxation.

A recent report by the House Government Operations Committee disclosed the following:

- IRS decisions on some multinational oil firms have cost the U.S. Treasury over $7 billion since 1974. "By the early 1970s, multinational petroleum companies were operating abroad under a set of factual and legal circumstances completely at variance with those upon which the previous foreign tax credit rulings were based."
- IRS failed to audit oil company returns or require them to provide supporting information for their expense claims (Presumably audits are only for individual taxpayers.)
- These favorable actions stemmed from "interference" by then Secretary of State Henry Kissinger (Trilateral).

- More recent "improper interference" for the same purpose came from Secretary of Treasury Blumenthal (Trilateral).

The committee did not cite the U.S. oil companies involved, except to note that they operate in Saudi Arabia, Libya, and Indonesia. Aramco alone was named in one place: this company is linked with Exxon and Chase Manhattan interests.

In brief, a House committee has charged Trilateralists Henry Kissinger and Michael Blumenthal with "improper interference" with IRS to obtain benefits for certain companies. Even further,

> In September 1977, at the very time that the subcommittee discovered and criticized a suggestion made by a Treasury official a year earlier to have IRS and Treasury officials "cooperate" in secret dealings with Indonesia and oil companies therein regarding foreign tax credits (a suggestion which was also admonished as being improper by other Treasury officials), the new International Affairs officials were recommending similar actions.

Another example follows for those readers who have read my Wall Street and the Bolshevik Revolution and who may remember that in 1918, the leading Wall Street law firm supporting the infant Bolshevik regime in Russia was Simpson, Thacher and Bartlett of New York. As one indication of then-support, partner Thomas D. Thacher wrote a report which became decisive in gaining British cabinet support for the Bolsheviks. Also Thomas Lamont, Dwight Morrow, and H. P. Davison were closely involved in developing policy towards the Bolsheviks: all were partners in the J. P. Morgan firm.

While in London on 13 April 1918, Thomas D. Thacher, a member of the American Red Cross Mission to Russia, wrote to the American ambassador in London that he had received a request from H. P. Davison, a Morgan partner, "to confer with Lord Northcliffe" concerning the situation in Russia and then to go on to Paris "for other conferences." Lord Northcliffe was ill, and Thacher left a memorandum to be submitted to Northcliffe on his return to London with yet another Morgan partner, Dwight W. Morrow. This memorandum not

only made explicit suggestions about Russian policy that supported the pro-Bolshevik position of William Boyce Thompson (director of Chase, now Chase Manhattan, Bank), but even stated that "the fullest assistance should be given to the Soviet government in its efforts to organize a volunteer revolutionary army."
The first three proposals in Thacher's report follow:

> First of all... the Allies should discourage Japanese intervention in Siberia.
>
> In the second place, the fullest assistance should be given to the Soviet Government in its efforts to organize a volunteer revolutionary army.
>
> Thirdly, the Allied Governments should give their moral support to the Russian people in their efforts to work out their own political system free from the domination of any foreign power. . .

Was Wall Street attorney Thacher a capitalist enemy of the Bolsheviks? Of course not. Thacher was right in there, helping the revolution, as part of the "breakaway ruling class," along with capitalists from J. P. Morgan and Chase Bank.

Similar aid for Marxist revolution came in South Africa and Red China. And who was U.S. Secretary of State in charge of facilitating this aid? Cyrus D. Vance, who before his appointment as Secretary of State was also a partner in Simpson, Thacher and Bartlett.

Senator Clifford P. Case was a member of the firm of Simpson, Thacher and Bartlett from 1928 to 1953, when he became president of the Fund for the Republic, the foundation that funded the study for a "new constitution" so desired by the elite.

Yet another memorandum from William Boyce Thompson (director of the Federal Reserve Bank of New York and Chase Bank) to Lloyd George (prime minister of Great Britain) in December 1917, supported the Bolsheviks and admitted in part:

> About the overthrow of the last Kerensky government we materially aided the dissemination of the Bolshevik

> literature, distributing it through agents and by aeroplanes to the German army. If the suggestion is permissible, it might be well to consider whether it would not be desirable to have this same Bolshevik literature sent into Germany and Austria across the West and Italian fronts.

Does this sound as if Wall Street and the Bolsheviks were enemies? Or allies?

Another excellent example of the capitalist-communist alliance is Gulf Oil in Angola, the financial backer of the Neto government, while Cuban troops protect Gulf's Cabinda production facilities.

And how about Armand Hammer, chairman of Occidental Petroleum? In the Russian edition of Lenin's Collected Works, you will find several letters from Lenin to Hammer addressed affectionately as "Dear Comrade." Capitalists, the big enemy of communists? Nonsense. They work hand-in-glove to rule the world.

And in 1994 inside history is not too much different to 1919.

It has not gone unnoticed that politicians make election promises that are abandoned when they enter office.

President Bill Clinton, a Trilateralist, is a prime example. Election promises to reduce bureaucracy, to protect individual privacy, to reduce the power of the elite and lobbyists and similar populist scenarios have all been abandoned.

And a series of declassified FBI documents illustrates the behind-the-scenes origins of many Clinton appointments. They are evenly divided between associates and supporters of the Institute for Policy Studies, a pro-Marxist think tank, and multinational professional lobbyists. The co-directors of the transition team were both Trilaterals: Warren Christopher and Vernon Jordan; and both were big time lobbyists. Then came a series of appointments reflecting Marxist-leaning Washington think tank persons (mostly from the Institute for Policy Studies, i.e. Anthony Lake, Leon Panetta, Morton Halperin) and/or big time lobbyists (Ron Brown, Warren Christopher), and revolving door insiders (Winston Lord, David Gergen, Bruce Babbitt).

The only truly non-Washington appointment is Attorney General Reno, who has proven herself adept at squashing investigations and actions that might embarrass the Administration — BCCI, Brown bribe investigation, Whitewater affair, Waco. . .

The key to understanding world events is to look at the world in terms of a Marxist Ruling-Class Alliance. Then, seemingly inconsistent actions and events make sense:

- The elite subsidizes Marxist regimes: they are not enemies.
- The elite abandons free enterprise allies: it wants socialism.
- The elite presses for more individual taxation, that is, the Marxist "graduated income tax."
- The elite reduces its own taxation in the same way that the Moscow elite lived it up in Soviet Russia at the expense of the Russian working class.

The textbook modern history is illusory because it is based on a mythical capitalist-versus-communist struggle.

Thus, when we are asked to believe that Trilateral ambitions are morally justified to build a New World Order devoted to the peace and welfare of mankind, two points strike us: (a) this end does not coincide with other interpretations of Trilateral motivations and actions, and (b) the means adopted appear authoritarian and suggest that the ends may also be authoritarian.

What are some of the practical lessons we can learn from this alliance?

• If you, an average American-in-the-street voter, recall the history of both Democrats and Republicans, can you think of one instance where either party kept a promise? 'Very few!

• Our argument is that if you are a small- or medium-sized businessman or independent professional, then you are targeted for elimination. Does this coincide with your personal experience over your own working lifetime?

• If you are a socialist, then stop deluding yourself. You are

working hand-in-hand with the elitists you proclaim to despise.

• If you are interested in tax reform, then consider that the only acceptable tax reform is complete repeal of the Sixteenth Amendment.

To emphasize the discriminatory approach of the Carter administration on tax matters, we can do no better than quote the congressional testimony of Philip E. Vision, supervisory revenue officer in the Chicago District Office of IRS, who in 1976 blew a small whistle on IRS procedures before the Subcommittee on Oversight of the Committee on Ways and Means. Congressman Jones asked Vision about differing treatment of rich and poor taxpayers:

> Is there pressure to seize a small business or a poor taxpayer's property in order to close the case, and pressure to perhaps settle quickly with a rich taxpayer who has plenty of accounting and legal ability to drag things out?

To which IRS official Vision replied:

> In all candor, Congressman, I must say this: You will find those branches or groups that are involved in the inner city of Chicago, the low income, the closures are highest because there is really no problem. It requires no technical skills or knowledge to prepare a levy upon the employer of an employee who is getting take-home pay of about $80. We can go in, serve the levy, and take the entire $80.
>
> Certainly a taxpayer who is earning $80 could hardly be expected to employ an expensive attorney or CPA. Usually when he comes in, in response to the levy, it is with tears in his eyes because he allocated that $80 to the gas or electric company and because IRS took that money, his electric and gas will be shut off and also part of that money was intended to feed his family. This is a common practice.
>
> I am sorry to report that, but if you would look at the closures in the poor areas of Chicago, the depressed areas, you would find that the closures of the small dollar

TDA's are overwhelmingly larger than they are in the affluent suburbs of Deerfield where I live.

To fully understand the implications of a viciously graduated income tax system aimed at the small/medium American businessman and the broad middle class and to understand as well the role of the multinationals and the international bankers who make up the power elite behind the Trilateral Commission, we need to go back to 1847 and the Communist Manifesto of Karl Marx and Friedrich Engels. Of the Communist revolution, Marx and Engels wrote: In the first instance, this can only be affected by despotic inroads upon the rights of property and by despotic interference with bourgeois methods of production; that is to say by measures which seem economically inadequate and untenable, but have far-reaching effects, and are necessary as means for revolutionizing the whole system of production.

In brief, elimination of property owners and small- and medium-sized businessmen ("Bourgeois methods of production") outside the orbit of the multinationals and international banks is an essential prerequisite to socialism.

Then Marx and Engels outline the famous ten "measures" for achieving revolution in the advanced countries to bring about socialism.

These measures are described by Marx and Engels as follows:

> In the most advanced countries they willy generally speaking, take the following forms:
>
> 1. Expropriation of landed property, and the use of landrents to defray State expenditure.
> 2. A vigorously graduated income tax.
> 3. Abolition of the right of inheritance.
> 4. Confiscation of the property of all emigres and rebels.
> 5. Centralization of credit in the hands of the State, by means of a national bank with State capital and an exclusive monopoly.

6. Centralization of the means of transport in the hands of the State.

7. Increase of national factories and means of production, cultivation of uncultivated land, and improvement of cultivated land in accordance with a general plan.

8. Universal and equal obligation to work; organization of industrial armies, especially for agriculture.

9. Agriculture and urban industry to work hand-in-hand, in such a way as, by degrees, to obliterate the distinction between town and country.

10. Public and free education of all children. Abolition of factory work for children in its present form. Education and material production to be combined

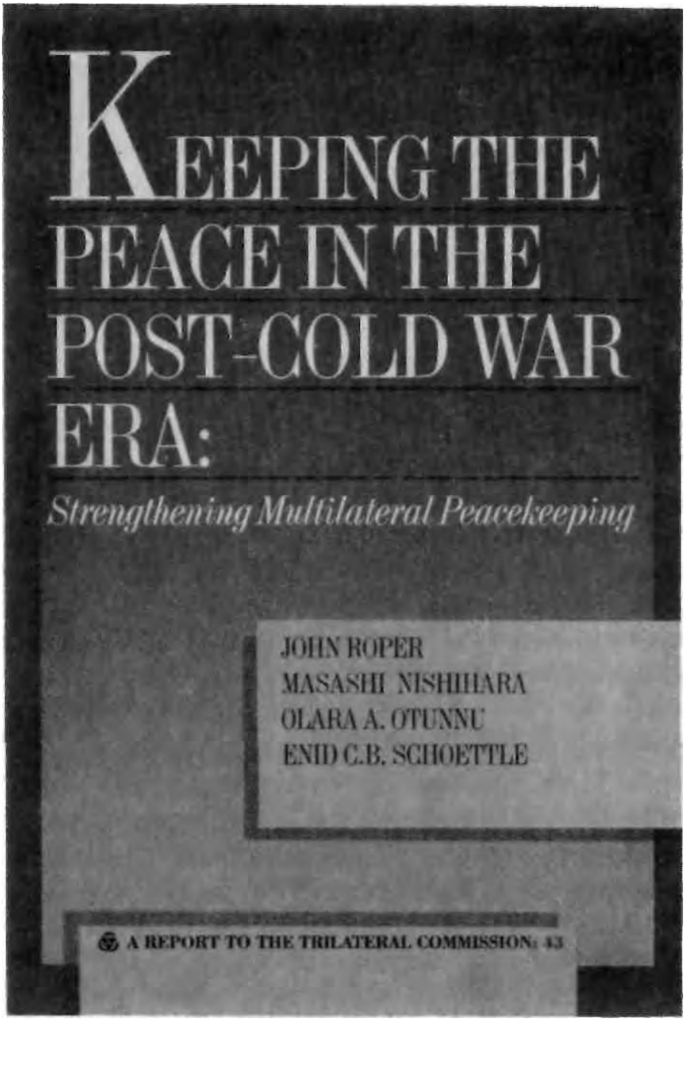
Notably, there is a parallel between Marx and Trilateral propositions: centralization of credit in IMF and the Federal Reserve System parallels Marx's measure 5. AMTRAK, federal funding of rapid transit, and persistent efforts to cut down on use of individual automobiles parallels Marx's measure 6. Finally, our Sixteenth Amendment to the Constitution, the "income tax amendment," is none other than the "vigorously graduated income tax" proposed by Marx in the Manifesto. What has this to do with Trilateral multinational avoidance of taxation? Plenty, as it turns out.

It is interesting to reread Karl Marx's Manifesto in the light of the alliance between Wall Street multinationals and the Communist imperialists. Marxists, especially, should reread Marx. The enemy of Marxist totalitarianism is not the capitalist but rather the "Bourgeoisie," the middle class. Marx sees the bourgeoisie as the source of all that is evil, yet he does not include all the ruling establishment in those designated for elimination. To the contrary, when the class war is about to be fought to a finish, Karl Marx envisaged a curious event: "a small part of the ruling class breaks away to make common cause with the revolutionary class, the class which holds the future in its hands."

In sum, Marx envisaged a coalition of ruling interests of the

revolutionary Marxists and a segment of the ruling class. This is precisely what history has recorded in the hundred or so years since the Manifesto was published. One of the most significant forces in modern world development has been the assistance from a relatively small yet powerful part of the ruling Western establishment to the Soviet Union channeled through such influential organizations as the Council on Foreign Relations (CFR) and today the Trilateral Commission. In Marx's terms, are not Cyrus Eaton, Armand Hammer, David Rockefeller, and the Trilateral Commission ruling class breakaways? Have not Marxists and the "breakaway ruling class capitalists" joined hands to eliminate the American middle class? Unfortunately, academic analysts are blind to the implications of the alliance: they read Marx with preconceptions. So let's present some evidence.

In 1976, the Marxist government of Angola reorganized Diamang, its diamond-producing monopoly. The Neto Marxist government will own 60.8 percent, and the balance will be owned by the former foreign corporate owners. It will be a mixed company. But which former owners will be expropriated to make way for the new Marxist shareholders? Not the big greedy capitalists we hear so much about in socialist literature, but, in the words of the Neto government, "a large number of small shareholders." The major "foreign companies," the large multinationals, that is, the ruling capitalists, will not be affected by the takeover. In other words, the ruling class joins hands with Marxist revolutionaries against the small bourgeois owners.


KEEPING THE PEACE IN THE POST-COLD WAR ERA:
Strengthening Multilateral Peacekeeping
JOHN ROPER
MASASHI NISHIHARA
OLARA A. OTUNNU
ENID C.B. SCHOETTLE
A REPORT TO THE TRILATERAL COMMISSION: 43

CHAPTER SEVEN
PERPETUAL WAR FOR PERPETUAL PEACE

Trilaterals have a fondness for declaring "war" on world problems. We have a "war on cancer," a "war on crime," a "war on drugs," a "war on AIDS" and so on.

What we find within these "wars" are policies designed to advance Trilateral world objectives. Peace and individual freedom are certainly not the objectives, nor in many cases do we identify any contribution to human welfare.

In this chapter we consider (a) the "war on AIDS" and (b) the "war on drugs." In each case we unearth a story very different from the establishment media official line intended for public consumption.

THE WAR ON AIDS

According to Dr. Robert Gallo and other establishment AIDS researchers, this deadly disease with the capability to wipe out the world originated with a little green monkey in Africa who bit a native with disastrous results. Believe it or not, establishment scientists either push this absurd, unproven argument or dismiss origins as irrelevant.

There is another argument, backed by hard evidence and reflected in five books by respected medical doctors. Briefly, this argument is that AIDS is a man-made disease developed by the U.S. Army as part of a biological warfare program,

funded by Congress and released by elitist fanatics to eliminate specific segments of the world's population.

Horrific as genocide by global fanatics may appear, there is more evidence for this interpretation than for the little green monkey theory.

Even more horrendous, this argument takes us right to Trilateralist Robert S. McNamara, former Secretary of State and Chairman of the World Bank. It was McNamara who approved funding for development of an artificial AIDS virus later funded by Congress.

Here's the story based on the research of these five doctors which we supplemented with our own research for documentary evidence.

We previously published our assessment in THE PHOENIX LETTER edited by this author in November 1992 and December 1993.[1] We reprint the following from the December 1993 issue. Further documentation may be found in the November 1992 issue.

Fort Detrich Biological Programs In The '60s

> Fort Detrich in Maryland is the U.S. biological warfare base. Originally called U.S. Army Biological Laboratories it is now labeled U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).
>
> The Army maintains a Special Operations Division (SOD) on the Fort Detrich base with a formal operating agreement with CIA (memorandum signed in May 1952). Both CIA and Army have covered their tracks well but some original documents survive to outline a horrific story.
>
> In the early '60s U.S. Army SOD personnel used specially designed suitcases to spray unsuspecting American civilians with bacillus subtilis at the Greyhound Bus Terminals in Washington, Chicago and San Francisco.

[1] Available from THE PHOENIX LETTER, Suite 216C, 1517 14th Street West, Billings, MT 59102; $87 for one year. THE PHOENIX LETTER, now in its 12th year, is a report on abuse of power.

Similar operations were conducted at airports in Washington D.C., New York, Boston and Los Angeles. The number of one way tickets sold at time of release was used to estimate distribution of the bacterial agents. (Bacillus subtilis can be bought at biological supply houses. It is not listed as a pathogen, but can cause respiratory infections, blood poisoning and food poisoning.)

According to declassified Army documents the Greyhound terminals in San Francisco and Chicago were the location for "six operatives to launch covert attacks" spread over 7 days. Specially designed suitcases sprayed bacteria into crowded terminals for maximum exposure. Photographs were taken and other Army personnel "covertly collected air samples in close proximity to the passengers" to determine if the civilians had been infected (See photographs.)

Later tests were repeated with smallpox agents, grown in large quantities and converted to a lethal powder for spraying. Senate investigation in 1975 revealed close cooperation between SOD and CIA:

"CIA associaiton with Fort Detrich involved the Special Operations Division (SOD) of that facility. This division was responsible for developing special applications for biological warfare agents and toxins. Its principal customer was the U.S. Army. Its concern was with the development of both suitable agents and delivery mechanisms for use in paramilitary situations. Both standard biological warfare agents and biologically derived toxins were investigated by the division."

The Senate Committee found the CIA had covered its tracks to conceal this unconstitutional activity from the American public. The Senate Committee stated, "Although some CIA originated documents have been found in the project files it is clear that only a very limited documentation of activities took place."

An extract from a U.S. Army report details why smallpox was selected as the "agent of choice." Its "attractive" features are listed as:

1. Smallpox is highly infectious with close contact It spreads readily from an infected person to susceptible individuals.

2. A long incubation period of relatively constant duration permits the operatives responsible to leave the country before the first case is diagnosed

3. The duration of illness for those who recover is relatively long.

Although the Federal Government claims that the 1972 treaty banning biological weapons stopped further use of Fort Detrich we know that the U.S. Army applied for $1.4 million appropriation to EXPAND germ warfare testing ability in the early 1980s. Senator James Sasser objected and it is unlikely that the appropriation went through. It could have been handled on the "black budget."

The Originator of AIDS

In July 1969 Dr. MacArthur, Director of the U.S. Army Advanced Research Project Agency (ARPA) appeared before Congress (the Appropriations Committee of the House) and stated: "within a period of 5-10 years it would be possible to produce a synthetic biological agent, an agent that does not naturally exist and for which no natural immunity could have been acquired.

This synthetic agent is AIDS (Acquired Immune Deficiency syndrome virus or HIV-1). ARPA requested $10 million to develop AIDS, 10 years before the virus was identified in the field

Dr. MacArthur added, "It is a highly controversial issue and there are many who believe such research should not be undertaken lest it lead to another method of massive killing of large populations."

From 1961 to 1968 while this artificial biological agent was under discussion in the Pentagon, Trilateral Robert McNamara was Secretary of Defense. Clark Clifford (of BCCI notoriety) took over as Secretary in 1969. (Emphasis added.)

On October 2, 1970, just 15 months after Dr. MacArthur requested an appropriation for AIDS development, Robert McNamara, now World Bank President, made a speech to international bankers in which he identified population growth as "the gravest issue that the world faces over the years ahead."

In his speech to the bankers, McNamara argued that population growth was leading to instability, that a 10 billion world population would not be "controllable."

Said McNamara, "It is not a world that any of us would want to live in. Is such a world inevitable? It is not sure but there are two possible ways by which a world of 10 billion people can be averted Either the current birth rates must come down more quickly or the current death rates must go up. There is no other way."

In brief, Robert McNamara was in the final decision-making role for development of AIDS at the very time he was contemplating the idea that "world death rates must go up." This is more than coincidence.

Our conclusion is that Trilateralist Robert McNamara knowingly encouraged development of AIDS as a means to reduce the world's population. It is difficult to arrive at any other conclusion,

Soviet Union Charges Pentagon With AIDS Development

This information became known to the Soviets and in October 1985 the Soviet Union mounted a worldwide propaganda campaign, AIDS had been manufactured at Fort Detrich, Maryland by the Pentagon, The initial information was planted in a Soviet-backed newspaper in India and then surfaced in more than 30 media sources worldwide. The report was backed by an East German report by Professor Jacob Segal of Humbolt University, East Berlin. Segal argued that the AIDS virus is "the product of an abortive experiment carried out at a laboratory to develop biological warfare means." This Soviet propaganda campaign was discounted in

the West (this editor included). It was beyond the realm of rationality that the U.S. would develop a killer agent such as AIDS. Professor Segal appears to hold the view that it was "accidental," i.e. an "abortive experiment." This position we also held for a while, until the McNamara speech of October 1970 surfaced.

In any event, in the late 80's the U.S. State Department ran a rebuttal campaign to the Soviet charges. However, State was unaware that the Congress had published Dr. MacArthur's requests and statements so the rebuttal fell flat on its face. The State Department, for example, claims the U.S. Army had never used Fort Detrich as a biological warfare base. This is just not true. Further, State apparently had no knowledge of the McNamara contemplation of raising death rates by design.

Conclusions

1. CIA-U.S. Army undertook field tests with bacillus subtilis and smallpox against American civilians.

2. There is no question that the Army received funds from Congress for AIDS development and this was probably undertaken at Fort Detrich.

The AIDS release could have been accidental but we discount this for several reasons. Initial cases came from Africa and Haiti, not the United States. Second, Robert McNamara had simultaneously called for increase in world death rates. This suggests a deliberate policy of controlled release of the AIDS virus.

3. The Soviets obtained the information and used it for a propaganda campaign. The State Department rebuttal was ineffective because State had no idea how much information had already been made public.

Extract from House of Representatives Department of Defense Appropriations for 1970 Hearings Part 5, 1969

129 - Tuesday, July 1,1969

SYNTHETIC BIOLOGICAL AGENTS

There are two things about the biological agent field I would like to mention. One is the possibility of technological surprise. Molecular biology is a field that is advancing very rapidly and eminent biologists believe that within a period of 5 to 10 years it would be possible to produce a synthetic biological agent, an agent that does not naturally exist and for which no natural immunity could have been acquired.

MR. SIKES. Are we doing any work in that field?

DR. MACARTHUR. We are not.

MR. SIKES. Why not? Lack of money or lack of interest?

DR. MACARTHUR. Certainly not lack of interest.

MR. SIKES. Would you provide for our records information on what would be required, what the advantages of such a program would be, the time and the cost involved?

DR. MACARTHUR. We will be very happy to.

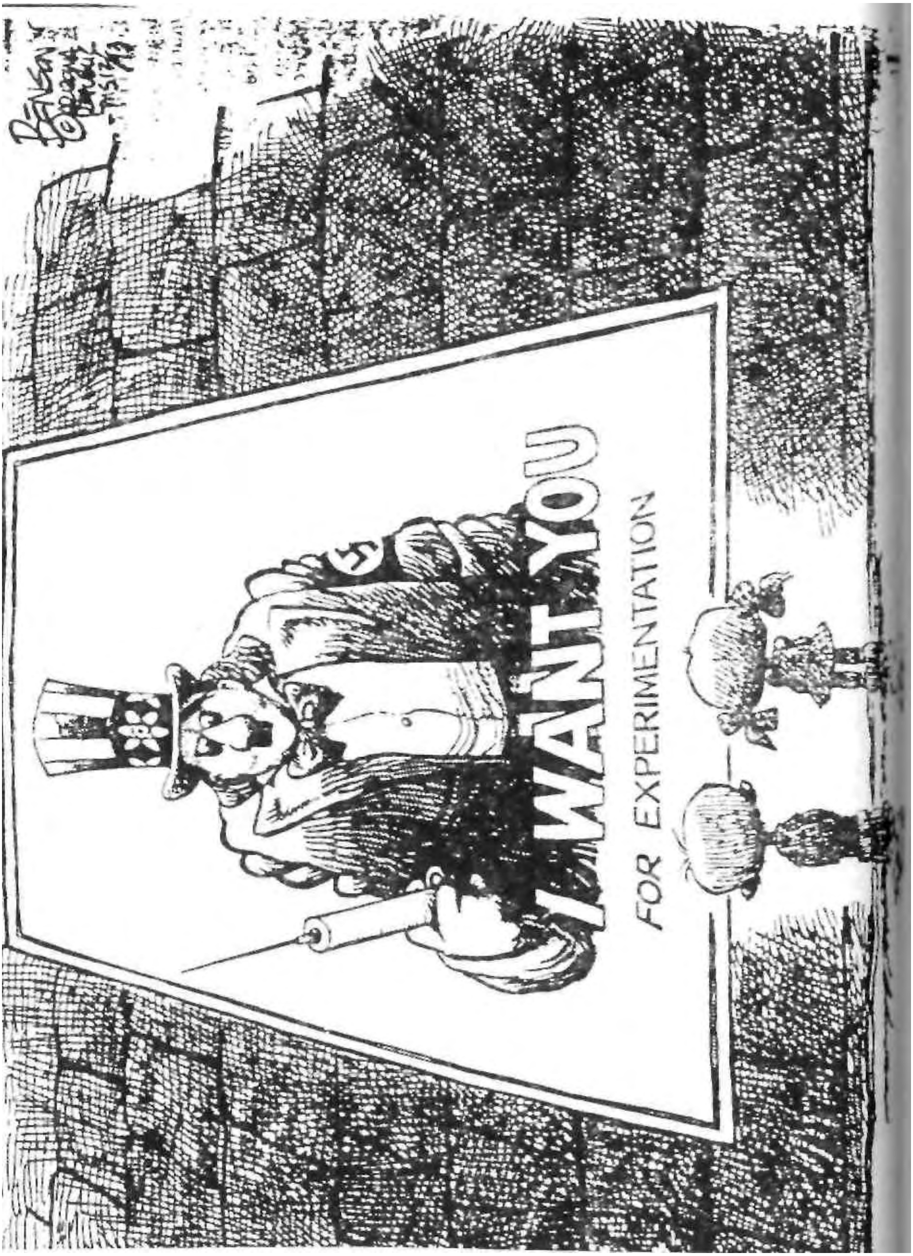
(The information follows:)

The dramatic progress being made in the field of molecular biology led us to investigate the relevance of this field of science to biological warfare. A small group of experts considered this matter and provided the following observations:

1. All biological agents up to the present time are representatives of naturally occurring disease, and are thus known by scientists throughout the world. They are easily available to qualified scientists for research, either for offensive or defensive purposes.
2. Within the next 5 to 10 years, it would probably be possible to make a new infective microorganism which could differ in certain important aspects from any known disease-causing organisms. Most important of these is that it might be refractory to the immunological and therapeutic processes upon which we depend to maintain our relative freedom from infectious disease.
3. A research program to explore the feasibility of this could be completed in approximately 6 years at a total cost of $10 million.
4. It would be very difficult to establish such a program. Molecular biology is a relatively new science. There are not many highly competent scientists in the field. Almost all are in university laboratories, and they are generally adequately supported from sources other than DOD. However, it was considered possible to initiate an adequate program through the National Academy of Sciences - National Research Council (NAS-NRC).

The matter was discussed with the NAS-NRC, and tentative plans were made to initiate the program. However, decreasing funds in CB, growing criticism of the CB program, and our reluctance to involve the NAS-NRC in such a controversial endeavor have led us to postpone it for the past 2 years.

It is a highly controversial issue and there are many who believe such research should not be undertaken lest it lead to yet another method of massive killing of large populations. On the other hand, without the sure scientific knowledge that such a weapon is possible, and an understanding of the ways it could be done, there is little that can be done to devise defensive measures. Should an enemy develop it there is little doubt that this is an important area of potential military technological inferiority in which there is no adequate research program.



Reprinted from a cartoon by Steve Benson in the Thursday, January 6, 1994 edition of the Arizona Republic.

Pravda: October 31, 1986

"The AIDS virus, a terrible disease with no cure was, according to western researchers, created in Pentagon laboratories." (SPID = AIDS)



(At Bottom) "Pentagon SPIDtsialist" (In Russian, a play on the words "SPID" and "specialist.")

For more information see:

(1) Lorraine Day, M.D., AIDS: What the Government Isn't Telling You, Rockford Press, P.O. Box 952, Rancho Mirage, CA 92270; $26.

(2) Alan CantweD, M.D., Queer Blood: The Secret AIDS Genocide Plot, Aries Rising Press, P.O. Box 29532, Los Angeles, CA 90029; $15.50. Dr. Cantwell is a gay dermatologist and can hardly be accused of anti-gay writing.

(3) Stanley Monteith, M.D., AIDS: The Unnecessary Epidemic, $18 from AIDS Book, 618 Frederick Street, Santa Cruz, CA 95062.

THE WAR ON DRUGS

The war on drugs is a farce. The "war" has had no effect on the supply of drugs, has not reduced demand for drugs, but has definitely been used to fund covert programs not authorized by Congress and to line individual official pockets.

Under the Bush and Clinton administrations, the national "war on drugs" is a shoot-from-the-hip stumbling failure and a waste of taxpayer funds. This is not only a personal conclusion, it is a conclusion reached by police chiefs, medical researchers, sociologists, psychologists, syndicated columnists and even by politicians. One can be excused if the conclusion is reached that the "war" is designed to fail

What went wrong?

• No one in any administration bothered to identify the problem in a realistic manner. . . each administration reacted in panic from a public outcry, unthinking and too late.

• The drug abuse problem involves perhaps 20 million Americans. Tsar Bennett wanted to build prisons to accommodate these 20 million errant citizens. . .but without facilities for cures. Additionally Bennett proposed gun control, curtailing civil rights and foster homes for children of abusers.

• Two-thirds of the drug fighting budget is spent on military excursions... in Latin America and Colombia. . . also in

Humboldt County, California, where for the first time possibly since the Civil War American troops have been used against Americans.

• Of every ten aircraft intercepted, only one is a drug runner. . . the other nine are innocents.

• A war of words is fought with incomplete, sometimes false, research information.

• The end result of the Bush-Clinton war has been more violence, more homicides, an increase in drug use. . . and of course an increase in headline-catching drug busts.

Some capsule comments:

Washington D.C. Police Chief Isaac Fulwood: "Bennett spends his time talking, not doing anything. Bennett's approach is absolutely wrong. I don't even know if he has an approach."

Washington D.C. Police Executive Research Forum (a think tank reflecting major city police chiefs): "A clear need exists to expand and intensify the inquiry into both the medical aspects of drug abuse and the efficacy of our current policy."

If we had space we could print scores of critical comments from the medical side. Here's a couple of typical comments:

Medical drug specialists are caustic in their criticism of ongoing programs. Says Dr. Lester Grinspoon of Harvard Medical School: "These ads (anti-drug ads) are totally irresponsible and they're scaring kids. When kids realize they've been had and not been told the truth, they'll backfire."

The general assessment is that the program is a failure: Statistician Susan Nissenbaum (California Department of Drug and Alcohol Programs), "The general consensus is that we're beginning to see an increase in the heroin problem."

The latest medical research suggests that certain brain irregularities make some people much quicker to become addicted than others. . . and much harder to cure. Extensive well-controlled research suggests that some addicts take drugs to repair a defective brain chemistry, that persons subject to depression, anger, restlessness find the first dose of the drug immensely reinforcing, i.e. they are biologically pre-

disposed to a specific drug. Reports Ralph Tarter, a psychologist at the Western Psychiatric Institute in Pittsburgh, many recovering drug abusers "tell me the moment I took my first drug I felt normal for the first time."

The New York Times (June 26, 1990) had an extensive article on biological predisposition. More generally, Newsweek (January 29, 1990) commented: "After nine months the model for national action has turned out to be only a nasty battle of words."

A predictable by-product of the Bennett war has been a distinct increase in violence and a dramatic increase in drug-related homicides. The undeniable increase in drug-related homicides is reported from New York, Miami, Houston, Phoenix, Los Angeles and San Francisco. Oakland, California, for example, tabulated 88 homicides by July 1990 (as opposed to 148 for all 1989) and 37 percent were drug related

Another neglected aspect is that valium and codeine, legally prescribed, are among the most addictive drugs and cause as many medical problems as illegally acquired drugs.

An increasing reaction has been a demand for legalization ... to place cocaine and heroin on a par with cigarettes and alcohol, freely available with tax revenues going to the government instead of the dope dealers.

This would certainly put the dealers out of business, and there would be no supply side left for the military excursion tactic. However, it would not solve the medical problem: if certain people are biologically disposed to drugs, then given the existing totally inadequate cure facilities we would end up with a medical overload instead of a legal enforcement overload

Here the information is inadequate... we just don't know too much about how business losses are generated in relation to drugs. Is it the pressure to obtain money for drugs that leads to theft, embezzlement and inefficiency or do the drugs themselves make for the inefficiency? This is a significant point: in one case legalization would lead to fewer business losses, in the other it would lead to even more inefficiency.

In brief: the shoot-from-the-hip Bush-Clinton approach wholly underestimates the complexity of the drug abuse

problem.

However, the program does achieve what has long been feared. . . curtailment of human rights and constitutional rights, military action against Americans by Americans, prison camps for large numbers of Americans, domestic street violence... all under the name of fighting drug abuse.

What's Happening at the Street Level

IF the Bush-Clinton anti-drug crusade had been successful, supply would have dried up at the street level and prices sky-rocketed This has not come about.

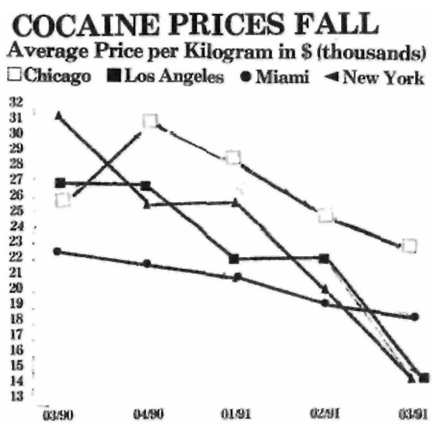
COCAINE is in plentiful supply. Police Departments around the country confirm this finding. Price dropped right after Bennett was appointed (as suppliers emptied their pipelines). Prices have now stabilized.

Police Chief Fulwood (Washington, D.C.) states: "We haven't seen any decrease in availability of drugs." A continent away from Washington D.C, this author was walking along Market Street, San Francisco, and saw a stocky white male at the corner of Powell and Market, where the tourists congregate for cable cars. . . who was shouting, "Powder, Rocks" (i.e., cocaine "powder" and crack "rocks"). This in broad daylight!

HEROIN supply has increased and price has dropped substantially. Here's a chart from Drug Enforcement Agency:

MARIJUANA can be bought openly on the street in any large U.S. city.

AMPHETAMINES of domestic manufacture have increased in supply.



PRICE OF COCAINE (per kilogram inside United States)

SOURCE: Drug Enforcement Agency, Field Intelligence Reports

The war on drugs has squeezed a balloon at a billion dollar cost. The effect has been to partly shift the drug of choice among users, away from cocaine to heroin.

Street violence has increased. We have overwhelmed police departments, the court system and our prisons. . . for what? For every dealer jailed another opens up shop... 70 percent of our prison population is drug related. Supply curtailment is a failure.

In November 1993 the CBS-TV program 60 Minutes produced dramatic evidence that our analysis is right on. DEA officials, including former DEA Chief Judge Bonner charged the CIA with importing one ton of pure cocaine in a single transaction from Venezuela. This was sold on American streets.

This same CIA operation created the drug trafficking network in Haiti with "intelligence network" used as a cover and operating under General Cedras.

One thousand pounds of the 1990 Venezuelan shipment was seized at the Miami Airport. DEA and Customs investigators were ordered to back off because the cocaine was imported with the approval of the United States Government.

Moreover, Department of Justice knew about the shipment and did nothing. Senator Boren (Skull & Bones) knew about the shipment and did nothing. A Senator who represents the people of the United States closed his eyes.

Only a few officials at DEA did their job! Culminating in the 1993 CBS program.

(No U.S. newspaper printed this information until New York Times 11/20/93. Phoenix Letter picked up some facts years ago, including information not on the CBS program, through the Caracas, Venezuela newspaper El Universal)

The point is this, if one has knowledge of a drug shipment going to the United States, then legally one is required to report the facts. That means every one of these knowledgeable officials in CIA, Justice and State, plus Senator Boren, are guilty of trafficking.

The street dealers who sold this one ton of pure cocaine were no doubt routinely picked up and sentenced. The offi-

rials should also go to jail. After all, if a $20 street sale earns a prison sentence then so should importing one ton of pure cocaine.

What has happened? You guessed it! Nothing.

The White House is protecting everyone, which, given Trilateralist Clinton's involvement in Mena, Arkansas cocaine trafficking, should not surprise us. Senator Boren is protected by fellow Senators. We don't hear any calls for investigation of the Boren role.

The ranking CIA official, Mark McFarlin, resigned. No charges filed.

The assistant CIA official in charge of the shipment was "disciplined," no charges filed. All State and Justice officials have been protected.

What's the law? Here it is, as outlined by a Senior DEA official: "If you are part of a drug shipment, and you have knowledge that it is going to the United States, you are culpable."

"Culpable?" Yes, culpable of drug trafficking.

So where is Attorney Janet Reno? Do we have a Constitution or have we become just another Banana State petty dictatorship? One rule for the peasants and another for the privileged?

Phoenix Letter has reported scores of government criminal activities over its 14 year history. Omaha child abuse, suppressed technology, taxpayer rip-offs, BCCI murder and corruption, prominent officials involved in corruption and bribery, unsafe aircraft design, weather control, government lies, treason, unconstitutional political policies and so on.

We do not recall any instance where government has acted honestly and brought right and honesty into the equation. The reaction has always been more cover up until the victim becomes the culprit.

Today the United States is governed by a bunch of amoral whining money grubbers whose only concern is to keep intact their position at the public trough.

The key point for Trilaterals Over America is that almost one-third of the American members of the Trilateral Commis-

sion have been appointed by Presidents from Carter to Clinton.

The dominant policy influence since the 1970s has been a Trilateral influence. These people have a written policy for guidance. The credit for all U.S. policies in the past several decades, including these absurd "wars" on problems, is definitely with the Trilateral Commission.

There is significant evidence published over the last two decades that the U.S. Government is involved in drug trafficking and that this trafficking is more than an accident.

The largest cocaine laboratory in Bolivia was built and operated by CIA. Lt. Colonel "Bo" Gritz has charged and produced evidence that the Golden Triangle, largest producer of heroin, has ties to Washington, D.C.[1] We know that CIA financed the Afghan rebels and the Nicaraguan "contras" through drug sales. There are in fact scores of such instances .... in brief, a large portion of trafficking is operated under official Washington approval.

And we have demonstrated that Washington, D.C, since the 1970s, has been under the control of Trilateralists. . . and not coincidentally the "drug problem," the so-called "war on drugs," has been with us since the late 1970s.

It was Trilateralist Henry Kissinger who developed "crisis management" — that crises can be used to move the world to New World Order. The multibillion dollar "war on drugs" is a brilliant example of "crisis management" — and will continue until the voting public insists that the "war" be closed down and the multibillions wasted are returned to the taxpayers.

[1] See Appendix below.

CHAPTER EIGHT
POLITICS OF NEW WORLD ORDER
FORMATION OF TRILATERAL ADMINISTRATIONS

Examinations of appointments to both the Carter and Clinton Administrations show that Trilaterals do the choosing and essentially run administrations.

Remarkably both Carter and Clinton ran on a platform emphasizing anti-Establishment policies while immediately and without hesitation appointing establishment representatives and then conducting long time establishment policies.

The duplicitous procedures of both administrations is remarkable for its parallels rather than differences: both Carter and Clinton lied during the election process and told the electorate only what the electorate wanted to hear. When gaining office both Presidents proceeded to do the opposite in many cases to the policy promised during the election.

Reagan and to a lesser extent Bush were more consistent in that policy tended to follow promises. However, both these Presidents also lied before and after taking office.

If politicians in the United States complain they are held in low regard they have only themselves to blame. What we find extraordinary is that common sense suggests voters would turn to third parties. So far the electorate has been convinced that a third party could not win, without even considering the probability that a strong third party vote would at least bring some honesty to the morally bankrupt Democrats and Republicans.

A very large proportion of the electorate is now sitting on its hands, not voting. If this silent and considerable segment ever acts in unity, there will be a political revolution in the United States, and New World Order will take a massive tumble.

The creation of a Carter administration image of anti-Establishmentarianism while simultaneously creating a Trilateral administration is typically the deceptive operational approach taken by this self-appointed elite. Take the first half dozen appointments and look at their associations and allegiances. The administration was at some pains to show a competition for posts and promoted the idea that anti-Establishment and non-Establishment persons would be appointed. See, for example, the Wall Street Journal on 2 December 1976 concerning the meeting of 16 candidates in Plains, Georgia. The initial sequence of appointments went like this:

Appointment Number 1 - Bertram Lance: president of National Bank of Georgia (Atlanta) to be director of Office of Management and Budget (OMB). This is a vital, central post for plans to centralize the U.S. economy.

Appointment Number 2 - Cyrus Vance. Secretary of State, Trilateralist. At the time of taking office, Vance was a partner in Simpson, Thacher & Bartlett; a director of IBM, Pan American World Airways and Aetna Life Insurance; a member of the Democratic party, Foreign Policy Task Force, Council on Foreign Relations (vice-chairman of the board), and the Trilateral Commission; and also a former deputy director of defense.

Appointment Number 3 - W. Michael Blumenthal: Secretary of Treasury. Also a Trilateralist. Who is Blumenthal? Like Henry Kissinger, he was born in Germany and came to the U.S. at the age of 21. At the time of taking office, he was chairman of Bendix Corporation and formerly in the Kennedy administration as deputy for the secretary for economic affairs, member of the Trilateral Commission, and the Council on Foreign Affairs, and the Initiative Committee for National Economic Planning (with Irwin Miller and Robert McNamara.)

After this third appointment, there was definite feedback in newspapers and radio that the "liberals" felt they had been

betrayed because appointments and rumors of appointments did not include them. The result? Jane Cahill Pfeiffer, vice president of IBM, strongly pushed for commerce secretary as Appointment Number 4, dropped out, and the next two appointments went to big government liberals:

Appointment Number 4 - Brock Adams: transportation secretary. Also a Trilateralist.

Appointment Number 5 - Congressman Andrew Young as Ambassador to the United Nations. Trilateral

Appointment Number 6 - Zbigniew Brzezinski: executive director of Trilateral Commission, was appointed national security adviser. Who is Brzezinski? By explicit statement, Trilateralists reject the Constitution and the democratic political process; in Between Two Ages, Brzezinski (Carter's sixth appointment) wrote as follows:

> The approaching two-hundredth anniversary of the Declaration of Independence could justify the call for a national constitutional convention to reexamine the nation's formal institutional framework. Either 1976 or 1989 — the two hundredth anniversary of the Constitution — could serve as a suitable target date culminating a national dialogue on the relevance of existing arrangements. . . Realism, however, forces us to recognize that the necessary political innovation will not come from direct constitutional reform, desirable as that would be. The needed change is more likely to develop incrementally and less overtly. . . in keeping with the American tradition of blurring distinctions between public and private institutions.

According to Huntington of Foreign Policy magazine, an "election coalition" may be abandoned after political office has been achieved; a politician does not have to keep his word to the electorate. Jimmy Carter is a supreme example of Trilateralism in practice. When Brzezinski refers to "develop(ing) incrementally and less overtly" he is specifically recommending a deceptive "salami-type" approach to abandonment of the Constitution. Perhaps some readers may consider this to be the essence of subversion. If so, they had better do some-

thing about it, because no one in Congress has yet plucked up enough courage to even call for an investigation of Trilateralism.

Clinton Abandons "Election Coalition"

Trilateral Huntington's dictum that a politician may abandon the "election coalition" after election to office, i.e., a politician may break his promises, has bypassed our journalist investigators.

Jimmy Carter broke promises right and left without much of a squeak from anyone. There appears to be a joint Democrat-Republican compact to ignore the "election coalition" and keep out third parties, which is about as close as you can get to dictatorship without abandoning the Constitution.

In January 1993, the same month Clinton took office, our newsletter, The Phoenix Letter, (a Report on the Abuse of Power) carried the following front page article:

Clinton Reeks of Conflict of Interest

The American public has been suckered. . . again!

Among the lavish Clinton promises to fix everything from health care to the deficit was above all a commitment to run the thieves and crooks out of Washington.

Well, we have news for Clinton voters. Clinton was backed by the thieves and crooks and has appointed the self-same lobbyists he swore to run out of town to run the transition team. The political con game has become so blatant that Presidents don't even wait until the ink is dry on the ballot to break their promises.

Before the election, we identified the background of Clinton's key financial backer, none other than Jackson Stephens, a founder of the Bank for Crooks and Criminals (BCCI), and the man who actually introduced Democratic elder statesman, Clark Clifford, to the BCCI crowd.

We figure that one way or another, Stephens contributed $2 million to the Clinton campaign. And we are supposed to

believe that the BCCI whitewash won't continue!

Then we looked at Clinton's transition team and found it headed and staffed by Washington lawyers and lobbyists, the very people that Clinton said he would remove, those whose client lists and board directorships covered just about every major corporation and many foreign countries.

Who is represented in Washington? You and I? Not likely.

Many of the transition team clients have matters pending before regulatory bodies and the Congress itself. Then to emphasize the hypocrisy, the transition team introduced new ethics "rules" to supposedly limit "the influence of lobbyists" and to be rigidly enforced. All well and good, except that at time of writing, it has been impossible to obtain a set of these rules. (Released December 10, see below.)

During the election, Clinton repeatedly called for limits on lobbyists. "We've got to clean it up. We're all going to have to change," said candidate Clinton.

"Business as usual," says elected Clinton.

A Huge Scaly Serpent Crawling Through the Corridors of Congress

Politicians, lobbyists, college professors of political science and their textbooks all tell us that lobbying is essential, a necessary function of society to make democracy work.

The conventional view is that lobbying is harmless and useful in that it makes all viewpoints heard.

Hogwash! Individual voting citizens are those represented in Congress by their elected representatives. Congressmen and women are not elected by corporations or foreign interests, they are elected by individual American voters. It is American citizens that are elected, not the dairy interests or the water interests or the welfare interests of some way off foreign country. Certainly Joe Dairy Farmer has representation as an individual, but the collected interests have no collective vote and should have no representation in Congress.

In practice, lobbying has become the conduit for pressure groups. And every so-called reform has left gigantic loopholes

to continue the process of lobbying. Lobbyists now place money on both sides (Democrat and Republican) and fight smaller parties because they would then have to lay out money on more parties to guarantee representation.

The political process has become an outright fraud. The individual American has become disenfranchised. The power groups and foreign interests have become power holders working through a compliant Congress.

And from what we can see, the "new" Congress will be little different from the old.

Reportedly, Clinton was shocked at the public reaction to the appointed transition team, and instructed staff to draft lobbying rules. These rules were drafted and succeeded only in rejecting one transition aide from one meeting for conflict of interest. Even then the Clinton White House refused to release copy of the new "rules" until December 10.

The transition director, Trilateralist Warren M. Christopher, is senior partner in O'Melveny and Myers, with a heavy Far East client list including Mitsui, Sumitomo Trust, Japan Airlines and Hyundai. Christopher has more interest in representing Japanese interests than the American down home. In fact, just to illustrate the hypocrisy, during the campaign, Clinton pointedly criticized American law firms who work for foreign interests.

Once elected, Clinton picked on this foremost representative of foreign interests to act as director of the transition.

Warren Christopher is on the board of Lockheed Aircraft but is not (under the Clinton rules) in conflict of interest on military matters in the Clinton Administration. The Clinton rules do not bar Christopher from discussing Asian matters on behalf of his clients.

What is the Clinton defense to such charges? Simply that there is no conflict of interest because the connection between these officials' advice and their ability to profit is "too diffuse" and that Mr. Clinton, not his transition advisors, will make the final decisions.

Lobbyists themselves are under no illusion that the "rules" have not changed The firm of Patton, Boggs and Blow pub-

lishes a newsletter in which it openly boasts of its contacts within the Democratic Party and Washington power circles, and indeed has two partners close to the Democratic Party: Democratic Party Chief Ron Brown and Thomas Boggs.

Then we find Lefitia Chambers, who is transition overseer on budget issues, who in real life is lobbyist for AFL-CIO, home builders and senior citizens.

The results of this system can be seen in billion dollar wasteful expenditures:

• The State of Virginia, as reported in November Phoenix Letter, has a disproportionate share of Federal funds guided to Virginia by the "King of Pork."

• Extraordinary waste of money in technical expenditures: for example, the billion dollar "Hot fusion" program.

• Neglect of programs that have no powerful voice in Congress. Most of the "future technology" reported in FTIR (Future Technology Intelligence Report, P.O. Box 423652, San Francisco, CA 94142-3652) is ignored by financiers.

The rules announced on December 10 and hailed by observers as pathbreaking are no more than a further whitewash. Officials may be personally banned from lobbying for five years, but what about their partners? These are exempt The lifetime ban on foreign company lobbying has no meaning in practice. The only sure fire solution is complete and final ban on all lobbying, except that of individual private citizens or their own elected representative. Corporations and law firms do not vote. Individuals do. When Mr. Clinton adopts this standard, we shall see the scaly serpent crawl back out of Washington, D.C.

NAFTA — Step to New World Order

Multinationals well represented on the Trilateral Commission aim to dominate world production and trade.

The enormous pressure behind the NAFTA agreement, to bring the U.S., Mexico and Canada into a tariff-free community, was motivated by New World Order. Little question that the U.S. citizen will be adversely impacted, but gains will be

made by international firms and banks that drive NWO.

Initial reaction was from Chiapas, Mexico, the revolt of Indians against Mexican authority. The Indians, already hard-pressed, unable to sell their coffee on the world market, now find that the Mexican Government support structure was dismantled, and their domestic corn crop could not compete against imported U.S. corn. NAFTA was the last straw.

Another result still to emerge will be Mexican meat exports. U.S. giant meat firms will go to Mexico to take advantage of low wages, poor safety standards and lax sanitation regulation. We will see a flood of imported Mexican beef, with the identity of U.S. firms hidden behind a Mexican import label. NAFTA exempts Mexico from the U.S. Import Act to benefit GIANT U.S. firms. NAFTA was an end-run by U.S. multinationals around U.S. regulation. Clinton promised to appoint more meat inspectors as a cover to disguise the reality. The end result will be to hurt smaller U.S. ranchers and to expose U.S. citizens to uninspected beef.

Mexico is now highly advantageous for Trilateral firms like General Electric (Vice Chairman Paolo Fresco is a Trilateral), Motorola (Chairman George M. C. Fisher is a Trilateral), Levi Strauss (Robert D. Haas is a Trilateral and close to David Rockefeller), Mobil Corporation (Allen Murray, Chairman, is Trilateral), and several major pharmaceutical companies (Johnson and Johnson, Smith Kline Beecham).

NAFTA will spur U.S. firms into Mexico to take advantage of lower regulatory standards and low wage rates.

NAFTA is an essential part of the Trilateral plan to reduce U.S. living standards and transfer benefits overseas to less developed countries. Trilateral Clinton was able to do this because the media have their Trilateral members who act as guides for smaller circulation newspapers and stations (CNN Chairman W. Thomas Johnson is a Trilateral, so is Katharine Graham, Chairman of the Washington Post, among others).

The U.S. citizen doesn't stand a chance, faced with this array of like-minded conspirators. The only way out is to vote for a third party candidate, read books published by small publishers along with newsletters, and above all, be critical

and question statements out of Washington and your State capitol.

If you feel up to tackling your Congressman, there are some do's and don'ts.

• Don't write long complaining letters; keep to a single issue, short and definite. Don't insult or threaten. State the problem, how it affects you, and what you see as the solution. Briefly.

• Often a Congressional aide is a more effective target. Especially if you can get a personal visit. Be persistent and definite. You have a vote, the lobbyist has money. Your representative needs both.

• Probably an effective route is to get a group of like-minded citizens to invite a representative to discuss a problem — if 20 aircraft mechanics are threatened by overseas low cost maintenance contracts and can get together with a Congressman, this will get some action. But remember, you're fighting the Trilateral Commission — and if your representative is a member (see Appendix), you might want to question the company he/she keeps.

• Above all, talk to your friends, buy extra copies of this book (see copyright page) and similar books, pass them around. It's slow, but over the long haul, it works. This author remembers when there was no discussion at all of Trilaterals and establishment elitism, when to talk about a political conspiracy was to be dismissed as a kook. No longer. The bulk of citizens these days are onto the con game. Awareness now needs to be translated into action.

TRILATERAL GLOBAL POLITICS AIMS TO REMOVE ALL NON-CONFORMING GROUPS... THE WACO MASSACRE IS A PRIME EXAMPLE.



VICTORY! ATF flag flies over ashes of Waco compound.

BY REUTERS



COST TO SERVE A SEARCH WARRANT:
83 Civilians + 4 ATF agents dead
$10 million (?) in taxpayers' funds.

CHAPTER NINE:
FRIENDS OF NEW WORLD ORDER

The Trilateral Commission is not the only organization working for New World Order in the United States.

Much of the thinking behind Trilateralism comes from early concepts put forward by Cecil Rhodes and Lord Milner with funds from South African gold and diamond mines. Rhodes founded the Rhodes Scholarships to bring Americans with specific personality traits to Oxford University for one year. Bill Clinton became a Rhodes scholar after studying under Carroll Quigley at Georgetown University.

Carroll Quigley wrote a massive volume, Tragedy and Hope, which described New World Order plans. Quigley was not a defector; he agreed with the objectives of an Anglo-American New World Order. Where he parted company was that he believed this should be an open objective, not a closed secretive conspiracy.

So the Rhodes organization and the Royal Institute for International Affairs in London are essential parts of the New World Order. The RIIA spawned the Council on Foreign Relations in the United States, a broader-based but still limited organization with the same objectives. Our observation is that CFR has a wider range of views among its members, some even against New World Order, than does the Trilateral Commission or the RIIA.

The interesting aspect of CFR is that David Rockefeller, founder of the Trilateral Commission, was long time Chairman of CFR and is today Chairman Emeritus. (Appendix C lists the officers and directors of CFR. There is an obvious interlock with the Trilateral Commission.)

Another more restricted segment of New World Order is the truly secret Skull & Bones Senior Society at Yale. Fifteen years ago this author obtained a copy of the secret membership list (a two-volume black leather-bound affair) and was able to analyze in depth the influence and extent of Skull & Bones in the U.S. government. This was published as America's Secret Establishment[1] and is still in print today.

Loose Backgrounds of New World Order Types

Almost every proponent of New World Order from its very earliest days has some kind of shady past certainly not in keeping with the high ideals professed.

Cecil Rhodes himself was accused of deception and crookery in gaining control of the gold and diamond mines of South Africa. His partner, Lord Milner, was the author of the infamous "Milner Telegram" which brought about the Anglo-Boer War in 1899.

The Rhodes diamond mines became the core of the DeBeers monopoly and still today maintains monopoly control of world diamonds — a model for New World Order.

Cecil Rhodes' own image of a New World Order was hardly inspiring to any but Anglo Americans. The second largest language group in the world is Spanish speaking — and you won't find a single Latin in any New World Order organization. In fact, so far as the Trilateral Commission is concerned, Latins don't exist who warrant membership in the Commission. You won't find Arabs, either, or Chinese resident in the Far East.

Now this might be comforting to the English-speaking world but disparities of this kind are guaranteed to lead to

[1] Obtainable from Liberty House Books, P.O. Box 80650, Billings, MT 54108-0650, for $22 postpaid.

conflict. If Latins, Arabs, Chinese, Russians and others are delegated to subordinate positions in New World Order, the outcome will be conflict, not peace.

Then the individual and corporate histories of Trilateral members and firms are hardly reassuring. We couldn't find a single individual or firm where some investigation had not been started for illegal conduct.

Take as a random example a firm mentioned only once above — Prudential Securities Company. Robert C. Winters, Chairman of the Board of Prudential, is a Trilateral. As we go to press, Prudential is under investigation on several charges. Apparently Prudential brokers had orders to deceive customers (New York Times, 2/28/94) and some brokers even quit rather than go along. Prudential is the focus of a widening criminal inquiry relating to the way customers were treated when the firm was suffering enormous losses.

A few years ago Wall Street brokerage firms could maintain zero balance accounts, funds were deposited only when the bank called. This is also known as check kiting. If you and I did it we would end up in jail. The brokerage firms got off scot-free and made millions a year from the practice. E. F. Hutton was the major player in this con game.

Kissinger Associates, an influence-peddling outfit founded by Henry Kissinger to capitalize on his "public service" has more than once come into unfavorable criticism but his membership of the Trilateral Commission is carefully screened out of reports.

The firm had a field day, for example, in the bankruptcy of LTV Corporation where $144 million went to consultants for professional services related to the bankruptcy, and Kissinger Associates got the lion's share. The gross overcharging was never investigated.

Similarly, the BCCI affair, a worldwide scandal to which Kissinger Associates was linked, managed to evade investigation in the United States. In England where many thousands lost deposits, only a lower level manager went to jail.

The Clintons have proved themselves remarkably adept at promoting their own private interests at public expense — and especially in acquiring "friends" in need of Government favors who can show a little appreciation.

The fascinating difference between the Clintons and almost any other political family we can think of is the vehement, almost breast-beating denunciation of influence peddlers and lobbyists. Yet these are the "friends" that come to show their appreciation.

The New York Times (March 31,1994) commented caustically on "Arkansas, where a thousand or so insiders run things in a loosey-goosey way that may look unethical or even illegal to outsiders." Apparently, Arkansas morality is, for the Clintons, distinct from Washington morality and they cannot be accused of irregular conduct because that would discriminate against Arkansas.

The really breathtaking "loosey-goosey" event that benefited the Clintons was Hillary's ability to take $1,000 as a complete novice without collateral and with naked market exposure, and convert it into $100,000 in cattle futures — a notoriously unstable market.

Hillary did this in ten months with only $1,000 in a margin account (this would normally require at least $10,000) and faced disastrous losses any day or hour if the market turned sour on her investment.

Moreover, Hillary went through specific market moves with results which are impossible unless her broker was making illegal actions on her behalf.

Hillary's broker was Robert L. (Red) Bone of the Ray E. Friedman & Company brokerage firm of Chicago. In October 1978 she opened a trading account with $1,000. The very first day this investment went to $6,300. There is no documentation for the trades, and there is no way that $1,000 would cover the amount of cattle futures trades needed to make that amount of profit.

House Speaker Thomas Foley (Trilateral)

House Speaker Thomas Foley is a disgrace. Ever ready to serve fellow Trilaterals, Foley should be investigated for obstruction of justice.

Fellow Trilateral Bill Clinton was in trouble in March 1994, so Congressman Thomas Foley called a secret 8:00 a.m. meeting of Democratic congressmen and staff members. It was agreed — no meetings or hearings on Whitewater under any circumstances.

That put non-Trilateral Congressman John La Falce, Chairman of the Small Business Committee, on the spot. La Falce had already started an investigation and requested documents from the Small Business Administration. These documents had already been sent to the General Accounting Office for analysis and Congressman La Falce had to install his own minor coverup at the insistence of Speaker Foley to block GAO from issuing a report.

And these are your elected representatives!

"Poor, Poor Motorola"

Chairman of the Board and Chief Executive Officer of Motorola is George M. N. Fisher, a member of the Trilateral Commission.

Motorola under Chairman Trilateralist Fisher is notorious for using politics to advance its competitive position against both foreign countries and non-Trilateral American companies.

Under fellow Trilateral Bill Clinton, the former Public Relations Director for Motorola is the Number Three man in the office of the U.S. Trade Representative. And the former head of the U.S. Trade Offices Telecommunications Trade Policy Division is another Motorola type, today a lobbyist for Motorola. There's more. Lionel Olmer, undersecretary of Commerce, was four years with Motorola and helped negotiate the 1986 agreement that led to Motorola's system being approved in Japan.

In 1994 Motorola was dissatisfied with its sales position in Japan and used the U.S. Government as a blunt weapon to demand more trade. This even infuriated the Wall Street Journal, which ran a satirical article, "Poor, poor Motorola." Says Wall Street Journal (March 3, 1994):

> The U.S. has publicly accused the Japanese of reneging on their promises and throwing up barrier after barrier to block Motorola's market access. Nothing could be further from the truth. The history of Motorola in Japan reveals a company that has repeatedly used the U.S. Government as a battering ram to knock aside Japanese regulations and win special favors to accelerate market entry.

What Wall Street Journal omitted in this lengthy critique of Motorola is that both Chairman Fisher of Motorola and President Bill Clinton are members of the Trilateral Commission, which is devoted to such special interest strategies.

When you talk to these businessmen and suggest that their favored treatment is unfair, they respond with a smug, "That's how business is done."

CHAPTER TEN
TRANSCENDING MARXISM: OLD AND NEW MARXISTS

The world has been portrayed by historians as a political arena where capitalists and Marxists are rigidly opposed to one another and always act in opposition to each other.

Nothing could be further from the truth. This view is another Karl Marx fundamental misinterpretation of the 19th century world. Lenin, who followed Marx as tactician of the world revolutionary battle, was more perceptive and saw capitalists as shortsighted, with many willing to supply the rope to hang themselves.

The Rockefeller group of Wall Street financiers and their associated banks, Chase, Manhattan and then Chase Manhattan Bank, have always been in the forefront of capitalists willing to aid and succor Marxism. This suicidal policy continued under various Presidents who owe election to the Rockefeller family, i.e. Carter and Clinton, and the Trilateral Commission. A fundamental Trilateral policy is one world interdependence, a merging of Marxism and capitalism under Trilateral leadership.

The Rockefeller family has shown notable ability to first conceal its support of Marxism before and after World War II and then conceal its promotion of Trilateralism in recent decades. Historians have been unwitting supporters of the Rockefeller family objectives by continuing to advance the

theoretical dialectic view of an historical antagonism of communism vs. capitalism as the actual nature of events. The true history is a history of cooperation between elite political leaders of the West and various Marxist regimes. The West has used debt and technology to more or less control these ineffective Marxist societies.

Trilateralism is merely continuation of this global deception, and fools historians as well as voters. We are in a period where Marxist regimes are allowed to find their own level of instability, i.e. effectively to collapse, while new forms of world control are substituted. New World Order via Trilateralism is 21st Century Marxism.

Let's briefly review the history of elitist support of Marxism and Trilateralism to achieve New World Order. This began, by the way, with Cecil Rhodes and Lord Milner in England, founders of the Rhodes scholarships at Oxford. President Clinton is a Rhodes scholar and understands at least part of the picture. (A fascinating research topic, never undertaken, would be to explore the contacts between Rhodes, Milner and the Fabians in London with Karl Marx, who worked most of his life in London in the same period. The start point for any interested researcher would be the Scotland Yard files on Karl Marx.)

Back in the 1920s the Chase National Bank (Chase National merged with the Bank of Manhattan to become Chase Manhattan) was deeply involved in building the Soviets — and some of this activity was probably illegal and certainly against U.S. official policy.

Both Chase National and Equitable Trust were the leaders in the Soviet credit business at a time in the 1920s when the State Department had banned credits to Soviet Russia. Chase evaded the ban by accepting platinum from Soviet mines and advancing credit on the basis of these shipments. This was strictly against U.S. policy in the 1920s.

The president of the American-Russian Chamber of Commerce in the 1920s was Reeve Schley, also a vice-president of Chase National. The Chamber was a pressure group which sought to change U.S. policy into recognition of the USSR, to

open up the Russian market for some major American firms and banks. To this end, the Chamber used avowed communists as agents; for example, a Chamber delegation to Russia in 1936 was led by Charles Haddell Smith, previously described by the State Department as "in the employ of the Soviets and a member of the Soviet Peasant International." Members of the Chamber included many of the firms opening up the China trade today, including Deere & Co., Westinghouse and Chase National.

In the early 1920s the Soviet Union was on the verge of collapse. The only industrial structure was that of the Tsars. Industry was dormant, not destroyed as Soviet propagandists would have us believe. Foreign firms, mainly American and German, came in to start up a dormant Tsarist industry and remained to build the Five Year Plans. Why? Because the Soviets had destroyed the skilled engineers and managers needed to run industry. As Soviet Commissar Krassin phrased the problem: "Anyone can help pull down a house; there are but a few who can rebuild. In Russia there happened to be far fewer than anywhere else."

Take the example of Boeing Aircraft (Trilateral T.W. Wilson is chairman of the board). In the 1930s Boeing supplied technical assistance to the growing Soviets. The Soviet I-16 fighter was patterned on the Boeing P-26. The Soviet TU-4 four-engine bomber was a copy of the Boeing B-29 and could only have been reproduced with U.S. assistance. Today Boeing is a one-time supplier of aircraft technology to the Soviet Union and to Communist China, and remains represented on the Trilateral Commission.

Another example is UOP (Universal Oil Products), now a subsidiary of Signal Oil Company. In 1932 UOP had contracts in the USSR for construction of hydrogenation plants, which were of vital importance for military purposes. Up to 1938 the Soviets were unable to produce 87-94 octane gasoline for aviation use. Hydrogenation plants built by UOP converted 85 octane gasoline from Saratov and Grozny into 95 octane avgas. Today, UOP is one of the first American firms into China to build the Chinese petrochemical industry — also

vital for war purposes.

Yet another example is Ingersoll-Rand, which was represented in the Soviet Union by Armand Hammer (former chairman of Occidental Petroleum Corporation) as early as 1918. At that time Armand Hammer's father, Julius Hammer, was secretary of the Communist Party U.S.A. Ingersoll-Rand became a prime seller of technology to the U.S.S.R. In 1979, Ingersoll-Rand is following the same road with Communist China.

We can cite dozens of firms with similar stories. U.S. multinationals built Soviet power. This has cost the United States hundreds of thousands of lives in Korea and Vietnam. Now these same multinationals have begun to build Communist China under the initial push from Trilateral President Jimmy Carter.

The most important and largest China contracts link to Trilateralists and their corporate affiliates: The key financial backer of Jimmy Carter was Coca-Cola chairman and Trilateral Commissioner J. Paul Austin.

Coca-Cola will have a soft drink monopoly in China. Maybe the Chinese don't yet know what a soft drink tastes like, but 800 million Chinese is a prime market for the 21st century.

NOTE: Coca-Cola had been negotiating for ten years before 1979 with the Chinese, i.e., long before any public surfacing of a "new" China policy and presumably while the Chinese aided the killing of Americans in Vietnam.

• A consortium of U.S. oil companies has negotiated development of Chinese petroleum resources. These include Exxon (David Rockefeller has dominant interests), Pennzoil, Phillips and Union Oil.

• Former Time Magazine Man-of-the-Year was the Chinese Communist leader, Teng Hsiao-Ping. Trilateralist Hedley Donovan was editor-in-chief of Time.

• The first American banks into Communist China were Chase Manhattan and the First National Bank of Chicago.

• Japanese Trilaterals are heavily involved in construction of Communist China.

The Carter Administration agreement with Communist

China, the so-called "normalization" of relations, was an extraordinary treaty. All the Chinese terms, including those rejected by Presidents Nixon and Ford, were totally accepted by the Trilateral negotiations. The negotiators were Trilaterals. On the spot in Peking was Leonard Woodcock. In Washington was Cyrus Vance and Warren Christopher (under-Secretary of State for East Asian and Pacific Affairs, now Secretary of State).

There was no pressure to make an agreement at this time from the strategic or political viewpoint — so we must look to the multinationals for an answer. What do they gain? Was the China treaty a duplicate of the early 1920-30 Soviet agreement? A device to fill multinational order books and expand the loan base of international banks?

The United States was in an extremely strong bargaining position. The Chinese needed U.S. technology to survive. They needed U.S. credits to buy technology. They needed the U.S. as an ally against Russian intrusions over the Chinese border; and recognition by the U.S. gave the Chinese Communists a status they could achieve in no other way. Yet the United States capitulated without a whimper, very much like the Vietnamese situation when the U.S. got sucked into a major war without plan or purpose. Some 50,000 Americans were killed. Then we abandoned the battlefield at a time when we still had the absolute capability to finish the military job. In other words, we did not apparently know why we were in Vietnam in the first place. When we were involved, we spent billions on war materials and even then lacked the will to use those weapons.

In these instances and others we can find a common thread, a common explanation. In science, the answer that most likely is true, is that answer which fits the largest number of cases or events. Is there profit for Wall Street in recognizing Communist China? Was there also profit in $300 billion of Vietnamese military contracts? In the same way there was profit in saving the Soviets and building the Soviet Five Year Plan?

This is the simplest, most plausible answer. It fits most

cases — and this is where Trilateralism comes in. Trilateralism is the vehicle by which some banking interests and multinationals carry out their policy objectives.

The Trilateral opening to Communist China also reveals a total failure to recognize the human cost of Chinese Communism. Conservatively, China has murdered 50 million Chinese in the 30 years of the Revolution. During one particular campaign, "Let a Million Flowers Bloom," Chinese Communists lifted their restrictions on freedom of speech and action. Many Chinese then took the bait to criticize the regime. After a few months of freedom of speech the Chinese government promptly arrested the dissidents and used their own words as evidence to send them to labor camps, prisons, or to their death.

These big businessmen have a habit of telling each other how non-political and smart they are to ignore civil and social conditions while concentrating on the business at hand. The profit statement is the guide: In brief, an utter, complete amorality.

The dangerous illusions Trilaterals hold about Russia and China do not therefore stem from ignorance of the facts — their actions stem from extreme short-sightedness and amorality. The next contract for a multinational has total precedence over any nonsense about human rights. While, for example, Trilateral J. Paul Austin may want to sell Coca-Cola to 800 million Chinese, Austin has no interest in what happened to tens of millions of the less fortunate Chinese.

The outright betrayal of Taiwan in the clear, stark words in the official agreement reads as follows: "The government of the United States of America acknowledges the Chinese position that there is but one China, and Taiwan is part of China."

It is difficult to find any historical parallel where a country has acknowledged the slaughter of 50 million people by creating an alliance with that country. Possibly the closest parallel is Hitler's alliance with Stalin in 1939 after Stalin had murdered millions of peasants and Hitler had begun to move against his enemies much as the Trilaterals are moving today against their own particular enemies.

At this point we should note the official Trilateral double standard on human rights. In brief, for Trilaterals' human rights are subordinate to their overall objective of world control. Witness the following statement:

> ... the support for human rights will have to be balanced against other important goals of world order. Some Trilateral conceptions of detente with the Soviet Union and other communist states tend to conflict with a policy of promoting human rights. (Richard N. Cooper, et al; Toward a Renovated International System; Trilateral Commission, 1977, p. 30)

Clintons Follow Rockefeller Pro-Marxist Policies

The Rockefeller founded and directed Trilateral Commission is a major force behind the Clinton Administration. . . and Clinton follows Carter's pro-Marxist policies long after the moral and practical usefulness of Marxism has been discredited.

Interestingly, the Clintons fit the description of "breakaway capitalists" formulated by Lenin. . . i.e., a group of capitalists who see pecuniary advantage in Marxism and so support the Marxist cause. Obviously the Clintons have no aversion to moneymaking using the political process; Hillary's cattle futures trading and Arkansas activities are excellent examples. Yet while making capitalistic profit we also find Hillary supporting Marxist causes... in exactly the same manner as the Rockefeller Chase Bank in the 1920s.

In the case of the Clintons, the evidence is somewhat more serious because, according to recently released FBI documents (reprinted below) a Clinton-supported pro-Marxist organization, IPS (Institute for Policy Studies) is suspected of bank robbery and murder.

The Clintons have a long standing and close connection with IPS in Washington, D.C. This link is well described in SECRET (FBI Documents Link Bill and Hillary Clinton to Marxist Terrorist Network), Sunset Research Group, 608 North West Street, No. 236, Wichita, KS 67203; $10.

Here are some quotes from SECRET (pages 35-40) which

illustrate the close Clinton-IPS link. Our interpretation is somewhat different to the general conservative interpretation. We do not see the Clintons as "Marxists." We see them as opportunists, amoral and apolitical opportunists, much as Lenin viewed the Rockefellers as "breakaway capitalists" who support Marxism for personal financial gain.

We see the Clintons as cultivating and financing IPS for future personal gain, not because they had Marxist leanings.

> These revelations of a communist-oriented IPS veteran (Derek Shearer) directly influencing Clinton, and Clinton entrusting the country's future to numerous other IPS supporters, is grim indeed and does not bode well for the Nation. But there are many more such disturbing revelations yet to be fathomed. These additional evidences — which even more firmly cement Bill Clinton into the camp of IPS subversives — come through Hillary Clinton.
>
> If the only links Hillary had to IPS were her close friendship with Derek Shearer's sister and her furrow-browed fling at Yale, such could appear quite incidental But unfortunately, there are additional reams of hard evidence which indict Hillary as a motivated IPS champion. For example, while serving as Director and Chair of the Board of Directors of the New World Foundation in 1987-88, Hillary Clinton praised and gave away significant sums of money to several far left organizations — including IPS.

An especially interesting footnote is:

> Statement by Isabel Letelier read at Rockefeller's New York City "Riverside Church" (next to NCC headquarters), February 2, 1985; per Powell, op. cit., p. 244. See section of SECRET on Johnetta Cole for more on the Clintons' links to Sandy Pollack.

Riverside Church is of course linked to Skull & Bones.

> In addition to IPS, Hillary sent money to other pro-communist groups which themselves have strong ties to

IPS — indicating a collaborative attempt for donations to serve similar purposes. These included the Committee in Support of the People of El Salvador (CISPES — a supporter of the Marxist Salvadoran guerrillas), the National Lawyers Guild (an officially cited adjunct of the Communist Party USA), militant William Kunstler's Center for Constitutional Studies, and the terroristic Christic Institute. Information on some of the anti-American and pro-communist activities of these other groups Hillary supported, and some of their relationships to IPS, are explained below.

CISPES, Hillary and IPS. The Committee in Support of the People of El Salvador (CISPES), which Hillary dished out $5,000.00 to, has been properly classified as a communist front organization. Formed in 1980 as the US branch of a worldwide apparatus supporting Marxist FMLN guerrillas in El Salvador, insight into CISPES's function with Latin American communist rebels and the international communist movement was gained in 1981 when the personal papers of guerrilla leader Farid Handal were captured in El Salvador, (p. 35)

The National Lawyers Guild, Hillary and IPS. U.S. Government investigators have repeatedly condemned the NLG (which Hillary lavished $15,000.00 on) as being a "Communist front" group. One such official denunciation charged that the NLG: "Is the foremost legal bulwark of the Communist Party [and]its front organizations. . . [which] since its inception has never failed to rally to the legal defense of the Communist Party and individual members thereof, including known espionage agents." (page 36)

At an NLG convention in Austin, Texas the delegates sang the Communist "Internationale" anthem, whose lyrics include the verse, "Tis the final conflict, let each stand his place. The International Soviet shall be the Human Race!"

Hillary gave money to a man who makes speeches be-

> neath the Soviet flag, who cheered the murder of 5 policemen and who applauds the assassination of President Kennedy. (page 37)

IPS Suspected of Bombings and Murder

The IPS has long been suspected of revolutionary activities and this must have been known to the Clintons—and especially to Hillary Clinton, who financed IPS in part. Foundation fund disbursers make themselves aware of recipients' backgrounds.

In 1971 the IPS was under investigation by the FBI "for possible involvement of IPS associates in bombing matters" (see documents reproduced below) and "a connection has been shown between the subjects of a bank robbery-murder and some IPS associates." (This related to the murder of a police officer on September 23, 1970 during robbery of the State Street Bank and Trust Company in Boston.)

At precisely this time in 1970, Hillary Clinton was associated with Robert Borosage, Director of the IPS. . . and ten years later we find Hillary still associated with and financing IPS Marxist causes.

If writers on the outside of IPS can determine IPS' revolutionary violent nature, then so can a Yale lawyer with inside contacts at IPS. We have to assume that either Hillary Clinton is remarkably naive or was aware of the violent nature of the IPS when she directed funds into the IPS and related organizations.

When we consider the FBI documents reproduced below with the additional materials in SECRET, this writer has serious reservations about Hillary Clinton. Anyone who would finance or aid violent activities is unstable and certainly not fit to influence public policy in a free country.

SECRET comments on public reaction to some of these revelations as follows:

> On CNN's Capital Gang columnist Mona Charen cited Hillary's radicalism but was interrupted by Al Hunt, Chief of the Washington Bureau of the Wall Street Journal, "It's utter, complete nonsense. You don't have

anything factual" blurted Hunt Charen replied, "No, it's based on her foundation grants to CISPES and William Kunstler." Hunt stormed, "No, that is the far-right American Spectator kind of neo-fascist hit nonsense."

After Rush Limbaugh raked Hunt over the coals over 500 radio stations for that sophomoric name-calling spree, a humbled and much smarter Al Hunt scraped out an apology, offering that, "It would be outrageous for me or anyone else to smear [The American Spectator] with that pejorative label."

Regardless how uneasy the truth makes persons such as Al Hunt, Hillary Clinton's political activities are as relevant as the political activities of any first lady. If Eleanor Roosevelt had (before, after or during WWII) channeled money to Japan's military supporters, that would have been relevant. If Bess Truman had directed monies to North Korea's advocates, that would have been relevant. If Jackie Kennedy had aided Castro or if ""Lady Bird' Johnson had supported the Viet Cong, those actions would have been relevant; as would news of Barbara Bush funding Sadam Hussein's forces.

Likewise, Hillary's support for pro-Marxists in America and for communist insurgents in Nicaragua and El Salvador is just as relevant! Especially in light of the Clinton campaign rhetoric that he and Hillary would be somewhat of a husband-and-wife Presidential team. As Hillary declared at the New York Convention, "With me you are getting two for the price of one.... Vote for him and you will have me also.

The Trilateral Commission then is a prime Rockefeller front to control policy to bring about New World Order. Through the Clintons the decades-old policy of aid to Marxist regimes and revolutionaries continues.

This is a long way from the "study group" label claimed by the Trilateral Commission. The Commission is a revolutionary organization in opposition to the U.S. Constitution (in its own reports) and through its members uses deceit, violence and criminal activity to advance its own global political and

financial interests.

The delicacy of language and presumed elevated status of its members should not disguise either their tenacity or their immorality. The soft word, the empty promise and the subtle threat have replaced the Marxist red banner and screaming hordes.

CHAPTER ELEVEN
WHERE THE TRILATERAL COMMISSION WENT WRONG

When we published the original TRILATERALS OVER WASHINGTON, the Trilateral Commission had no track history. Although we wrote the book from the viewpoint that Trilateral Commissioners and especially Chairman David Rockefeller were not telling the entire truth about their objectives, there was no way to prove self interested objectives.

Today, in 1994, we can look at two decades of Trilateral actions and determine just how disinterested Trilateral proposals and policies have been in the light of the extraordinary ability to place their members in every Administration.

First, we now know they have a common philosophy, this by their own statements. The radio interview of Trilateral Coordinator George Franklin Jr., in July 1979 (Radio station KLNG, Council Bluffs, Iowa, July 27,1979) highlighted specific sensitive areas of discussion that the Commission wants to avoid.

Without doubt the Trilaterals had not considered the possibility of opposition to their plans and have no damage control mechanism in place. They also demonstrate an easy ability to avoid, evade, deny and even outright lie when these sensitive areas are made public.

The central role of David Rockefeller is always disguised and his influence diluted:

COMMENTATOR: Mr. Sutton?

SUTTON: Can we go off energy for a while?

COMMENTATOR: Yes.

SUTTON: I have a question for Mr. Franklin. Who chooses the members of the Trilateral Commission?

FRANKLIN: The Trilateral Commission's Executive Committee.

SUTTON: Who comprises that committee?

FRANKLIN: Who is on that committee?

SUTTON: Yes.

FRANKLIN: Okay. William Coleman, former Secretary of Transportation, who is a lawyer; Lane Kirkland, who is Secretary-General of the American Federation of Labor; Henry Kissinger, who does not need too much identification; Bruce McLaury, who is president of the Brookings Institution; David Rockefeller; Robert Ingersoll, who was formerly Deputy Secretary of State and Ambassador to Japan; I. W. Able, who was formerly head of United Steelworkers; and William Roth, who is a San Francisco businessman and was chief trade negotiator in the previous trade Kennedy round.

SUTTON: May I ask a question? How many of these have a rather intimate business relationship with Mr. Rockefeller?

FRANKLIN: Henry Kissinger is chairman of Mr. Rockefeller's Chase Advisory Committee.

SUTTON: Coleman?

FRANKLIN: Coleman, I don't think has any business relationship with him, he is a lawyer. [In fact, William Coleman is a Director of Chase Manhattan Bank, which Franklin has already admitted to be controlled by David Rockefeller.]

SUTTON: Mr. Ingersoll?

FRANKLIN: Mr. Ingersoll, I don't think has any business relationship.

SUTTON: Isn't he connected with First Chicago?

FRANKLIN: He is vice chairman of the University of Chicago.

SUTTON: NO, what about the First Bank of Chicago? (First

Chicago Corp.)

FRANKLIN: I don't believe that Ingersoll has any relationship with banks in Chicago, but I don't know for certain on that. [Robert Stephen Ingersoll, before joining the Washington "revolving door," was a director of the First National Bank of Chicago, a subsidiary of First Chicago Corp. The largest single shareholder in First Chicago is David Rockefeller's Chase Manhattan Bank. Ingersoll has also been a director of Atlantic Richfield and Burlington Northern. Chase Manhattan is also the largest single stockholder in these two companies. Thus, Ingersoll has a longstanding relationship with Rockefeller interests.]

Freedom of the press is distasteful to Trilaterals, and they have good reason to find it distasteful. Here's another segment of the same radio interview of Mr. Franklin, in which he disclaims knowledge of a Trilateral book recommending abridgement of press freedoms, a violation of the First Amendment of the Constitution.

SUTTON: Mr. Franklin, do you believe in freedom of the press in the United States?

FRANKLIN: Definitely, of course.

SUTTON: Let me quote you from a book, Crisis In Democracy, written by Michel Crozier, who is a Trilateral member.

FRANKLIN: Correct.

SUTTON: I am quoting from page 35 of his book: "The media has thus become an autonomous power. We are now witnessing a crucial change with the profession. That is, media tends to regulate itself in such a way as to resist the pressure from financial or government interests." Does that not mean that you want to restrict the press in some way?

FRANKLIN: I can't quite hear you.

SUTTON: Let me paraphrase this for you. I think I will be clear in my paraphrasing. The Trilateral Commission is unhappy with the press because it resists the pressure from financial or government interests. That is one of your statements.

FRANKLIN: NOW, let me say something about our book. [NOTE: "our"] The book that we put out, the report, is the responsibility of the authors and not of the Commission itself. You will find that in the back of a number of them, and that book is one of them, that other members of the Commission will hear dissenting views, and you will find dissenting views in the back of that book on the press question.

SUTTON: I would like to quote a further statement from the same book and leave the question at that point: "The media deprives government and to some extent other responsible authorities of the time lag and tolerance that make it possible to innovate and to experiment responsibly." What the book recommends is something like the Interstate Commerce Commission to control the press. This seems to me to be a violation of the Constitution.

FRANKLIN: I would agree with you that we do not want something like the Interstate Commerce Commission to control the press.

[Michel Crozer, et al, in Crisis In Democracy, make the following statements with reference to the "Interstate Commerce Act and the Sherman Anti-trust Act":

"Something comparable appears to be now needed with respect to the media. .. there is also the need to assure to the government the right and the ability to withhold information at the source" (page 82).

The authors go on to argue that if journalists do not conform to these new restrictive standards, then "The alternative could well be regulation by the government. "]

SUTTON: I fail to understand why the Trilateral Commission would associate itself with such a viewpoint.

FRANKLIN: As I just mentioned to you, we hired three authors for each report. The authors are allowed to say what they think is correct. What the Trilateral Commission does is this: It says we think this report is worthwhile for the public to see. This does not mean that all the members of the Commission agree with all the statements in the report and, in fact, a majority of them might disagree with certain things. Now,

where a statement is one that many Commissioners seem to disagree with, we then do put in the back a summary of the discussion. That book does have a summary of the discussion of our meeting which questions various things in the book, in the back of it.

While Mr. Franklin tries to put distance between the Trilateral Commission and individual members, he then admitted to a "common philosophy" which appears to suggest they have common views on at least fundamental issues.

SUTTON: Would you say Mr. Franklin that the members of the Commission do have a common philosophy?

FRANKLIN: Yes, I think a common philosophy. I think that all of them believe that this world will work better if the principal industrial powers consult each other on their policies and try to work them out together. This does not mean that they will agree on everything. Of course, they won't. But, at least they will know what the other countries feel, and why they feel it.

SUTTON: The Financial Times in London—the editor is Ferdy Fisher, a Trilateralist. He fired a long time editorial writer, Gordon Tether, because Tether wanted to write articles criticizing the Trilateral Commission. Do you have any comments?

FRANKLIN: I didn't know that at all. It sounds terribly unlikely, but if you say that it is so, probably it is. [See Chapter Seven, "Trilateral Censorship: the case of C. Gordon Tether" in Trilaterals Over Washington. Trilaterals see the media as the "gatekeeper" and comment as follows: "Their main impact is visibility. The only real event is the event that is reported as seen. Thus, journalists possess a crucial role as gatekeepers of one of the central dimensions of public life. "]

George Franklin got into further deep water about control of the press when asked how it chose writers and whether it approved of the chosen writers.

REES: Yes, Mr. Franklin, I noticed that you were saying that the Trilateral Commission takes no responsibility for the use

of the publisher's imprimatur, but I would be interested to know about how you go about selecting your writers to put out the various positions.

FRANKLIN: Well that is a very interesting question. We have a meeting with the chairmen. The way the situation is organized is this. There are three chairmen, one from each of the three areas. Three secretaries, one from each of the three areas, and I, have got an intermediate staff job called "coordinator." Now, the chairmen and secretaries meet with what they have jointly, will discuss not only topics they think will be useful to have, but also authors for these topics. The topics are then discussed by the whole Commission and approved or changed slightly. The authors are chosen by members of the staff and consultation with the chairmen.

REES: SO, although you do not take responsibility for the finished product you are responsible for the selection of the writers.

FRANKLIN: Very much. No question about that.

REES: SO it does have your imprimatur stamp of approval each time?

FRANKLIN: In that sense. We certainly choose the writers, and we choose them because we think they are very good, obviously. So far, every single report that has been written by the authors has, in fact, been accepted for publication by the Commission.

REES: Then the report on the news media was accepted?

FRANKLIN: It was accepted, but there was a lot of disagreement with that. It was felt that it was an important statement, with quite a lot of interesting new ideas in it. It was also a very strong opposition which was reflected in the back of the report in a section, I think it is entitled, "Summary of Discussion."

Whatever Mr. Franklin's evasive statements, common sense suggests that Trilateral reports do in fact reflect a common philosophy, else the Commission would hardly pay out funds for their production. The "do not necessarily agree with

the authors" is a mere ploy to evade responsibility for unwelcome views.

In one sensitive area, the abnormally low tax rates paid by Trilateral banks and firms, George Franklin Jr. was highly evasive — and for good reason. Trilaterals have been getting away with murder, taxwise.

Here's the Council Bluffs segment on taxation:

COMMENTATOR: Mr. Sutton, do you have any other questions?

SUTTON: I have one more question, that goes to a new field entirely: taxation. We have established that David Rockefeller is chairman and single most powerful influence in Chase Manhattan Bank. Now, do you happen to know the tax rate that Chase Manhattan pays in the United States?

FRANKLIN: I don't know. . . happen to know — it is about 50% (fifty percent),

SUTTON: I will give you some figures. In 1976, Chase Manhattan Bank's tax rate was precisely zero. I am wondering why, if you are so influential politically, why at least you cannot pay a tax rate more equivalent to that of the average American taxpayer, which is 15%, or 20% or 30%.

FRANKLIN: I have nothing to do with Chase Manhattan Bank. But if the tax rate was zero, it must have been because it had very large real estate losses in that year, I think.

SUTTON: In 1975, it was 3.4%. It is always way under 10%.

FRANKLIN: Well, that is extremely interesting. It is a new fact for me.

SUTTON: Well, my point is this, that you are willing to guide the United States into the future, but apparently you are not willing to pay your fair share of the costs.

COMMENTATOR: YOU are talking about the Commission members as a whole?

SUTTON: Yes.

FRANKLIN: I think you will find that the Commission members pay whatever the laws say they are supposed to pay under the circumstances. I do not know what the particular

reason was on Chase. They did have heavy losses; I am not familiar enough with their situation to be able to tell to you.

In brief, our Trilateral friends have been dealing themselves favors when it comes to taxation. Trilateral firms are notorious for the ridiculous low tax rates they appear to pay, zero being quite common. And it's all legal because Trilateral policies are put into law by Trilateral politicians — so George Franklin can truly say that "the Commission members pay whatever the laws say they are supposed to pay under the circumstances."

CHAPTER TWELVE: CONCLUSIONS

Twenty years after founding of the Trilateral Commission we can now assess its objectives and intentions. Originally presented as a "study group" by interested citizens concerned about world problems, we find that the Trilateral Commission is anything but this description.

The first finding is that from the start the Commission has reflected extremely narrow segments of the citizenry in each constituent country. The Commission is as representative of world requirements and world needs as the fox is representative of chickens in the hen coop.

The dominant influence has always been David Rockefeller and comparable bankers overseas. The dominant influence is that of the international bankers, those who already heavily control world directions through control of finance. Furthermore, David Rockefeller was long time Chairman of the Federal Reserve Bank of New York, the most important regional bank in this private system. The Federal Reserve System is not a public institution, it is a private institution, a fact which has to be borne in mind. Federal Reserve distance from the prevailing government of the time is deliberate, so that the financial system can be controlled in the interests of those who own the Federal Reserve.

Rockefeller has a small executive Committee that invites

prominent citizens to join the Commission. This perpetuates the Rockefeller influence so that new members are at least sympathetic to Rockefeller objectives in their private views. This in itself would not be objectionable if:

(1) The Commission was indeed a "study group" and,

(2) If the Commission exercised the same interest in separation from the Federal Government in appointments as it does in operation of the Federal Reserve.

The Trilateral Commission is not a study group. Its studies are farmed out to academics who can reflect the Commission views. These studies are then the basis for Trilateral discussion and agreed policies become the policy viewpoints of individual members.

When these members are appointed to the Federal Government, and generally about one-third of the members at any time are in the current Administration, then they transmit these policies into practice. The conclusion is that the Trilateral Commission is a policy-oriented group with the power to translate policies into action whatever the general citizenry may wish.

Nowhere do we find any policy determinations in favor of individual free enterprise and individual freedom. We find many claims that the world is "ungovernable" and that State action is needed to bring citizen objectives into line with Trilateral ambitions.

Our chapters and examples of attempts to solve social problems through "wars" demonstrates policies that must have a hidden objective. The so-called "war on drugs" has not succeeded and never could succeed. We find that the Clinton "war on drugs" is not far removed from the Reagan-Bush "war on drugs" although Clinton promised a new approach. It is still a multi-billion military approach to intercept supply, a remarkably inefficient procedure. The demand side has never been realistically tackled. And as Lt. Colonel "Bo" Gritz has pointed out, along with others, the CIA is deeply involved in trafficking. So we are left with the thought — is the war on supply designed to allow other channels like CIA to control supply? This is the only rational conclusion one can make.

Whatever the Trilateral Commission members may claim, our finding is that the objective is a New World Order with Trilateralists in control. This would be a planned New World Order with no individual freedom and no constitutional protections. These so-called "wars" on problems are designed to mold the outcome of the problem towards New World Order objectives, not to solve the problem.

INSTITUTE FOR POLICY STUDIES, Washington, D.C., is the "think tank" heavily used by the Clinton Administration to implement Trilateral policies. Here is the FBI summary on IPS.

FROM THE FBI FILES:

Memorandum for Mr. C. D. Brennan
Re: Institute for Policy Studies
1520 New Hampshire Avenue, N.W.
Washington, D. C.

SECRET

ineffective efforts by such groups as Weatherman and the Communist Party.

b7C

OBSERVATIONS:

As indicated above, it appears that IPS is not primarily an institution of learning nor is it an ordinary political organization; rather, it is an action-oriented organization of subversive aspect and should be investigated by the FBI as a New Left subversive organization, without limiting the investigation to contact with established sources.

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SECRET

APPENDIX A:
TRILATERAL COMMISSION MEMBERS

as of October 15, 1978. See page 142 for 1993.

North American Members

Abel, I.W., Former President, United Steelworkers of America

Abshire, David M., Chairman, Georgetown University Center for Strategic and International Studies

Ackley, Gardner, Henry Carter Adams University Professor of Political Economy, University of Michigan

Allison, Graham. Dean, John F. Kennedy School of Government, University of Michigan

Anderson, Doris, Former Editor,Chatelaine Magazine

Anderson, John B., House of Representatives

Armstrong, Anne. Former U.S. Ambassador to Great Britain

Austin, J. Paul. Chairman, The Coca-Cola Company

Ball, George W., Senior Partner, Lehman Brothers

Belanger, Michel, President, Provincial Bank of Canada

Bonner, Robert W., Q.C., Chairman, British Columbia Hydro

Brademas, John, House of Representatives

Brimmer, Andrew, President, Brimmer & Company, Inc.

Brock, III, William E., Chairman, Republican National Committee

Burns, Arthur F., Senior Adviser, Lazard Freres & Co.; former Chairman of Board of Governors, U.S. Federal Reserve Board.

Calkins, Hugh, Partner, Jones, Day, Reavis & Pogue

Castonguay, Claude, President, Fonds Laurentien; Chairman of the Board, Imperial Life Assurance Company; former Minister in the Quebec Government

Chaikin, SoL President, International Ladies Garment Workers Union

Cohen, William S., House of Representatives

Coleman, William T., Senior Partner, O'Melveny & Meyers; former Secretary of Transportation

Conable, Jr., Barber B., House of Representatives

Cowles, Jr., John, Chairman, Minneapolis Star & Tribune Co.

Cranston, Alan, United States Senate

Colver, John C, United States Senate

Curtis, Gerald L., Director, East Asian Institute, Columbia University

Cutler, Lloyd N., Partner, Wilmer, Cutler & Pickering

Desrochers, Louis A., Partner, McCuaig and Desrochers, Edmonton

Dobell, Peter, Parliamentary Centre for Foreign Affairs and Foreign Trade, Ottawa

Donovan, Hedley, Editor-in-Chief,Time, Inc.

Edwards, Claude A., Member, Public Service Staff Relations Board; former President, Public Service Alliance of Canada

Evans, Daniel J., President, The Evergreen State College; former Governor of Washington

Fairweather, Gordon, Chief Commissioner, Canadian Human Rights Commission

Foley, Thomas S., House of Representatives

Franklin, George S., Coordinator, The Trilateral Commission, former Executive Director, Council on Foreign Relations

Fraser, Donald M., House of Representatives

Fraser, John Allen, Member of Parliament, Ottawa

Glenn, Jr., John H., United States Senate

Harvie, Donald Southam, Deputy Chairman, Petro Canada

Hawley, Philip M., President, Carter Hawley Hale Stores, Inc.

Heller, Walter W., Regents' Professor of Economics, University of Minnesota

Hewitt, William A., Chairman, Deere & Company

Hills, Carla A., Senior Resident Partner, Latham, Watkins & Hills: former U.S. Secretary of Housing and Urban Development.

Hockin, Alan. Executive Vice President, Toronto-Dominion Bank

Hoge, Jr., James F., Chief Editor, Chicago Sun Times

Houthakker, Hendrik S., Henry Lee Professor of Economics, Harvard University

Hughes, Thomas L., President, Carnegie Endowment for International Peace

Ingersoll, Robert S., Deputy Chairman of the Board of Trustees, The University of Chicago; former Deputy Secretary of State

Johnson, D. Gale, Provost, The University of Chicago

Train, Russell E., Former Administrator, U.S. Environmental Protection Agency

Trezise, Philip H., Former Assistant Secretary of State for Economic Affairs

Volcker, Paul A., President, Federal Reserve Bank of New York

Wallace, Martha R., Executive Director, The Henry Luce Foundation, Inc.

Ward, Martin J., President, United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada

Watts, Glenn E., President, Communications Workers of America

Weinberger, Caspar W., Vice President and General Counsel, Bechtel Corporation

Weyerhaeuser, George, President and Chief Executive Officer, Weyerhaeuser Corporation

Whitman, Marina V. N., Distinguished Public Service Professor of Economics, University of Pittsburgh

Wilson, Carroll L., Mitsui Professor in Problems of Contemporary Technology, Alfred P. Sloan School of Management; Director, Workshop on Alternative Energy Strategies, MIT

Wilson, T. A., Chairman of the Board, The Boeing Company

Former Members in Public Service

Benson, Lucy Wilson, U.S. Under-Secretary of State for Security Assistance

Blumenthal, W. Michael, U.S. Secretary of the Treasury

Bowie, Robert R., U.S. Deputy to the Director of Central Intelligence for National Intelligence

Brown, Harold, U.S. Secretary of Defense

Brzezinski, Zbigniew, U.S. Assistant to the President for National Security Affairs

Carter, Jimmy, President of the United States

Christopher, Warren, U.S. Deputy Secretary of State

Cooper, Richard N., U.S. Under-Secretary of State for Economic Affairs

Gardner, Richard N., U.S. Ambassador to Italy

Holbrooke, Richard, U.S. Assistant Secretary of State for East Asian and Pacific Affairs

Mondale, Walter F., Vice President of the United States

Owen, Henry, Special Representative of the President for Economic Summits; U.S. Ambassador at Large

Pepin, Jean-Luc, Cochairman, Task Force on Canadian Unity

Richardson, Elliot L., U.S. Ambassador at Large with Responsibility for U.N. Law of the Sea Conference

Kaiser, Jr., Edgar F., President and Chief Executive Officer, Kaiser Resources Ltd.

Kirby, Michael, President, Institute for Research on Public Policy, Montreal

Kirkland, Lane, Secretary-Treasurer, AFL-CIO

Kissinger, Henry A., Former Secretary of State

Linowitz, Sol M., Senior Partner, Coudert Brothers; former Ambassador to the Organization of American States

Lord, Winston, President, Council on Foreign Relations

Macdonald, Donald S., Former Canadian Minister of Finance

MacLaury, Bruce K., President, The Brookings Institution

McCracken, Paul W., Edmund Ezra Day Professor of Business Administration, University of Michigan

Miller, Arjay, Dean, Graduate School of Business, Stanford University

Morgan, Lee L, President, Caterpillar Tractor Company

Naden, Kenneth D., President, National Council of Farmer Cooperatives

Packard, David, Chairman, Hewlett-Packard Company

Parsky, Gerald L., Partner, Gibson, Dunn & Crutcher; former Assistant Secretary of the Treasury for International Affairs

Pearce, William R., Vice President, Cargill Incorporated

Peterson, Peter G., Chairman, Lehman Brothers

Reischauer, Edwin O., University Professor and Director of Japan Institute, Harvard University; former U.S. Ambassador to Japan

Robinson, Charles W., Vice Chairman, Blyth Eastman Dillon & Co.; former Deputy Secretary of State

Rockefeller, David, Chairman, The Chase Manhattan Bank, N.A.

Rockefeller, John D., IV, Governor of West Virginia

Roosa, Robert V., Partner, Brown Bros., Harriman & Company

Roth, William M., Roth Properties

Roth, Jr., William V., United States Senate

Sawhill, John C, President, New York University; former Administrator, Federal Energy Administration

Schacht, Henry B., Chairman, Cummins Engine Inc.

Scranton, William W., Former Governor of Pennsylvania; former U.S. Ambassador to the United Nations

Sharp, Mitchell, Member of Parliament; former Minister of External Affairs

Shepherd, Jr., Mark, Chairman, Texas Instruments Inc.

Spencer, Edson W., President and Chief Executive Officer, Honeywell Inc.

Taft, Jr., Robert, Partner, Taft, Stettinius & Hollister

Taylor, Arthur R.

Thompson, James R., Governor of Illinois

Smith, Gerard C, U.S. Ambassador at Large for Non-Proliferation Matters

Solomon, Anthony M., U.S. Under-Secretary of the Treasury for Monetary Affairs

Vance, Cyrus R., U.S. Secretary of State

Warnke, Paul C, Director, U.S. Arms Control and Disarmament Agency; Chief Disarmament Negotiator

Young, Andrew, U.S. Ambassador to the United Nations

European Members

Agnelli, Giovanni, President, FIAT

Anderson, P. Nyboe, Chief General Manager, Andelsbanken A/S; former Danish Minister for Economic Affairs and Trade

Bassetti, Piero, Chamber of Deputies, Rome

Berthoin, George, President, European Movement

Biedenkopf, Kurt H., Deputy Chairman, Christian Democratic Union Federal Republic of Germany

Birrenbach, Kurt, President, German Foreign Policy Association; President, Thyssen Stiftung

Boon, Henrik N., Former Dutch Ambassador to NATO and Italy

Carli, Guido, President, Confindustria; former Governor, Bank of Italy

Carrington, Lord, House of Lords, London

Casanova, Jean-Claude, Professor of Political Science, Institute of Political Studies, Paris

Clercq, Willy de, Chairman, Party for Freedom and Progress, Belgium

Colombo, Umberto, Director-General, Research & Development Division, Montedison

Compagna, Franceso, Chamber of Deputies, Rome

Cromer, The Earl of, Advisor to Baring Bros. & Co., Ltd., former British Ambassador to the United States

Danis-Spaak, Antoinette, Member of Chamber of Representatives, Brussels

Debatisse, Michel, Chairman of the French National Farmers Union

Delouvrier, Paul, Chairman, French Electricity Board

Desmond, Barry, Member of Irish Parliament and Labour Party Whip

Dromer, Jean, President Directeur General, Banque Internationale pour l'Afrique Occidentale

Duchene, Francois, Director, Sussex European Research Centre, University of Sussex

Eastwood, G., General Secretary, Association of Patternmakers & Allied Craftsmen, London

Ehmke, Horst, Deputy Chairman, Parliamentary Fraction of Social Democratic Party, Federal Republic of Germany; former Minister of Justice

Esteva, Pierre, Administrateur Directeur General, Union des Assurances de Paris

Fibbe, K, Chairman of the Board, Overseas Gas and Electricity Company, Rotterdam

Fisher, M. H., Editor, Financial Times

Fitzgerald, Garret, Member of Irish Parliament and Leader of Fine Gael Party; former Foreign Minister of Ireland

Foch, Rene. Delegue National aux Questions Internationales du Parti des Republicains Independants

Forte, Franceso, President, Tescon, S.p.A., Rome

Gaudet, Michel, President, Federation Francaise des Societes d' Assurances

Geddes, Sir Reay, Chairman, Dunlop Holdings, Ltd.

Glisenti, Giuseppe, President, La Rinascente

Grierson, Ronald, Director, General Electric Co., Ltd.

Harlech, Lord, Chairman, Harlech Television; former British Ambassador to the United States

Hartwig, Hans, Chairman, German Association for Wholesale and Foreign Trade

Hayhoe, Bernard, Member of British Parliament

Houthuys, Jozef P., Chairman, Belgian Confederation of Christian Trade Unions

Huber, Ludwig, President, Bayerische Landesbank

Jannott, Horst K., Chairman, Board of Directors, Munich Reinsurance Society

Janssen, Daniel E., Administrateur Delegue et Directeur General, Belgian Chemical Union

Junghans, Hans-Jurgen, Member of the Bundestag

Kaiser, Karl, Director, Research Institute of the German Society for Foreign Policy

Keith, Sir Kenneth, Chairman, Rolls Royce Ltd.

Keswick, Henry, Chairman, Matheson & Company, Ltd.

Killeen, Michael, Managing Director, Industrial Development Authority of the Irish Republic

Knight, Sir Arthur, Chairman, Courtaulds, Ltd.

Kohnstamm, Max, Principal, European University Institute, Florence

Kristoffersen, Erwin, Director, International Division, German Federation of Trade Unions

Lambert, Baron Leon, President du Groupe Bruxelles Lambert, S.A.

Levi, Arrigo, La Stampa, Turin

Littman, Mark, Deputy Chairman, British Steel Corporation

Lowenthal, Richard, Professor Emeritus, Free University of Berlin

MacFarquhar, Roderick, Member of British Parliament

Malfa, Giorgio La, Chamber of Deputies, Rome

Marjolin, Robert, Former Vice President of the Commission of the European Communities

Martin, Roger, President, Compagnie Saint-Gobain Pont-a-Mousson

Maudling, Reginald, Member of British Parliament; former Cabinet Minister

Merlini, Cesare, Director, Institute for International Affairs, Rome

Montbrial Thierry de, Professor of Economics, Ecole Polytechnique, Paris

Munchmeyer, Alwin, Chairman of the Board, Bank Schroder, Munchmeyer, Hengst & Co.

Munthe, Preben, Professor of Economics, Oslo University; Official Chief Negotiator in Negotiations between Labor Unions and Industry

Murphy, Dan, Secretary-General of the Civil Service Executive Union, Dublin

Narjes, Karl-Heinz, Member of the Bundestag

Neuman, Friedrich A., Chairman, State Association, Industrial Employers Societies, North-Rhine Westphalia

Ortona, Egidio, President, Honeywell Information Systems, Italia; former Italian Ambassador to the United States

Pagezy, Bernard, President Directeur General, Societes d' Assurances du Groupe de Paris

Pilcher, Sir John, Former British Ambassador to Japan

Rey, Jean, Ministre de 'Etat; former President of the Commission of the European Communities

Ridsdale, Julian, Member of British Parliament; Chairman, Anglo-Japanese Parliamentary Group

Roberts, Sir Frank, Advisory Director, Unilever Ltd.; former British Ambassador to Germany and the Soviet Union

Robinson, Mary T. W., Member of Senate, Irish Republic

Roll, Lord, Chairman, S. G. Warburg and Co., Ltd.

Roper, John, Member of British Parliament

Rose, Francois de, Ambassadeur de France; President Directeur General, Societe Nouvelle Pathe Cinema

Rothschild, Baron Edmond de, President, Compagnie Financiere Holding, Paris

Samkalden, Ivo, Former Mayor of Amsterdam

Sanness, John C, Director, Norwegian Institute of International Affairs

Scherpenhuijsen Rom, W. E., Chairman, Board of Directors, Nederlandsche Middenstandsbank, N.V.

Schmidt, Erik Ib, Permanent Undersecretary of State, Chairman, Riso National Laboratory

Scholten, Th. M., Chairman of the Board, Robeco Investment Group, Rotterdam

Schroder, Gerhard, Member of the Bundestag; former Foreign Minister of the Federal Republic of Germany

Seidenfaden, Erik, Directeur de la Fondation Danoise, Institut Universitaire International de Paris

Sensi, Federico, Ambassador of Italy; former Italian Ambassador to the Soviet Union

Seydoux, Roger, Ambassadeur de France; President, Banque de Madagascar et des Comores; President, Fondation de France

Shackleton, Lord, Deputy Chairman, Rio Tinto-Zinc Corporation Ltd., London

Shonfield, Sir Andrew, Professor of Economics, European University Institute, Florence; former Director, Royal Institute of International Affairs

Smith, J. H., Deputy Chairman, British Gas Corporation

Sohl, Hans-Gunther, Chairman of the Board, August Thyssen Hutte A.G.

Sommer, Theo, Editor-in-Chief, Die Zeit

Staunton, Myles, Member of Senate, Irish Republic

Storry, G. R., St. Antony's College, Oxford (Far East Centre)

Swire, John A., Chairman, John Swire and Sons, Ltd.

Tidemand, Otto Grieg, Shipowner; former Norwegian Minister of Defense and Minister of Economic Affairs

Tuke, A. F., Chairman, Barclays Bank International Ltd.

Vetter, Heinz-Oskar, Chairman, German Federation of Trade Unions

Vittorelli, Paolo, Member of Italian Parliament

Warner, Sir Frederick, Director, Guinness Peat Group Ltd.; former British Ambassador to Japan

Wauters, Luc, Chairman, Kredietbank, Brussels

Wellenstein, Edmund, Former Director General for External Affairs, Commission of the European Communities

Whitaker, Kenneth, Member of Senate, Irish Republic; former Governor of the Central Bank of Ireland

Williams, Alan Lee, Member of British Parliament

Wolf von Amerongen, Otto, President, Otto Wolff A.G.; President, German Federation of Trade and Industry

Woods, Michael, Member of Irish Parliament

Zulueta, Sir Philip de, Chairman, Antony Gibbs Holdings Ltd.

Former Members in Public Service

Auken, Svend, Minister of Labor, Denmark

Barre, Raymend, Prime Minister and Finance Minister, French Republic

Ehrenberg, Herbert, Minister of Labor and Social Affairs, Federal Republic of Germany

Eyskens, Marc, Belgian State Secretary for Budget and Flemish Regional Economy

Lambsdorff, Otto Graf, Minister of Economics, Federal Republic of Germany

Lecat, Jean-Philippe, Minister of Culture and Communications, French Republic

Luard, Evan, Parliamentary Under Secretary of State for the British Foreign Office

Norgaard, Ivar, Danish Minister of Commerce

O'Kennedy, Michael, Minister for Foreign Affairs, Irish Republic

Simonet, Henri, Foreign Minister of Belgium

Stoltenberg, Thorvald, Secretary of State, Norwegian Ministry of Foreign Affairs

Sund, Olaf, Senator for Labor and Social Affairs, Land Government of Berlin

Japanese Members

Amagi, Isao, President, Japan Society for the Promotion of Science; former Vice Minister of Education

Ariyoshi, Yoshiya, Counsellor, Nippon Yusen, K.K.

Asada, Shizuo, President, Japan Air Lines Company, Ltd.

Ashihara, Yoshishige, Chairman, Kansai Electric Power Company, In<

Doko, Toshiwo, President, Japan Federation of Economic Organizatio: (Keidanren)

Eto, Jun, Professor, Tokyo Institute of Technology

Eto, Shinkichi, Professor of International Relations, Tokyo University

Fujino, Chujiro, Chairman, Mitsubishi Corporation

Fukushima, Shintaro, President, Kyodo News Service

Gotoh, Noboru, President, TOKYU Corporation

Hagiwara, Toru, Advisor to the Minister of Foreign Affairs; former Ambassador to France

Hanamura, Nihachiro, Vice President, Japan Federation of Economic Organizations (Keidanren)

Hara, Sumio, Executive Advisor, Bank of Tokyo, Ltd.

Haraguchi, Yukitaka, Chairman, Central Executive Committee, All Japan Federation of Metal Mine Labor Unions

Hasegawa, Norishige, Chairman, Sumitomo Chemical Company, Ltd.

Hidaka, Teru, Chairman, Yamaichi Securities Company, Ltd.

Hirose, Gen, President, Nihon Insurance Co, Ltd.

Hori, Hideo, President, The Association for Employment Promotion of the Handicapped

Hosomi, Takashi, Advisor, Industrial Bank of Japan, Ltd.

Hotta, Shozo, Honorary Chairman, Sumitomo Bank, Ltd.

Hyuga, Hosai, Chairman, Sumitomo Bank, Ltd.

Ichimura, Shinichi, Professor of Economics, Kyoto University

Ikeda, Yoshizo, President, Mitsui & Co., Ltd.

Inayama, Yoshihiro, Chairman, Nippon Steel Corporation

Inouye, Kaoru, Honorary Chairman, Dai-Ichi Kangyo Bank, Ltd.

Ishikawa, Rokuro, President, Kajima Corporation

Ishikawa, Tadao, President, Keio University

Itakura, Joji, President, The Mitsui Bank, Ltd.

Iwasa, Yoshizane, Chairman, Japan-U.S. Economic Council

Kaji, Motoo, Professor of Economics, Tokyo University
Kamiya, Fuji, Professor of International Relations, Keio University
Kashiwagi, Yusuke, President, Bank of Tokyo, Ltd.; former Special Advisor to the Minister of Finance
Kato, Koichi, Member of the Diet
Kawai, Ryoichi, President, Komatsu, Ltd.
Kawamata, Katsuji, Chairman, Nissan Motor Company, Ltd.
Kitaura, Kiichiro, President, Nomura Securities Company, Ltd.
Kobayashi, Koji, Chairman, Nippon Electric Company, Ltd.
Komai, Kenichiro, Chairman, Hitachi, Ltd.
Kondo, Shinichi, Advisor, Mitsubishi Corporation; former Ambassador to Canada
Kono, Fumihiko, Counsellor, Mitsubishi Heavy Industries, Ltd.
Kosaka, Masataka, Professor, Faculty of Law, Kyoto University
Maki, Fumihiko, Principal Partner, Maki and Associates, Design, Planning and Development
Matsumoto, Shigeharu, Chairman, International House of Japan, Inc.
Miyado, Daigo, Chairman, The Sanwa Bank, Ltd.
Morita, Akio, Chairman, SONY Corporation
Mukaibo, Takashi, President, Tokyo University
Nagai, Norihiko, President, Mitsui O.S.K. Lines
Nagai, Yonosuke, Professor of Political Science, Tokyo Institute of Technology
Nagano, Shigeo, President, Japan Chamber of Commerce and Industry
Nagasue, Eiichi, Member of the Diet
Nakahara, Nobuyuki, Managing Director, Toa Nenryo Kogyo, K.K.
Nakamura, Toshio, Chairman, Mitsubishi Bank, Ltd.
Nakayama, Ichiro, President, Japan Institute of Labor
Nakayama, Sohei, Counsellor, Industrial Bank of Japan, Ltd.
Ogata, Okira, Chief News Commentator, Japan Broadcasting Corporation (NHK)
Ohjimi, Yoshihisa, President, Arabian Oil Company, Ltd.; former Vice Minister of International Trade and Industry
Okita, Saburo, Chairman, Japan Economic Research Center
Saeki, Kiichi, President, Nomura Research Institute
Sasaki, Kunihiko, Chairman, Fuji Bank, Ltd.
Shibayama, Yukio, Chairman, Sumitomo Shoji Kaisha, K.K.
Shibusawa, Masahide, Director, East-West Seminar
Shimada, Yoshihito, President, Takahashi Foundation; former President, Japan Petroleum Development Corporation
Shoda, Tatsuo, Chairman, The Nippon Credit Bank Ltd.
Sugiura, Binsuke, Chairman, The Long Term Credit Bank of Japan, Ltd.

Takeuchi, Ryuji, Advisor to the Minister for Foreign Affairs;
former Ambassador to the United States
Toyoda, Eiji, President, Toyota Motor Company, Ltd.
Tozaki, Seild, President, C. Itoh & Co., Ltd.
Tsutsumi, Seiji, Chairman, Seibu Department Store, Inc.
Umesao, Tadao, Director, National Museum of Ethnology
Watanabe, Takesi, Former President, Asian Development Bank
Yasui, Kizo, Chairman, Toray Industries, Inc.

Former Members in Public Service

Miyazawa, Kiichi, Minister of Economic Planning
Ushiba, Nobuhiko, Minister of External Economic Affairs

APPENDIX B:
TRILATERAL COMMISSION MEMBERS
as of July 1, 1993.

OTTO GRAF LAMBSDORFF European Chairman	PAUL A. VOLCKER North American Chairman	AKIO MORITA Japanese Chairman
GARRET FITZGERALD European Deputy Chairman	ALLAN E. GOTLIEB North American Deputy Chairman	YOSHIO OKAWARA Japanese Deputy Chairman

DAVID ROCKEFELLER
Founder and Honorary Chairman

PAUL REVAY European Director	CHARLES B. HECK North American Director	TADASHI YAMAMOTO Japanese Director

North American Members

Allaire, Paul A., Chairman and Chief Executive Officer, Xerox Corporation

Andreas, Dwayne O., Chairman of the Board and Chief Executive Officer, Archer Daniels Midland Company

Araskog, Rand V., Chairman, President and Chief Excutive Officer, ITT Corporation

*Bergsten, C. Fred, Director, Institute for International Economics; former U.S. Assistant Secretary of the Treasury for International Affairs

Black, Conrad M., Chairman and Chief Executive Officer, Hollinger Inc., Toronto

Bosley, John, Member, Canadian House of Commons and Chairman of the Standing Committee on External Affairs and International Trade; former Speaker of the House of Commons

Bouey, Gerald K., Former Governor of the Bank of Canada

Brademas, John, President Emeritus, New York University; former Member, U.S. House of Representatives

Brown, Harold, Counselor, Center for Strategic and International Studies; former Chairman, Johns Hopkins Foreign Policy Institute, Washington, D.C.; former U.S. Secretary of Defense

*Brzezinski, Zbigniew, Counselor, Center for Strategic and International Studies; Robert Osgood Professor of American Foreign Affairs, Paul Nitze School of Advanced International Studies, Johns Hopkins University; former U.S. Assistant to the President for National Security Affairs

Burke, James E., Chairman of the Board and Chief Executive Officer Emeritus, Johnson & Johnson

Calloway, D. Wayne, Chairman and Chief Executive Officer, PepsiCo

Carlucci, Frank C, Vice Chairman, The Carlyle Group, former U.S. Secretary of Defense

Chafee, John H., Member, United States Senate

*Coleman, William T. Jr., Senior Partner, O'Melveny & Myers; former U.S. Secretary of Transportation

Corrigan, E. Gerald, President, Federal Reserve Bank of New York

Curtis, Gerald L., Professor of Political Science, East Asian Institute, Columbia University

Deans, Ian; Chairperson, Public Service Staff Relations Board of Canada, Ottawa; former Member, Canadian House of Commons

Dobell, Peter C, Director, Parliamentary Centre for Foreign Affairs and Foreign Trade, Ottawa; Vice-President, Institute for Research on Public Policy

Drouin, Marie-Josee, Executive Director, Hudson Institute of Canada, Montreal

Einhorn, Jessica P., Vice President and Treasurer, World Bank

Erburu, Robert F., Chairman and Chief Executive Officer, Times Mirror Company

Eyton, Trevor, Member, Canadian Senate; President and Chief Executive Officer, Brascan Limited, Toronto

Feinstein, Dianne, Member, United States Senate; former Mayor of San Francisco

Feldstein, Martin S., President, National Bureau of Economic Research, Inc.; George F. Baker Professor of Economics, Harvard University; former Chairman, President's Council of Economic Advisors

Fisher, George M. C, Chairman of the Board and Chief Executive Officer, Motorola, Inc.

Foley, Thomas S., Speaker of the U.S. House of Representatives

*Fortier, L. Yves, Senior Partner, Ogilvy Renault, Barristers and Solicitors, Montreal; former Canadian Ambassador and Permanent Representative to the United Nations

Fresco, Paolo, Vice Chairman of the Board and Executive Officer, The General Electric Company, (U.S.A.)

Friedman, Stephen, Senior Partner & Co-chairman, Goldman, Sachs & Co.

Gardner, Richard N., Henry L. Moses Professor of Law and International Organization, Columbia University; Of Counsel, Coudert Brothers; former U.S. Ambassador to Italy

Gerstner, Louis V. Jr., Chairman and Chief Executive Officer, International Business Machines

Goldschmidt, Neil, former Governor of Oregon; former U.S. Secretary of Transportation

Gorman, Joseph T., Chairman and Chief Executive Officer, TRW Inc.

*Gotlieb, Allan E., Chairman, Canada Council; Chairman, Burson-Marsteller, Toronto; former Canadian Ambassador to the U.S.

Graham, Katharine, Chairman of the Board, The Washington Post Co.

Greenberg, Maurice R., Chairman and Chief Executive Officer, American International Group, Inc.

Gutfreund, John H., former Chairman of the Board and Chief Executive Officer, Salomon Inc.

*Haas, Robert D., Chairman and Chief Executive Officer, Levi Strauss & Company

Hamilton, Lee H., Member, U.S. House of Representatives

Hennigar, David J., Chairman, Crownx Inc.; Vice-Chairman, Crown Life Insurance Co.; Atlantic Regional Director, Burns Fry Limited, Halifax, Nova Scotia

Hormats, Robert D, Vice Chairman, Goldman Sachs International; former U.S. Assistant Secretary of State for Economic and Business Affairs

Houghton, James R., Chairman of the Board and Chief Executive Officer, Corning Incorporated

Johnson, Samuel C, Chairman and Chief Executive Officer, S.C. Johnson & Son, Inc.

Johnson, W. Thomas, President, CNN

Jordan, Vernon C, Partner, Akin, Gump, Strauss, Hauer & Feld

Keohane, Nannerl O., President, Duke University, Durham, No. Carolina

Keough, Donald R., Chairman of the Board, Allen & Co., Inc.

*Kissinger, Henry A., Chairman, Kissinger Associates, Inc.; former U.S. Secretary of State; former U.S. Assistant to the President for National Security Affairs

Labrecque, Thomas G., Chairman and Chief Executive Officer, The Chase Manhattan Bank, N.A.

Leach, Jim, Member, U.S. House of Representatives

Lewis, Flora, Senior Columnist, The New York Times, Paris

MacLaren, Roy, Member, Canadian House of Commons; former Minister of State [Finance]; former Minister of National Revenue

MacMillan, Whitney, Chairman of the Board and Chief Executive Officer, Cargill, Inc.

Mazur, Jay, President, International Ladies' Garment Workers Union

McColl, Jr., Hugh L., President and Chief Executive Officer, Nations-Bank Corporation

*McNamara, Robert S., former President, The World Bank; former U.S. Secretary of Defense

Murray, Allen E., Chairman of the Board and Chief Executive Officer, Mobil Corporation

Oksenberg, Michel, President, East-West Center, Hawaii

Owen, Henry, Senior Fellow on leave, Brookings Institution; Member, Consultants International Group; former U.S. Ambassador-at-Large and Special Representative of the President for Economic Summits

Putnam, Robert D., Director, Center for International Affairs and Clarence Dillon Professor of International Affairs, Harvard University

Rangel, Charles B., Member, U.S. House of Representatives

Raymond, Lee R., Chairman and Chief Executive Officer, Exxon Corp.

Ridgway, Rozanne, Co-chair, Atlantic Council; former U.S. Assistant Secretary of State for European and Canadian Affairs; former U.S. Ambassador to the German Democratic Republic

Robb, Charles S., Member, United States Senate; former Governor of Virginia

*Rockefeller, David

Rockefeller, John D. IV, Member, United States Senate; former Governor of West Virginia

*Rosovsky, Henry, Lewis P. & Linda L. Geyser University Professor, Harvard University

Roth, Jr., William V., Member, United States Senate

Ruckelshaus, William D., Chairman and Chief Executive Officer, Browning-Ferris Industries; former Administrator, U.S. Environmental Protection Agency; former U.S. Deputy Attorney General

Shanker, Albert, President, American Federation of Teachers

Shultz, George P., Honorary Fellow, Hoover Institution, Stanford University; former U.S. Secretary of State; former U.S. Secretary of the Treasury; former U.S. Secretary of Labor; former Director, U.S. Office of Management and Budget

Smith, Gerard C, former Head, U.S. Arms Control and Disarmament Agency and Chief Negotiator of SALT 1; former Ambassador-at-Large for Non-Proliferation Matters

Southern, Ronald D,, Chairman, President and Chief Executive Officer, ATCO Ltd., Calgary; Chairman, Canadian Utilities Ltd., Edmonton

Stern, Paula, President, The Stern Group, Washington, D.C.; former Chairwoman, U.S. International Trade Commission

Thurow, Lester C, Professor of Economics and Dean, Alfred P. Sloan School of Management, Massachusetts Institute of Technology

Tung, Ko-Yung, Chairman, Global Practice Group, O'Melveny & Myers, New York

Turner, William I.M. Jr., Chairman and Chief Executive Officer, Exsultate, Inc., Montreal

*Volcker, Paul A., Chairman, James D. Wolfensohn Inc., New York; Frederick H. Schultz Professor of International Economic Policy, Princeton University; former Chairman, Board of Governors, U.S. Federal Reserve System

Watts, Glenn E., President Emeritus, Communications Workers of America

Wendt, Henry, Chairman, Smith Kline Beecham

Whitman, Marina v.N., Distinguished Visiting Professor of Business Administration and Public Policy, The University of Michigan

Williams, Karen Hastie, Partner,' Crowell & Moring

Winters, Robert C, Chairman of the Board, The Prudential Insurance Co. of America

Former Members in Public Service

Allison, Graham, Assistant Secretary of Defense for Plans and Policy

Babbitt, Bruce, U.S. Secretary of the Interior

Christopher, Warren; U.S. Secretary of State

Cisneros, Henry, U.S. Secretary of Housing and Urban Development

Clinton, Bill, President of the United States

Crowe, William E. Jr., U.S. Ambassador to Great Britain

Davis, Lynn E., U.S. Undersecretary of State for International Security Affairs

Deutch, John M., Undersecretary of Defense for Acquisition

Gergen, David, U.S. Assistant to the President for Communications

Greenspan, Alan, Chairman, Board of Governors, U.S. Federal Reserve System

Jones, James R., U.S. Ambassador to Mexico

Lord, Winston, U.S. Assistant Secretary of State for East Asian and Pacific Affairs

Murray, Lowell, Government Leader in the Senate

Nye, Joseph S. Jr., Chairman, National Intelligence Council, Central Intelligence Agency

Rivlin, Alice M., Deputy Director, Office of Management and Budget

Shalala, Donna E., U.S. Secretary of Health and Human Services

Spero, Joan Edelman, U.S. Undersecretry of State for Economic and Agricultural Affairs

Talbott, Strobe, Ambassador-at-Large and Special Adviser to the Secretary of State for the New Independent States and Russia

Tarnoff, Peter, U.S. Undersecretary of State for Political Affairs

Wharton, Clifton R., Jr. U.S. Deputy Secretary of State

European Members

Agnelli, Umberto, Vice Chairman, Fiat, Turin

*Albert, Michel, Assurances Generates de France; former High Commissioner of the French Planning Agency

Armstrong, Lord of Ilminster, Director, The R.T.Z. Corporation, London; former Chief Cabinet Secretary to the Prime Minister

Armenise, Giovanni Auetta, Chairman, Banca Nazionale dell'Agricoltura, Rome

Barre, Raymond, Member of National Assembly; former Prime Minister of France

Bartelds, Hans, Chairman of the Board of Managing Directors, Amev, Utrecht; Chairman of the Executive Board of Fortis

Bassetti, Piero, Chairman, Chamber of Commerce and Industry of Milan; former Member of Chamber of Deputies

Bergougnoux, Jean, Director General, French Electricity Board (EDF), Paris

Berthoin, Georges, International Honorary Chairman, European Movement; Honorary European Chairman, The Trilateral Commission, Paris

Biedenkopf, Kurt, Minister President of the Free State of Saxony; former Member of the German Bundestag

Bjerregaard, Ritt, Member of Danish Parliament; Chairman, Social Democratic Parliamentary Group; former Minister of Education and Minister for Social Affairs

Boada Vilallonga, Claudio, Honorary Chairman, Banco Hispano-Americano, Madrid

Boiteux, Marcel, Honorary Chairman, French Electricity Board, Paris

Callebaut, Pierre, Chairman, Amylum, Brussels; former Chairman, Belgian Federation of Agricultural and Food Industries

Cappuzzo, Umberto, Defense Advisor to the Italian Minister of Foreign Affairs; Member of the Defense Committee, Italian Senate; Former Chief of Staff of the Army, Rome

*Carmoy, Herve de, Chairman, Banque Industrielle Mobiliere et Privee (B.I.M.P.); Advisor to the Chairman, HR Finances, Paris; former Chief Executive, Societe Generale de Belgique, Brussels

Carvajal Urquijo, Jaime, Chairman Iberfomento; Chairman, Ford Espana, Madrid

Casanova, Jean-Claude, Professor of Economics, Institute of Political Studies, Paris; Editor, Commentaire

Cereti, Fausto, Chairman and Chief Executive Officer, Alenia, Rome

Ceron Ayuso, Jose Luis, Former Spanish Minister of Trade; Chairman of ASETA, Madrid

Clercq, Willy de, Member of the European Parliament; Chairman, Commission on Foreign Economic Relations; former Vice President, Commission of European Communities, Brussels

Conroy, Richard, Chairman, Conroy Petroleum; Member of Senate, Irish Republic

Cotta, Alain, Professor of Economics and Management, University of Paris

David-Weill, Michel, Senior Partner, Lazard Freres, Paris & New York

Davignon, Viscount Etienne, Chairman, Societe Generate de Belgique; former Vice President, Commission of the European Communities

Declercq, Baron Guido, Chairman, FIDISCO, INVESTVO and BENEVENT, Brussels; Honorary General Administrator, Kath University, Leuven

Deflassieux, Jean, Chairman, Banque des Echanges Internationaux; Honorary Chairman, Credit Lyonnais, Paris

Del Turco, Ottaviano, Secretary General, Italian General Confederation of Labour (C.G.I.L.), Rome

Dromer, Jean, Chairman, Financiere Agache, Paris; Chairman, Louis Vuitton, Paris; former Chairman, Union des Assurances de Paris (UAP)

Evans, Robert, Chief Executive and Member of the Board, British Gas Corporation, London

*Fanjul, Oscar, Chairman, Repsol; Chairman, Institute National de Hidrocarburos, Madrid

Feo, Julio, Chairman, Consultores de Communication y Direction, Madrid; Chairman, Holmes & Marchant

Ferrer, Carlos, Chairman, Ferrer International; Chairman, Bank of Europe, Barcelona; President, UNICE, Brussels; former Chairman, Spanish Employers Confederation

*FitzGerald, Garret, Former Prime Minister of Ireland

Fuchs, Michael, President, National Federation of German Wholesale & Export Traders, Bonn

*Garrigues Walker, Antonio, Senior Partner, J & A Garrigues, Madrid

Gazzoni Frascara, Giuseppe, Chairman and Managing Director, Gazzoni; President, Federation of Italian Food Industries, Bologna

Gilbert, John, Member of British Parliament, London; Former Treasury, Transport and Defense Minister; Chairman, John Gilbert & Associates

*Groothaert, Baron Jacques, Honorary Chairman of the Board, Generale de Banque, Brussels; Honorary Ambassador of Belgium

Hahn, Curt, Member of the Supervisory Board, Volkswagen, Wolfsburg

Harding, Sir William, Director, Lloyds Bank, London; former British Ambassador

Harrowby, Earl of, Chairman, The Private Bank, London

Herrero de Minon, Miguel, Member, Spanish Parliament

Hinnekens, Jan, Chairman, Belgian Boerenbond; Member, Board of Directors, National Bank of Belgium

Holm, Niels W., Chairman, Ramboll & Hannemann, Virum; Vice Chairman, L. Lauritzen Holding; Director, Teledanmark, Copenhagen

Hornhues, Karl-Heinz, Member, German Bundestag; Deputy Chairman, CDU/CSU Parliamentary Group

Howell, David, Member, British Parliament and Chairman of the Foreign Affairs Committee; former Cabinet Minister

Imbert, Claude, Editor-in-Chief and Managing Director, Le Point, Paris

Jagland, Thorbjorn, Secretary General, Norwegian Labour Party

Janssen, Baron Daniel, Chairman, Executive Committee, Solvay & Co., Brussels

Janssen, Baron Paul-Emmanuel, Chairman of the Board of Directors, Generale de Banque, Brussels

Jochimsen, Reimut, President, Central Bank of the Northrhine-Westphalia, Dusseldorf; Member, Central Bank Council of the Deutsche Bundesbank

Joly, Alain, Member of the Board and Managing Director, L'Air Liquide, Paris

Julliard, Jacques, Associate Director, Le Nouvel Observateur, Paris

Keating, Justin, Former Irish Minister of Industry and Commerce; former Leader of the Labour Party in the Senate; former Dean, Faculty of Veterinary Medicine, University College, Dublin

Kiep, Walther Leisler, Treasurer of the Christian Democratic Party and Chairman of the "Atlantik Brucke"; Senior Partner, Gradmann & Holler, Frankfurt

Kohnstamm, Max, Former President, European University Institute, Florence

*Lambsdorff, Count Otto, Chairman, Free Democratic Party; Member, German Bundestag; President, Liberal International; former Federal Minister of Economics

Liam Lawlor, Member of Irish Dail

Lede, Cees van, Member of the Board, Akzo; former President, Federation of Netherlands Industry

Lee Williams, Alan, Director, The British Atlantic Committee; former Member, British Parliament

Leister, Klaus Dieter, Member of the Board, Westdeutsche Landesbank Girozentrale, Dusseldorf; former State Secretary, Minister of Defense; former Head of the Chancellery of Northrhine Westphalia

Levi, Arrigo, Political Columnist, Corriere della Sera, Rome

Levy-Lang, Andre, Chairman of the Board of Management, Compagnie Financiere Paribas, Paris

Leysen, Andre, Chairman, Agfa Gevaert, Antwerp; Chairman, Supervisory Board, Hapag Lloyd, Hamburg

Maas, Cees, Member of the Executive Board of the Internationale Nederlanden Group, Amsterdam; former Treasurer, Dutch Government

MacFarquhar, Roderick, Professor of Government, Harvard University; Director, Fairbank Center for East Asian Research; former Member, British Parliament

March Delgado, Carlos, Chairman, Banca March; Vice Chairman, Juan March Foundation, Madrid

Martinet, Gilles, Ambassadeur de France; President, Association for the European Cultural Community, Paris

Martini, Eberhard, President, Association of German Banks; Chairman, Bayerische Hypotheken-und Wechsel Bank, Munich

Mateus, Rui, Chairman, Emaudio International; President, The Foundation for International Relations, Lisbon

Matuschka, Count Albrecht, Chairman, Matuschka Group, Munich

Maull, Hanns W., Co-Director, German Institute for Foreign Affairs (DGAP), Bonn; Professor of International Relations, University of Trier;

European Representative, Japan Center for International Exchange

Merlini, Cesare, Chairman, Institute for International Affairs, Rome

Montbrial, Thierry de, Member de l'Institut; Professor, Ecole Polytechnique; Director, French Institute for International Relations, Paris

*Monti, Mario, Rector, Bocconi University, Milan

Munthe, Preben, Professor of Economics, University of Oslo; Counselor, Norwegian Nobel Institute

Murmann, Klaus, Chairman, Federation of German Employers' Association (BDA), Cologne

Narjes, Karl-Heinz, Former Vice President, Commission of the European Communities

Neisser, Heinrich, Member, Austrian Parliament; Chairman, People's Party Parliamentary Group (OeVP), Vienna

Nixon, Sir Edwin, Deputy Chairman, National Westminster Bank, London

Norrington, Humphrey, Vice Chairman, Barclays Bank, London

*Ortona, Egidio, Chairman, ISPI, Milan; Honorary Chairman, Bull Italia, Rome; former Italian Ambassador to the United States

Owen, Lord, Co-Chairman (EC) of the Steering Committee of the International Conference on former Yugoslavia; former Member, British Parliament; former Foreign and Commonwealth Secretary

* Palliser, Sir Michael, Chairman, Sameul Montagu & Co.; former Permanent Undersecretary of State, Foreign and Commonwealth Office, London

Perry, Michael, Chairman, Unilever, London

Pierer, Heinrich von, Chairman, Siemens, Munich

Pinho, Ilidio de, Chairman, COLEP, Lisbon

Pinto Balsemao, Francisco, Member, Portuguese Parliament; former Prime Minister

Ratti, Giuseppe, Member of the Board, Coe-Clerici, Genoa

Rippon of Hexham, Lord, President, INVESCO MIM.; Chairman, Unichem, London; Former Chancellor Duchy of Lancaster

Rocca, Gianfelice, Chairman of Techint, Milano

Roll of Ipsden, Lord, President, S.G. Warburg Group, London

Romano, Sergio, Editorialist, La Stampa; former Italian Ambassador to USSR, Milan

Roper, John, Director, Institute for Security Studies, Western European Union; former Member of British Parliament

Rose, Francois de, Ambassadeur de France; former Permanent Representative to NATO

Ruding, H. Onno, Vice Chairman Citicorp/Citibank, New York; former Dutch Minister of Finance

Ruggiero, Renato, Member of the Board of Directors in charge of International Relations, Fiat, Turin; former Italian Minister of Foreign Trade

Sarasqueta, Antxon, President, Multimedia Capital; Editor, Echos, Madrid

*Scherpenhuijsen Rom, Willem, Former Chairman, Internationale Nederlanden Group, Amsterdam

Schlehnann, Jorgen, Columnist, Morgenavisen Jyllands-Posten, Denmark

*Schmidt-Chiari, Guido, Chairman, Creditanstalt Bankverein, Vienna

Schmitz, Ronaldo, Member of the Board of Managing Directors, Deutsche Bank, Frankfurt

Schwartz, Pedro, Executive Vice President, National Economic Research Associates, Madrid; Member of the Board of Directors, Iberagentes Brokers; Professor of Economics, Madrid University

Segurado, Jose, Chairman, Jasinas, Madrid; Special Advisor to the Chairman, Banesto; former Member, Spanish Parliament

*Shore, Peter, Member of British Parliament

Siglienti, Sergio, Chairman, Banca Commerciale Italiana, Milan

Silvestri, Umberto, Managing Director and Chief Executive Officer, STET, Rome

Simonet, Henri, Member, Belgian Senate; former Belgian Minister for Foreign Affairs and Vice President of the Commission of the European Communities, Brussels

*Staunton, Myles, Member of Senate, Irish Republic

Sutherland, Peter, Chairman, Allied Irish Bank Group, Dublin; former Member of the European Commission; former Attorney General of Ireland

Svanholm, Poul Johan, President and Group Chief Executive Officer, Carslberg, Copenhagen

Tameron, Marques de, Director, Institute de Cuestiones Internacionales y Politica Exterior (INCIPE), Madrid

Tapsell, Sir Peter, Member of British Parliament

Taylor, Geoffrey W., Chairman, Daiwa Europe Bank; former Group Chief Executive, Midland Bank, London

Thierry, Jacques, Chairman of the Board, Banque Bruxelles Lambert; Chairman of the Board, Artois Piedboeuf Interbrew, Brussels

Thorn, Gaston, Chairman, Banque Internationale a Luxembourg; former President, Commission of the European Communities

*Thygesen, Niels, Professor of Economics, Economics Institute, Copenhagen University

Tidbury, Sir Charles, Member, Board of Directors, Whitbread & Co.

*Tidemand, Otto Gried, Shipowner, Oslo; former Norwegian Minister of Defense and Minister of Economic Affairs

Van Traa, Maarten, Member of Dutch Parliament; Foreign Affairs Spokesman, Labour Party, Amsterdam

*Vasco de Mello, Antonio, Chairman, Sociedade de Reparacao e Montagem de Equipamentos Industrials, Lisbon; former Member, Portuguese Parliament

Verzetnitsch, Friedrich, Member, Austrian Parliament (SPOe); President, Austrian Federation of Trade Unions, Vienna

Vila Marsans, Jose, Chairman, Rhone Poulenc Fibras, Barcelona; Director, Banco Central, Madrid

Vittorelli, Paolo B., Chairman, Instituto Studi Ricerche Defesa (ISTRID), Rome; former Member of Italian Parliament

Voigt, Karsten D., Member of the German Bundestag; Spokesman on Foreign Affairs of the SPD Parliamentary Group

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Yashiro, Masamoto, Country Corporate Officer, Citibank NA
Yoshino, Bunroku, Chairman, Institute for International Economic Studies; former Ambassador to the Federal Republic of Germany

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Ogata, Sadako, United Nations High Commissioner for Refugees

*Executive Committee

APPENDIX C:

STATEMENT

by
Lt. Col. James "Bo" Gritz, U.S.A. (Ret)
for
U.S. Congress, House Foreign Affairs Committee
International Narcotics Control Task Force
Rayburn House Office Building, Washington, D.C.
Tuesday, 30 June 1987

NINE HUNDRED TONS OF HEROIN & OPIUM WILL ENTER THE FREE WORLD FROM SOUTHEAST ASIA'S "GOLDEN TRIANGLE" THIS YEAR. The reason is because U.S. taxpayer dollars and American equipment have been used to construct a new road that will allow narcotics to pour out of General Khun Sa's Shan Territories rather than trickle out by horse and mule as has been the case until the beginning of this year.

Last year 600 tons of Opiates trafficked from this area. Press reports included as part of this statement argue that it is logistically impossible to increase the output to 900 tons. The new road capable of easily handling 10-ton truck convoys signal not only the capability, but the reality. The disappointing fact is that this new artery was constructed by the Thai Government using money, manpower, time and materials furnished by our drug suppression funds.

Moreover, there are serious implications that elements within the U.S. Government are Khun Sa's biggest customers. The facts are that for 15 years U.S. taxpayers through legislative bodies like this committee and executive agencies such as have testified here today, have dumped hundreds of millions of dollars into drug suppression programs within Thailand and Burma which have done nothing but nourish the flow of narcotics from Asia into the United States. The proof is statistically clear. Fifteen years ago the flow of Opiates was 60 tons; this year it will approach or exceed 900 tons. The reasons, while multi-faceted, boil down to one word, "money."

Certain high level Thai and Burmese officials are packing their pockets with U.S.-supplied drug suppression funds, political payoffs, and other spinoff profits like the thousands of Teak trees felled during the Khun Sa road effort. Khun Sa has no outlet for teak, but it is a protected and highly valued commodity in Thailand. More shameful are the serious allegations raised by General Khun Sa and his staff that corrupt U.S. officials allow this travesty and in certain cases are directly involved.

After a meeting with General Khun Sa and others, I am convinced that a secret combination exists today within the U.S. Government that was officially germinated during the Nixon-Vietnam years and has, through illicit drug profits, propagated itself today into a self-serving righteous monster of global proportions. I believe Ed Wilson was a member of this combination and that his activities represent only one of many tentacles. I believe the Contra-Iran situation is merely another visible lesion that has emerged from this extra-governmental organism.

I say "would be righteous" because those within this secret combination I believe honestly think they are serving America by offering an established model of sabotage, subversion, and assassination to areas threatened by communism. They are in existence because normal government process is too cumbersome, time-consuming and ofttimes impotent. These persons who are intelligent and well seeded in our governmental structure think they are smarter than our elected officials and can expedite accomplishment of national objectives. They have funded their efforts through drug trafficking because of a 1960s mindset that anyone who would use opiates is animalistic and the U.S.A. doesn't really care about them. They began their drug dealing in Southeast Asia as a means to fund the secret war in Laos and Cambodia that Congress was officially unaware of. Besides my personal experiences, all of these conclusions are spelled out in the book, The Politics of Heroin in Southeast Asia.

I have good reason to believe that after President Nixon got the U.S. out of Vietnam "with honor," while bringing home "all the POWs" in 1973 that either with his concurrence, or on the initiative of those "Best and Brightest" included within the "President's 40," the war continued to be fought through Project Phoenix. The insiders knew the North Vietnamese would not abide by the tri-accord and continue to consolidate their position in Vietnam, Laos, and Cambodia. Since the war was over there was no Congressional funding and homegrown trafficking offered the most expedient solution.

Ideally the communist takeover in 1975 would fall like a house of cards since the infrastructure would be eliminated by extreme prejudice through the Phoenix operation. Even so, an estimated 150,000 nonmilitary persons were terminated; the program failed to meet the expectations of those in charge.

Next, I believe the Phoenix model was moved to help stabilize a toppling Shah who happened to be close to the Administration — and to people in the secret combination society, many of whom held high positions within the Executive Branch. The Shah fell. By this time the model was self-perpetuating.

Rather than shut down after failing in Iran, there was a refocus on the building communist threat in Central America. The Contra-Iran-Oliver North-White House disclosures are only protrusions that have become visible because of the extent and intensity of this para-government organization. Even as these hearings are underway, representatives of this secret combination are at work in the Philippines, offering "anti-communist solutions" to that struggling democracy. I believe that.

As years and changing administrations have gradually thinned the society's active duty status within the U.S. Government, I believe those who still steer the society have become more self-serving, making huge personal profits under the guise of fighting worldwide communism. Further, I believe they are maximizing their influence to protect those of the brotherhood who still hold active office in the government.

I have been told for years that U.S. POWs would never be allowed to return because they were directly related to illegal drug trafficking by U.S. officials. Until May of 1987, I thought this absurd. Now, after eight years in the POW-Southeast Asian arena, I clearly can see what was hidden except to those more sensitive to power politics than myself. The reason we have met the enemy and he is U.S. in our efforts to return POWs while they are still alive is simple. When POWs are returned the first demand by the American people will be to examine those within the government responsible for their return. America will want to know why these individuals failed in their official capacities; why the burden fell on the private sector, and what took so long if the POW issue is truly "Top National Priority" as designated by President Reagan. Upon investigation it will be revealed that responsible officials were more interested in interested in actuating
their secret society than accounting for our POW and MIA.

The fact is that all of the Heroin and Opiates could be shut off at

the Golden Triangle if America's responsible elected and appointed officials would do their job. General Khun Sa is recognized as the drug kingpin and controls the Golden Triangle with a well-disciplined army of 40,000 Shan soldiers. He has stated to me before three other American witnesses on videotape that he greatly desires to stop the drug trafficking, but we won't let him. He has promised that if we will give him any economic alternative, he will not just stem, but stop the flow of narcotics through his areas of control. He has said for example that for one-tenth the money we now give the Burmese for drug suppression turned into economic aid and crop substitution, he will use his force to enforce what we cannot and have not. In addition, Khun Sa has stipulated that the Burmese must be stopped from using the 12 Bell Helicopters and fixed wing aircraft given them by the U.S. to spray the Shan State people, animals, food and water with Agent Orange and herbicides. All that I have presented thus far is backed up by written and recorded documents made available to the Committee.

It has been reported to me by committee personnel that Khun Sa has made these offers before. They say the CIA has expressed doubt and mistrust that Khun Sa will carry out his part of the bargain. I and three other Americans have met with Khun Sa. We believe him to be sincere. Certainly in view of the dismal failure of the CIA and DEA to slow, stop or even deter the flood of drugs from the Golden Triangle, it seems that a change in dynamics is in order. Especially since Khun Sa has directly implicated persons within the CIA as some of his best customers. The videotapes show testimony of a frustrated medical doctor who, under orders from Khun Sa, did everything from offer radio links to Khun Sa's headquarters to present a horse that might be used to alert DEA of drug movements. The low level agents supported these initiatives, but in every case they were rejected at DEA headquarter levels.

I have strived at the invitation of the Executive Branch for eight years to convince political skeptics that American POWs are alive in the hands of Communist forces in Laos and Vietnam. I abhor drugs and dopes that are users, yet in the past two weeks I've been told by committee staff and others that "federal sources" and a Los Angeles State Department employee have said that I am "a drug trafficker," and I will be in prison before July 4th. I know this level of federal employee would never make such slanderous statements unless encouraged by higher-ups. While following the

classic model of "deny-defame-divert," it is disappointing that law enforcement agencies would reveal such lowlife practices as directly as they have, and then avoid comment when confronted.

I have tried in every way to cooperate with the committee and its membership. I've furnished videotapes, only to be informed that the chairman has blocked their distribution. I've supplied the Suchesk letter to Vice President Bush, and requested a written transcript of the file from which Khun Sa's secretary read from. I received a letter in the mail last week. It was from Khun Sa. The stapled and sealed envelope had been opened. Inside, the pamphlet, which had also been stapled shut, had been opened and the contents removed. I had asked Khun Sa to translate his record; sign it himself with two additional witnesses. I was assured this document was part of the opened package. I have requested my contacts furnish me with a FAX of their copy. It serves to supplement in writing the verbal and video accounts.

I'm disillusioned that this committee, which represents the interest of 240 million Americans in controlling illegal drug trafficking, would take such a negative and skeptical position on such a critical issue as Khun Sa's proposal and my deliverance of the information he gave us. I've been told that I must "sell my case" to you. Facts are, I am a citizen who has been twice to see a warlord who is recognized as the world's most powerful Heroin kingpin. This person has shown statistically that our 15-year old drug suppression program is, at best, "dumb" by anyone's standards. At best we have millions of U.S. tax dollars being mishandled; one recipient has made use of U.S. assets to build a major road, and secures that road from outside infiltration; 900 tons of opiates entering the free world; rampant corruption of allied officials. At worst, in addition to the best case, we have officials within the USG who won't, as Khun Sa says, let him get out of the drug business, because they are his biggest buyers.

Your business is representing American interest in drug control. You greatly influence how our tax dollars are used and how well the enforcement agencies do their job. My business is bringing home POWs while they are still alive. Neither one of us has been able to make much headway because I'm convinced there are persons within the government that are opposing us both. If POWs came home, the resulting investigation will expose their drug involvement; if the drugs are stopped, their source of income dries up. I agree that communism threatens the liberty of free people

everywhere, but in my opinion drugs are even a bigger and more immediate threat. To fuel these self-righteous freedom fighters with drug money is to steal, cheat, and mislead every American taxpayer, and circumnavigate the greatest governmental system in the world. While it may appear slow, and at times fickle and indecisive, still ours is the greatest government in the world. There aren't boatloads of Americans headed for the Soviet Union. I believe our system was divinely inspired. I believe it will work despite any shortcomings.

Fleshing Out Skull & Bones



Investigations into America's Most Powerful Secret Society

Antony Sutton
Howard Altman
Kris Millegan
Dr. Ralph Bunch
Anton Chaitkin & Webster Griffin Tarpley

A Select Few Pass Through This Portal of Power



Both father and son use the Order's connections to reach their political goals



THROUGH THESE DOORS pass the members of the **Order of Skull & Bones**, a small secret society founded at Yale University in 1832 that has risen to the top of American political and economic power. Three U.S. Presidents, two Chief Justices of the United States, over twenty U.S. Senators, and many congressmen, cabinet officers, judges and state officials are testimony to the power, privilege and prestige of *Bones*.

What do these elite secret society members have over us regular folks? Who are they? What do they do? Did members of Skull & Bones really finance Hitler? Do they hold the bones of Geronimo in their Tomb? This book is your chance to investigate these questions and more.



Son of Skull & Bones co-founder, Alphonso Taft, Bonesman William H. Taft is the only man to serve as both President and Chief Justice of the United States.

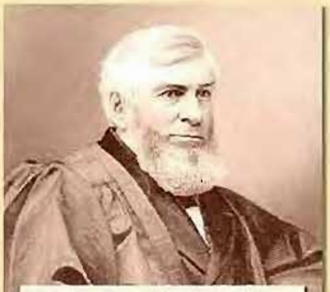


Will it be Bonesman Bush *versus* Bonesman Kerry in 2004?

John Forbes Kerry, Skull & Bones '65

***Fleshing Out Skull & Bones* features:**

- 100+ Photographs/Illustrations
- Rare Reprints of Bones Memorabilia
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Chief Justice of the United States Bonesman M. R. Waite in 1886 declared, in two sentences and with no debate, that corporations have the rights of a person.

OVER 30 WRITINGS from more than ten different authors, plus many historical articles, provide a wide array of viewpoints into this very secret club whose members increasingly affect world events.

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- *A Role Model For His Daughters* by CHARLOTTE ISERBYT
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– and many more!





G.D. Miller gave one of his private islands, **Deer Island,** to Bones, where the Order continues to enjoy annual retreats.

EDITOR & AUTHOR **KRIS MILLEGAN** is the son of a CIA intelligence official. His articles can be read in *High Times* and *Paranoia* magazines and on the Internet. He lives in Oregon.



"These secret societies are behind it all," my father told me many years ago, During the early '50s he was a CIA branch chief, head of the East Asia intelligence analysis office. "The Vietnam War," he said soberly, "is about drugs." Many years later I finally had some understanding of what Dad was talking about. I wish I had asked more questions. Such as, was he talking about the Order of Skull and Bones?



IT'S A SYMBOL USED BY PIRATES, POISONS AND THE NAZIS but it's also a "fraternity" at Yale University. College kids having fun? Well, ...

Fifteen juniors are tapped each year. Around 2,500 Yale graduates have been members, mostly white males from wealthy Northeastern families: Bush, Bundy, Cheney, Dodge, Ford, Goodyear, Harriman, Heinz, Kellogg, Phelps, Pillsbury, Rockefeller, Taft, Vanderbilt, Weyerhauser and Whitney are some of the names on its roster. Minorities were brought into membership in the 1950s, and the first women were admitted in 1991,

The Order of Skull and Bones is a secret society begun at Yale by William Huntington Russell. His cousin Samuel Russell's family enterprise was the largest American opium smuggler. When Russell & Co. worked with the world's largest smuggler, the Scottish firm Jardine-Matheson, they were known as the *Combination.*



WH Russell

Many New England and Southern families in the "China Trade" sent their sons to Yale, and many were *tapped* into Skull and Bones. From Yale, *Bonesmen* went into and were very influential in the worlds of commerce, communications, diplomacy, education, intelligence, finance, law and politics.



The Tomb
The Temple of the Order

DEDICATED TO
My Father

AT ONE TIME, HE PEDDLED SKULL & BONES
IN HIS FRONT JOB FOR THE CIA.



LLOYD SIDNEY MILLEGAN
OSS/G2/CIA
August 18, 1918 — February 7, 1990
Picture taken in Indonesia - 1951

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PREFACE

This book started as research into trying to understand some things my Dad told me. When I was first writing on the subject, I contacted several publishers and was politely told, by the one that answered, they "didn't want to take on Skull & Bones."

An article of mine was published online at www.parascope.com, which was well received. From that article and a friendship with Antony Sutton — came this book.

The Internet has become an astounding force whose cultural and political realities are still to be understood and it's power is forcing change that continues today—with an unknown ending. The Internet has allowed uncensored national discussion, engendered understandings and energized a potent plebeian power whose creativity is countering the secretive sophism that ruins our republic and economy through covert corrupt means. The question remains: will the dreamscape that enthralls vast numbers continue its hoodwink, and will our children wake up slaves in a mean, technologically locked-down fascist state, or will they continue to slumber in the propaganda and hidden corruption of the celebrity-laden delusion of the contrived virtual reality friendly fascism that the secret societies have created around us — or will the Internet and other factors bring about a revival of our civic heritage and liberty.

The most important thing that I would like folks to understand from this work is that the secrecy of these organizations is not good for our Republic. These secret societies are historically foreign-based and do not care about this country. Their ends justifies the means Zeitgeist leads to massive corruption and the "institutionalized sociological" excess of "elite deviancy." Where a certain few believe that they are beyond the law and then through corrupted political and economic power — act above the law, through whatever means at their disposal. One question this book examines is whether there is any truth in the age-old lore of the conspiracy theory of history — are we are dealing with a multi-generational, necromantic, synarchistic phenomenon? Have secret societies created a national security state apparatus to beguile us hoi polloi of our economic, civic and spiritual integrity? Do these secret societies create and play both sides in controlled conflicts to produce outcomes to further their New World Order millenniumist designs?

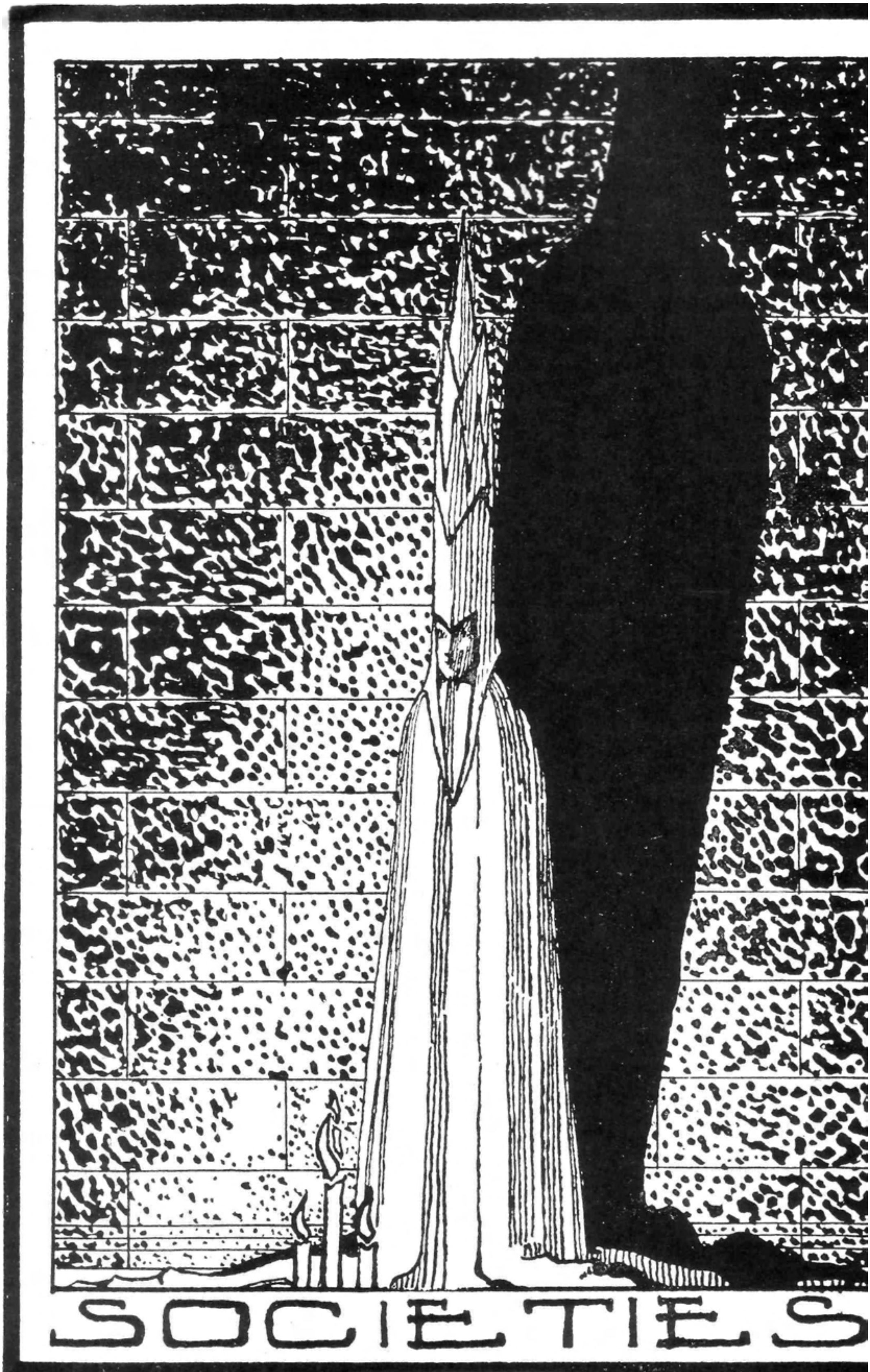
Porch brethren are requirement for a secret society to work and many in these organizations, magickal and fraternal are unawares of any deeper motivations of the elite leadership of the group. It is when these secret organizations with members in high political office exert their influence towards goals unknown and/or unbecoming that we citizens should take notice — and action.

Mysticism and fellowship are not bad and evil things. They are just like any thing. It is what people do with them ... their actions that do ill or good in this world.

Secrecy and our Republic do not mix.

Our children's future is what we leave them.

Om
K



From the 1918-19 Yale *Banner*

EVERYTHING YOU EVER WANTED TO ASK, BUT WERE AFRAID TO KNOW

THE STORY BEGINS AT YALE, where three threads of American social history — espionage, drug smuggling and secret societies

KRIS MILLEGAN

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— intertwine into one.



Elihu Yale

Elihu Yale was born near Boston, educated in London, and served with the British East India Company, eventually becoming governor of Fort Saint George, Madras, India in 1687. He amassed a great fortune from trade and returned to England in 1699. Yale became known as a philanthropist; upon receiving a request from the Collegiate School in Connecticut, he sent a donation and a gift of books. After subsequent bequests, Cotton Mather suggested the school be named Yale College in 1718.

A statue of Nathan Hale stands on Old Campus at Yale University. A copy of that statue stands in front of the CIA's headquarters in Langley, Virginia. Yet another stands in front of Phillips Academy in Andover, Massachusetts (where George H.W. Bush went to prep school and joined his first secret society at the age of 12).



Nathan Hale, along with three other Yale graduates, was a member of the "Culper Ring," one of America's first intelligence operations. Established by George Washington, it was successful throughout the Revolutionary War. Nathan was the only operative to be ferreted out by the British, and after speaking his famous regrets, he was hanged in 1776. Ever since the founding of the Republic, the relationship between Yale and the Intelligence Community has been unique.



Samuel Russell

In 1823, Samuel Russell established Russell and Company for the purpose of acquiring opium in Turkey and smuggling it to China. Russell and Company merged with the Perkins (Boston) syndicate in 1830 and became the primary American opium smuggler. Many of the great American and European fortunes were built on the "China" (opium) trade.

One of Russell and Company's Chief of Operations in Canton was Warren Delano, Jr., grandfather of Franklin D. Roosevelt. Other Russell partners included John Cleve Green (who financed Princeton), Abiel Low (who financed construction of Columbia), Joseph Coolidge and the Perkins, Sturgis and Forbes families. (Coolidge's son organized the United Fruit company, and his grandson, Archibald C. Coolidge, was a co-founder of the Council on Foreign Relations.)



William H. Russell

William Huntington Russell (S&B 1833), Samuel's cousin, studied in Germany from 1831-32. Germany was a hotbed of new ideas. The "scientific method" was being applied to all forms of human endeavor. Prussia, which blamed the defeat of its forces by Napoleon in 1806 on soldiers only thinking about themselves in the stress of battle, took the principles set forth by John Locke and Jean Rousseau and created a new educational system. Johan Wolfgang Fitche, in his "Address to the German People," declared that the children would be taken over by the State and told what to think and how to think it.

Georg Wilhelm Friedrich Hegel took over Fitche's chair at the University Of Berlin in 1817 and was a professor there until his death in 1831. Hegel was the culmination of the German idealistic philosophy school of Immanuel Kant.

To Hegel, our world is a world of reason. The state is Absolute Reason and the citizen can only become free by worship and obedience to the state. Hegel called the state the "march of God in the world" and the "final end." This final end, Hegel said, "has supreme right against the individual, whose supreme duty is to be a member of the state." Both fascism and communism have their philosophical roots in Hegelianism. Hegelian philosophy was very much in vogue during William Russell's time in Germany.



Georg Hegel

When Russell returned to Yale in 1832, he formed a senior society with Alphonso Taft (S&B 1833). According to information acquired from a break-in to the "tomb" (the Skull and Bones meeting hall) in 1876, "Bones is a chapter of a corps in a German University ... General Russell, its founder, was in Germany before his Senior Year and formed a warm friendship with a leading member of a German society. He brought back with him to college, authority to found a

chapter here." So class valedictorian William H. Russell, along with 14 others, became the founding members of "The Order of Scull and Bones," later changed to "The Order of Skull and Bones."



The secretive Order of Skull and Bones exists only at Yale. Fifteen juniors are "tapped" each year by the seniors to be initiated into next year's group. Some say each initiate is given $ 15,000 and a grandfather clock. Far from being a campus fun-house, the group is geared more toward the success of its members in the post-collegiate world.

The family names on the Skull and Bones roster roll off the tongue like an elite party list — Lord, Whitney, Taft, Jay, Bundy, Harriman, Weyerhaeuser, Pinchot, Rockefeller, Goodyear, Sloane, Stimson, Phelps, Perkins, Pillsbury, Kellogg, Vanderbilt, Bush, Lovett and others.



Alphonso Taft

William Russell went on to become a general and a state legislator in Connecticut. Alphonso Taft was appointed US Attorney General, Secretary of War (a post many "Bonesmen" have held), Ambassador to Austria, and Ambassador to Russia (another post held by many "Bonesmen"). His son, William Howard Taft (S&B 1878), is the only man to be both President of the United States and Chief Justice of the Supreme Court.



William H. Taft

SECRETS OF THE "TOMB"

THE ORDER FLOURISHED from the very beginning in spite of occasional squalls of controversy. There was dissension from some professors, who objected to its secrecy and exclusiveness. And there was backlash from students, showing concern about the influence "Bones" was having over Yale finances and the favoritism shown to "Bonesmen."

In October, 1873, Volume 1, Number 1, of The Iconoclast was published in New Haven. It was only published once and was one of only a few openly published articles on the Order of Skull and Bones.

From The Iconoclast.

We speak through a new publication, because the college press is closed to those who dare to openly mention 'Bones'....

Out of every class Skull and Bones takes its men. They have gone out into the world and have become, in many instances, leaders in society. They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will. No doubt they are worthy men in themselves, but the many, whom they looked down upon while in college, cannot so far forget as to give money freely into their hands. Men in

> Wall Street complain that the college comes straight to them for help, instead of asking each graduate for his share. The reason is found in a remark made by one of Yale's and America's first men: 'Few will give but Bones men and they care far more for their society than they do for the college ....'
>
> Year by year the deadly evil is growing. The society was never as obnoxious to the college as it is today, and it is just this ill-feeling that shuts the pockets of non-members. Never before has it shown such arrogance and self-fancied superiority. It grasps the College Press and endeavors to rule it all. It does not deign to show its credentials, but clutches at power with the silence of conscious guilt.
>
> To tell the good which Yale College has done would be well nigh impossible. To tell the good she might do would be yet more difficult. The question, then, is reduced to this - on the one hand lies a source of incalculable good - on the other a society guilty of serious and far-reaching crimes. It is Yale College against Skull and Bones!! We ask all men, as a question of right, which should be allowed to live?

At first, the society held its meetings in hired halls. Then in 1856, the "Tomb," a windowless, brown-stone meeting hall, was constructed, where to this day the "Bonesmen" hold their "strange, occultish" initiation rites and meet each Thursday and Sunday.



The Tomb - 1864

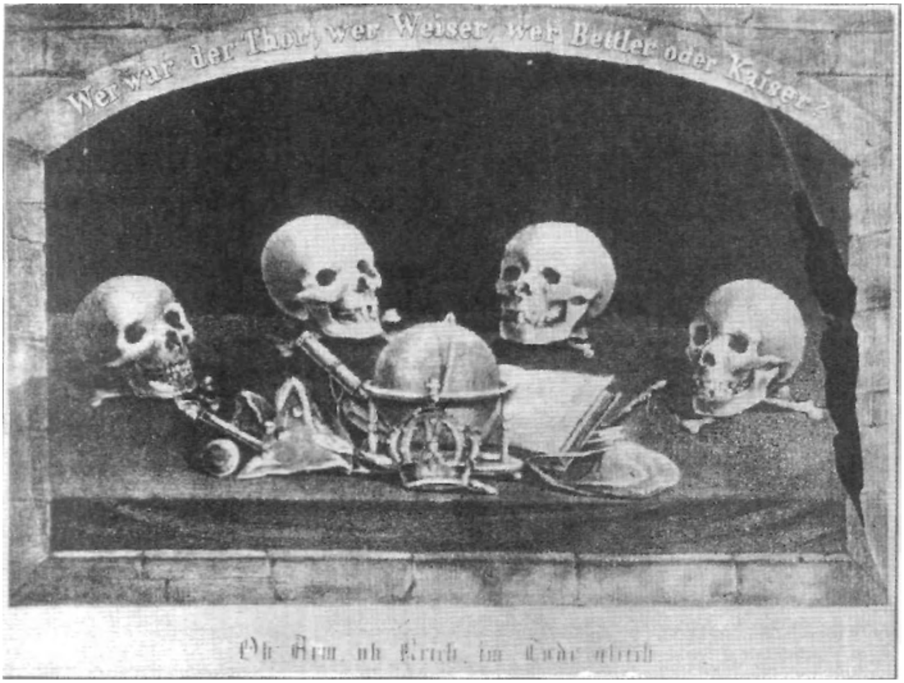
On September 29,1876, a group calling itself The Order of File and Claw broke into the Skull and Bones' holy of holies. In the "tomb" they found lodge-room 324 "fitted up in black velvet, even the walls being covered with the material." Upstairs was lodge-room 322, "the sanctum sanctorum of the temple ... furnished in red velvet" with a pentagram on the wall. In the hall are "pictures of the founders of Bones at Yale, and of members of the Society in Germany, when the chapter was established here in 1832." The raiding party found another interesting scene in the parlor next to room 322.



FILE AND CLAW.

From The Fall Of Skull And Bones:

> On the west wall, hung among other pictures, an old engraving representing an open burial vault, in which, on a stone slab, rest four human skulls, grouped about a fools cap and bells, an open book, several mathematical instruments, a beggar's scrip, and a royal crown. On the arched wall above the vault are the explanatory words, in Roman letters, 'We War Der Thor, Wer Weiser, Wer Bettier Oder, Kaiser?' and below the vault is engraved, in German characters, the sentence; 'Ob Arm, Ob Beich, im Tode gleich.'



The picture is accompanied by a card on which is written, 'From the German Chapter. Presented by D. C. Gilman of D. 50'.

Daniel Coit Gilman (1852), along with two other "Bonesmen," formed a troika which still influences American life today. Soon after their initiation in Skull and Bones, Daniel Gilman, Timothy Dwight (1849) and Andrew Dickinson White (1853) went to study philosophy in Europe at the University of Berlin. Gilman returned from Europe and incorporated Skull and Bones as the Russell Trust in 1856, with himself as Treasurer and William H. Russell as President. He spent the next 14 years in New Haven consolidating the order's power.

Gilman was appointed Librarian at Yale in 1858. Through shrewd political maneuvering, he acquired funding for Yale's science departments (Sheffield Scientific School) and was able to get the Morrill Land Bill introduced in Congress, passed and finally signed by President Lincoln, after being vetoed by President Buchanan.


Daniel C. Gilman

This bill, "donating public-lands for State College for agriculture and sciences," is now known as the Land Grant College Act. Yale was the first school in America to get the federal land scrip and quickly grabbed all of Connecticut's share at the time. Pleased by the acquisitions, Yale made Gilman a Professor of Physical Geography.

Daniel was the first President of the University of California. He also helped found, and was the first president of, John Hopkins.

Gilman was first president of the Carnegie Institution and involved in the founding of the Peabody, Slater and Russell Sage Foundations.

His buddy, Andrew D. White, was the first president of Cornell University (which received all of New York's share of the Land Grant College Act), U.S. Minister to Russia, U.S. Ambassador to Berlin and first president of the American Historical Association. White was also Chairman of the American delegation to the first Hague Conference in 1899, which established an international judiciary.



Andrew D. White

Timothy Dwight, a professor at Yale Divinity School, was installed as president of Yale in 1886. All presidents since have been either "Bonesmen" or directly tied to the Order and its interests.



Timothy Dwight

The Daniel/Gilman/White trio was also responsible for the founding of the American Economic Association, the American Chemical Society and the American Psychological Association. Through their influences on John Dewey and Horace Mann, this trio continues to have an enormous impact on education today.

NETWORKS OF POWER

IN HIS BOOK AMERICA'S SECRET ESTABLISHMENT, Antony Sutton outlined the Order of Skull and Bones' ability to establish vertical and horizontal "chains of influence" that ensured the continuity of their conspiratorial schemes. The Whitney-Stimson-Bundy links represent the "vertical chain." W. C. Whitney (S&B 1863), who married Flora Payne (of the Standard Oil/ Payne dynasty), was Secretary of the Navy. His attorney was a man named Elihu Root. Root hired Henry Stimson (S&B 1888), out of law school. Stimson took over from Root as Secretary of War in 1911, appointed by fellow Bonesman William Howard Taft. Stimson later became Coolidge's Governor-General of the Philippine Islands, Hoover's Secretary of State, and Secretary of War during the Roosevelt and Truman Administrations.



W.C. Whitney

Hollister Bundy (S&B '09) was Stimson's special assistant and point man in the Pentagon for the Manhattan Project. His two sons, also members of Skull and Bones, were William Bundy (S&B '39) and McGeorge Bundy (S&B '40) — both very active in governmental and foundation affairs. The two brothers, from their positions in the CIA, the Department of Defense and the State Department, and as Special Assistants to Presidents Kennedy and Johnson, exercised significant impact on the flow of information and intelligence during the Vietnam "War."



McGeorge Bundy and LBJ

William Bundy went on to be editor of Foreign Affairs, the influential quarterly of the Council on Foreign Affairs (CFR). McGeorge became president of the Ford Foundation.



Prescott Bush



Averell Harriman

Another interesting group of "Bonesmen" is the Harriman/ Bush crowd. Averell Harriman (S&B '13), "Elder Statesman" of the Democratic Party, and his brother Roland Harriman (S&B '17) were very active members. In fact, four of Roland's fellow "Bonesmen" from the class of 1917 were directors of Brown Brothers, Harriman, including Prescott Bush (S&B '17), George HW Bush's dad.

Since the turn of the century, two investment bank firms — Guaranty Trust and Brown Brothers, Harriman — were both dominated by members of Skull and Bones. These two firms were heavily involved in the financing of Communism and Hitler's regime.

Bonesman share an affinity for the Hegelian ideas of the historical dialectic, which dictates the use of controlled conflict (thesis versus anti-thesis) to create a pre-determined synthesis. This being a synthesis of their making and design, where the state is absolute and individuals are granted their freedoms based on their obedience to the state — a New World Order.

Funding and political maneuvering on the part of "Bonesmen" and their allies helped the Bolsheviks prevail in Russia. In defiance of federal laws, the cabal financed industries, established banks and developed oil and mineral deposits in the fledgling USSR.



Robert Lovett, Winston Churchill, Dean Acheson (Scroll & Key) and Averell Harriman

Later, Averell Harriman, as minister to Great Britain in charge of Lend-Lease for Britain and Russia, was responsible for shipping entire factories into Russia. According to some researchers, Harriman also oversaw the transfer of nuclear secrets, plutonium and US dollar printing plates to the USSR.

In 1932, the Union Banking Corporation of New York City was established with four directors from the 1917 S&B cell and two Nazi bankers associated with Fritz Thyssen, who had been financing Hitler since 1923.

From George Bush; The Unauthorized Biography.

President Franklin Roosevelt's Alien Property Custodian, Leo T. Crowley, signed Vesting Order Number 248 [11/17/42] seizing the property of Prescott Bush under the Trading with Enemy Act. The order, published in obscure government record books and kept out of the news,* explained nothing about the Nazis involved; only that the Union Banking Corporation was run for the Thyssen family of Germany and/or Hungary — nationals ... of a designated enemy country.

By deciding that Prescott Bush and the other directors of the Union Banking Corporation were legally front men for the Nazis, the government avoided the more important historical issue: In what way were Hitler's Nazis themselves hired, armed, and instructed by the New York and London clique of which Prescott Bush was an executive manager?


BANKING DEPARTMENT REPORTS ON ACTIONS

*New York Times, December 16, 1944, ran a five-paragraph page 25 article on actions of the New York State Banking Department. Only the last sentence refers to the Nazi bank, as follows: The Union Banking Corporation, 39 Broadway, New York, has received authority to change its principal place of business to 120 Broadway.

The Times omitted the fact that the Union Banking Corporation had been seized by the government for trading with the enemy, and the fact that 120 Broadway was the address of the government's Alien Property Custodian.

After the war, Prescott went on to become a US Senator from Connecticut and favorite golfing partner of President Eisenhower. Prescott claims some responsibility for getting Richard Nixon into politics and takes personal credit for bringing Dick on board as Ike's running mate in 1952.

NAME ROSTER OF THE SECRET ESTABLISHMENT

THERE WERE SO MANY "YALIES" IN THE OSS (Office of Strategic Services) that Yale's drinking tune, the "Whiffenpoof Song," became an "unofficial" song of the OSS. Many in the OSS were "Bonesmen" or belonged to the other Yale senior societies.

Robert Lovett (S&B '18), Harriman's childhood friend, had been tapped into Skull & Bones by Prescott Bush's cell of '17 and was a director at Brown Brothers, Harriman.

Again, from George Bush: The Unauthorized Biography.

On October 22, 1945, Secretary of War Robert Patterson created the Lovett Committee, chaired by Robert A. Lovett, to advise the government on the post-World War II organization of U.S. intelligence activities... The new agency would 'consult' with the armed forces, but it must be the sole collecting agency in the field of foreign espionage and counterespionage. The new agency should have an independent budget, and its appropriations should be granted by Congress without public hearings. Lovett appeared before the Secretaries of State, War, and Navy on November 14, 1945 ... Lovett pressed for a virtual resumption of the wartime Office of Strategic Services (OSS) ... The CIA was established in 1947 according to the prescription of Robert Lovett, of Jupiter Island. [Florida]


Robert A. Lovett

Gaddis Smith, a history professor at Yale, said, "Yale has influenced the Central Intelligence Agency more than any other university, giving the CIA the atmosphere of a class reunion." And "Bonesman" have been foremost among the "spooks" building the CIA's "haunted house."

F. Trubee Davison (S&B ' 18) was Director of Personnel at the CIA in the early years. Some of the "Bonesmen" connected with the intelligence community have been:

- Sloane Coffin, Jr. (S&B '49)
- V. Van Dine (S&B '49)
- James Buckley (S&B '44)
- Bill Buckley (S&B '50)
- Hugh Cunningham (S&B '34)
- Hugh Wilson (S&B'09)
- Reuben Holden (S&B '40)
- Charles R. Walker (S&B '16)
- Yale's 'unofficial' Secretary of War, Robert D. French (S&B '10)
- Archibald MacLeish (S&B '15)
- Dino Pionzio (S&B '50), CIA Deputy Chief of Station during Allende overthrow
- William and McGeorge Bundy
- Richard A. Moore (S&B '36)
- Senator David Boren (S&B '63)
- Senator John Kerry (S&B '66)

...and, of course, George Herbert Walker Bush. Bush tapped Coffin, who tapped Buckley.

Some other prominent "Bonesmen" include:

- Henry Luce (S&B '20), Time-Life
- John Thomas Daniels (S&B '14), founder Archer Daniels Midland
- Gifford Pinchot (S&B 1889), President Theodore Roosevelt's chief forester
- Frederick E. Weyerhaeuser (S&B 1896)
- Harold Stanley (S&B '08), founder of Morgan Stanley, investment banker
- Alfred Cowles (S&B '13), Cowles Communications
- Henry P. Davison (S&B '20), senior partner Morgan Guaranty Trust
- Thomas Cochran (S&B '04) Morgan partner
- John Heinz (S&B '31) CEO Heinz Foods
- Pierre Jay (S&B 1892), first chairman of the Federal Reserve Bank of New York
- George Herbert Walker, Jr. (S&B '27), financier and co-founder of the NY Mets
- Fred Smith (S&B '66), founder, CEO and President of Federal Express
- Artemus Gates (S&B '18), President of New York Trust Company, Union Pacific, TIME, Boeing
- William Draper III (S&B '50), the Defense Department, UN, Import-Export Bank

- Dean Witter, Jr.(S&B '44), investment banker
- Senator Jonathan Bingham (S&B '36)
- Potter Stewart (S&B '36), Supreme Court Justice
- Senator John Chaffe (S&B '47)
- Harry Payne Whitney (S&B 1894), married Gertrude Vanderbilt, investment banker
- Russell W. Davenport (S&B '23), editor Fortune Magazine, created Fortune 500 list
- Evan G. Galbraith (S&B '50), Ambassador to France and Managing Director of Morgan Stanley
- Richard Gow (S&B '55), president Zapata Oil
- Amory Howe Bradford (S&B '34), husband of Carol Warburg Rothschild and general manager for the New York Times
- C. E. Lord (S&B '49), Comptroller of the Currency
- Winston Lord (S&B '59), Chairman of the Council on Foreign Relations, Ambassador to China and assistant Secretary of State in the Clinton administration


Barbara and George HW Bush in China

Ever since Nixon re-established America's political relationship with China, many of our ambassadors to that country have been Bonesmen, including George HW Bush, the first Chief U. S. Liaison Officer to the Peoples Republic of China.

CHINA AND THE OPIUM WARS

WHY ALL THIS INTEREST IN CHINA? Well, among other things, China is one of the largest producers and users of opiates in the world.

For a period, in the 1800s, the Yankee Clippers in Connecticut and Massachusetts were the fastest ships on the ocean. Speed was crucial to the opium trade; whoever made the trip from Turkey/India to Macao/Hong Kong/Shanghai first got the most for their goods.

During the Opium Wars, the U.S. chose to stand on the sidelines and cheer for the English and French, knowing that treaty obligations would bring the U.S. a share in the spoils. Russell and Company was at times the only trading house operating in Canton and used the opportunity to developed strong commercial ties and handsome profits.


Charmer launched Oct. 1854 for Bush & Wildes, Boston

Powerful national interests were behind the drug trade. American traders were badly in need of trade goods that the Chinese would buy, since by this time our natural

trade items, such as fur seals and ginseng were in depletion. If the Chinese had not bought opium from Americans, then United States imports of silk, porcelain and tea would have to paid in precious coin, which was in short supply. In 1843, when the Port of Shanghai was opened, Russell and Co. was one of its earliest traders.



Yale-in-China Hospital, 1931

In 1903, Yale Divinity School set up a program of schools and hospitals in China. Mao Zedong was among the staff. During the intrigues of China in the 1930s and '40s, American intelligence called upon the resources of "Yale in China," and George Bush's cousin and fellow "Bonesman" Reuben Holden.

After stints as UN Ambassador and Chairman of the Republican National Committee for the beleaguered Richard Nixon, George Bush was sent to look after the "China trade." The Bush family is still very much involved in the economic activities of "Red" China.

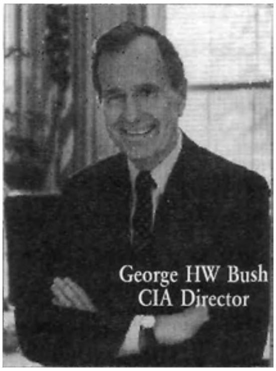


George HW Bush
UN Ambassador

Many researchers contend that George Bush has been with the CIA since the early 1950s, and that one of his jobs was to consolidate and co-ordinate the worldwide narcotics industry, the largest industry on Earth. Some say that one of the reasons behind the Vietnam "Police Action" was a cover for the consolidation of the "Golden Triangle."

THE WAR ON DRUGS: AN "INTELLECTUAL FRAUD"

BEFORE THE VIETNAM "WAR," the Golden Triangle was run by French intelligence operatives and Corsican mobsters. After the French bailed out and America moved in, the triangle was run by U.S. intelligence, with aid from Sicilian mobsters. This narcotics network is well documented in The Politics of Heroin in S. E. Asia by Alfred McCoy, The Great Heroin Coup by Henrik Kruger and Double-Cross by Sam and Chuck Giancana.

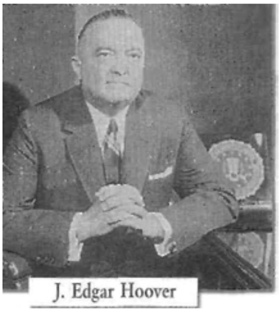


George HW Bush
CIA Director

Vice-President George Bush, as Chairman of President Reagan's cabinet-level working group and as Director of the National Narcotics Interdiction System, was the highest US governmental official involved in the "war on drugs."

Frances Mullen, Jr., former head of the Drug Enforcement Agency (DEA), called Bush's efforts "an intellectual fraud" and "a liability rather than an asset." Soon after these statements, Mullen resigned and the resultant General Accounting Office (GAO) report was buried.

GEORGE BUSH, SKULL & BONES AND THE JFK ASSASSINATION



J. Edgar Hoover

RODNEY STICH'S BOOK Defrauding America tells of a "deep-cover CIA officer" assigned to a counter-intelligence unit, code-named Pegasus. This unit "had tape-recordings of plans to assassinate Kennedy" from a tap on the phone of J. Edgar Hoover. The people on the tapes were "[Nelson] Rockefeller, Allen Dulles, [Lyndon] Johnson of Texas, George Bush and J. Edgar Hoover."

Could George Bush be involved in the JFK assassination? In 1963, Bush was living in Houston, busily carrying out his duties as president of the Zapata Offshore oil company. He denied the existence of a note sent by the FBI's J. Edgar Hoover to "Mr. George Bush of the CIA." When news of the note surfaced, the CIA first said they never commented on employment questions, but later relented, said yes, a "George Bush" was mentioned in the note, but that it was "another" George Bush, not the man who took office in the White House in 1988.

Some intrepid reporters tracked down the "other" George Bush and discovered that he was just a lowly clerk who had shuffled papers for the CIA for about six months. He never received any interagency messages from anybody at the FBI, let alone J. Edgar.

It is also worth noting that a CIA code word for Bay of Pigs was Operation Zapata, and that two of the support vessels were named Barbara and Houston. Many say that George Bush was high up on the CIA ladder at the time, running proprietorial vehicles and placed in a position of command, responsible for many of the Cubans recruited into "service" at the time. All through the Iran-Contra affair, Felix Rodriguez, the man who captured and had Che Guevara killed for the CIA, always seemed to call Bush's office first.

From The Realist (Summer, 1991):

> Bush was working with the now-famous CIA agent, Felix Rodriguez, recruiting right-wing Cuban exiles for the invasion of Cuba. It was Bush's CIA job to organize the Cuban community in Miami for the invasion.... A newly discovered FBI document reveals that George Bush was directly involved in the 1963 murder of President John Kennedy. The document places marksmen by the CIA. Bush at that time lived in Texas. Hopping from Houston to Miami weekly, Bush spent 1960 and '61 recruiting Cubans in Miami for the invasion ....
>
> George Bush claims he never worked for the CIA until he was appointed Director by former Warren Commission director and then President Jerry Ford in 1976. Logic suggests that is highly unlikely. Of course, Bush has a company duty to deny being in the CIA. The CIA is a secret organization. No one ever admits to being a member. The truth is that Bush has been a top CIA official since before the 1961 invasion of Cuba, working with Felix Rodriguez. Bush may

> deny his actual role in the CIA in 1959, but there are records in the Bay of Pigs invasion of Cuba that expose Bush's role ... .

On the Watergate tapes, June 23, 1972, referred to in the media as the smoking gun conversation, Nixon and his Chief of Staff, H.R. Haldeman, were discussing how to stop the FBI investigation into the Watergate burglary. They were worried that the investigation would expose their connection to the Bay of Pigs thing. Haldeman, in his book The Ends of Power, reveals that Nixon always used code words when talking about the 1963 murder of JFK. Haldeman said Nixon would always refer to the assassination as the Bay of Pigs.

On that transcript we find Nixon discussing the role of George Bush's partner, Robert Mosbacher, as one of the Texas fundraisers for Nixon. On the tapes Nixon keeps referring to the Cubans and the Texans. The Texans were Bush, Mosbacher and Baker. This is another direct link between Bush and evidence linking Nixon and Bush to the Kennedy assassination.


President Nixon meets with Republican Party Chairman George Bush and others

MOTIVES FOR THE CONSPIRACY

SO, WHY WOULD an intelligence agency/secret society want to smuggle drugs and assassinate JFK?

Well, they make a lot of money and they garner intelligence assets through their participation. There is also the rationale that the world is a seamy and unseemly place, and if you're going to be the big boy on the block, you better know what's going on. And what better way of knowing than by running it yourself?


Moments before the murder

There are also some who theorize that the covert drug trade fits with plans to destabilize American families and society. Through demoralizing and fracturing the body politic, they can impose their will using psychological warfare and the political alchemy of the Hegelian dialectic.

James Shelby Downard's article, Sorcery, Sex, Assassination and the Science of Symbolism, an underground classic, links American historical events with a wild, numerological, grand occult plan "to turn us into cybernetic mystery zombies." The assassination of JFK, this article contends, was the performance of a public occult ritual called The Killing of the King, designed as a mass-trauma, mind-control assault against our US national body-politic.

During Operation Sunrise, Operation Blowback, Operation Paperclip and others, thousands of Nazi scientists, researchers and administrators were brought to the United States after World War II. Many were smuggled into the country against direct, written orders from President Harry S. Truman.

Project Monarch was the resumption of a mind-control project called Marionette Programming, which started in Nazi Germany. The basic component of the Monarch Program is the sophisticated manipulation of the mind, using extreme trauma to induce Multiple Personality Disorder.

Mr. Downward feels that the perpetrators purposefully murdered JFK in such a way as to affect our national identity and cohesiveness — to fracture America's soul. Even the blatancy of their conspiracy was designed to show their superiority and our futility.


President Kennedy is hit

There have been studies that show a correlation between the JFK assassination and the rise in violence in society, distrust of government and other extensions of social ills.

THE ILLUMINATI; SUBVERTING THE BODY POLITIC

WHY THIS ATTACK against our body politic?
In 1785, a courier died en route to Paris from Frankfort-on-the-Main. A tract written by Adam Weishaupt, founder of the Illuminati, Original Shift in Days of Illuminations, was recovered from the dead messenger, containing the secret society's long-range plan for 'The New World Order through world revolution."
The Bavarian Government outlawed the society and in 1787 published the details of The Illuminati conspiracy in The Original Writings of the Order and Sect of the Illuminati. In Adam Weishaupt's own words:


Adam Weishaupt

> By this plan, we shall direct all mankind in this manner. And, by the simplest means, we shall set all in motion and in flames. The occupations must be so allotted and contrived that we may, in secret, influence all political transactions.

There is disagreement among scholars as to whether or not the Illuminati survived its banishment. Nevertheless, the group had been quite successful in attracting members and had allied itself with the extensive Masonic networks.

The Illuminati was publicly founded May 1,1776, at the University of Ingolstadt by Weishaupt, Professor of Canon Law. It was a very "learned" society; Weishaupt drew the earliest members of his new order from among his students.

On December 5,1776, students at William and Mary College founded a secret society, Phi Beta Kappa. A second chapter was formed, at Yale, in 1780. The anti-Masonic movement in the United States during the 1820s held groups such as Phi Beta Kappa in a bad light. Because of pressure, the society went public.

This is noted by some researchers as the direct cause of the appearance of Yale's Order of Skull and Bones.



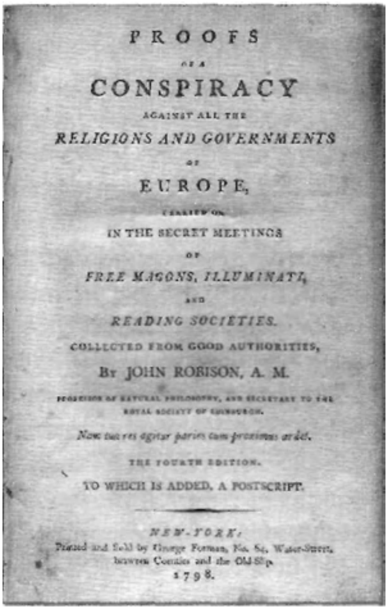
THE COLLEGE OF WILLIAM AND MARY
As it was at the time Phi Beta Kappa was organized

In The Cyclopedia Of Fraternities, a genealogical chart of general Greek-Letter college fraternities in the United States, shows Phi Beta Kappa as "the parent of all the fraternal systems in [American] higher education." There is only one "side" lineal descendant: the Yale chapter of 1780. The line then continues to Skull and Bones in 1832, and on through the other "only at Yale" senior societies, Scroll & Key and Wolf's Head. Phi Beta Kappa is the "first three Greek letters, for 'Philosophia Biou Kubernetes' or 'Love of wisdom, the helmsman of life'." A skull homophone is scull, a quick, gliding boat and part of Skull & Bones first nomenclature.

John Robison, a professor of natural philosophy at Edinburgh University in Scotland and a member of a Freemason Lodge, said that he was asked to join the Illuminati. After study, he concluded the purposes of the Illuminati were not for him.

In 1798, he published a book called Proofs Of A Conspiracy:

> An association has been formed for the express purpose of rooting out all the religious establishments and overturning all the existing governments... the leaders would rule the World with uncontrollable power, while all the rest would be employed as tools of the ambition of their unknown superiors.



PROOFS
OF A
CONSPIRACY
AGAINST ALL THE
RELIGIONS AND GOVERNMENTS
OF
EUROPE,
CARRIED ON
IN THE SECRET MEETINGS
OF
FREE MASONS, ILLUMINATI,
AND
READING SOCIETIES.
COLLECTED FROM GOOD AUTHORITIES,
BY JOHN ROBISON, A. M.
PROFESSOR OF NATURAL PHILOSOPHY, AND SECRETARY TO THE ROYAL SOCIETY OF EDINBURGH.
Nam tua res agitur paries cum proximus ardet.
THE FOURTH EDITION.
TO WHICH IS ADDED, A POSTSCRIPT.
NEW-YORK:
Printed and Sold by George Forman, No. 64, Water-Street, between Coenties and the Old-Slip.
1798.

Proofs Of A Conspiracy was sent to George Washington. Responding to the sender of the book with a letter, the president said he was aware the Illuminati were in America. He felt that the Illuminati had diabolical tenets and that their object was a separation of the People from their government.

In Proofs Of A Conspiracy, Robison described the ceremony of initiation of the "Regent degree" in Illuminism. In it "a skeleton is pointed out to him [the initiate], at the feet of which are laid a crown and a sword. He is asked whether that is the skeleton of a king, nobleman or a beggar. As he cannot decide, the president of the meeting says to him, The character of being a man is the only one that is importance."



From a Bones membership book

This is, essentially, the same as the writing in the Skull & Bones' Temple:

"Wer war der Thor, wer Weiser, Bettler oder Kaiser? Ob Arm, ob Reich, im Tode gleich."

Which reads:

"Who was the fool, who the wise man, beggar or king? Whether poor or rich, all's the same in death."

SKULL & BONES = ILLUMINATI?

IS THE ORDER of the Skull & Bones part of the Illuminati?

When a person is initiated into Skull & Bones, they are given a new name, similar to the practice of the Illuminati. Many recorded Illuminati members can be shown to have contact and/or strong influences with many of the professors that taught "Bonesmen" in Berlin.

When a secret society conspires against the sovereignly of a king, they need to organize, raise funds, make their plans operational, and hopefully bring them to fruition.

Could we have in the United States a secret society that has used the "National Security State" as a cover for their nefarious plans?

From George Bush: The Unauthorized Biography. That September [1951], Robert Lovett replaced Marshall as secretary of defense. Meanwhile, Harriman was named director of the Mutual Security Agency, making him the U.S. chief of the Anglo-American military alliance. By now, Brown Brothers, Harriman was everything but commander-in-chief. A central focus of the Harriman security regime in Washington (1950-53) was the organization of covert operations and psychological warfare. Harriman, together with his lawyers and business partners, Allen and John Foster Dulles, wanted the government's secret services to conduct extensive propaganda campaigns and mass-psychology experiments within the U.S.A., and paramilitary campaigns abroad ....

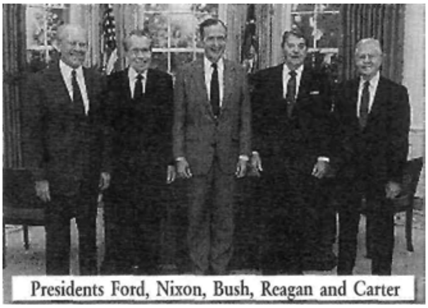

Averell Harriman taking oath to serve as Director of the Mutual Security Agency

The Harriman security regime created the Psychological Strategy Board (PSB) in 1951. The man appointed director of the PSB [was] Gordon Gray ... Gordon's brother, RJ. Reynolds chairman Bowman Gray Jr., was also a naval intelligence

> officer, known around Washington as the founder of operational intelligence. Gordon Gray became a close friend and political ally of Prescott Bush; and Gray's son became for Prescott's son, George, his lawyer and the shield of his covert policy.



So you have the Whitney/Stimson/Bundy clan and the Harriman/Bush boys wielding a tremendous amount of influence on the political, economic and social affairs of America and the world. Then you have Prescott Bush's buddy Richard Nixon as an activist Vice-President. Then, a nation-chilling assassination, some time under LBJ with the Bundy boys keeping things in line, then Nixon as President with "Bonesmen" aides Ray Price ('51) and Richard A. Moore. Then DKE and Yale Law School graduate Gerald Ford. Some time out for a Trilateralist-patsy president, followed by Prescott's son as an activist Vice-President under Reagan. Then, Bonesman George HW Bush, who declares a New World Order while beating up on Saddam Hussein.



After 12 years of Republican administrations, Bush passes the reins to his drug smuggling buddy from Arkansas, Bill Clinton, who studied at Yale Law School. According to some researchers, Clinton was recruited as a CIA operative while a Rhodes Scholar at Oxford. Could this be the ol' Hegelian historical dialectic two-step tango?

WORLD HISTORY; PLAN OR ACCIDENT?

WILL WE GET ANOTHER FAILED Democratic administration? A scandal as disgraceful as Nixon's fall? When Robert P. Johnson (William Barr) told Clinton in a bunker in Arkansas that "you are our fair-haired boy, but you do have competition for the job you seek. We would never put all our eggs in one basket. You and your state have been our greatest asset ... Mr. Casey wanted me to pass on to you, that unless you fuck up and do something stupid, you are number one on our short list for shot at the job you always wanted."



So, you have William Casey — CIA Director, George Bush's campaign manager and Sovereign Knight of Malta — speaking through the proxy of George Bush's last Attorney General to George's rival in the 1992 federal elections. Is it all just a show and sham for US hoi polloi?

Perhaps so, if there exists the type of control over the electoral process as told by Mae Brussell and the suppressed book, VoteScam, written by Jim and Ken Collier:


William Casey

Your vote and mine may now be a meaningless bit of energy directed by pre-programmed computers — which can be fixed to select certain pre-ordained candidates and leave no footprints or paper trail.

In short, computers are covertly stealing your vote.

For almost three decades the American vote has been subject to government-sponsored electronic theft.

The vote has been stolen from you by a cartel of federal national security bureaucrats, who include higher-ups in the Central Intelligence Agency, political party leaders, Congressmen, co-opted journalists — and the owners and managers — of the major Establishment news media, who have decided in concert that how America's votes are counted, by whom they are counted and how the results are verified and delivered to the public is, as one of them put it, [n]ot a proper area of inquiry.

By means of an unofficial private corporation named News Election Service (NES), the Establishment press has actual physical control of the counting and dissemination of the vote, and it refuses to let the public know how it is done.

Is the American electorate subjected to cyclical propaganda, pre-selected candidates and winners, and psychological warfare to alienate Americans from the institutions established to serve them by the Constitution? Are the Democratic and Republican National Parties used for a Hegelian experiment in controlled conflict?


Pamela Churchill Harriman

Pamela Churchill Harriman, Averell's wife, is one of the Democratic Party's biggest fund-raisers. She once gave Bill a job as director of her PAM PAC when he was defeated for governor of Arkansas in 1980. Bill paid her back by appointing her as Ambassador to France.

Another Harriman/Bush friend, Eugene Stetson (S&B '34), was an assistant manager for Prescott Bush at Brown Brothers, Harriman's New York office. He organized the H. Smith Richardson Foundation. The foundation, in the late 1950s, participated in the MKULTRA, the CIA's domestic covert psychological warfare operation. The Richardson Foundation helped to finance the testing of psychotropic drugs, including LSD, at Bridgewater Hospital in Massachusetts, the center of some of the most brutal MK-ULTRA experiments.

During the Iran-Contra operations, the H. Smith Richardson Foundation was a "private donors steering committee," working with the National Security Council to co-ordinate the Office of Public Diplomacy. This was an effort to propagandize in favor of and run cover for the Iran-Contra operations, and to coordinate published attacks on opponents of the program.

The H. Smith Richardson Foundation also runs the Center for Creative Leadership in Virginia to "train leaders of the CIA," as well as another center near Greensboro, North Carolina, that trains CIA and Secret Service Agents. Almost everyone who achieves the military rank of general also gets this training.

This is just the tip of an iceberg. You also have eugenics and population control, suppressed history and technology, yearly retreats, profitable partnerships with brutal dictators, deals with "terrorists," the involvement of the Knights of Malta, war-mongering and profiteering, mind-control, secret societies for teens, ritual magic and more — all spinning the dark threads in the web of conspiracy that our spinning blue-green ball has become entangled.


Bonesmen Bush

A whole new crop of "Bonesmen" coming up, including George HW Bush's son George W Bush (S&B '68), Governor of Texas.

When Don Schollander (S&B '68), the Olympic gold-medalist and only known Skull and Bones member living in Portland, Oregon, was contacted by local Willamette Week reporter John Schrang regarding his involvement in the Order, he said, "It's really something I can't talk about."

Not wouldn't, but "couldn't."

In wake of Antony Sutton's first ground-breaking exposes of the Order, some of the Russell Trust papers at the Sterling Library at Yale have not been available.

Daniel Gilman, like most Bonesmen, makes no mention of Skull & Bones or the Russell Trust in his memoirs or biographies.

So, are we all just fodder for a secret society that is attempting to form a one world government with themselves at the helm? Or is the Order of Skull and Bones just a bunch of frat boys from Yale? Want to bet your future on it?

In the mid to late 90s there was very little mentioning George W Bush on the Internet. Consequently up until 1999, the above essay was always in the top 10 responses when searching Google for George W Bush. In 1998, the article was listed as the reference for Skull & Bones in Robert Anton Wilson's Everything Is Under Control— Conspiracies, Cults and Cover-ups — but most of all the story led to my personal introduction to author, historian and researcher, my friend, Antony Sutton.

THE SEPTEMBER 11th ATTACK THE WAR ON TERROR AND THE ORDER OF SKULL & BONES

ANTONY SUTTON
JUNE 2002 - HIS LAST WRITTEN ARTICLE



THE WORLD TRADE CENTER TRAGEDY of September 11, 2001, murdered just under 3,000 Americans. The most costly attack ever on US soil. Today still uninvestigated, unsolved and virtually forgotten except for friends and relatives.

Why this suppression of WTC? Essentially because President Bush claims he cannot be bothered, he does not want his staff distracted, they are busy with the War on Terror.

Distracted?This matter could be disposed of in a 30-minute press conference.

The WTC episode was the initial, and so far the only, domestic physical act in this War on Terror. Now in denial Mr. Bush has apparently his own deep reasons for avoiding the topic. The country with less transitory interest has a right to know the reality of WTC. In one year this War on Terror has only this single disastrous WTC episode.

Mr. Bush has skillfully directed public attention to Afghanistan and Pakistan, but failed to show how Afghanistan and Pakistan tie to WTC.

Reality is where the public interest resides. For the public the WTC is the War on Terror, yet this is the core reality aspect where Bush ducks and weaves. Even further, he prevailed upon Senator Daschle to kill a Senate inquiry and pours cold water on any public inquiry.

Given this excellent opportunity for public exposure, Bush and the Administration have become shy and bashful. Our non-political question is ... what are they hiding?

According to New York Times, (June 6, 2002 page A-21), "... the Administration has a deep desire to avoid any investigation at all but this has become politically untenable."

While at the same time Mr. Bush is quoted, "I've seen no evidence today that said this country could have prevented the attacks." The latter statement does not accord with known facts.

As Kristen Breitweiser wrote in the New York Times, (May 17, 2002 page A 21), "Why was the President allowed to sit for 35 minutes with a group of second graders when the country was under attack?"

What is clearly obvious even to a New York Times reporter was not obvious to the echelons of officials surrounding the President... of course the Miami photo shoot could have been deliberately planned as a deception move.

None of this is reflected in the public assessment and Bush retains a respectable 77% rating. This can plummet like a stone in a well.

DEATHS HEAD OF MR. BUSH



GEORGE W BUSH AND HIS FATHER (as was his father) are members of a deeply submerged secret society, a satanic secret society, they would prefer you know nothing about. More suited to the I8th century than the 21st century it is known as Skull & Bones and is a real life anachronism in this modern world.

Bush is in the 1968 cell and a photograph of him and his 15 fellow cell-mates shows them grouped around a table bearing their symbol ... a skull and cross bones. (Incidentally the possession of human remains is an offense against the laws in Connecticut, the home of S&B).

The Order of Skull and Bones is no mere innocent college fraternity, as Bush would have you believe. This is a post-graduate society geared to the outside world through the RTA (a tax exempt foundation, also known as the Russell Trust Association) and their retreat on Deer Island (See this author's America's Secret Establishment for further details)

One of the RTA's operating principles is the use of Hegelian creation of conflict to make "progress" or advance history, and is typical of two other omnipotent philosophies with Hegelian roots... Nazism and Marxism.

As three members of the Bush family (grandfather Prescott, father George and George Junior) are members of RTA, we are interested in what this trio has done to further history using Hegelian methodology.

BACK TO WTC AND SEPTEMBER 11, 2001



Mr. Bush is deeply reluctant to tell us what he was doing between 8 AM and 9:15 AM on September 11, 2001. Yet this is a critical question for his fellow Americans. Because while Bush was meeting with Florida 2nd graders for 35 minutes — and according to the New York Times reporter this Florida meeting had absolute priority — almost 3,000 Americans were murdered.

The New York Times reporter found this strange, so do we. Mr. Bush has missed a key point here. His penchant for secrecy is not going to enable him to avoid the question. Why didn't he use this 35 minutes to partially rescue the US and send F-16s to shoot down the high-jacked planes? Then maybe only 300 lives, not nearly 3,000, would have been lost.

DOES BUSH HAVE A HEGELIAN HANGOVER?



The Reichstagg

The Bush family approach to the presidency is quite different from other presidents. The Bush family seemingly views the presidency as a personal fiefdom empowered with the divine right of kings, unassailable, not to be challenged, not to be doubted and potentially omnipotent.

This is an extraordinary error. The vast American public is just not on the same wavelength.

As an example of minefields down the road, take George Sr. and the Iran-Contra papers.

These are totally secret, not to be released and many believe will never be released. George Sr. was in charge of Iran-Contra.

How do we know this? Simply because 10 or so of the official participants (from DEA, CIA, NSA and on and on) had second thoughts, saw the illegalities, rebelled and placed their participation and what they knew on paper and the Internet.

So we have a personal and open account of the official suppressed record. We can well understand why Bush Sr. and his fellow operators want complete and permanent secrecy. Iran-Contra should place several dozen officials in jail.

An important part of Iran Contra was cocaine trafficking using a combination of official and private facilities with Bush Sr. in charge. For example, the deep sea drilling rigs, staffed by CIA and NSA persons of the Zapata Corporation (with Bones and Bush ties) were used as transit points for the cocaine. It may have been a joint operation with Israel because some cocaine packages were also labeled with the Star of David.

In brief, the private and public parts of this narcotics operation were merged and hidden, which is good enough reason for concealment of this episode from a long suffering public.

Then we have the deeply disturbing case of Prescott Bush, grandfather of George Bush, who with Averell Harriman helped finance Hitler through the Union Banking Corporation, which was later taken over by the Alien Property Custodian. Prescott seems to be a very active participant in The Order's efforts to create a Hegelian dialectic arms.

We know that this 1930s pro-Hitler maneuver even today creates alarm in Bush circles. We were interviewed for a documentary on this topic for Dutch National TV and great efforts were made to suppress the Dutch papers relating to this Bush-Harriman episode.

Prescott and Averell were members of the same secret society and supposedly opposite political parties — all while working together out of the same business office.

Our interest is purely research. We have two Bonesmen with private interests in a secret society, are they attempting to pursue Hegelian dialectic? We have every reason in the world to question Bush Junior's involvements in similar situations.

This is not a something Mr. Bush should avoid. If you lose control in these situations — as Mr. Bush well knows — you lose any influence you might have.

If we find three Bushes in a row involved in conflict creation situations ... even the dumbest of American voters won't feel too happy.

This is where you find the limits of the American Historical Association, the major book publishers and establishment history. Any author in this field steers a path well clear of AHA and the major New York publishers. Why... because they have their marching orders. Also more interesting, we know how these blinker-equipped publishers became part of establishment mythology. And this is why the major publishers become smaller and smaller and ultimately will disappear.

FINALE

NO DOUBT THE ABOVE NEWS and similar yet to be published misdeeds will shock many — yet are really not cause for individual alarm.

The country has automatic ways of dealing with those who abuse, not always prompt or noticeable , but sooner or later Iran-Contra, the 2000 election episode and offshoots like Enron (Bush's biggest financier) will be called to account. That is the history of the United States. The country has an unusual ability to disgorge even its worst offenders and offenses.



Who remembers Teapot Dome, the Wall Street excesses of 1929, even the McCarthy era and segregation?

They have been dealt with.

Give this country enough time for information to spread and the system will right wrongs itself.

Even childish excesses like Skull & Bones will find their level and eventually be expunged.

The reaction will come from the bottom up.

WHAT A ROLE MODEL FOR HIS DAUGHTERS!

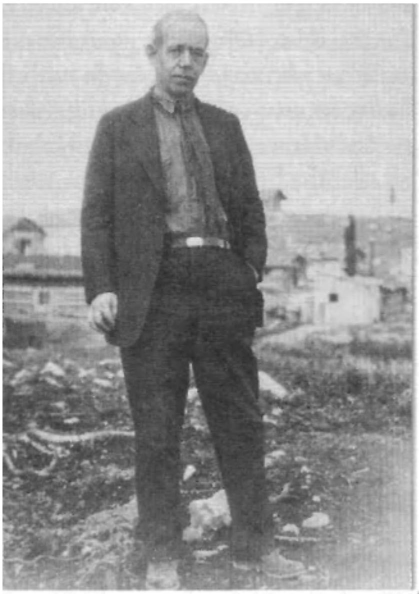
CHARLOTTE THOMSON ISERBYT
JULY 2003 -

MY GRANDFATHER, SAMUEL CLIFTON THOMSON, The Order (Bones) 1891, was from Pottsville, Pa, an important coal mining center to this day. The Thomson family had been involved in coal mining from the early eighteen hundreds into the mid-twentieth century. The family was descended from Scottish Covenanters (Scottish Presbyterians who arrived in America in the mid seventeen hundreds. I have a beautiful sword presented to my great grandfather by officers in his Pennsylvania regiment at the conclusion of the Civil War.)

The original homestead exists in bad repair in Thompsontown, PA. My great grandfather changed the spelling of Thomson to Thompson adding a "p" since he wanted to show off his flourishing handwriting and a "p" really made the grade in this regard.

Grandpa graduated from Andover Boys Preparatory School, Yale University and from Columbia School of Mines with honors, in 1893. He received the School of Mines medal from the President of Columbia University, Nicholas Murray Butler.

Nicholas Murray Butler, on the Executive Committee of the Carnegie Endow-



Samuel C. Thomson at Noranda Mines, Quebec, 1922

ment for International Peace, delivered an address entitled "Higher Preparedness" on Nov. 27, 1915 to the Union League of Philadelphia in which he stated "The old world order changed when this war storm broke — the old world order died with the setting of the day's sun and a New World Order is being born while I speak." From A World in Ferment, a Collection of Butler's Speeches, Scribners 1917, page 106.

Butler's book Across the Busy Years — Recollections and Reflections, Scribners, 1935, pp 160-161 reveals much regarding Butler's role as Dean of the Faculty of Philosophy, Columbia University, in changing American education from its traditional academic orientation to a behaviorist (Wundtian/Pavlovian) orientation originating in Leipzig, Germany. This change was necessary for brainwashing (value change) and implementation of the present work force training required for a planned economy. It was Butler's access to Daniel Coit Gilman, an incorporator of Skull & Bones, and a key activist in the revolution of education which, resulted in bringing to Columbia University, Professor James McKeen Cattell. Butler's information ties in well with Tony Sutton's coverage of The Order's influence on American education. Sutton's book America's Secret Establishment is the only book on The Order which documents The Order's extraordinary influence in bringing about what this author refers to as "the deliberate dumbing down of America."

Butler's book also refers extensively to the activities of Charles D. Hilles, Sr. (not a member of The Order) whose role in the Republican Party included running for Governor of New York, Vice President of the United States, and who was Chairman of the Republican Party Platform Committee, 1916. Charles D. Hilles, Sr. was the father of Charles D. Hilles, Jr., one of my father's closest Bones' associates who stands behind the table in the Tomb (See photo of 1924 members of The Order. A few Bonesmen about whom I have written are seated as follows: my father, Clifton Thomson, is to the left of the table, Hilles behind table, Spofford standing left of the clock, and Blair standing, third from the left.)

What all of this has to do with Bones is not clear, but there surely must be connections. No doubt Grandpa's receiving the School of Mines medal was well-earned. However, it is also likely that Butler, an internationalist with connections all over the English-speaking world, selected Grandpa for the honor not only due to his engineering abilities, but also due to his connections through his membership in The Order.

Grandpa had good credentials for being tapped for The Order. He was a Unitarian and a Mason, from Pottsville, Pennsylvania. Had it not been for his being tapped for Bones, and his being awarded the mining medal, I rather doubt that he would have been invited to go to South Africa which took him to the pinnacles of the engineering profession and led him into a leadership role in the opening up of the gold mines. He had a close personal and working friendship with Sir Abe Bailey, who I believe was a South African Fabian socialist, and I understand he was an acquaintance of Cecil Rhodes. Upon returning to the United States, he explored in Quebec, Canada and founded Noranda Mines in the early twenties.

My memories of him are all wonderful. He was a most generous, unspoiled fellow who preferred to spend his evenings in the company of the less affluent on the West Side of NYC, eating hot dogs and drinking beer, rather than in his elegant suite at the Pierre Hotel on Fifth Avenue. I have a small silver trophy (cup), which I cherish, engraved "Grandpa to Charlotte for swimming, 1938" which he had made specially for me when I won a swimming race while on vacation with him at the Seigneury Club in Quebec. (I use it as a double shot measure in memory of grandpa who was an enthusiastic scotch drinker!)

Grandpa left for California in the late eighteen hundreds and worked at Grass Valley in a chlorination factory for a short while during the gold boom. He soon after was invited by the great John Hays Hammond to go to Africa, an invitation he declined, but later accepted from Thomas H. Leggatt. He arrived in the Rand in 1898 and spent twelve additional seasons (1902-1914) in charge of the mining operations of Norman and Company and Sir Abe Bailey. During that time Thomson's major concerns were the Witwatersrand Deep, the Treasury and Great Central mines. Many other properties came under his charge, as well, so that by the time he left Africa, he was widely known to the gold-mining fraternity. I have a solid gold cigarette box, the inside cover of which is engraved with the signatures of American mining engineers which they presented to him when he left the Rand in 1914.

During his stay in South Africa, Thomson saw service as a lieutenant in the British Army through the later phases of the Boer War. (He was in charge of protecting the mines from Boer sabotage.) It was Thomson's plan, on leaving the Rand in 1914, to engage in consulting practice in London, England, principally for Sir Abe Bailey and his associates. He evidently worked closely with Bailey while in South Africa. I had a wonderful black and white photo of my grandfather and Sir Abe Bailey, but somehow it has been lost.

World War I intervened while he was on holiday in the United States, however, thus reserving grandpa's future for Canadian mining, and to Noranda Mines. (He was one of the principals in the discovery and development of copper mines in Canada.) The Anglo-American connections are clear and of course, we are all aware of Carnegie's plan to bring America back to the mother's bosom, something we are looking at today. (George Bush and Tony Blair!)

My Dad, Clifton Samuel Thomson, a graduate of Hotchkiss Boys School, class of 1924 at Yale, Columbia Law School, 1926, and a Bonesman, was born in 1903 in Johannesburg, S.A., and lived there until 1914 when his family went to live in London for a while and then moved back to Englewood, N.J., U.S.A. Dad was also a member of Delta Kappa Epsilon while at Yale. This fraternity boasts many important members, including four Presidents of the United States: Hayes, Bush, Sr. Bush, Jr. Roosevelt, and Ford. I have always felt there was a very, very close connection between The Order and DKE. While in London he attended Cheam Boys School, the very elitist school outside of London, which caters to British royalty. He detested every minute of it (cold showers and lousy food) and his dislike of all things English, including the British cruelty exhibited in the Boer

War, remained with him until he died in 1984. Dad was, I believe, an unlikely candidate for Bones, being very down to earth, an individualist, honest to the core, and Christian. He served as Mayor of Sands Point, Long Island, N.Y., as a vestryman at St. Stephen's Episcopal Church at Port Washington, New York, and was elected councilman, Mendham Township Council, Mendham, New Jersey.



I knew three or four of his Bones classmates quite well: One, my sister's god-father, was I believe, instrumental in starting the Hemlock Society! This fellow who bounced me on his knees and told great stories ... was the last person I would ever have thought to be involved in bringing euthanasia to America. Dad also spent a couple of weeks at Bohemian Grove as a guest of his very close friend Edwin Blair, another Bones guy, who was nick-named "Mr. Yale" since he was such a good fund raiser. (Blair was also a partner with Chuck Spofford at Davis, Polk, Wardwell, Sunderland and Keindl ... see below.) Dad was not impressed by most of the activities at the Grove although he said a few presentations were noteworthy, food was excellent and accommodations top of the line. He had one big, and I mean "big" problem with pompous people, and there was no shortage of such types at Bohemian Grove functions. Henry Allen, another Bones friend of Dad's, was a director of the American Civil Liberties Union, set up by Amos Pinchot (The Order), and the daughter of his friend, Sherman Ewing, married a Rockefeller, but Ewing himself was not involved in any high level international or national policy planning.

Dad was at Hotchkiss School with E.O. Matthiessen (Bones 1923). An interesting aside follows: Matthiessen's daughter lived in the same town where I was on the local school board creating problems for the liberals ... in the seventies. She knew my father was her father's friend due to Hotchkiss and Bones, but that didn't make any difference to her ... she went after me with a vengeance, often,

and in public (even at social occasions!) due to my opposition to the federally-funded non-academic and no right/no wrong programs being implemented in the seventies. She was a carbon copy of her father about whom Tony has written in his newsletters. Her Dad is quoted on the jacket of Tony's book as saying "As long as we have somebody from Bones who can bring pressure on the committee, I should think we'll be all right." — E.O. Matthiessen (S&B 1923) to Donald Ogden Steward (S&B 1916) about "Matty's" upcoming appearance before the House Committee on Un-American Activities.

In my opinion, the most important Bonesman in the Class of 1924, a close friend and roommate of my father's, was Charles Merville Spofford, who rose to great heights in international law and politics. Dad, once, close to the end of his life, related to me an account of Spofford's promotion to positions of international influence, much of which is covered in detail in Yale '24- 24S and which I am including since Spofford provides a most important case study in how a very few members of the Order become global shakers and movers.

An account of Spofford's meteoric rise to fame, taken from page 326 of Yale '24-24S, published in 1955, follows:

> Chuck, who took his LL.B. at Harvard in 1928, was with Isham, Lincoln & Beal in Chicago until 1930 and has since been with Davis, Polk, Wardwell, Sunderland & Kiendl, in which he became a partner in 1940. He is a director of the Guaranty Trust Company of New York, the Distillers Company, Ltd., and the Gordon's Dry Gin Company, Ltd., and is on the boards of the Free Europe Committee, Union Theological Seminary, the Carnegie Corporation, the Juilliard Musical Foundation, the Juilliard School of Music, and the national council of the English-Speaking Union. He belongs to various bar associations and to the Council on Foreign Relations. He went on active duty as a lieutenant colonel in October, 1942, was assigned to the General Staff Corps, and had thirty-two months' service in the Eastern Theatre of Operations and Mediterranean Theatre of Operations, ranking as a brigadier general at his release in December, 1945; he was in the Reserve from 1947 to 1954. In addition to the U.S. Distinguished Service Medal and Purple Heart, he was awarded the Croix de Guerre with palm and was made a commander of the Legion of Honor, the Order of the British Empire, the Order of Ishan Iftikhar (Tunisia), and the Order of St. Maurice and St. Lazarus (Italian). Chuck was appointed U.S. deputy representative to the North Atlantic Council, with the rank of Ambassador, in June, 1950, the next month being elected chairman of the North Atlantic Council Deputies; for his work in this capacity (which continued until April 1952), he received the following decorations: officer, Legion of Honor; grand officer, Order of the Crown (Belgium); commander with star, Order of the Falcon (Iceland). He is the author of "The North Atlantic Treaty," in the Journal of the Royal Empire Society, "Toward Atlantic Security," in International Affairs, "North Atlantic Security," in the Journal of the Royal United Services Institution, and "NATO's Growing Pains" in Foreign Affairs.

I remember his coming into my office in Middle Eastern Affairs, U.S. Department of State, in 1956, at the peak of one of the continuing Mid-East crises, to participate as a board member of The Suez Canal Company.

After Chuck had divorced his wife of many years, he had a serious stroke, which confined him to a wheel chair. Surprisingly enough he remarried his former long-time secretary at Davis, Polk, a wonderful, down-to-earth woman with whom I had worked at one time. They lived in Easthampton, Long Island, in a house he bought from William Simon, former Secretary of the Treasury. I relate these seemingly unimportant bits of information to reveal how even those who rise to great heights in world affairs encounter the same difficult problems in marriage, severe illnesses, etc. that we plain regulars encounter, and that occasionally they survive through attachments to persons whose backgrounds are totally different (normal?). His second wife, who came from an entirely different background, took such wonderful care of Chuck until he passed on. She probably turned out to be the most important person in his life, outside of his children. There were other Bones friends of Dad's I knew fairly well but I don't have any interesting stories. I'd say only 3 or 4 out of the 15 were involved in important U.S. Government or international policy decisions.

Dad always supported the Bush family in its election efforts, while Mom, a true-blue conservative Catholic from Virginia, whose family served on the Confederate side during the Civil War, supported Reagan. The Order would solicit campaign contributions for Bush from its members. Dad attended the reunions on Deer Island, but not frequently.

Dad was a Senior Partner with Appleton, Rice, and Perrin, a small Wall Street law firm. Lee Perrin, Bones 1906, was a very fine gentleman who I suspect brought Dad on board at the firm. (Connections help!) Dad was also the attorney for a French company, the Matham Corporation, during World War II. I remember that he received all sorts of pins (medals) from Matham for his service to the company during the war. I believe Matham was involved in manufacturing arms.

Dad resigned his position with Matham due to its involvement with the Nazis. He was very principled, and I'm sure not at all on the Bones' wavelength of supporting both sides (i.e. Hitler and Stalin). Of interest and along the same lines was a comment he made to Alan Klotz, a Wall Street attorney, also a Bonesman from another year, regarding dropping the bomb on Hiroshima. Dad said he told Klotz, who reacted in shock, that, "we should have dropped it on Moscow instead." That doesn't jibe with Bones politics, does it? My mother always jokingly said, "One day Dad acts like a capitalist; the next day he acts like a communist." That's quite a comment, isn't it? I rather suspect that could be applied to most of those guys who received the same brainwashing at Yale. Isn't that known as cognitive dissonance in psychological circles?

On a personal level, that is, his attitude towards my work, he was "cool." Although he and I were very, very close as Dad and daughter and did many things together (tennis, swimming, long walks, talks, etc.), it always bothered him that I was critical of the public education system and U.S. foreign policy. (Although

he would often make disparaging remarks about the "striped pants" guys running the world.) He once said he couldn't understand why I was opposed to world government and I responded "Dad, I can't believe what you are saying ... whose Constitution will our country have?" (He was a conservative, constitutionally oriented, and had been mayor of our town!) He lent back in his chair, took a long puff on his cigar and slowly uttered the following in a deep voice: "Oh, Char, we'll take care of that when the time comes." He also once said when I complained about the national debt "not to worry, we owe it to ourselves!"

Although he considered me a very good writer, he said, "I don't agree with where you are coming from." He was brainwashed big time at Yale, especially considering how the brainwash lasted for such a long period of time (over the years) with someone who was so fair, honest, unspoiled, etc., and in constant pursuit of the truth. He was an avid reader ... I never saw him without a book in his lap. His favorite writer was Thoreau and he had read all the books in Will and Ariel Durant's The History of Civilization series.



My sister and I spent the last year of his life with him at his home in Gladstone, New Jersey. He was dying of cancer and my sister and I kept him at home; didn't allow him to be put in the hospital. Our mother was in a nursing home. Very sad they were separated like that at the end of their lives. He died in 1984 with his dog, Whiskers, a Welsh terrier, on the bed beside him!

1984 was the year Phyllis Schlafly's book, Child Abuse in the Classroom, which was really half mine since I had written most of the parts about the parents' testimony at U.S. Department of Education hearings. Phyllis and I worked on the book by phone, in order to have it available at the Republican Convention in Texas. Dad was able to hear our conversations about everything from death education to world government. His bedroom was on the ground floor next to the kitchen where I sort of lived with the phone. About a week before he died he looked at me and said, "If I had more time, I'd help you." That was so nice.

He had also told me several months before he died that he wished he had been a farmer rather than a Wall Street lawyer, and I really believe he meant that.

When not in town with his Wall Street friends, at the Downtown Association for lunch or in his office, all of which he surely enjoyed, he was painting landscapes, cooking, walking the dogs, creating a small pond, or turning the earth in his garden, a plain down to earth person and the greatest friend to many, many people. He never turned down a request for legal or other advice ... was available to everyone, free, no matter rich or poor. A more generous person never lived. He was a man of few words, had a laid back personality, and was incredibly witty with a very dry sense of humor.

What a role model for his daughters!

My parent's wedding was attended by all fifteen of his Bones friends who served as the ushers in 1926 and there is a photo of all fifteen Bones members in the Temple, all standing, with exception of my Dad and another Bones guy, who are sitting on either side of a table which holds the Skull and Bones. Yuk!

I also inherited the beautiful grandfather clock which I believe is given to Bones members when they marry. Dad always insisted that the women in the family never, ever allow the clock to stop. We were never told what would happen if we forgot and let it wind down. Sounded like some occult monkey business at work. Interestingly enough, since I inherited that clock it has broken down numerous times no matter how intent I am on not letting it wind down! I also have the little Skull and Bones pin each member is given upon initiation.

Charlotte Iserbyt is the consummate whistleblower! Iserbyt served as Senior Policy Advisor in the Office of Educational Research and Improvement (OERI), U.S. Department of Education, during the first Reagan Administration, where she first blew the whistle on a major technology initiative which would control curriculums in Americas classrooms. Iserbyt is a former school board director in Camden, Maine and was co-founder and research analyst of Guardians of Education for Maine (GEM) from 1978 to 2000. She has also served in the American Red Cross on Guam and Japan during the Korean War, and in the United States Foreign Service in Belgium and in the Republic of South Africa. Iserbyt is a speaker and writer, best known for her 1985 booklet Back to Basics Reform or OBE: Skinnerian International Curriculum and her 1989 pamphlet Soviets in the Classroom: America's Latest Education Fad which covered the details of the U.S.-Soviet and Carnegie-Soviet Education Agreements which remain in effect to this day. She is a freelance writer and has had articles published in Human Events, The Washington Times, The Bangor Daily News, and included in the record of Congressional hearings.

www.DeliberateDumbingDown.com

GERONIMO'S BONES

HOWARD ALTMAN
JULY 2003

BACK IN THE LATE SUMMER OF 1989, when the New Haven Advocate's office was located on Chapel Street, it was not unusual for the odd and the insane to wander in off the streets.

Some came to sell purloined objects. Some came to babble. And some came because the office was open and there was no place else to go.

Most of the time, I was called upon to deal with the crazies, usually in the role of bouncer protecting the mostly female staff. On more than a few occasions, I had to physically remove such visitors.

Often, though, the crazies came looking for me.

Such was the case with the man in olive drab who had a story to tell.

"Hey Altman, someone's here to see you," said our receptionist.

Great. When she said it like that, it usually meant another paranoid crack head was coming to call.

I'd been visited by relatives of Jesus, descendents of UFO aliens and a man claiming to be great Caesar's ghost. The least I could do, I figured, was humor the man and send him, harmlessly, on his way.

I walked out of my office, to the front desk and greeted the man, a short, wiry guy with a craggily, weathered face and stringy hair. Instantly, I sensed there was something about him, something different than the other whackos who walked in off the street.



Geronimo 1829-1909
May He Rest in Peace

Extending his hand, he introduced himself.

"I am Geronimo's great-great grandson," he said.

"Yeah? And my name is Moses," I thought to myself.

By the look on the receptionist's face, I could tell that the man was making her nervous, so contrary to my usual rule, I invited him back to my office.

I sat down and invited him to do the same, but he refused, saying he was more comfortable standing.

As he stood, he began to tell me about his past, which, he claimed, included a stint in the US military, where he served with the special forces. He made it a point to tell me how he'd killed people, though it wasn't quite clear to me whether the killings took place as a member of the military or on his own.

Either way, I remember feeling just a might uneasy. He might have been hallucinating about being related to Geronimo, but the look in his eyes when he talked about killing people made me think that this guy was telling the truth about something.

After a few minutes more of small talk, I asked him a question.

"So what brings Geronimo's great-great grandson to New Haven?" I asked, a fairly legitimate question considering the circumstances.

And that's when he began to tell me an incredible story.

"I am here because my great-great grandfather Geronimo's bones are here," he said.

That was fantastic enough. But, the more he talked, the more fantastic the story became.

The bones, he said, were dug up by Prescott Bush, father of George Herbert Walker, the first President Bush. They were taken to the Skull and Bones, a secret society on the Yale campus that counts as members a number of Presidents and other high-ranking government and military officials.

The man, who said his name was Phillip Romero, said he wanted the bones returned to their rightful owner, the Apache. He asked if I would be interested in writing a story.

Well, of course I would be interested in writing a story about the President's father digging up Geronimo's bones and bringing them to a secret society in New Haven. There was just one little problem, I told Romero, the man who claimed to be a killer.

Being as tactful as possible, so as not to set him off unnecessarily, I explained that I needed more than his say-so to write a story implicating the father of the President in what amounts to a crime in the state of Connecticut, specifically, the illicit harboring of bones.

The great Apache chief's self-purported great-great grandson told me that such proof existed, in the form of a picture, which was in the hands of a man named Ned Anderson, a former tribal leader of the San Carlos Apache tribal council.

Anderson, said the man, had been tipped off about Geronimo's bones by a disgruntled Skull & Bonesman named "Pat," who told Anderson that Prescott Bush and others dug up the Apache chief's remains from their burial plot at Fort Sill, Oklahoma, and transported them to the Tomb — the Skull & Bones' formidable stone headquarters on High Street in New Haven — where they are to this day said to be used in society rituals.

(In addition to becoming a cult figure for his efforts to retrieve Geronimo's bones, Anderson, according to WaBun-Inini, of the White Earth Anishinabe Ojibwa Nation, would later be credited with helping to found Jesse Jackson's Rainbow Coalition and coining the phrase "Run, Jesse, Run," in conjunction with Jackson's nascent bid for the Presidency.)

His story finished, Romero thanked me for his time, turned around and walked out my office. I never heard from him again.

Anderson, on the other hand, I was in contact with frequently — though reaching him was no easy feat.

He lived on a reservation more than 20 miles from the nearest telephone and our conversations had to be scheduled far in advance so that he could hop a ride.

When we did speak, Anderson told a fascinating story, about how he discovered the whereabouts of Geronimo's bones after a very public battle with Geronimo's relatives, over where the great chief should be buried.

Anderson wanted the remains moved to his reservation in San Carlos, Arizona. Geronimo's family, represented by Wendell Chino, a family member and leader of the Mescalero Apache tribe, wanted the remains to remain where they were, or at least where everyone thought they were, in Fort Sill, where Geronimo died in captivity.



Geronimo - 1890s

Anderson and Chino were never able to resolve their dispute — Chino calling Anderson's bid "a publicity stunt to attract tourists."

But that was not the end of the story.

The publicity, said Anderson, spurred a Bonesman named "Pat" to come forward and, perhaps out of guilt, tell Anderson that Geronimo was not buried in Fort Sill, but was instead on a shelf in the "Tomb."

The bones, said Anderson, were dug up in 1918 by Prescott Bush — father of the first President Bush and grandfather of the second — along with some cohorts.

In addition to telling Anderson about what happened to Geronimo's bones, "Pat" —whose real identity Anderson would never reveal despite my pleas, whimpers and other forms of persuasion — provided Anderson with a picture of what Anderson claimed are Geronimo's bones in New Haven.

Anderson said he took that picture and tried to have his Senator at the time, Mo Udall, intervene. He also said he arranged a meeting with then President George H. W Bush's brother Jonathan.

"Bush was taken aback when confronted with the evidence," Anderson told me. Just how far aback was hard to ascertain when I finally tracked down Bush. He was cordial, but did not want to talk about the meeting.

My research on the subject revealed that, with a lawyer willing to fight the battle, there might have been a case to investigate the corpse conundrum under Connecticut state law, which holds that it is unlawful to keep such remains.

But no one I talked to was willing to represent Anderson and everyone I talked to said no one would.

Armed with Anderson's evidence, I tried to pay a visit to the Tomb.

I slammed the great knocker, which bounced off the metal door with a tremendous thud. Eventually, someone answered and opened the door ever so slightly.

I introduced myself and told the man why I was there. He refused to talk or even let me in.

Taking a page out of the Obnoxious Salesman's Handbook, I stuck my foot in the heavy metal door in an effort to continue our conversation. The man slammed the door on my foot in an effort to end it.

Ultimately, his impatience (and pressure on my foot) outlasted my patience and I removed my foot, allowing him to close the door on me and any chance of my getting a comment from a Bonesman.

Although Anderson was unsuccessful in finding anyone to represent him and although I was unable to come to any definitive conclusion about Geronimo's bones, the story I wrote — Bones of Contention: Skullduggery at Yale?— made a bit of a splash. A local TV station covered it and interviewed me and I received a call from an Italian news magazine.

I left the New Haven Advocate in 1991 and the story about Geronimo's bones became a warm but distant memory until just a few years ago, when I began to read about the controversy in the CIA-Drugs Yahoo group and other places on the Internet, leading me to the conclusion that, no matter what happened, Geronimo's bones have legs.

PRESCOTT BUSH, $1,500,000 AND AUSCHWITZ

HOW THE BUSH FAMILY WEALTH IS LINKED TO THE JEWISH HOLOCAUST

TOBY ROGERS

APPEASED IN CLAMOR MAGAZINE, MAY/JUNE "2002

WHILE THE ENRON SCANDAL currently unfolds, another Bush family business scandal lurks beneath the shadows of history that may dwarf it.

On April 19,2001, President George W. Bush spent some of Holocaust Remembrance Day in the Capital Rotunda with holocaust survivors, allied veterans, and their families. In a ceremony that included Jewish prayers and songs sung by holocaust victims in the camps, Benjamin Meed, a survivor of the Warsaw ghetto uprising, movingly described to the gathering what he experienced on April 19, 1943.

"I stood outside a Catholic church, which faced the ghetto," Mr. Meed said, "a young Jewish boy posing as a gentile. As I watched the ghetto being bombarded by the German artillery, I could see many of the Jews of my community jumping out of windows of burning buildings. I stood long and mute."

The survivor concluded his reminiscence saying, "We tremble to think what could happen if we allow a new generation to arise ignorant of the tragedy which is still shaping the future."

President Bush, appearing almost uncomfortable, read a statement that said that humanity was "bound by conscience to remember what happened" and that "the record has been kept and preserved." The record, Mr. Bush stated, was that one of the worst acts of genocide in human history "came not from crude and uneducated men, but from men who regarded themselves as cultured and well schooled, modern men, forward looking. Their crime showed the world that evil can slip in and blend in amid the most civilized surroundings. In the end only conscience can stop it."

But while President Bush publicly embraced the community of holocaust survivors in Washington last spring, he and his family have been keeping a secret

from them for over 50 years about Prescott Bush, the President's grandfather. According to classified documents from Dutch intelligence and US government archives, President George W Bush's grandfather, Prescott Bush made considerable profits off Auschwitz slave labor. In fact, President Bush himself is an heir to these profits from the holocaust which were placed in a blind trust in 1980 by his father, former President George Herbert Walker Bush.

Throughout the Bush family's decades of public life, the American press has gone out of its way to overlook one historical fact - that through Union Banking Corporation (UBC), Prescott Bush, and his father-in-law, George Herbert Walker, along with German industrialist Fritz Thyssen, financed Adolf Hitler before and during "World War II. It was first reported in 1994 by John Loftus and Mark Aarons in The Secret War Against the Jews: How Western Espionage Betrayed the Jewish People.

The US government had known that many American companies were aiding Hitler, like Standard Oil, General Motors and Chase Bank, all of which were sanctioned after Pearl Harbor. But as The New York Times reporter Charles Higham later discovered, and published in his 1983 groundbreaking book, Trading With The Enemy; The Nazi American Money Plot 1933-1949, "the government smothered everything during and even after the war." Why?

According to Higham, the US government believed "a public scandal... would have drastically affected public morale, caused widespread strikes and perhaps provoked mutinies in the armed services." Higham claims the government thought "their trial and imprisonment would have made it impossible for the corporate boards to help the American war effort."

However, Prescott Bush's banks were not just financing Hitler as previously reported. In fact, there was a distinct business link much deeper than Mr. Higham or Mr. Loftus knew at the time their books were published.

A classified Dutch intelligence file which was leaked by a courageous Dutch intelligence officer, along with newly surfaced information from U.S. government archives, "confirms absolutely," John Loftus says, the direct links between Bush, Thyssen and genocide profits from Auschwitz.

The business connections between Prescott Bush and Fritz Thyssen were more direct than what has been previously written. This new information reveals how Prescott Bush and UBC, which he managed directly, profited from the Holocaust. A case can be made that the inheritors of the Prescott Bush estate could be sued by survivors of the Holocaust and slave labor communities. To understand the complete picture of how Prescott Bush profited from the Holocaust, it is necessary to return to the year 1916, where it all began.

POST WORLD WAR I; THYSSEN EMPIRE ON THE ROPES

BY 1916, AUGUST THYSSEN could see the writing on the wall. The "Great War" was spinning out of control, grinding away at Germany's resources and economy. The government was broke and his company, Thyssen & Co., with 50,000 German workers and annual production of 1,000,000 tons of steel and iron, was buckling

under the war's pressure. As the main supplier of the German military, August Thyssen knew Germany would be defeated once the US entered the war.

At 74, "King" August Thyssen knew he was also running out of time. His first born "prince" Friedrich (Fritz) Thyssen, had been groomed at the finest technical business schools in Europe and was destined to inherit his father's estimated $100,000,000 fortune and an industrial empire located at Muehhlheim on the Ruhr.

In addition to Fritz, plans were also made for the second son Heinrich. At the outbreak of the war, Heinrich Thyssen discreetly changed his citizenship from German to Hungarian and married the Hungarian aristocrat Baroness Margrit Bornemisza de Kaszon. Soon Heinrich Thyssen switched his name to Baron Thyssen Bornemisza de Kaszon.

Near the end of World War I, August Thyssen opened the Bank voor Handel en Scheepvaart in Rotterdam. The neutral Holland was the perfect location outside of Germany to launder assets from the August Thyssen Bank in Berlin when the financial demands of the Allied forces surfaced. But the war ended much sooner than even Thyssen calculated and what developed caught the "Rockefeller of the Ruhr" off guard. On November 10, 1918, German socialists took over Berlin. The following morning at 5 a.m., what was left of Germany surrendered to the Allies, officially ending World War I. "At the time of the Armistice and the signing of the Treaty of Versailles, my Father and I were deeply saddened by the spectacle of Germany's abject humiliation," Thyssen recalled later in his autobiography, I Paid Hitler.

After the war, chaos descended on Germany as food ran short. Winter was looming over a starving nation when on Dec. 7, 1918, the socialist Spartacists League came knocking on the Thyssen Villa with armed militia. August and Fritz were arrested and dragged from jail to jail across Germany for four days. Along the way, they were lined up in staged executions designed to terrorize them.

It worked. When released, the two Thyssens were horrified at the new political climate in their beloved Germany. They could not accept that Germany was responsible for its own demise. All Germany's problems, the Thyssens felt, "have almost always been due to foreigners." It was the Jews, he and many others believed, who were secretly behind the socialist movement across the globe.

Meanwhile Fritz's younger brother Baron Thyssen Bornemisza de Kaszon moved to Rotterdam and became the principal owner of the Bank voor Handel en Scheepvaart. All the Thyssens needed now was an American branch.

1920s: The Business Ties That Bind

RAILROAD BARON E.H. HARRIMAN'S SON AVERELL wanted nothing to do with railroads, so his father gave him an investment firm, W.A. Harriman & Company in New York City. E.H. hired the most qualified person in the country to run the operation, George Herbert Walker. Averell hired his little brother Edward Roland "Bunny" Harriman as a vice president.

By 1920, George Herbert Walker had already built a fortune in Missouri. Walker, a charismatic former heavyweight boxing champion, was a human pit

bull. He lived life to the fullest, owning mansions around the East Coast and one of the most extravagant apartments in Manhattan. His hobbies were golf, hunting, drinking scotch and beating his sons to a pulp. Elsie Walker, one of Walker's grandchildren described Walker as a "tough old bastard" whose children had no love "for their father." He was also a religious bigot who hated Catholics, although his parents raised him to be one. According to other sources, he also did not like Jews.

In 1922, Averell Harriman traveled to Germany to set up a WA. Harriman & Co. branch in Berlin. The Berlin branch was also run by Walker. While in Germany, he met with the Thyssen family for the first time. Harriman agreed to help the Thyssens with their plan for an American bank.

The following year, a wounded Germany was growing sicker. The government had no solution and froze while Germany rotted from within. With widespread strikes and production at a near standstill, Fritz Thyssen later recalled, "We were at the worst time of the inflation. In Berlin the government was in distress. It was ruined financially. Authority was crumbling. In Saxony a communist government had been formed and the Red terror, organized by Max Hoelz, reigned through the countryside. The German Reich ... was now about to crumble."

In October, 1923, an emotionally desperate Fritz Thyssen went to visit one of his and Germany's great military heroes, General Erich Ludendorff. During the 1918 socialist rule in Berlin, Ludendorff organized a military resistance against the socialists and the industrialists were in great debt to him. When Thyssen met with Ludendorff, they discussed Germany's economic collapse. Thyssen was apocalyptic, fearing the worst was yet to come. Ludendorff disagreed. "There is but one hope," Ludendorff said, "Adolph Hitler and the National Socialist party." Ludendorff respected Hitler immensely. "He is the only man who has any political sense." Ludendorff encouraged Thyssen to join the Nazi movement. "Go listen to him one day" he said to Thyssen.

Thyssen followed General Ludendorff's advice and went to a number of meetings to hear Hitler speak. He became mesmerized by Hitler. "I realized his orator gifts and his ability to lead the masses. What impressed me most however was the order that reigned over his meetings, the almost military discipline of his followers."

Thyssen arranged to meet privately with Hitler and Ludendorff in Munich. Hitler told Thyssen the Nazi movement was in financial trouble, it was not growing fast enough and was nationally irrelevant. Hitler needed as much money as possible to fight off the Communists/Jewish conspiracy against Europe. Hitler envisioned a fascist German monarchy with a nonunion, antilock national work force.

Thyssen was overjoyed with the Nazi platform. He gave Hitler and Ludendorff 100,000 gold marks ($25,000) for the infant Nazi party. Others in the steel and coal industries soon followed Thyssen's lead, although none came close to matching him. Many business leaders in Germany supported Hitler's secret union-hating agenda. However, some donated because they feared they would be left out in the cold if he actually ever seized power.

Most industry leaders gave up on Hitler after his failed coup in 1923. While Hitler spent a brief time in jail, the Thyssens, through the Bank voor Handel en Scheepvaart, opened the Union Banking Corporation in 1924.

UNION BANKING CORPORATION

EARLY IN 1924, HENDRICK J. KOUWENHOVEN, the managing director of Bank voor Handel en Scheepvaart, traveled to New York to meet with Walker and the Harriman brothers. Together, they estabhshed The Union Banking Corporation. The UBC's headquarters was located at the same 39 Broadway address as Harriman & Co.

As the German economy recovered through the mid to late '20s, Walker and Harriman's firm sold over $50,000,000 worth of German bonds to American investors, who profited enormously from the economic boom in Germany. In 1926, August Thyssen died at the age of 84. Fritz was now in control of one of the largest industrial families in Europe. He quickly created the United Steel Works (USW), the biggest industrial conglomerate in German history. Thyssen hired Albert Volger, one of the Ruhr's most influential industrial directors, as director General of USW.

Thyssen also brought Fredich Flick, another German family juggernaut, on board. Flick owned coal and steel industries throughout Germany and Poland and desperately wanted to invest into the Thyssen empire. One of the primary motivations for the Thyssen/Flick massive steel and coal merger was suppressing the new labor and socialist movements.

That year in New York, George Walker decided to give his new son in law, Prescott Bush, a big break. Walker made Bush a vice president of Harriman & Co. Prescott's new office employed many of his classmates from his Yale class of 1917, including Roland Harriman and Knight Woolley. The three had been close friends at Yale and were all members of Skull and Bones, the mysterious on-campus secret society. Despite the upbeat fraternity atmosphere at Harriman & Co., it was also a place of hard work, and no one worked harder than Prescott Bush.

In fact, Walker hired Bush to help him supervise the new Thyssen/Flick United Steel Works. One section of the USW empire was the Consolidated Silesian Steel Corporation and the Upper Silesian Coal and Steel Company located in the Silesian section of Poland. Thyssen and Flick paid Bush and Walker generously, but it was worth every dime. Their new business arrangement pleased them all financially, and the collective talents of all four men and their rapid success astonished the business world.

In the meantime Hitler and the Nazi party were broke. Since the German economic recovery, members and donations had dried up, leaving the Nazi movement withering on the vine. In 1927, Hitler was desperate for cash; his party was slipping into debt. Hitler told his private secretary Rudolf Hess to shake down wealthy coal tycoon and Nazi sympathizer Emil Kirdorf. Kirdorf paid off Hitler's debt that year but the following year, he too had no money left to contribute.

In 1928, Hitler had his eyes on the enormous Barlow Palace located in Briennerstrasse, the most aristocratic section of Munich. Hitler wanted to convert the palace into the Nazi national headquarters and change its name to the Brown House but it was out of his price range. Hitler told Hess to contact Thyssen. After hearing the Hess appeal, Thyssen felt it was time to give Hitler a second chance. Through the Bank voor Handel en Scheepvaart, Thyssen said he "placed Hess in possession of the required funds" to purchase and redesign the Palace. Thyssen later said the amount was about 250,000 marks but leading Nazis later claimed that just the re-molding cost over 800,000 marks (equivalent to $2 million today).

Regardless of the cost, Hitler and Thyssen became close friends after the purchase of the Brown House. At the time, neither knew how influential that house was to become the following year when, in 1929, the great depression spread around the world. With the German economic recovery up in flames, Hitler knew there was going to be a line of industrialists out the door waiting to give him cash.

1930S; HITLER RISES - THYSSEN/BUSH CASH IN

THYSSEN WOULD LATER TRY TO CLAIM that his weekends with Hitler and Hess at his Rhineland castles were not personal but strictly business and that he did not approve of most of Hitler's ideas, but the well-known journalist R.G Waldeck, who spent time with Thyssen at a spa in the Black Forest, remembered quite differently. Waldeck said when he and Thyssen would walk through the cool Black Forest in 1929-30, Thyssen would tell Waldeck that he believed in Hitler. He spoke of Hitler "with warmth" and said the Nazis were "new men" that would make Germany strong again. With the depression bleeding Europe, Thyssen's financial support made Hitler's rise to power almost inevitable.

The great Depression also rocked Harriman & Co. The following year, Harriman & Co. merged with the London firm Brown/Shipley. Brown/Shipley kept its name, but Harriman & Co. changed its name to Brown Brothers, Harriman. The new firm moved to 59 Wall St. while UBC stayed at 39 Broadway. Averell Harriman and Prescott Bush reestablished a holding company called The Harriman 15 Corporation. One of the companies Harriman had held stock in was the Consolidated Silesian Steel Company. Two thirds of the company was owned by Friedrich Flick. The rest was owned by Harriman.

In December 1931, Fritz Thyssen officially joined the Nazi party. When Thyssen joined the movement, the Nazi party was gaining critical mass around Germany. The charismatic speeches and persona of Hitler, the depression and the Thyssen's Bank voor Handel en Scheepvaart all contributed to Hitler's sudden rise in popularity with the German people.

In September 1932, Thyssen invited a group of elite German industrial tycoons to his castle to meet with Hitler. They spent hours questioning Hitler, who answered all their questions with the "utmost satisfaction," Thyssen remembered. The money poured in from the industrial circles mostly due to Hitler's "monarchistic attitude" towards labor and issues of class.

But by November, German voters grew weary of Hitler s antidemocratic tendencies and turned to the Communist party, which gained the most seats in the fall election. The Nazis lost a sweeping 35 seats in the Reichstag, but since the Nazis were already secretly negotiating a power sharing alliance with Hindenberg that would ultimately lead to Hitler declaring himself dictator, the outcry of German voters was politically insignificant.

By 1934, Hindenberg was dead and Hitler completely controlled Germany. In March, Hitler announced his plans for a vast new highway system. He wanted to connect the entire Reich with an unprecedented wide road design, especially around major ports. Hitler wanted to bring down unemployment but, more importantly, needed the new roads for speedy military maneuvers.

Hitler also wanted to seriously upgrade Germany's military machine. Hitler ordered a "rebirth of the German army" and contracted Thyssen and United Steel Works for the overhaul. Thyssen's steel empire was the cold steel heart of the new Nazi war machine that led the way to World War II, killing millions across Europe.

Thyssen's and Flick's profits soared into the hundreds of millions in 1934 and the Bank voor Handel en Scheepvaart and UBC in New York were overflowing with money. Prescott Bush became managing director of UBC and handled the day-to-day operations of the new German economic plan. Bush's shares in UBC peaked with Hitler's new German order. But while production rose, cronyism did as well.

On March 19, 1934, Prescott Bush handed Averell Harriman a copy of that day's New York Times. The Polish government was applying to take over Consolidated Silesian Steel Corporation and Upper Silesian Coal and Steel Company from "German and American interests" because of rampant "mismanagement, excessive borrowing, fictitious bookkeeping and gambling in securities." The Polish government required the owners of the company, which accounted for over 45% of Poland's steel production, to pay at least its full share of back taxes. Bush and Harriman would eventually hire attorney John Foster Dulles to help cover up any improprieties that might arise under investigative scrutiny.

Hitler's invasion of Poland in 1939 ended the debate about Consolidated Silesian Steel Corporation and Upper Silesian Coal and Steel Company. The Nazis knocked the Polish Government off Thyssen, Flick and Harriman's steel company and were planning to replace the paid workers. Originally Hitler promised Stalin they would share Poland and use Soviet prisoners as slaves in Polish factories. Hitler's promise never actually materialized and he eventually invaded Russia.

1940s: BUSINESS AS USUAL

CONSOLIDATED SILESIAN STEEL CORPORATION was located near the Polish town of Oswiecim, one of Poland's richest mineral regions. That was where Hitler set up the Auschwitz concentration camp. When the plan to work Soviet prisoners fell through, the Nazis transferred Jews, communists, gypsies and other minority populations to the camp. The prisoners of Auschwitz who were able

to work were shipped to 30 different companies. One of the companies was the vast Consolidated Silesian Steel Corporation.

"Nobody's made the connection before between Consolidated Silesian Steel Corporation, Auschwitz and Prescott Bush," John Loftus told Clamor.

"That was the reason why Auschwitz was built there. The coal deposits could be processed into either coal or additives for aviation gasoline."

Even though Thyssen and Flick's Consolidated Steel was in their possession, Hitler's invasions across Europe spooked them, bringing back memories of World War I. Thyssen and Flick sold Consolidated Steel to UBC. Under the complete control of Harriman and management of Bush, the company became Silesian American Corporation which became part of UBC and Harriman's portfolio of 15 corporations. Thyssen quickly moved to Switzerland and later France to hide from the terror about to be unleashed by the Nazi war machine he had helped build.

A portion of the slave labor force in Poland was "managed by Prescott Bush," according to a Dutch intelligence agent. In 1941, slave labor had become the lifeblood of the Nazi war machine. The resources of Poland's rich steel and coal field played an essential part in Hitler's invasion of Europe.

According to Higham, Hitler and the Fraternity of American businessmen "not only sought a continuing alliance of interests for the duration of World War II, but supported the idea of a negotiated peace with Germany that would bar any reorganization of Europe along liberal lines. It would leave as its residue a police state that would place the Fraternity in postwar possession of financial, industrial, and political autonomy."

Six days after Pearl Harbor and the US declaration of war at the end of 1941, President Franklin D. Roosevelt, Secretary of the Treasury Henry Morgenthau and US Attorney General Francis Biddle signed the Trading With the Enemy Act, which banned any business interests with US enemies of war. Prescott Bush continued with business as usual, aiding the Nazi invasion of Europe and supplying resources for weaponry that would eventually be turned on American solders in combat against Germany.

On October 20, 1942, the U.S. government had had enough of Prescott Bush and his Nazi business arrangements with Thyssen. Over the summer, The New York Tribune had exposed Bush and Thyssen, whom the Tribune dubbed "Hitlers Angel." When the US government saw UBC's books, they found out that Bush's bank and its shareholders "are held for the benefit of... members of the Thyssen family, [and] is property of nationals... of a designated enemy country." The list of seven UBC share holders was:

E. Roland Harriman...............3,991 shares
Cornelius Lievense ....4 shares
Harold D. Pennington ....1 shares
Ray Morris.............................1 shares

Prescott S. Bush..................... 1 shares
H. J. Kouwenhoven................ 1 shares
Johann G. Groeninger............ 1 shares

The UBC books also revealed the myriad of money and holding companies funneled from the Thyssens and the government realized UBC was just the tip of the iceberg. On November 17, 1942, The US government also took over the Silesian American Corporation, but did not prosecute Bush for the reasons Higham noted earlier. The companies were allowed to operate within the Government Alien Property custodian office with a catch — no aiding the Nazis. In 1943, while still owning his stock, Prescott Bush resigned from UBC and even helped raise money for dozens of war-related causes as chairman of the National War Fund.

After the war, the Dutch government began investigating the whereabouts of some jewelry of the Dutch royal family that was stolen by the Nazis. They started looking into books of the Bank voor Handel en Scheepvaart. When they discovered the transaction papers of the Silesian American Corporation, they began asking the bank manager H.J. Kowenhoven a lot of questions. Kouwenhoven was shocked at the discovery and soon traveled to New York to inform Prescott Bush. According to Dutch intelligence, Kouwenhoven met with Prescott soon after Christmas, 1947. Two weeks later, Kouwenhoven apparently died of a heart attack.

1950s: BUSH SELLS UBC STOCK

BY 1948, FRITZ THYSSEN'S LIFE WAS IN RUINS. After being jailed by the Nazis, he was jailed by the Allies and interrogated extensively, but not completely, by US investigators. Thyssen and Flick were ordered to pay reparations and served time in prison for their atrocious crimes against humanity.

On February 8, 1951, Fritz Thyssen died bitterly in Argentina at the age of 78. Thyssen was angry at the way he was treated by Europe after the war and how history would remember him as Hitler's most important and prominent financier.

When Thyssen died, the Alien Property Custodian released the assets of the Union Banking Corporation to Brown Brothers Harriman. The remaining stockholders cashed in their stocks and quietly liquidated the rest of UBC's blood money.

Prescott Bush received $1.5 million for his share in UBC. That money enabled Bush to help his son, George Herbert Walker Bush, to set up his first royalty firm, Overby Development Company, that same year. It was also helpful when Prescott Bush left the business world to enter the public arena in 1952 with a successful senatorial campaign in Connecticut. On October 8th, 1972, Prescott Bush died of cancer and his will was enacted soon after.

In 1980, when George H.W Bush was elected vice president, he placed his father s family inherence in a blind trust. The trust was managed by his old friend and quail hunting partner, William "Stamps" Farish III. Bush's choice of Farish to manage the family wealth is quite revealing in that it demonstrates that the former president might know exactly where some of his inheritance originated.

Farish's grandfather, William Farish Jr., on March 25th, 1942, pleaded "no contest" to conspiring with Nazi Germany while president of Standard Oil in New Jersey. He was described by Senator Harry Truman in public of approaching "treason" for profiting off the Nazi war machine. Standard Oil, invested millions in IG Farben, who opened a gasoline factory within Auschwitz in 1940. The billions "Stamps" inherited had more blood on it then Bush, so the paper trail of UBC stock would be safe during his 12 years in presidential politics.

It has been 60 years since one of the great money laundering scandals of the 20th century ended and only now are we beginning to see the true historical aspects of this important period of world history, a history that the remaining Holocaust survivors beg humanity to "never forget."

Loftus believes history will view Prescott Bush as harshly as Thyssen. "It is bad enough that the Bush family helped raise the money for Thyssen to give Hitler his start in the 1920s, but giving aid and comfort to the enemy in time of war is treason. The Bush bank helped the Thyssens make the Nazi steel that killed Allied solders. As bad as financing the Nazi war machine may seem, aiding and abetting the Holocaust was worse. Thyssen's coal mines used Jewish slaves as if they were disposable chemicals. There are six million skeletons in the Thyssen family closet, and a myriad of criminal and historical questions to be answered about the Bush family's complicity."

There is no question that the Bush family needs to donate at least $1.5 million to the proper holocaust reparation fund. Since Prescott Bush is dead, the only way to compensate is for the main inheritors of his estate to make amends with surviving slaves and the families of slaves who died in Bush and Thyssen's coal mines. If the Bush family refuses to contribute the money to compensate for Prescott Bush's involvement in the Holocaust, it is like denying the Holocaust itself and their role in one of the darkest moments in world history.

Toby Rogers is a contributing writer to High Times, New York Times, The New York Post and the Village Voice. In 1992, he won the Quill Award for Investigative reporting. In 2003, Toby Rogers was featured in Horns and Halos, a film about George W. Bush.

Special thanks to John Loftus, Emmy winning journalist, author and current president of the Florida Holocaust Museum.

This article and others on the same subject are posted at many sites on the Internet with no "official" or mainstream response. While we do not know if these articles are true or not, they should be explored with honest research and diligence. The only response I could find on this vexing question was/is at www.straightdope.com. Cecil Adams's defense of Prescott, is that everyone does it and that he "[will] buy the claim that Bush got his share of UBC back — it was an American bank, after all — but the idea that his German holdings increased in value despite being obliterated by Allied bombs is ridiculous." No refutation just amused contempt and story.

More on the use of these stories later.

REFLECTING ON THE YALE SUCCESSION

STEVE SEWALL

THIS OPINION PIECE APPEARED UNDER A DIFFERENT NAME IN THE YALE HERALD - FEBRUARY 21, 2003

IN 1949, Yale Daily News Editor William F. Buckley, Jr., DC '50, and my father, Yale English professor Richard B. Sewall, had a memorable exchange at Freshman Commons. They were there to help freshmen of the class of '53 make the most of their years at Yale. But they disagreed passionately about the purpose of education. Is it active (Buckley) or contemplative (Sewall)?

Buckley, the big man on campus, urged the freshmen to join, heel, compete and succeed. Yale, he said, is your chance to build the networks that will sustain you throughout life. Sewall, a teacher and scholar, urged the freshmen to read, write, discuss and understand. Yale, he said, is your chance to reflect on life itself. Years later, '53 alumnus Jim Thomson summed up the student response: "We all knew Sewall was right, but we wanted to be like Buckley."

Since 1988, three Yale graduates have led the United States. This Yale succession is historic. Never before have three (or even two) successive U.S. presidents studied at the same university. During its tercentenary year, mother Yale codified this lineage by gathering its presidential progeny, separately, back to Yale. At graduation, President George W. Bush, DC '68, jokingly likened himself to the Prodigal Son.

Today, Yale uses its presidential lineage as a beacon to attract students, raise money and extend its global presence. But no one studies it. By falling silent on something historic happening in its own backyard, Yale's community of scholars risks losing its perspective on history. Equally at risk is America's political press, given its stunning silence on one university's four-term (and counting) lock on the White House.

So what's being overlooked? Under scrutiny, the Yale succession is a key to recent history and a gateway to leadership issues of concern to Yale as a "laboratory for future leaders," in President Richard Levin's phrase.

All three Yale presidents owe their White House tenures to the Big Money that has tightened its grip on local, state, and national government since the advent of televised attack ads in the 1960s. In addition, Big Money's grip on education and media has helped the Yale presidents advance America's post-Cold War bid for military and economic empire without ever consulting or informing voters. Finally, it was on the Yale presidents' watch that Big Money corrupted and inflated corporate and political America until the bubble burst, plunging the world into a recession that economists say could last for years.

No economy, national or global, can stand forever on a corrupt political base. Healthy societies, like healthy families, require trust. The seismic convergence of ethics and economics that toppled Japanese and American markets in 1991 and 2000, respectively, now rattles the entire world. Corruption and terror, widely seen as two unethical sides of the same coin of oil and empire, depress financial markets around the globe.

In America, the Dow Jones average reflects a general loss of faith in institutions fueled by Machiavellian venality in politics and by Enronitis in business. The restoration of integrity — a sea change in America's civic and commercial life — is the task of a generation. It entails creating a new "balance of public and private interests in the global economy," writes Jeffrey Garten of Yale's School of Management. If not apparent now, the need for change will become clear as investor mistrust causes market rally after market rally to fizzle.

Does the United States, in its commitment to freedom and democratic values, have the will to effect change? And does Yale, as a laboratory for future leaders, have the will to lead the way in imagining and implementing change? The unwillingness of Japan's elite universities to produce a generation of tough-minded reformers helps explain why that former economic superpower, now in its thirteenth year of recession, could be stagnate for years to come. Will America be next?

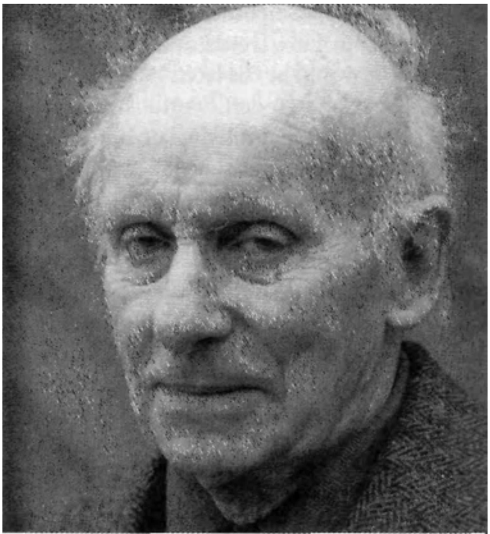
Significantly, the Ivy League aura that shields the Yale succession from scrutiny is fading. In Secrets of the Tomb, a recent history of Skull and Bones, Yale grad Alexandra Robbins, SY '98, shows how four generations of Bonesmen created the Bush dynasty that comprises two thirds of Yale's presidential troika. Looking ahead to 2004, Robbins describes a possible Bush/Kerry contest as "the first Bones versus Bones presidential race."

In this pairing, Yale comes off more as a club for oligarchs than as a laboratory for leaders. Three more Yale-trained presidential hopefuls bolster this impression: Vermont Governor Howard Dean, PC '71, and Senators Joe Lieberman, MC '64, LAW '67, and Hillary Clinton, LAW '67.

In 1949, Yale, in its wisdom, sent Bonesman Buckley and "barbarian" Sewall to Freshman Commons to encourage the class of '53 to pursue success and understanding. Today, Yale's silence on the Yale succession suggests that Yale, to its peril, may be pursuing success alone. The cure for non-reflection is thoughtful dialogue. The stakes are high. Let the dialogue begin.

ADDENDUM; THE GLASS-TOP TABLE CONVERSATION

AS YOU KNOW BY NOW, my father, Richard B. Sewall, taught English at Yale for forty years. In the 1960s, he was the first Master of Ezra Stiles College. He retired in 1976. In June of last year, ten months before his death last April at age 95, he flew from Boston to Chicago to spend three months with me.



Richard B. Sewall Professor, Dean and Master at Yale University
Picture taken early 1980s – courtesy the Sewall Family

In his last years he suffered from dementia, a close cousin to full-blown Alzheimer's. He stopped writing letters and reading newspapers. Although he could take phone calls, he no longer made them. Most of the time, he seemed to be withdrawing from the world.

One evening in 1999, while he was still at his beloved country home in Bethany, outside of New Haven, I had phoned him and found him utterly disoriented. "Steve," he pleaded, "I don't know where I am. What are all these books doing on the walls?"

He was referring to the bookshelves of the cozy study with the little wood burning fireplace where for twenty years he had worked on his National Book Award-winning biography of Emily Dickenson. He was speaking from the house where he and my mother had enjoyed forty years of idyllic rural life, and where, since her death from pancreatic cancer in 1975, he had been bound and determined to end his days, like the New Englander he was, even at the cost of being apart from his three sons.

In his last years, he pursued a number of quests. One related to Yale. Sometimes after an afternoon nap he would appear in a jacket and tie. Glancing at his watch, he would say he had to be downtown at Yale in an hour to give a lecture. "What about, Dad?' I once asked. "I don't know," he said, with a hint of annoyance in his voice, "Whatever they want me to lecture about."

Another quest was to reunite with his family of birth. Just before we moved him to safety with my brother Rick's family near Boston, he would tell us he was waiting to be picked up and driven back to his childhood home in Rye, New York. His home in Bethany, with its splendid prospect of the New Haven reservoir and West Rock in the far distance, was now a mere way station in his search for a destination that always eluded him.

One of the joys of living with very old people is the knowledge that not all of their quests are imaginary One of my father's real-life quests was visible in the luminous look of recognition he gave me when we met at O'Hare airport last June. He had reached a destination.

And here he was now, in high spirits, sitting opposite me at the sunlit, glass-top breakfast table at my home in Glenview, sipping from a bowl of chicken noodle soup and munching on a tuna fish sandwich. It was amazing to see him. He had made the flight by himself, without a hitch. And now he was bent over, utterly engrossed in the

act of eating. Later that summer, I asked him what keeps him going. "Well," he said, "I get to eat three good meals a day. And I like being around you guys."

We hadn't seen each other in months. And I yearned to talk with him about the book I wanted to write. How would our conversation go? Where would it take us? I had no idea. Yet I knew it would be the latest installment in a running dialogue about Yale, education and, in effect, the modern world that began in 1965 while he was at Ezra Stiles, and where I lived while completing a Masters degree in teaching at Yale.

That was an eventful year for me. I studied Romantic poetry with Harold Bloom, sang with the Original Golden Stars, a New Haven gospel quartet, watched Vietnam War hearings conducted by Senator William Fulbright and his Senate Foreign Relations Committee on the color TV at the Yale Law School dining hall, I also met Allard K. Lowenstein, the Yale-trained lawyer, civil rights activist and future Congressman who then was building the student-based antiwar movement that in 1968 would unseat a sitting president, Lyndon Baines Johnson.

Al Lowenstein was the only visitor who was welcome to Stiles at any hour, day or night. He could wake my parents at midnight and within minutes be munching on a sandwich of his own, enthralling us with tales of political intrigue at the highest levels.

The highlight of '65-'66 for me, however, was the English class I taught at Troup Junior High School in New Haven to 30 ninth grade boys diagnosed as slow learners. Most of these youngsters were nothing of the sort. They were students in a failed school system and residents of a failing city. By 1990, the City of New Haven, decimated by gangs and drugs, would have the highest per-capita murder rate of any city in America.

On my last day at Troup in 1966, school Principal Frank J. Carr asked me what I would change at Troup if could change just one thing. I said the school needed textbooks that were less than six years old. In response, he told me that while the New Haven Board of Education would spend $400,000 that summer on renovations for the Troup dining room, it would spend only $50,000 that year for textbooks for the entire system, grades 1 through 12.

In those days, fat cat general contractors ran the New Haven Board of Education. It was Big Money at the local level. I wonder who controls that Board today.

My year at Troup opened my eyes to the world. My students had problems, but my students were not the problem. To see if they could write, I assigned on the first day of class a one-page answer to the question, "What happened in English class today?" The paper Joe McVety (not his real name) handed me next day began, "At 9:27, Mr. Sewall walked into room 314 wearing his threadbare jacket." This kid could write. Another student, David Johns, was brighter than most people I met at Harvard, Yale and U. C. Berkeley.

It was not IQ problems but bad schooling and personal problems that held these students back. Take Dexter Matthews, a young man with a bladder problem but no written permission to leave class. Normally well behaved, Dexter would stand up and glare at me whenever I refused his urgent requests to go to the bathroom.

Well into the school year I asked students to write a story in which they tell me an enormous lie, wild and crazy, In his paper, Joe McVety championed Dexter's cause with a terrific yarn about how, after a global search, detective Dexter had finally tracked the evil Mr. Sewall down to the men's room of the Seaview Hotel in Paris, France, and, with a tremendous punch, knocked him clear through the skylight window.

The class howled with delight when I read Joe's paper aloud. But it still hadn't dawned on me that maybe Dexter did need to go to the John.

One day near the end of the school year, Dexter, in desperation, pulled a knife on me. Standing wide-eyed at his desk, he looked far more scared than I. The class froze. I told him scornfully to put away the knife, go take a leak, and be back in class in two minutes. He did. Finally I saw that Dexter wasn't trying to con me. But I can't say I taught him anything in English that year.

Then there was Anthony Tomasino, whose mom had a fresh-baked chocolate cake waiting for me when I visited her home to find out why her son was acting up in class. When I saw the front door had six locks on it, Mrs. Tomasino said that the sixth one was there because Anthony, a sleepwalker who still slept in his mom's bed, had learned to unlock the first five in his sleep.

At supper throughout the year, I regaled my parents with stories like these. But I learned less about teaching than I should have. My supervising teacher spent a total of 10 minutes with me during entire school year. Yale had never told me to expect any help from her, so I didn't. Still, after class most days, I wandered the school, taught as a substitute, or visited classes overseen by battle-scarred souls who had stopped teaching years ago, or never started. I got to know the school.

Although my father never visited my students at Troup, the late Paul Weiss did. Paul was a family friend, a Fellow at Stiles and a legend in the Yale philosophy department. He was also one of Yale's great teachers. What a day that was. Informed that a Yale professor was coming to class, my students expected John Wayne. But when Paul Weiss entered the room — the gnarliest, most eccentric looking guy you ever saw in your life — they thought they had got Mr. McGoo.

What they had was an incarnation of Socrates. Paul confronted them with Archimedes' paradox of the race between the hare and the tortoise. The discussion was pretty good. It came down to a contest between Paul and the super-sharp David Johns, who loved to argue, but who had a chip on his shoulder that kept him and Paul from coming to terms.

My most memorable moment at Troup, it turns out, was with my least memorable student. Nothing seemed to stand out about Kenny Brown. But here he was one day, in the passenger seat of my '65 green WV, getting a ride to the Dixwell Avenue bus after spending 45 minutes with me in after school detention. Kenny and I were on bad terms that day and neither of us felt like talking. Finally I broke the silence and asked him what he wanted to do when he got out of high school.

"I just want to get a job," he said in voice I had never heard before. It was low and guttural, like a man's. Dead serious. And yet despairing. What he yearned for in life, at age 15, was a job. What did I yearn for when I was 15? Stamps, girls and soccer. We talked. From then on, I respected Kenny Brown.

At supper that night at the long rustic wooden dining table at Ezra Stiles, I told my parents that schools like Troup had broken the Jeffersonian promise of universal public education. My dad agreed. In the years to come, we came to feel that this promise — this fundamental right and indispensable cornerstone of democracy—survived at the national level mainly, and merely, in the "equal opportunity" and "no child left behind" platitudes of public figures who knew full well that American schools were sending millions of youngsters into the world utterly unprepared to survive in it.

Troup Junior High School brought out the Jonathan Kozoll in both of us. The gap between what Yale offered students and what the City of New Haven offered students was not only wrong, it was all but criminal. And we knew that this gap, if not corrected, would ultimately prove fatal to democracy itself.

Several years after granting me the M.A.T degree in 1966, Yale summarily terminated its rickety M.A.T. program and replaced it with one that has made improvements in the New Haven schools, and, by example, in schools nationwide.

As the response of a torch-bearing university to the developing crisis in American education, however, my father and I felt this program was a drop in the bucket. The need, as we saw it, was for a Yale School of Education that would rival in size, quality and influence Yale's schools of law, management and medicine. Let this school train superb teachers and principals, much as Yale trains superb lawyers, businessmen and doctors.

Why is it, we asked ourselves, that great universities like Yale, in the quest to explore and to master every aspect of nature and every corner of the world, were so slow to see the obvious: the critical role of universal public education in sustaining a viable democracy?

To this paradox, we took bittersweet comfort in T S. Eliot's celebrated account of the belatedness of all self-knowledge:

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

At the glass-top table with my father last June, the knowledge that Eliot speaks of, and the day that my father and I had hoped for, seemed farther off than ever. The world had entered the era of Enronitis and the War on Terror.

My father had finished his meal. We had discussed family matters. I fell silent, wondering how I would resume the dialogue that had guided me over the past 35 years. His eyes, sunken and watery, were fixed on me. Age be damned, I told myself, we're gonna talk, full throttle, just like we always have.

At first I didn't let on that I wanted to write a book. I didn't have the nerve. Instead, I gave him the big picture, a sound-bite history of the 1990s, as if he had just gotten back from the planet Mars. I told him about the end of the cold war, the rise of the global economy, the boom in tech stocks, the bursting of the tech bubble, and the War on Terror triggered by 9/11.

He took it all in. For well over an hour, his eyes would neither wander or nor waiver.

I told him about the three Big Money "leadership issues" noted in the Yale Herald piece: campaign finance, America's post-Cold War drive toward global empire, and the endemic corruptions exposed by the bursting of the tech bubble. And I mentioned a fourth issue: the CIA's role in advancing the global drug trade that had corroded the American system of justice and decimated nearly every city in the nation, including New Haven and Chicago, the two cities I knew best.

I showed him my copy of the essential book on this topic, The Politics of Heroin: CIA Complicity in the Global Drug Trade, by Alfred W McCoy, a Yale Ph.D. who teaches at the University of Wisconsin.

Then I brought it all home with a unifying insight. After several months of research, the idea of a Yale succession of U.S. presidents — Bush/Clinton/Bush and their possible Yale-trained successors — had suddenly dawned on me. Omens of Ivy League oligarchy!

To personalize this point, I placed on the glass-top table copy of the American Heritage Dictionary that he had handed me in 1975. "Read the entry for perquisite," he had said then, with undisguised pride. I asked him to look at it now. I read the entry to him, including the example of usage that follows the definition: "Politics was the perquisite of the upper classes. (Richard B. Sewall)"

He beamed and grasped my hand warmly. A former student of his, later a harmless drudge of a lexicographer at Random House, had recalled it from class, honored him with the attribution, and sent him the dictionary.

Pondering the "end of all our-exploring" belatedness of my discovery of the Yale succession, it struck me that Yale's string of White House occupants was itself hidden in plain view, celebrated and promoted by Yale, yet screened from critical analysis by 300 years of Ivy League venerability.

What was screened from analysis ran deeper still. Now I had to talk with my father about the covert Yale.

It will not surprise you to hear that two highly secretive, Yale-related institutions, CIA and Skull and Bones, are the wellsprings of this concept. The origins of Skull and Bones, however, just might. I told my father how William Huntington Russell, valedictorian of the Yale class of 1832, and recently returned from a transformative experience at a university-based secret society in Germany, had founded Skull and Bones with drug money provided by his uncle, Samuel Russell, an entrepreneur whose fleet of speedy Yankee Clippers had made him a fortune by transporting opium from Turkey, India and Burma to Canton and Shanghai in the so-called China Trade of the 19th century.

As his past students never cease telling me, Richard Sewall was among the most patient of men. For this reason, the rare moments of anger I saw in him as a child have stayed with me. One such, a recurrent one, had to do with Skull and Bones. At tea with Yale people in our living room, the mere mention of Bones would prompt him to declare it a "curse on the academic life of the university."

Having thrown down this gauntlet, he would fall silent, giving others the option of pursuing or dropping it. Sometimes someone would pursue it. That is how I first heard about the huge archive of old term papers, covering much of Yale's undergraduate course offering, that Bonesmen could touch up and resubmit as their own work. It was institutionalized plagiarism, he felt, and he was furious at Yale's inability to stop it.

In recent months, in overheated yet by no means unsubstantial online histories of Skull & Bones written by "outlaw historians" like Antony Sutton, Kris Millegan, Webster Tarpley and Anton Chaitkin, I had found weightier reasons to be concerned with Bones. Before sharing a few with my father, I wanted first to see if he could recall his old attacks on Bones. So I asked him.

"Sure I do," he replied, "but more than that, those guys were trying to run the whole damned university!"

This, to put it mildly, was news to me. Later I would read that Yale presidents have been Bonesmen or related to Bonesmen for 84 of the last 105 years up the time of his retirement in 1976 (See Appendix I)

How, I asked, was Bones trying to run the university? His response, while an answer to a different question, was passionate in its conviction.

"Skull and Bones will never succeed in running the university," he said. "Yale is too big and too diverse a place to be controlled by any one group." Suddenly, he was back

in the 1950s, fighting some old battle that I had never heard about and never would. Sensing my interest, he cautioned me: "Watch out. You can never prove anything against those guys. They cover up everything they do."

For a moment, I had a queasy feeling of tilting at windmills. But anticipating that my father, even at age 95, would want documentation, I had at hand materials photocopied from the U. S. Government Documents Office at Northwestern University. These made reference to several Bonesmen, one of whom was the first of three generations of Bush family members who were Bonesmen.

I showed him four U.S. Treasury Department vesting orders issued in late 1941, after Pearl Harbor, and ordering the confiscation, under the terms of the Trading with the Enemy Act, of the assets of four corporations set up and run by Averell Harriman '13 and his chief lieutenant, Prescott Bush '17, grandfather of the current president, whom, as a child in 1950s, I remembered as a respected Republican senator from my home state of Connecticut. [See Appendix II, to be put online].

Identified by name on one of these orders were Prescott Bush, and another Bonesman, Roland Harriman '17, Averell's younger brother. Since the early 1920's, the four Harriman firms had raised millions from American investors not to build up Adolph Hitler's transportation or agriculture infrastructures, but to build up Hitler's military machine.

"Dad," I said, "If you spend a couple days on the Internet, you may get the feeling that the United States is run by a group of Ivy League arms merchants!" In the past, an incendiary assertion like this — and had I made one or two over the years — would have triggered a soothing, quietistic "yes, but" response. But not now.

I paused. We looked at each other. He seemed sad. "Dad, are you sure you want me to go on with all this?" I asked him, laughing as I spoke, "This ain't fun, and, believe me, it only gets worse!" He smiled affectionately and nodded yes. This was one of our moments. We were on a quest.

I showed him Houston Chronicle accounts from the early 1990's describing long-standing business dealings between the Bush and bin Laden families. These, I said, began in the late 1970's when Sheik Mohammed bin Laden, the family patriarch and Osama's father, had, through a friend of the Bush family named James R. Bath, invested $50,000 in Arbusto, the oil exploration company founded by George W. Bush with his father's help.

I added that on September 11, 2001, Shafiq bin Laden, an estranged half-brother of Osama, had represented his family's investments at meeting of the Carlyle Group in Washington, D.C. Carlyle is a $16 billion private equity firm that buys up and turns around ailing firms, especially defense contractors. George H. W. Bush serves as a Senior Consultant there. And as Dan Briody establishes in his recent book on the firm, that Fred Malek put George W. Bush on the Caterair Board from 1990-94 while Caterair was owned by Carlyle.

It was important to understand, however, that questionable dealings of American industrialists and politicians were by no means limited to the Bush family or even to the Republicans. Averell Harriman, I told my father, was a career Democrat. I passed on the observation by one of the outlaw historians that Skull & Bones likes to have a voice on both sides of the political debate.

As it happens, Harriman's third wife, the glorious and glamorous Britisher, Pamela Harriman, had, after his death, presided over the neo-liberal refashioning of the Democratic Party in the 1980s to the point of advancing the young Bill Clinton to prominence as, of all things, the party's chief fundraiser.

No arms dealings here, but plenty of Big Money. Clinton was tied to a two-party system — and to a mass media and legal system as well — that had kept knowledge of American business dealings with Hitler and Stalin out of the political mainstream. Only Big Money, it seemed, could account for this act of suppression.

And Big Money had lots to hide. I told my father about two well-received recent books documenting the Nazi business dealings of Henry Ford and James Watson of IBM. In addition, General Motors, the du Ponts and the Rockefellers had all done business with Hitler. Finally, I mentioned Antony Sutton's controversial three-volume study of the buildup of Stalin's military machine, even during the Cold War years, by American businesses assisted by the U. S. Department of Commerce. Sutton was a Fellow at Stanford University's Hoover Institute. His book, as Harvard historian Richard Pipes indicated in endorsing Sutton's findings, would mark the end of Sutton's career as a mainstream academic.

Recently I had discussed these dubious dealings with my co-author Bob Back, a financial analyst with a CIA background who, as it happens, had worked during the 1970s at Brown Brothers, Harriman. "How in hell," I asked Bob in a moment of anger, "could American industrialists arm the two dictators who had turned the world into a living hell during much of the last half of the 20th century?"

In response, as I told my father, Bob, himself a Bush Republican who sees a need for uninhibited dialogue on these matters, had said, "Big money likes to play both sides of the game."

To wrap things up, I read my father an excerpt from Joseph Trento's magisterial Secret History of the CIA. This extraordinary book is a history of American intelligence since World War II and, in many respects, of American foreign and domestic affairs as well. James Jesus Angleton '41, Yale's second most famous spy (the first being Nathan Hale), is a central figure in this book. Appointed by CIA founder Allen Dulles (a Princeton alum), Angleton was the founding Director of CIA Counterintelligence. His job was to protect the CIA from penetration by Soviet spies.

At Yale, Angleton had majored in English. My father recalled his name and said he had taught him. Angleton was a true aesthete. He created and edited a poetry magazine that he hand-delivered to subscribers at all hours of the night. On a visit to Harvard, he heard a lecture by the English critic William Empson and took it upon himself to bring Empson to lecture at Yale. Not bad for an undergraduate, we agreed.

In 1974, CIA Director William Colby dismissed Angleton for his failed attempt to expose a Soviet mole who, Angleton was convinced, had totally penetrated the CIA. Angleton's obsessive witch hunt had destroyed the careers of dozens of wrongly accused agents and demoralized the entire agency.

But time confirmed his worst fears. As Trento and David Wise before him have shown, CIA counterintelligence and FBI counterintelligence as well were indeed totally compromised by Soviet agent Igor Orlov, a "man with the soul of a sociopath" yet supremely disciplined and loyal to Stalin. Angleton missed nabbing Orlov by a hairsbreadth. Under scrutiny for years — CIA and FBI agents openly visited Gallery Orlov, the quaint art and picture-framing store that Igor and his wife Eleanore managed in Alexandria, Virginia — Orlov managed to pass two polygraph tests and got away clean.

Angleton, "written off as a crank and a madman by his critics," and dying of cancer, granted Trento an interview two years before his death in 1987. I read my father the following excerpt:

> Within the confines of [Angleton's] remarkable life were most of America's secrets. "You know how I got to be in charge of counterintelligence? I agreed not to polygraph or require detailed background checks on Allen Dulles and 60 of his closest friends ... They were afraid that their own business dealings with Hitler's pals would come out. They were too arrogant to believe that the Russians would discover it all. ... You know, the CIA got tens of thousands of brave people killed. ... We played with lives as if we owned them. We gave false hope. We — I — so misjudged what happened."
>
> I asked the dying man how it all went so wrong.
>
> With no emotion in his voice, but with his hand trembling, Angleton replied: "Fundamentally, the founding fathers of U.S. intelligence were liars. The better you lied and the more you betrayed, the more likely you would be promoted. These people attracted and promoted each other. Outside of their duplicity, the only thing they had in common was a desire for absolute power. I did things that, in looking back on my life, I regret. But I was part of it and I loved being in it... Allen Dulles, Richard Helms, Carmel Office, and Frank Wisner were the grand masters. If you were in a room with them you were in a room full of people that you had to believe would deservedly end up in hell." Angleton slowly sipped his tea and then said, "I guess I will see them there soon."

I read the last paragraph aloud twice. Then I paused. He was still with me. Shifting gears, I asked; "Who can tell for sure whether Dulles and his pals were liars? But Angleton sure doesn't sound like a madman."

I then tried to restore balance by suggesting that the world is a dangerous place, pure and simple. To read academics, journalists and public servants like George Kennan, Arnaud de Borchgrave, William Kristol, Robert Kagan, John Lewis Gaddis or Christopher Hitchens, I said, is to see that people like Allen Dulles and Averell Harriman, and the Yale succession presidents as well, have reason to believe they are addressing dangers that most Americans are too busy or afraid or uninformed to face up to.

The problem is, I told him, that the nation lacks a mechanism — public forums — for distinguishing between dangers real and unreal. Since the advent of network television, I said, civic discourse in America has degenerated to partisan strife. It's always been this way, the historians tell us, and this backward-looking argument has great force.

Yet America needs to look forward. It has the finest communications technologies ever devised. It should have a public communications system — a civic media — that brings out the best in citizens, not the worst. A problem-solving media, operating year round and prime time at local, state and national levels, that makes citizens and government responsive and accountable to each other.

With this, I had spoken my piece. The sunlight was gone from the dining area. Yet my father's watery eyes were still on me. He knew all about civic media, a concern of mine over the past 25 years. After a moment, sensing that I was waiting for him to speak, he lowered his eyes.

He had to be tired, I thought, and indeed, at that moment, he looked to be the oldest man I'd seen outside of a wheelchair or a hospital bed. A little puddle of drool flowing from his open mouth had formed on the glass top table beneath his chin. But the slight forward lean in his posture told me that his mind was working.

"So" he said, "What do you want to do with all this?"

"I want to write a book," I said. "An election year book. One that gives Yale, and the nation as well, a chance to reflect. And to act appropriately. But I need a good title. What do you think should I call it?"

Another moment passed. He leaned forward. "How about Yale and the Modern World?" he asked. It was simple. Yet Olympian in its detachment. I suddenly felt as if, it was I who was returning from Mars - and he who had been here all along.

Our dialogue continued throughout that very hot summer. Wearing big old straw hats we took our twice daily walks, measured now not in miles covered, as in days gone by, but in houses passed. We dined alfresco at a Mexican restaurant on Waukegan Road overlooking a parking lot. A little fountain there sent water six feet into the air and brought out the best in children.

At twilight on June 20, my 62nd birthday, four generations of Sewalls - my father and I, my nephew Ethan ('00), and my four year old son, Joseph Richard Sewall — took to a big open field near our house and threw Frisbees.

During that summer I gave my father baths and backrubs. I played him "Open My Eyes That I May See", a favorite hymn. This, and songs by Paul Robeson — "Jacob's Ladder" and "Old Man River" — moved him to tears. And at several memorable gatherings, some of his former Yale students found that Richard Sewall himself could still perform, still make a telling point, even to point of moving others to tears.

[to be continued] — www.yalesuccession.com

Appendix 1

President	Term	Years	Ties with Bones?
Richard Levin	1992-2003	11	No known ties
Benno Schmidt	1986-1992	6	No known ties
Bart Giamatti	1978-1986	8	Scroll & Key
Kingman Brewster	1963-1978	15	2 relatives in Skull & Bones
A. Whitney Griswold	1950-1978	18	2 relatives in Skull & Bones
Charles Seymour	1937-1950	16	Member, Skull & Bones
James R. Angell	1921-1937	16	No known ties. From Univ. of Chicago
Arthur T. Hadley	1899-1921	22	Member, Skull & Bones '76
Timothy Dwight	1886-1899	13	Skull & Bones '49
Noah Porter	1871-1886	16	(The last of Yale's clerical presidents)

Table based on Antony Sutton, America's Secret Establishment, pp. 68-69

Author's Note - Kris Millegan surprised me when he said he wanted to publish this long, rambling piece, originally written as background material for a class at Yale. The piece's concern with education and civic media does not relate directly to Kris' concern with Skull & Bones. And while the piece may

tie some threads together for readers, it advances little that is new. Instead, it tries to introduce Yale people to aspects of Yale that are seldom discussed in print, yet which have national impact. Kris wanted to publish the piece verbatim. This impressed me. An "outlaw historian," as I call him in the piece, was interested in the entirety of something written for academics. All my adult life I have tried to keep one foot in the learning camp of academics and the other in that of non-academics. So has my colleague Bob Back. That's how we learn, how we get closer to "the nuance," as Bob likes to call it.

I hope Kris' book takes us all a step closer to the day when, if we're able and lucky enough to reach it, outlaw and academic historians alike, and people on the left and right as well, will be astonished to discover how much there is to be learned when we learn from each other.

Steve Sewall, Harvard A.B. '64, Yale M.A.T '66, U. C. Berkeley Ph.D. '91, is a Chicago area educator and media activist. With Robert W. Back, Trinity College B.A. '58 and Yale GRD '60, he is writing, Yale and the Modern World: Bush/CIinton/Bush, Big Money and the 2004 Presidential Election.

The very word "secrecy" is repugnant in a free and open society; and we are as a people inherently and historically opposed to secret societies, to secret oaths and to secret proceedings. We decided long ago that the dangers of excessive and unwarranted concealment of pertinent facts far outweighed the dangers, which are cited to justify it.

President John F. Kennedy
Address to newspaper publishers, April 27, 1961.

SECRECY AND OUR CONSTITUTION: WHOM DO THEY SERVE?

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SECRECY IS AS AMERICAN AS APPLE PIE. Americans, often characterized as optimistic, naive, and idealistic, might be momentarily put off by-such an assertion, but a bit of thought and observation will confirm the ubiquity of secrecy in American public and private life.

The federal government's love affair with secrecy is well known and generally acknowledged in the fields of national security and police work. In the specialized fields of taxation, commerce, social programs, education, transportation, medicine, and perhaps all government activity, local, state, and national, secrecy exists officially and unofficially.

The law requires certain information — personnel records, personal information about citizens, plans for land purchases (lest speculators be advantaged and public costs increased), grand jury records, etc., be held tightly secret.

Government imposes secrecy on citizens as it does on its bureaucrats. The law requires some settlements in legal disputes be held confidential, and it prohibits some information about minors being made public. Libel and slander laws prohibit some known facts about persons being published or pronounced; thus, the law requires secrecy.

Corporate officers may not give out financial information to advantage some market players over other market players. Corporations, in keeping with the requirements of capitalist competition, have government- protected secrecy over rheir internal financial, marketing, and technological matters. Lawyer-client relations and doctor-patient relations are protected. In ordinary personal relations, everyone knows secrets, keeps some, and passes some on, at least occasionally.

Surely, most people keep financial and sexual matters secret.

The Constitution enshrines secrecy. Article I, Sec. 5, requires the Congress to publish its proceedings, that is, tell its secrets, except that by a majority vote in either house, it may keep some secrets. But by a twenty percent vote, a minority may cause any secret to be printed in the Congressional Record. Article VI requires that no religious test shall ever be required as a qualification to any office or public trust under the United States; that is, religious identity remains a secret for all in government, unless they should desire otherwise.

The government's desire for secrecy — a universal phenomena, according to German sociologist, Max Weber: "Every bureaucracy seeks to increase the superiority of the professionally informed by keeping their knowledge and intentions secret," has been in constant conflict with the First Amendment. President Nixon's request for an injunction against the New York Times for intending to publish the Pentagon Papers was struck down by the Supreme Court, even though, according to Nixon, national security and the Vietnam War effort were in danger from the publication. The Court, citing the First Amendment, has quite consistently held that government entities may not suppress speech or publishing, even in severe circumstances, unless there is a strong "clear and present danger that they will bring about the substantive evils that Congress has a right to prevent" (Schenck v. United States, 1919).

The Fourth Amendment is specifically aimed at protecting the rights of citizens to have and keep secrets from the government. "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated …" But the Court has had much difficulty in regulating the details; the requirements of effective police work run counter to an absolute requirement that a warrant be procured for a search. The police may need to search a person, on the person's apprehension, to protect the officer's safety and to prevent any relevant evidence being destroyed, for instance. What to do about phone taps of known criminals? Their acquaintances? How extensive may be a search for evidence of a person's car, home, or business at the moment of his arrest? If, in the search for evidence of a crime, evidence of another crime is found, but the warrant was issued for only the first crime, what evidence may be presented to a jury? How broad the rights to citizens' secrecy under the Fourth Amendment is the result of many Supreme Court cases, and changes often.

The Fifth Amendment's prohibition against a person charged with a criminal offense being forced to be a witness against his or her own self is based on the notion that there needs be a balance of respect between the citizen (or person) and the government; the government, at least in a democracy, must accord dignity and integrity to its subjects. Obviously, that would not be evident if the government were able to torture or intimidate a confession out of a person. Criminal law enforcement is more reliable and stronger when based on independently acquired evidence. Furthermore, as Justice Brandeis stated in Olmstead v. United States (1928), in a dissenting opinion,

> Decency, security and liberty alike demand that government officials shall be subjected to the same rules of conduct that are commands to the citizens. In a government of laws, existence of the government will be imperiled if it fails to observe the law scrupulously. Our Government is the potent, the omnipresent teacher. For good or for ill, it teaches the whole people by its example.
>
> Crime is contagious. If the Government becomes a lawbreaker, it breeds contempt for law; it invites every man to become a law unto himself; it invites anarchy. To declare that in the administration of the criminal law the end justifies the means ... would bring terrible retribution. Against that pernicious doctrine this Court should resolutely set its face.

Thus, Miranda rights. But, on the other side, and in order to facilitate "good faith" conduct by officers, a citizen may not keep secret his identity when apprehended by an officer, according to the Supreme Court.

Amendment VI requires that the accused shall "have compulsory process for obtaining witnesses in his favor." In other words, a person may not keep secret exculpatory evidence, if ordered by a court to provide it in a criminal case. The fact that a witness is required to take an oath to tell the truth, sanctioned by the criminal offense of contempt of court, means that witnesses for one side in a trial may be forced, by cross-examination, to divulge evidence that favors the other side.

A detailed list of secret activities and secrecy impositions — by and on government and by and on citizens could fill this and several other books! So if secrecy is as American as apple pie, and as common as apple pie, it must have a function. It does; it functions as an integral aspect of all politics, or, at least, the politics practiced by less than perfect persons in less than perfect societies, i.e., all societies. (One might hypothesize a Utopian situation in which all relationships were transparent and overt, thus needing no secrecy). But in the real world of human relations, politics requires — and would be impossible without secrecy. These assertions won't stand without explanation, nor would they be relevant to the subject of secrecy without an explanation based upon an uncommon definition of politics.

POLITICS, IN THEORY

PROFESSIONAL POLITICAL SCIENTISTS have had a bit of a problem with their central term. In the attempt to present themselves as scientists, they have, historically (if not hysterically) sought a definition of politics that would be acceptable and understandable to all. It would surely be a great achievement on the road to scientific acceptance if such a definition could be formulated. One must give the discipline credit for effort, if not for achievement; thousands of definitions exist. As it is, in recognition of the absence of a commonly accepted definition of politics, the discipline has agreed to disagree; every political scientist is free to create his own, on the convenient assumption that any agreed upon definition would inhibit free enquiry and cause a straitjacket mentality.

Recall President Bill Clinton's comment in his defense to the charge of inappropriate behavior in the Oval Office: "It all depends on what the meaning of is is." Ever the consummate politician, he was exactly right in noting that the definition is the crux of all matters. Likewise, for politics, which is not what you learned in PS 101 — constitutions, legislatures, elections, etc., all of which are but the idiosyncratic formal, organizational, and somewhat regularized, but ephemeral, expression of politics in the hundred plus nations of the world. While such knowledge is necessary and useful for partial understanding of formal governmental and political structures and machinations, one doesn't build a science on such ephemera; it would be like trying to develop a theory of botany by studying only the roses of the world, but only those roses found organized in formal gardens, or to develop a theory of biology by studying only aardvarks.

A scientifically adequate definition of politics would require that it be presented in terms of behavior known and practiced by all humans. As it is, most people know and care more about licorice than legislation, like elephants more than elections, and worry about constipation more than constitutions. The existing multitude of definitions of politics is the product of academicians and practitioners fascinated by those who hold the reins of public power. Their definitions might be useful and partially valid within the confines of that notable sphere of activity, but one should not confuse, say, a definition of water, adequate to discuss flood control, with a scientific definition of water at the level of its constituent elements of hydrogen and oxygen or, even at the lower level of its atomic structure. The social cost of defining politics in terms of governmental power was nicely noted by David Ignatius of the Washington Post who wrote, "When the big guys in Washington dream of transforming the world, it's the little guys who come home in body bags."

Politics, to be studied as a science, must first be defined as the universal form of human behavior that it is! Every human expresses politics throughout his or her life, just as all individuals expresses psychological, sociological, economic, and biological realities every day of their lives, and the psychologists, sociologists, economists, and biologist can speak to their cohorts sensibly because they have common understanding of their basic terms. Not so, political scientists.

But who can doubt that politics is a universal phenomenon not restricted to only those who govern, seek to govern, or seek to influence those who govern. There is a fundamental parallel between the behavior of Winston Churchill in defining the situation of England in 1940 as dire and seeking to convince Franklin Roosevelt to send guns and butter to England, and the behavior of a baby in the middle of the night. Thus, for example, the plaintive cry of the baby, at 3:00 AM, is a political act — defining its situation as hungry, wet, and/or lonesome. The baby's definition of the situation will be reinterpreted by the father, who will define it to his advantage; he will fake a few snores. His wife, acting politically in her own interests, using her elbow, will reject the father's definition and substitute one of her own: "You're faking, John! You know it's your turn! Get up and warm the bottle!" Now, that's politics at its universal human level.

By contrast, the definitions of the subject in the writings of major political science authorities are narrow and idiomatic. Twenty experts: twenty definitions. There is a British book, What is Politics?, in which each authority presents a different definition of the subject. One pundit will define politics as influence, another as power, another as self-interest, another as the art of the possible, and another as the skill of building consensus around a policy option. One expert, writing on the power of the presidency, determined that political power is the power to persuade. That's close, but he made the mistake of confusing means and results. Thus, all he had was a tautology, asking, then, what is the power to persuade? If, instead, he had concentrated on means, on behavior, he would have found that persuasive behavior (politics in a generic sense) is the effective skill of creating self -serving definitions of reality. Politics is the universal human behavior of defining reality so as to bring about acceptance of one's desired outcome.

Here are examples that prove the point: "Johnny, stop hitting your sister; be a good boy." "If you really loved me, you'd buy me that necklace." "Good friends don't let each other drink and drive." "Owning one's personal weapon is a sacred American right." "Dan Quayle is no Jack Kennedy!" "Osama bin Laden has insulted and degraded the Moslem faith." Accept any of these quotes, and you have accepted the speaker's definition of reality and his or her politics.

With this definition of politics, politics as a universal human goal-fulfilling behavior, consider the element of secrecy in the following example from Mark Twain's Huckleberry Finn. Huck finds himself in a real jam and has to come up quickly with an effective definition of the situation! He and the runaway slave, Jim, are on the raft, floating down the Mississippi, when a boat comes along side. In it are two fellows with guns, and they are looking for an escaped slave. Huck has hurried Jim under their tent to hide beneath some blankets. The conversation is pure Twain: The men ask if Huck has seen the slave, and he assures them that he has not, but if he had, he would surely turn him in. The men are somewhat convinced, but just to be sure, they say that they will come aboard and look around the raft.

Huck is feeling "scared as a rabbit," but he just up and says that, yes, you better come aboard, but don't get too close to my daddy in the tent, cause he has 'the sickness.' And nobody will let me land and take care of him. What do you say, 'Boy'? Your pappy has the plague? All ends well, with the men each putting a five-dollar gold piece on a shovel blade and, making sure not to get too close, poking the gold over to Huck, 'cause he's sure in a poor way!' Huck, the master politician, defining the situation to his advantage, by keeping the reality secret in order to manipulate his competitors into accepting his contrived redefinition of that reality.

Another example of how politics is an expression of different perspectives of reality is shown in four differing definitions of the little town of Denton, Texas, (where I taught in the late 60s). A huge billboard on Interstate 35 claimed that Denton was "just like Los Angeles, give or take six million people." Some of the

local rednecks had crossed out "people" and painted in "Niggers!" Other citizens (I suspect some of my ACLU friends) had crossed out that obscenity and written in "Racist Trash!" But that had been crossed out by some of the local feminists, who had scrawled, "Male Chauvinist Pigs!" For obvious reasons, the authors of these insights chose to keep their identities secret.

Religion is essentially a subset of politics, the elaborate creation of a particular definition of life and eternity which is then offered to or imposed upon members and others. In requiring unquestioning acceptance, religions practice considerable secrecy. They exhibit much of the same behavior as governmental agencies that become convinced of their role as protector of the nation's security. Those agencies, such as the CIA and the FBI, approach totalitarian means of secrecy (on which, more later) to carry out what, to them, comes close to being considered a divine mission. Religions create absolute definitions of reality. There is no argument, in that context. (As a friend once said in response to one of my more arrogant pronouncements, "I see you have a very concrete view of this — all mixed up and permanently set"). Thus, some religions require members to police themselves - not read certain books, not allow evolutionary theory to contaminate their minds, not let authorities know of certain illegal practices such as polygamy, child abuse, narcotic use, etc., and violation of this secrecy is sanctioned by the ultimate punishments: banishment, and later, eternal hell.

POLITICS, IN PRACTICE

THE MATERIAL ABOVE, in summary, says secrecy is a necessary and integral aspect of American life. It is required and protected by the Constitution, practiced by all bureaucracies and all citizens, and is essential to politics in all its forms, formal and informal, public and private. What becomes apparent is that secrecy, like so many elements of life, is neither inherently 'good' nor 'bad.' Secrecy, like government, the law, the presidency, the military, the police, religion, politics, money, guns, or drugs, is a tool or device or resource that is to be judged according to the result of its use.

Some obviously bad uses of secrecy, in terms of public policy and social felicity, ironically, are quite well known, but, regardless, seem to be repeated over and over through our history. The exercise of governmental police power, defined as the authority to promote and safeguard the health, morals, safety, and welfare of the people, tends to enlarge the domain of government, local, state, and national, over the citizen.

Surely, the constant repetition of scandals wherein the local or state police have kept secret files on citizens, a practice prohibited by law, speaks to the weakness of dedication to the principle of a government of law by the very bureaucracies assigned to protect it. In Portland, Oregon, twenty years ago, the ACLU succeeded in forcing the police to eliminate such a file, but in 2002, police again were found to have kept illegal files on thousands of citizens. In that same year, the Denver, Colorado, police were ordered to purge their system of spying secretly on citizens.

In Denver, great-grandmother Helen Henry, 82, was noted in the secret files as having a "Free Leonard Peltier" bumper sticker on her Toyota sedan (Sunday Oregonian, 9/15/02, p. A21)! While such absurdities may cause a laugh, it is a serious matter; fear of one's name being placed in a secret file may cause that citizen to give up the constitutional right to protest peacefully. Hearing that a neighbors name, or even an unknown citizen's name may be in a file has a chilling effect on the exercise of civil rights, the life blood of democratic government.

At the national level, the FBI under Director J. Edgar Hoover was found to have maintained extensive secret files on the rich, the famous, and the politically active. Hoover's long tenure was often attributed to the belief that he held embarrassing evidence on even the presidents and other top leaders, thus no president dared to fire him.

In response to the 9/11/01 terrorist attack on the nation, local police have been asked to work with the FBI-led Joint Terrorism Task Force. Many civil libertarians are troubled by the implicit conflict between the need to fight terrorist threats and the quite probable partial misuse of the police power. This fear is augmented by the creation of the Department of Homeland Security and the aggressive use of secrecy by Attorney General of the United States, John Ashcroft.

The AG's office has adopted a blanket policy to close hundreds of deportation hearings of noncitizens suspected of connection to terrorist activity. In August of 2002, a unanimous three-judge panel of the Sixth United States Court of Appeals declared that unlawful. Said Judge Damon J Keith, "Democracies die behind closed doors. When government begins closing doors, it selectively controls information rightfully belonging to the people. Selective information is misinformation."

It is upsetting to read constantly of the use of secrecy by national leaders. Both President Bush and Vice President Cheney have kept secret public information publicly demanded, in response to the recent corporate crime scandals, about their activities as CEOs of Harken Oil and Halliburton, respectively. President Bush wants the new Homeland Security Department to be exempt from the Freedom of Information Act and the Whistleblower Act. Dick Cheney has stonewalled the legitimate demand for the notes and list of attendees at his meetings to create a national energy policy; that "national energy policy development gtoup" was a public body that met in secret. Even diehard Republican conservatives such as Senator Dan Burton of Indiana, who fear big and intrusive government, are aghast at a White House so hostile to open government.

The high cost of misused secrecy was made evident on September 11, 2001. It has become all too clear, in the public hearings in October, 2002, of the joint intelligence committee's investigating the attacks that the FBI, the CIA and the NSA had failed to protect the nation from calamity because of inefficiency tied to the overuse of secrecy. The agencies failed to communicate with each other, protecting bureaucratic turf rather than American soil. Though FBI Director Robert Mueller, the Director of the National Security Agency, Michael V. Hayden,

and CIA Director George Tenet all spoke at length and provided many excuses, Senator Carl Levin of Michigan, a member of the Senate Select Committee on Intelligence, said, "At crucial points in the 21 months leading up to September 11th, this intelligence information was not shared or was not acted upon and, as a result, numerous opportunities to thwart the terrorist plots were squandered." (The Oregonian, October 18, 2002, p. A2)

As tragic as the incompetence leading up to 9/11 has been, an even more pervasive example of incompetent management of a governmental responsibility is reported by Senator Daniel Patrick Moynihan in his book, Secrecy (Yale University Press, 1998).

The extreme politics between the Right and the Left in America, in the period leading up to World War II and after, were based on allegations of secret conspiracies. The Right was sure that the Left was aligned with world communism, that Pearl Harbor was the result of a secret plan to bring the US into the war to save Stalin and Russia, and that the Communist International had spies in all the sensitive areas of government.

The Left, citing the Red Scare raids of the 1920s, pictured the Right as a group of fascists led by J. Edgar Hoover who wanted to destroy the legal protections of the Constitution, turn America over to Hitler, and was secretly involved in munitions and other manufacturing in Germany. Senator Joseph McCarthy astounded the Senate with the news that General George C. Marshall was a Communist traitor at the center of "a conspiracy so immense" as to dwarf any in history. McCarthy, it is now clear, would have been nothing without government secrecy. His ability to hypnotize the nation over the radio and the then-new television screen was based upon his claim that all his evidence came from secret documents held by the executive branch, which was dominated by communists.

Within this environment, says Moynihan, bazaar surreal events transpired. Hoover wrote an amazing letter to George E. Allen, Director of the Reconstruction Finance Corporation, intending that it would then be seen by President Truman (Hoover apparently could not bring himself to write directly to the President whom he personally detested). The letter outlined a huge conspiracy of top government officials working for a communist victory over America: Dean Acheson, Secretary of State; John J. McCloy, Former Assistant Secretary of War; Henry A. Wallace, Secretary of Commerce; Alger Hiss of the UN Organization; Dr. Edward U. Condon, Advisor to the Congressional Committee on Atomic Energy; popular journalists Raymond Gram Swing and Marquis Childs, and others. The message, six pages long, outlined Hoover's conclusions, from evidence by an 'informer,' that the secrets of the American atomic bomb were being funneled through these people directly to the Soviets! Moynihan characterizes it as a loony message not taken seriously. But what about its inclusion of the name, Alger Hiss!?

That was 1946. In 1949, after the very fortuitous breaking of the Soviet code by which the USSR was communicating with its agents in America, it was found that there was, in fact, an effective Soviet espionage effort in America. This in-

formation was in the hands of the forerunner agency of the current NSA, and its head, Admiral Stone, determined that President Truman should be informed immediately. However, General Carter W. Clarke, then chief of the army security agency, strongly disagreed; if the information were spread around, surely there would be a leak, and the Russians would know their code had been broken. At that point, General Omar Nelson Bradley, chairman of the Joint Chiefs of Staff, in spite of his admiration and loyalty to the President, agreed with General Clarke that the fact should be kept secret from the President and from Admiral Roscoe H. Hillenkoetter, the first director of the CIA! Secrecy triumphed!

President Truman was subjected to the very heated abuse of the McCarthy period and was required to defend his administration from some wild and baseless charges as well as other valid charges that were not supported by known evidence. Whittaker Chambers was right about Alger Hiss. But Truman was not allowed to know the fact that the Soviet code had been broken, the extent of the communist espionage ring's success, and the truth about Alger Hiss. The president of the United States was kept in the dark on a most important matter of national security because of the secrecy demands of underlings. The Venona files (the name applied to the deciphered Soviet spy messages) only became public knowledge decades later through the efforts of Moynihan and the Commission on Protecting and Reducing Government Secrecy, in 1996. If, as the Constitution requires, civilian leadership is centered in a civilian president who dominates the military service, and if Truman had been informed of the Venona files, how different would have been his handling of the communists-in-government issue that plagued his tenure as President, and how less would have been the trauma of national politics through the late forties and the fifties?

But the battle continues even into this century. Richard Perle, reviewing Moynihan's book in Commentary (www.findarticles.com/ct), barely concealing his conservative stiletto, writes:

> Curiously, Moynihan, a former vice chairman of the Senate Intelligence Committee, does not pause to wonder whether Washington might have had good reason to conceal its success in deciphering the Soviet codes. Although one would like to know what lies behind his thinking here, he never tells us. Nor do we learn anything more about his breathtaking revelation that even President Truman was kept in the dark about the decryptions. Can this be true? Or is there some metasecret of which Moynihan, too, remains ignorant? (My emphasis)

Apparently, "Washington," for Perle, means the CIA, the FBI, and the Military Joint Chiefs of Staff, rather than the democratic structures of the government — the Congress and the Office of the President. He is quick to conjure up a conspiracy theory, in loyalty to his preferred powers.

And surely, the seventies and eighties would have gone down differently if the CIA and the NSA had been less secret. The nation knows now that there was gross incompetence in those agencies in their efforts to evaluate the Soviet Union

through the years of the Cold War. Soviet strengths were greatly exaggerated, and the weaknesses of the system were ignored. Only a few, Moynihan included, saw the errors in the analysis in the projections of Soviet power. Even Richard Perle accepts Moynihan's evaluation on this point.

There can be no doubt that the CIA seriously and consistently over-estimated the size, rate of growth, and potential of the Soviet economy. In 1958, the agency took the view that Soviet gross domestic product (GDP) was growing much faster than ours, and would come within 50 percent of ours by 1962. This was ludicrous, as was the CIA estimate in 1990 that the Soviet GDP stood at $2.5 trillion. ... As Moynihan rightly observes, any casual visitor to Moscow would have seen more than enough of the appalling circumstances in which most Soviet citizens lived to cast doubt on the plausibility of the CIA's view.

The CIA soon after its creation at the end of World War II came to exhibit all the earmarks of a usual regulatory bureaucracy - and some quite unusual characteristics: in 1997, the first public statement of its budget was made, and it was $26.6 billion! But regardless of its more than fifty years of existence, its huge secret budget, its ability to exist out of the public eye, and amazing technological developments (communications, U-2s, satellites, and computers), "the overall quality of American intelligence may well have declined over time," says Moynihan (p. 78).

Surely, the most telling evidence of the CIA's incompetence was in its main task, evaluation of the 'enemy,' the USSR. It continually pictured the Soviet Union as a strong, modern, industrial behemoth single-mindedly pursuing the goal of world domination and equipped with a nuclear age armed force. The reality had not been spotted in the decades of U-2 and satellite photos or in the reams of secret documents. The USSR's incompetence in Afghanistan and the final collapse of the wall were surprises to those who should have known. Stanford Turner, the director of the CIA from 1977 to 1981, in 1991, claimed never to have heard from the intelligence or defense or state establishment even a hint that non-official sources in the Soviet Union were convinced that the system was broken and would disintegrate from its own internal weaknesses.

Daniel Patrick Moynihan's conclusion is that, at least in part, the reason is that collected information was kept secret, analyses were kept secret, and conclusions were kept secret; if these had been allowed to be known, discussed, criticized, and argued, errors, inconsistencies, and illogical aspects could have been eliminated. The price paid for the luxury of secrecy was staggering. What if, Moynihan asks, the US had been less secret, less bellicose, more conservative in its financing of military might, and had been prepared, when the inevitable collapse of the USSR came, to offer a parallel to the Marshall Plan that produced a renewed Europe and a friendly Germany and Italy?

One of the most outrageous uses of secrecy in government in a democracy is one of its most common. It happens at every level of government, local, state,

and national. The policy making and enacting institutions of government, the legislative and executive branches, are overwhelmingly the sites of lobbying, a secret process in which the agents of private interests, in league with the majority of elected and appointed officials, work against the public interests.

The political aim of the lobbyists is to convince legislators and bureaucrats to accept a definition of reality favorable to the lobbyists, but to clothe that definition, which is kept secret, behind a definition of the reality that appears to be in the public interest. For example, lumber companies want to log state and national forest lands. They define their desire to see public money spent on roads throughout the forest as a desire to enhance the protection of the forest in case of forest fires, and to enhance the access to the public for hunting and camping activity.

Likewise, the pharmaceutical industry lobbies for extension of patent rights on profitable drugs "in order to ensure that they have enough money for their very important research in the war against devastating crippling diseases;" yet, most of their money goes for advertising, and most of their research money goes to invent drugs to fight the common cold, hemorrhoids, backache and zits. "Why? As Willy Sutton said, "That's where the money is." Countless other examples may be found in the alphabet of economic activity in America from agriculture, banking, and commerce through X-rays, yacht ownership, and zinc mining.

Politicians, of course, enter into these conspiracies eagerly so as to collect campaign funds and to win a block of voters whose interests are enhanced. Additionally, coming to light all too often in scandals are the cases of officials accepting bribes or presents or paid trips, with family, to exotic spots to attend "important policy discussions" held quite often on golf courses. Many, even perhaps most, politicians develop great skill in presenting themselves as selfless agents working tor the public weal, while secretly more concerned with job security and career goals in the struggle for power. That's politics!

THE POLITICS OF SECRET CONSPIRACIES

SECRECY, IN AN IMPERFECT WORLD, is an essential aspect of all politics. And, as noted above, the process of politics is the creation of self-serving definitions of reality. Secrecy, obviously, rests upon an assumption of mistrust in one's target of politics. Democrats mistrust Republicans, and vice versa. Nations mistrust each other. Husbands and wives mistrust each other, keeping their affairs secret, knowing their spouses just wouldn't understand. Likewise between parents and children. Thus, politicians define the reality of their ambitions in terms of service to the public good, nations talk peace but prepare for war, spouses define absence as the necessity of working late at the office, and children, intending to party, claim the need to get help on homework from a classmate.

James Madison, in THE FEDERALIST PAPERS, "Number X," describes the essential elements in a republic to be freedom to form factions, the necessity that mere be many factions, that they be spread over a large area, and that they be

composed of a large number of individuals. Minority factions are controllable by the votes of a majority faction. But majority factions present the danger of deprival of rights of individuals and minorities. This danger, however, can be minimized by the difficulties of majorities to act in unison. First, they are, themselves, composed of minorities and, thus, find it hard to organize in concert to oppress a particular minority. And the fact that they are composed of many individuals spread over a large area also reduces their ability to act efficiently. Half of what anyone needs to know to understand American politics can be found in these insights presented by Madison in the five or six pages of Number X!

But the politics of conspiracies is not explained by the theory of democracy. Certainly, conspiracies are factions, and they are minority factions, but the defense Madison proposes, a majority vote, does not apply, because conspiracies see all non-members as opponents, and their secrecy aims to prevent opponents from even knowing of their existence, let alone offering themselves up for a vote by the citizens. This is true for the corporation clique that conspires to defraud the public or its own stockholders, for criminals planning a bank heist, for a political conspiracy planning a coup de etat, or a cabal of bureaucratic insiders intent upon using government power for personal and/or political purposes.

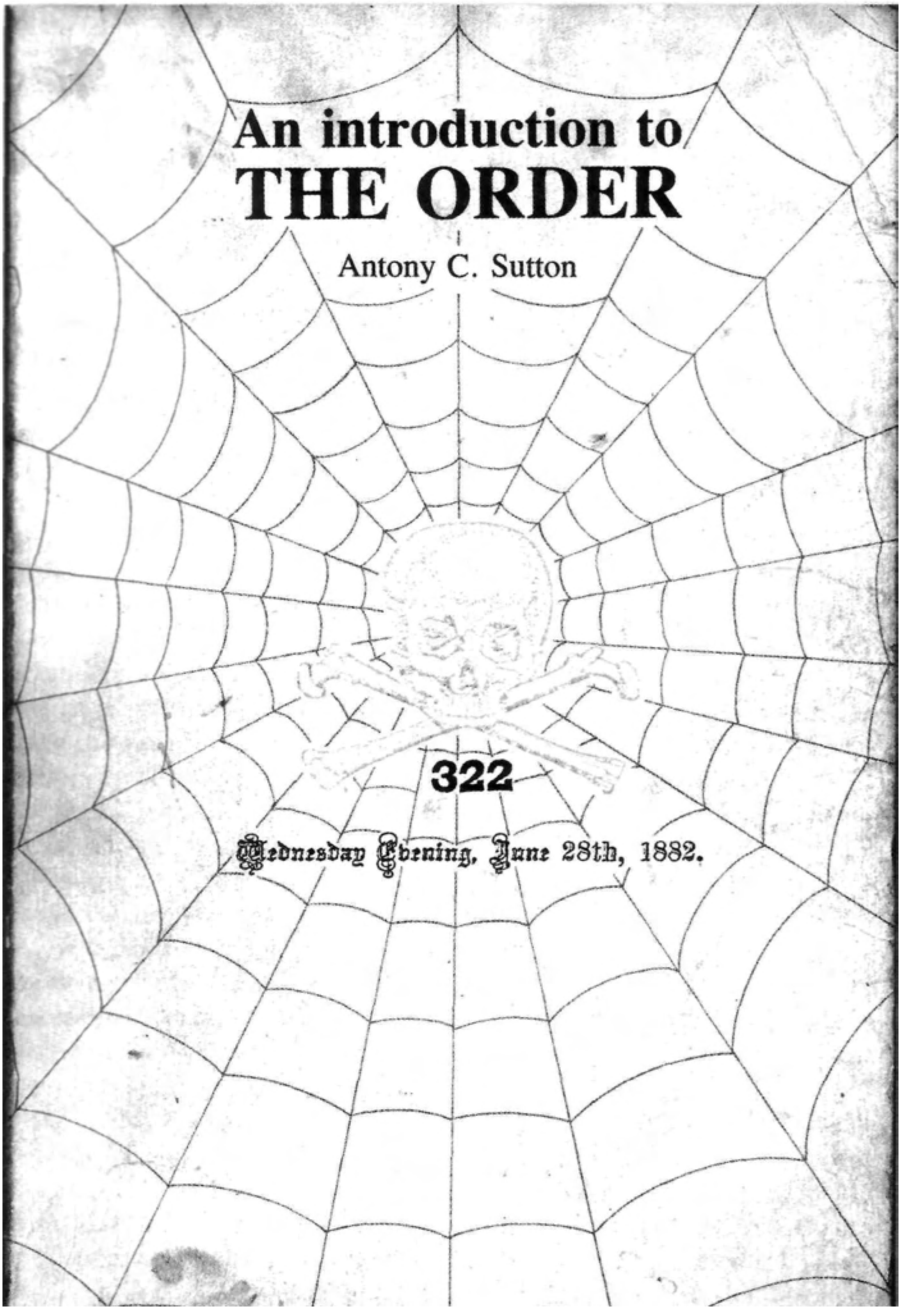
All secret societies are conspiratorial factions aimed at achieving goals that, by definition, are contrary to the public interest as determined by citizens in an open society. As Madison says, no faction can be allowed to be a judge in its own cause, because its interests would certainly bias its judgment and corrupt its integrity. And, as Karl Popper says, freedom is impossible unless it is guaranteed by the state; any secret society that weakens the rule of law, creates inequalities among citizens by illegal means, or frustrates the legitimate aims of democratic policy weakens a democratic republic and its objective of guaranteeing freedom to its citizens. Logically, then, secret societies are threats to democratic societies.

The question becomes one of determining how serious a threat to a democracy is a particular secret society. Certainly, Al-Queda is a very threatening conspiracy, as was the conspiracy led by Timothy McVeigh, and as is the mailer of the anthrax germs. One may create his or her own hierarchy of secret conspiracies threatening our society. The list is too long for this article, but would include some of these: all criminal activists, violent Right-to-Life factions, pedophilia traffickers, violent white-power advocates, anti-tax groups that practice fraud, illegal pornographers, a multitude of scam artists operating just within the law, the Elmer Gantrys of religious exploitation, gangs that use violence and intimidation, etc., etc.

Lastly, if I could be allowed a personal expression based on normative values rather than hard facts or academically sound theory, the conspiracies listed in the previous paragraph (other than the first three) are comparatively 'small potatoes' based on marginal personal greed or ego or fanaticism not reaching the level of serious threats to American democracy. They are the inevitable garbage created in a society that values liberty over totalitarian order. The real threats to the American democracy envisioned by Thomas Jefferson in his better moments, not contami-

nated by his aristocratic heritage and his personal needs, come from the misuse of political and economic power by an undemocratic wealthy elitist clique of materialist ideologues in secret cabals at the highest levels of American society.

RALPH E. BUNCH is an emeritus professor of the Department of Political Science of Portland State University. He was born in Portland, Oregon in 1927, served in the US Navy during WW II, graduated from Lewis and Clark College in 1951, received an M.S. (1961) and Ph.D. (1968) in political science from the University of Oregon. He has taught in public school in Oregon, Japan, and Canada, and during his twenty-five years as a professor, has taught in Oregon, Texas, Washington, and Russia. He served 16 years as Book Review Editor for The International Journal of Comparative Sociology, edited three books, and has authored numerous articles in professional journals. He is retired and lives with his wife, Eleonora, in King City, Oregon and in Moscow, Russia.



Antony Sutton's first booklet on the Order of Skull & Bones, printed in Phoenix Arizona in 1983 The booklet became part of America's Secret Establishment—An Introduction to the Order of Skull & Bones, which has stayed in print since 1986, becoming an underground classic.

W, S&B — AND THE TRUTH ... SHALL SET US FREE

A JULY 1, 1999 INTERVIEW WITH ANTONY C. SUTTON, RESEARCHER EMERITUS

Interviewers: Kris Millegan, Al Hidell, & David Guyatt

WELL, NOW, AIN'T LIFE GRAND here in these United States. Now, I don't know but I do believe I am being told, by our corporate media, that George W Bush is gonna be the next president and there ain't nothing us peons can do about it. W's already got the cash and all the friends a guy could want. Billy-boy has shown that personal peccadilloes don't matter. And, gee whiz, W's were just youthful indiscretions anyway.



Sutton and Millegan - July, 2000

The Mighty Wurlitzer is playing loud and strong; Project Mockingbird has come home to roost and it looks as though a foreign secret society will for the third time put their juvenile in the White House. The latest spin has W just being a president of his ol' college frat house, DKE, who maybe did some strange initiation rituals ... Yeah, right. Ya wanna buy a bridge?

George W Bush is a member of a 167-year-old secret society at Yale University, Skull & Bones. The Order of Skull & Bones has been shown to be founded as a chapter of a secret society based in Germany. Some say it is just a college club; other say much more and point to W's grandfather's filching of Geronimo's remains; of the financing of Nazis and Communism; of drug smuggling; of eugenics; of manipulation of our social and political arenas through the Hegelian method of thesis, antithesis — resulting towards the desired synthesis — a New World Order, and more ....

But then this is not just a story about W, or Skull & Bones, but also the story of a courageous man, his dutiful journey and consequent battles with the 'powers-that-be.'

ANTONY C. SUTTON, FEB. 14, 1925 - JUNE 17, 2002, has been persecuted but never prosecuted for his research and subsequent publishing of his findings. His mainstream career was shattered by his devotion towards uncovering the truth. In 1968, his Western Technology and Soviet Economic Development was published by The Hoover Institute at Stanford University. Sutton showed how the Soviet state's technological and manufacturing base, which was then engaged in supplying the North Vietnamese the armaments and supplies to kill and wound American soldiers, was built by US firms and mostly paid for by the US taxpayers. From their largest steel and iron plant, to automobile manufacturing equipment, to precision ball-bearings and computers, the majority of the Soviet's large industrial enterprises had been built with the United States help or technical assistance.



Professor Richard Pipes, of Harvard, said in his book, Survival Is Not Enough: Soviet Realities and America's Future (Simon & Schuster; 1984):

"In his three-volume detailed account of Soviet Purchases of Western Equipment and Technology ... [Antony] Sutton comes to conclusions that are uncomfortable for many businessmen and economists. For this reason his work tends to be either dismissed out of hand as extreme or, more often, simply ignored."
The reportage was too much and Sutton's career as a well-paid member of the academic establishment was under attack and he was told that he "would not survive." His work led him to more questions than answers. "Why had the US built-up it's enemy? Why did the US build-up the Soviet Union, while we also transferred technology to Hitler's Germany? Why does Washington want to conceal these facts?"

Sutton, following his leads, proceeded to research and write his outstanding Wall Street financial expose series Wall Street and FDR; Wall Street and the Rise of Hitler, and Wall Street and The Bolshevik Revolution.

Then, someone sent Antony a membership list of Skull & Bones and ... "a picture jumped out." And what a picture! A multigenerational foreign-based secret society with fingers in all kinds of pies and roots going back to Illuminati influences in 1830's Germany.

And what a list of members, accomplishments and ... skullduggery!

Here, in a rare interview by email, are Antony Sutton's own reflections and answers to questions from myself and other researchers:

REMEMBER, ALL MY PAPERS on this are in deep storage 1000 miles away and cannot be accessed and I've not even thought about S&B for 15 years. I

had no idea that any interest had been aroused out there. I know the book is a steady seller from the royalty reports; but that is all.

For the last 10 years I have been in complete seclusion working on future technology ... I'm more engineer than historian. The only visitors I've had or meetings have been with three-letter agency people, who arrive on the doorstep unannounced and complain I am hard to find. Big Brother has the ability apparently to find anyone.

Nothing mysterious about this, I just dislike publicity and social interaction. You will see from the Dutch TV episode that my work still upsets the powers-that-be so these are merely reasonable precautions.

THE INTERVIEW

KM - Can you tell the story of how you learned about Skull 8c Bones, and how you felt?

AS - I knew nothing of S&B until I received a letter in the early 80's asking if I would like to look at a genuine membership list. For no real reason I said yes. It was agreed to send the package by Federal Express and I could keep it for 24 hours, it had to be returned to the safe. It was a "black bag" job by a family member disgusted with their activities.

For the benefit of any S&B members who may read and doubt the statement; the membership list is in two volumes, black leather bound. Living members and deceased members in separate volumes. Very handsome books.

I spent all night in Kinko's, Santa Cruz, copied the entire volumes and returned within the 24 hour period.

I have never released any copies or identified the source. I figured each copy could be coded and enable S&B to trace the leak.

How did I feel? I felt then (as I do now} that these "prominent" men are really immature juveniles at heart. The horrible reality is that these little boys have been dominant in their influence in world affairs. No wonder we have wars and violence. Skull & Bones is the symbol of terrorist violence, pirates, the SS Deaths Head Division in WW Two, labels on poison bottles and so on.

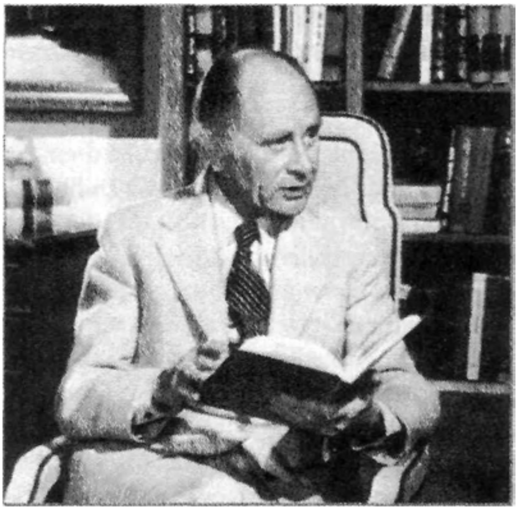
I kept the stack of xeroxed sheets for quite a while before I looked at them—when I did look—a picture jumped out, THIS was a significant part of the so called establishment. No wonder the world has problems!

KM - What is the percentage of active members?

AS - I haven't checked for 15 years ... it used to be about one quarter. With the rise of the Bush dynasty it will increase somewhat, as they climb on the bandwagon. The Demos had their turn with Harriman in the 40's and 50's.

KM - How many active members are there?

AS - Usually about 600 alive at any one time ... recently more active.



KM - What is your take on the grandfather clock that each member allegedly receives?
AS - They do get a clock. I've had that confirmed and you will see it in the photos in ASE (America's Secret Establishment). Might be symbolic, perhaps to state their organization goes on tunelessly.

KM - Has Skull and Bones lost its clout?
AS - Well look at the recent fund-raiser for George Bush ... Republicans are stuffing money into his pockets ... I suggest members recently got behind one of their own and decided to push George all out for president ... and Democrats can't do a thing because Democrat Bones are not going to allow the Party to use the ultimate weapon ... George's membership in a foreign secret society.

KM - What do you know of George W Bush?
AS - He is a third generation Bonesman. My personal impression is that he doesn't have the drive of his father or the skills of his grandfather ... but I could be very wrong. He can beat anyone hands down — EXCEPT VENTURA.

If Bush handlers allow a face to face debate between Bush and Ventura. Ventura will win. Remember Ventura has admitted to his so-called "sins." Bush has a closet-full waiting to emerge. People are getting bored with cover ups and spin.

2000 may see the end of the Bones influence or — reality that these Bones people are powerful.

KM - Is the name of the German group known?
AS - Almost certainly Illuminati.

KM - Some people say that there are other cells; what do you think?
AS - There are many other secret societies. I've only looked at S&B. Unfortunately no historian will keep his job if he tries to explore conspiracy ... this is taboo for the American Historical Association. Sooner or later outsiders will take a look. I've long thought that S&B fits the legal definition of a conspiracy and needs to be officially investigated.

Yes there should be other cells. No secret society worth anything is going to keep its inner actions written down on paper. If the gigantic electronic monitor-

ing apparatus is for national security purposes, then it should be monitoring these people 24 hours a day.

KM - What are your thoughts on WolFs Head? Scroll & Key? And the other Senior societies at Yale?
AS - Wolfs Head, Scroll and Key seem to be pale imitations of S&B, but they have the same objective of deliberately building discrimination into a society. I listened to Jesse Ventura last night and he made the point that the Founding Fathers intended for CITIZENS to represent the people. I agree; a trucker, a farmer, a teacher represent the people not a bunch of professional pols or a secret society like S&B. All these societies place their own members ahead of the pack and give preference to their own members; this is discrimination par excellence.

KM - Have you read Cathy O'Brien's book Tranceformation Of America? What do think of it?
AS - The book does not contain one piece of hard physical evidence.. I think Cathy O'Brien BELIEVES SHE IS TELLING THE TRUTH ... but remember that Mark Phillips is a skilled neuro-linguistic-programmer.

Another point that really concerns me is this ... where did this story originate? It originated in Communist Chinese Intelligence and Mark Phillips had a contractual relationship with the ChiComs. This could be an attempt to destabilize the US.

No doubt these Washington pols are fully capable of these weird practices, lust look at Bohemian Grove but that doesn't mean that the book is an accurate portrayal. If the book is credible, I would think the police would have raided Bohemian Grove long ago

My best guess is that the Chinese picked up whispers of Washington scandals and blew them out of proportion for their own purposes. This is a GUESS ... I don't know.

One thing that puzzled me, with all these sexual shenanigans how do Washington politicians find time to do anything else? According to the book this is a full time occupation for Senator Byrd and others.

KM - What did your study of elites, economics, secrecy and technology do tor your career?
AS - Depends what you mean by career?

By conventional standards I am an abject failure. I've been thrown out of two major Universities (UCLA and Stanford), denied tenure at Cal State Los Angeles. Every time I write something, it appears to offend someone in the Establishment and they throw me to the wolves.

On the other hand I've written 26 books, published a couple of newsletters and so on ... even more important I've never compromised on the truth, and I don't quit.

In material terms... hopeless failure. In terms of discovery... I think I've been successful. Judge a man by his enemies. William Buckley called me a "jerk." Glenn Campbell, former Director of the Hoover Institution, Stanford called me "a problem."

KM - Do you believe that there has been suppression of technology? Has it been major or minor?
AS - Yes there has been suppression but its going to be impossible to suppress the new emerging paradigm.

KM - The Federal Reserve, the House of Morgan, House of Rothschild and Skull and Bones are they related?
AS - Best source for this is my book The Federal Reserve Conspiracy.

KM - What are the good source materials for your research and writings about Skull and Bone's influencing John Dewey and Horace Mann?
AS - Depends what you want to find. You could explore the 10 or so volume works of Dewey ... outrageous Hegelianism, the state is supreme, the individual merely a pawn to be trained. This is the basis of our 'educational system" ...or you could go and explore the members of S&B who brought the system to the US. This trained "sausage mind" outlook has thoroughly permeated our universities ... that's why we have the peer review system ... we are all supposed to think alike and find the same answers. This political correctness garbage is another step to total thought control.

AH - Did any of Hitler's economic policies threaten the interests of the international bankers, and if so did that play a role in his downfall?
AS - Hitler's economic policies were OK'd by the bankers right through the war ... ITT, Chase, Texaco and others were operating in Nazi-held France as late as 1945. In fact Chase in Paris was trying to get Nazi accounts as late as 1944. When we got to Germany in May, 1945, I remember seeing a (bombed-out) Woolworth store in Hamburg and thinking, "What's Woolworth doing in Nazi Germany?" While we were bombed and shelled it was "business as usual" for Big Business. Try the Alien Custodian Papers.

See my Best Enemy Money Can Buy for more.

Union Banking is very important. I made a documentary for Dutch National TV some years ago. It got all the way through the production process to the Dutch TV Guide ... at the last minute it was pulled and another film substituted. This documentary has proof of Bush financing Hitler — documents.

Maybe my Dutch friends will still get it viewed, but the apparatus reaches into Holland.

KM - What is the story that was going to be told on Dutch TV? And what is the story of it's censorship?

AS - Couple of years back, a Dutch TV production company from Amsterdam - under contract to Dutch National TV—came to the US to make a documentary on S&B. They went to the Bones Temple and other places and interviewed people on the East Coast. On the West Coast, they interviewed myself and one other person.

I saw extracts from the original and it is a good professional job. They had documents linking the Bush family and other S&B members to financing Hitler through Union Banking of New York and its Dutch correspondent bank. More than I have in Wall Street And The Rise Of Hitler.

The first version was later upgraded into a two part documentary and scheduled for showing this last March. It was pulled at the last minute and has never been shown.



AH - Who has been financing Milosevic, and what role has the international banking community played in the Balkans?
AS - I haven't looked at this one. Of course the notorious Black Hand society is located in the Balkans. See WW One.

DG - What is the importance of your work on Skull and Bones?
AS - The potential is extraordinary. IF we find that secret societies are indeed significant, the entire history of the last two centuries will have to be re-written.

At this point in 1999, the potential has not been explored by others and I've moved back to my original interest—technology. Apparently people see some merit in the work. It is never advertised. It is an underground word of mouth distribution but has sold steadily from 1986 to date. Every month I get a royalty check, so I know it is selling. But my original enthusiastic statement has not been fulfilled.

KM - What do you see for the future?
AS - Chaos, confusion and ultimately a battle between the individual and the State.

The individual is the stronger; and will win. The state is a fiction sanctified by Hegel and his followers to CONTROL the individual.

Sooner or later people will wake up. First we have to dump the trap of right and left, this is a Hegelian trap to divide and control. The battle is not between right and left; it is between us and them.

The message is getting through. ASE has sold for 15 years, small but steady. No advertising. Its an underground work. But the breadth of interest is amazing. From Black Africa, to Russia (12,000 copies), right, left... it cuts across all ethnic, political, social lines..

The spirit of God is within us as individuals. Skull & Bones represents death. It has no life spirit and pretends that the State "is the march of God on earth."

The thinking of immature juveniles, deadly and destructive and has almost totally infected Washington.

What to do? Find yourself and then go to work ... tell your friends and put out the message.

The answer is within you.

NEW YORK EDITORS ...

IN TALKING TO A MAGAZINE in New York that is working on a feature story on George W. Bush and was thinking of doing a piece on S&B, I asked how about a sidebar on Antony Sutton? And got these responses:

"Someone is claiming he's a John Bircher. Liberty House is a right wing publishing company in Montana.

"Antony Sutton was at Stanford's conservative Hoover Institute.

"Among many other claims, Sutton's book accuses Skull and Bones of funding and encouraging 'the Maxist/Leftist '60s revolution'... and diverting attention by drawing students into disarmament and/or environmental groups and issues.

"Although there seems to be some real info in his book, it reads like a classic text of right-wing propaganda, filled with hyperbole and unsourced allegations."

Antony Sutton's response:

What's wrong with these editors?

I was thrown out of the Hoover Institution by the CIA types... I am definitely persona non-grata. Director Glenn Campbell actually threatened me "you will not survive."

Some right winger!!

I've never been a member of the Birch Society or any society come to that.

I'd like to have that Editor say that to my face. They're sick!

Get his comments on the above ... and have him come up with some proof.

What's the legal definition of slander ... it has to be untrue and malicious. Do they have any money?

When it comes right down to it the NY people didn't even read my book ... else they would know that I see the right-left approach as a Hegelian trap ... as for lack of evidence I'll leave that to the readers. On second thought they probably never heard of Hegel.

When Lenin referred to 'useful idiots" he must have had these people in mind.

SEPTEMBER 18, 1999 — MORE QUESTIONS, MORE ANSWERS

KM - What has surprised you the most about America's Secret Establishment?
AS - The most astonishing aspect of ASE is that the damn thing keeps selling with no advertising, no publicity, no help from me or the publisher. Astonishing and gratifying. It means that some readers see enough of value to pass the word. In terms of S&B discovery, nothing until very recently. I turned to other work (technology) and forgot about S&B. Recently I found extraordinary work by unknown people from the genealogical angle, This is definitely an advance. All the royal families of Europe stem from the House of Saxe-Coburg-Gotha, that is where Weishaupt was installed. Its a 2 prong attack (1) via royal families and their descendents (2) via secret societies ... and the almighty State is the vehicle using dialectic methods.

KM - Was there any reaction from Bones to your writings about the Order?
AS - The material was removed from Yale Library promptly after the first edition was published in 1983, say within 4-6 months ... Members of S&B tried to make contact after about a year but both used phony names with their REAL ADDRESS, so I could find their real names. The content of their letters alerted me to check. Amateurs ... .

KM - What was that material and did you make any copies?
AS - From memory, it was about a magazine file thick, say 5 inches. Letters mostly, I selected a few for the book.

These materials still exist but so deeply hidden that it would cost several thousand dollars and much negotiation to regain. The holders don't know what they have and I don't know exactly where the material is. You can't say our spooky friends didn't teach us something ... .



KM - What do you think S&B is planning now?
AS - Plans ? I don't know. They look at the world through filters and "yes men." So while they have excellent information, they are dangerously off track in assessing the ordinary man. Their assumption is that they can buy, cajole or steal what they want and that everyone will go along. I see them as myopic juveniles ... .

KM - Did ASE cause you any trouble?

AS - From this book? Not at all ... The fireworks came much earlier in the early 1970's after publication of National Suicide (now Best Enemy Money Can Buy!).

I am not looking for anything. Socially they are boring, so there is no basis for any discussion. One day they will hit a big bump in the road. Nothing to do with me.

KM - Any last words?

AS - Watch as events unfold. We are observers. They will destroy themselves. We can help a little but don't get any bright ideas about overturning the system. They have all the bombs but we have something stronger — the truth and freedom of spirit.

Be patient, spread the word among friends, do your little bit. The system will self destruct because it is founded on corruption and untruth.

Antony Sutton passed away on June 17, 2002. According to published accounts June 17th, 1933, was the date of the Order of Skull & Bone's Century Celebration. His death was sudden and unexpected. He was 77 and the local county coroner declared his passing, natural causes. Even after repeated contacts and pleas, no newspaper ran an obituary or story about his death and works. Tony died less than three weeks after the first hardbound copies of America's Secret Establishment were delivered from the printer. He was getting ready and was excited about appearing on radio shows to promote the book. The book was to be in West-Coast bookstores in September. Tony's death and a national book distribution opportunity changed the limited fall 2002 release to a national 2003 spring release. Meanwhile Little & Brown moved Alexandra Robbins' book (the first ever mainstream book on Bones) up to September, 2002 from January, 2003. Her book, Secrets of the Tomb, gets placed in the history section, whilst Tony's book gets placed in the speculation section with UFO's and such. Hmm, a book written by a member of the second oldest secret society at Yale, which declares Bones to be "the equivalent to the Wizard of Oz," that sometimes "Oz needed its Wizard" and disposes of the Nazi financing issue in one terse sentence is declared history, but a college professor's work on the same topic, that was the first book written about Bones and breaks many stories and research is just speculation. Such are the times we live in.

Antony had gone back to his engineering background and was producing a newsletter called Future Technology Intelligence Review (FTIR). Following is Tony's memoir about Stanford, some of his background and what happened to him because of his principles and courageous actions. After that are some of his thoughts on the September 11th attack and writings on the Order of Skull & Bones from FTIR and then some articles from The Phoenix Newsletter, Tony's newsletter from the 1980s and 90s, some from the time when he was first uncovering the story about Bones. The writing style is of a newsletter and that has been preserved, most of his underlined words and capitals have been turned to italics for presentation in book form

For more information about Antony Sutton visit
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MEMOIR CONCERNING EVENTS AT THE HOOVER INSTITUTION, STANFORD UNIVERSITY IN THE PERIOD 1968 -1974

[RELATING TO SUPPRESSION OF INFORMATION BY WASHINGTON, D.C.]

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BECAUSE THIS MEMOIR CONCERNS "PERCEPTIONS" of the Soviet Union and how this author avoided the conventional (and erroneous) artificial Soviet created propaganda perception, the memoir goes into formation of the author's own perceptions. These early paragraphs can be skipped.

The memoir also includes Appendix II, notes on a post-1974 event which repeated the perceptions problem in another context, and which the author tried to bring to official attention — again, unsuccessfully.

EARLY BACKGROUND OF THE AUTHOR



THE WRITER WAS EDUCATED at Bishopshalt Grammar School, Hillingdon Middlesex (outside London) from 1936 to 1941. This was the traditional English grammar school education with five years of two foreign languages, physics, biology, chemistry, music, history, geography, art, mathematics, English, wood and metal workshop with no elective courses and considerable homework. It was a thorough and no-nonsense basic education, very different from the U.S. high school.

My father was a coach builder for Thrupp & Mabberly making Rolls Royce custom wood automobile bodies. My grandfather was former head coachman for the Duke of Beaumont. In the World War One period, he owned a fleet of a dozen London taxis. On my mother's side, the family stems from a line of substantial businessmen in the London furniture trade. My uncle

formed the London Pattern company. In brief, I grew up in a family familiar with hand tools, jigs and fixtures, pattern making and automobile manufacture.

When I left Bishopshalt (in 1941 during World War II), I went to work for Richard Thomas Steel Company head office in London. This company had installed the first hot and cold strip steel mills in England. I worked in the mill scheduling department until called up to the Army in July 1943. Mill scheduling provides an excellent education in the capacity, operation and limits of steel mills and the end uses of various specifications.

In the Army, I was trained as a "driver-wireless operator" with extensive courses in radio communication (#19 and #22 sets), line laying, mine clearing, field maintenance, Morse code, codes and ciphers, all vehicles through personnel carriers. Just before D-Day, we were re-designated as the 42nd Armoured Division (a nominal deception unit with a handful of men and vehicles).

I landed in Normandy on D+10, and went through to Germany. For most of this time, numerous individual assignments gave me freedom for days at a time, and opportunity to learn something of European culture and industry. Seconded for six months to University of Gottingen for de-Nazification work. Demobilized 1947 with rank of sergeant.

In fall of 1947, I started at University of Southampton and obtained Honors Degree in Economics in 1951. The advantage of Southampton then (and now) is that students and faculty were flexible in study, ideas and work. Martin Fleischman and Stanley Pons did their early work on cold fusion at University of Southampton. In the 1940s, study was unregimented and free flowing. No grade point system.

A major plus was presence of an open Communist Party and recommended reading in Marx, Engels and Lenin. This proved to be an excellent foundation to understand the use of dialectical materialism and deception by the Soviets and their foreign Communists Party allies.

In 1951, I spent a few months as a clerk in a plant making gas meters and tinplate instruments; then returned to Richard Thomas & Co (now part of British Steel). I was appointed to a two years' management training course. This included visits to every major iron and steel plant in England with months spent on the floor of various plants including ore mining, blast furnaces, coke ovens, stripmills, tinplate and bypass mills, annealing and so on.

This two-year course gave me an understanding of the construction and operation of iron and steel plants and a reasonable grasp of metallurgy and metals testing.

By 1953, I had become disgusted with the laxity of nationalization. I left England and went to Canada via New York. I worked a year in Canadian steel firms, and then joined a mining exploration firm (Desmac Exploration, Ltd.) in charge of exploration logistics and information acquisition. By 1956, we had discovered major deposits of magnetite iron ore in Northern Quebec (Montgol-

fier Township) and had programs in several Canadian provinces. I acquired an introduction to geology and drilling techniques in order to evaluate potential mines. I left because it was too cold (i.e., -40° in winter!).

In 1957, I went to New York and was hired by Hoyland Steel as assistant to the manager of their Los Angeles branch, known as Great Western Steel, Inc. (the manager was an alcoholic, my job was to keep the firm on track, my eye on the manager, and quietly report back to New York). In this job, I visited every operating mine in the Western United States and Northern Mexico, and most of the significant plants, including the L.A. aircraft and electronics industries, i.e., Lockheed, Hughes, North American, and Douglas, as well as lumber mills, rood processing and cement plants, quarries, and shipbuilding in California, to determine the potential for new alloys and specifications.

In November, 1957, 1 happened to be in the Motorola plant in Phoenix when :he Russians sent up Sputnik. This had an enormous impact on the Motorola engineers, and I was struck by their naive acceptance, "The Russians are ahead of us." I knew from my steel experience that the gestation period for a strip mill was 6-8 years under western conditions, and the Russians could not have developed an indigenous strip process in the period 1917-1929 (the start of the first Five Year Plan). From my experience in post-war Germany, when the Soviets dismantled and shipped to Russia what was left of German industrial plants (really, a pile of junk), the "Russians are ahead" theory made no sense at all. Nowhere in my multi-country, multi-plant visits, had I encountered a Soviet process or innovation. My experience was the opposite to the prevailing perception of Soviet technological power.

My assessment was that the USSR in the 1950s and 1960s was a backward, technically dependent economy, without a support infrastructure.

In brief, by mid-1959, I had probably unique training with regard to on-the-floor exposure to industrial processes in five countries. I knew the equipment, who made it, its limits, and who used the equipment. Every technological process has its own "signature." For example, an iron blast furnace has precise shapes and measurements; it requires specific inputs of iron ore, coke, and limestone, of specific grades. You don't design a new blast furnace from scratch — you build on earlier designs with knowledge of limitations with each design change. These can be remarkably precise. Ask any engineer.

With this varied and detailed technological background, in 1959, I quit business and went to UCLA graduate school. My intent was to study the interface between economics and technology. Rather naively (I see today), I thought theoretical economics could teach me something about the efficiency factors behind engineering design. The immediate impact, however, was the rigid doctrinal structure of American graduate education. It turned out fine technicians, but was decidedly not happy with any original ideas or anything that challenged the textbooks.

Economics, I quickly found, treated technology as a constant given factor, not as a developing engineering dynamic. Once again, the assumption "The Russians are ahead" was the prevailing doctrine.

I spent considerable time in the UCLA Main Library and the Engineering Library where I located a wealth of material supporting my idea that everything Soviet had come from the West. I even found the original contract Averell Harriman signed with the Soviets to develop the Georgian manganese deposits. (He was taken! I had negotiated similar contracts in Canada, and could spot the loopholes.)

UCLA libraries also held several series of journals in Russian and English on 1930s construction by Western firms in Russia. These cited the foreign builders never mentioned in the UCLA textbooks on Soviet economic development. At first, I used these findings and ideas in seminars and papers, but soon found they were definitely not welcome, and the idea of challenging the textbooks bordered on treason. I found that prominent faculty such as Armen Alchian and Jack Hirschleifer, who also worked at Rand Corporation on Russian strategy, had naive ideas on Russian economic development and knew nothing — and I mean, nothing— about technology. Products were called, "widgets;" and technology was treated as a constant "given," rather than a dynamic engineering process. I did considerable research for Professor Dudley Pegrum and W.E. Baldwin in transportation and the African copper industry, and wrote an article on the Colombian iron industry, which was later published.

The textbooks and article literature on Soviet economic development had a truck-size omission: there was nothing on the development and origins of the technology used in the USSR. Every text and article had an extremely naive and erroneous description of Soviet development. There were no exceptions to this statement. Even Clark's The Economics of Soviet Steel, an otherwise excellent book, had missed the Western origins. Another book was Economics ofTechnology, published in the early 60s, and had no understanding of technology. It was a meaningless mass of mathematics with no relevance to technology in the slightest. Not one technological process was cited. I feel today as I did 30 years ago — the book is a fraud, but accepted in the academic community as an advance of knowledge.

Gradually, I developed a technique in my own research. Assume every Soviet design is indigenous; compare it to similar Western designs known from past experience; locate a transfer mechanism, i.e., installed by Western firms, taken from patent literature, copied within the Soviet Union in a "copying bureau." Then compare design specifications. Always assume the design is Soviet, unless the opposite can be proven.

The UCLA Ph.D. program was not completed. In one topic (macroeconomics), I was told to repeat one question of the Ph.D. finals, but to go ahead with the dissertation (which I did). The Department then gave me a new set of multiple questions. UCLA then denied the Ph.D. I later obtained two D.Sc. degrees elsewhere. Dr. Dudley Pegrum, Chairman of my Committee, then

pushed me as Assistant Professor of Economics at (now) State University of California, Los Angeles.

The same kind of political pressure developed when I came up for tenure at Cal State in 1968. It was approved at the department level. Then tenure was rejected at the Administration level - even though my first book had been accepted at Hoover Institution and no Cal State economics faculty member had a published book at that time.

There is no question my views on Soviet weaknesses were the cause. In 1963, when I gave a lecture on Soviet development to the faculty, I made the blunt statement that Marxist central planning was not viable without outside help. The USSR stagnant, and this was a fatal flaw. When I stated that "Marxism is finished," one could feel the intense disapproval - almost, emotional distress - in the audience. By the early 1960s, it was clear that my perception of the Soviet Union as a technically backward and dependent economy was highly unwelcome to everyone else. The experiences at Motorola, UCLA and Cal State were consistent, in that I found no one agreed with my view of the Soviet Union as a backward, stagnant economy. Soviet propaganda was extraordinarily successful with its progressive image.

WESTERN TECHNOLOGY AND SOVIET ECONOMIC DEVELOPMENT

AS A UCLA GRADUATE STUDENT, I began in 1959 to explore the early technological history of the Soviet Union, and to learn technical Russian (enough to translate technical manuals). I said little about this work (except the one lecture cited above), which continued in my five years at Cal State Los Angeles. At Cal State, I engaged a tutor from the faculty to improve my Russian reading skills.

While at Cal State, I tried to obtain funding to speed up the work. All I could get was $400 for microfilm of State Department documents from Relm Foundation. In the early 1960s, I read scores of rolls of State documents, including reports from officers in Moscow, Leningrad, and Riga, Latvia. These included interviews with American businessmen returning from Russia, and detailed plans and specifications for plants installed by the West. (Magnitogorsk, Gorki, Uralmash, etc.). These businessmen were not always honest with State officers. They wanted to maintain Soviet good will. A few told State officials they were instructed to paint a rosy picture if they wanted contracts.

The State files supported my theory of technical dependence. However, I noted that State was reluctant to release certain documents on the purport lists. I made a special point to push for declassification, where I found State resistance. In practice, the resistance guided me to the real gold mines of information.

Through Blackwells (Booksellers) in Oxford, England, I bought hundreds of Soviet technical manuals and maintenance charts. It was fascinating to trace the

technology in these manuals to systems I knew in the West. Even the Western language was adopted — for example, "Stilsona" for "Stilson wrench." The maintenance and training charts were invaluable in tracing origins. To this day, I don't understand why the Soviet Union allowed export of these items. For someone who knew the technology, it was like labeling the Western manufacturer. The Soviet copying bureaus were helpful. They duplicated EXACTLY the Western design. In consumer products, however, the Soviets often used military spec materials, yielding an overweight, clumsy product. Sometimes, the Soviets varied the way a part was made, i.e., by casting or stamping instead of forging.

In 1963, the State Department public view was "the Soviets have their own self developed technology" — i.e., Directly contrary to their own files.

By 1966, 1 had completed the first volume of Western Technology and Soviet Economic Development (1917 to 1930). It took about eight years, using my own funds (except $400), and with the facts consistently pointing away from academic and official statements and assumptions.

Soviet technology was western technology — period. Soviet attempts at innovation (i.e., the electric tractor) were pitiful.

The manuscript was sent unsolicited to Henry Regnery Company in Chicago. I was surprised to receive a reply letter from Henry Regnery himself, to the effect this was "an extremely important manuscript but not commercial." I wrote Hoover and received a letter back from Alan Belmont (Assistant Director). He had taken early retirement from the FBI, where he was Assistant Director for Domestic Intelligence. In response, I sent the manuscript to Hoover. Belmont suggested I spend the summer of 1966 at Hoover. I accepted. During this summer, I kept a low profile, avoided the social circuit (much to Director Glenn Campbell's disgust), and concentrated on work. Frankly, I didn't want a repeat of the UCLA and Cal State hostility. Only Al Belmont appeared to understand my hermit-like stance, and I will be eternally grateful for his understanding, and the "cover" he provided me, unasked.

I found that Belmont had insisted Roger Freeman, a long-time friend of Director Campbell, a man of many contacts and a former White House Aide, read the manuscript. Belmont then sent it to ex-Russian engineers for evaluation. The Russians were definite: "Sutton is right." Belmont told me this, and added the manuscript was also going to Sovietologists, but not to worry if they made adverse comments. (He once said something to the effect, "we do not accept them.") At some point, Roger Freeman told me that "they" (i.e., White House or CIA) didn't know about the "early period." I remember saying that my work should be repeated and double checked. It made our policy towards the Soviet Union naive and idiotic.

I agreed to return to Cal State for another year, and then go to Hoover as a Research Fellow to complete the two further volumes. Campbell has claimed that Hoover financed the first volume also. They did not. I submitted a complete Volume One, financed by myself. I returned to Hoover about mid-1968 and completed the two volumes by 1971. Volumes One and Two were brought into print fairly quickly. I had only one minor problem with the Editors. They wanted to remove everything on Soviet military use of our technology. I agreed to this.

I completed Volume Three by 1971 and anticipated it would be published promptly, like the first two volumes. In fact, it went quickly to page proof, which I corrected — then I heard nothing for a year. Normally, a book moves quickly from page proof to final book to recoup investment. My inquiries were met with a blank wall. All I could get from Al Belmont was, "It's coming."

We had a war in Vietnam, and I could daily see the product of U.S. and European technology killing our men in Vietnam, while we were still supplying technology for Soviet plants to manufacture weapons and supplies for North Vietnam. I considered this immoral and lunatic behavior. Further, I had personal experience of war in Normandy, in Belgium and the Rhine Crossing in March, 1945. Active war is not pleasant. Its cold, dirty, dangerous. My concern was with men on the ground in Vietnam rather than armchair academics and politicians who had probably never been on the dangerous end of a gun, but who were making technological decisions without knowing technology. In particular, I was horrified at State Department statements directly opposed to materials in their own files.

I decided to do an end-run around whomever was delaying the third volume, which had current application to policy, and was obviously being delayed. I agreed with Arlington House to quietly write another volume on the military use of our technological transfers and so-called, "peaceful trade." My planned, deliberate objective was to spring loose my Volume Three, by publishing the segments Hoover wanted "out" — i.e., the military end-use segments supplied by the West — and so, force their hand. I fully admit this was my intent. I would do the same again, only quicker, and with more publicity.

About this time, Henry Kissinger OK'd export of the Centalign B machines to the Soviet Union. These had only one end use — to machine ball-bearing races to extremely high accuracy for MIRV-ing Soviet missiles. The USSR could then pinpoint-target the United States. The Washington arguments were wrong. (However, DOD had people warning of the dangers.) The Soviets could not manufacture Centalign B machines, and no one else in the world had an equivalent machine.

Kissinger's action confirmed to me that something was badly wrong in Washington. His "detente" strategy was to give the Soviet long-term, needed technological advantage in exchange for short-term political promises which might or might not be kept. Kissinger called this policy "linkages." I called it "lunacy." We were handing over what Soviets really wanted (advanced technology) to receive

empty words. It still baffles me how Kissinger can be regarded as an "expert." Anyone can hand over the keys to the safe and ask nothing in return.

Further, the McNamara "rules of engagement" had tied the hands of the military in Vietnam. In effect, we helped the Soviets build trucks, and then told our pilots not to shoot them up. When one looked at the entire picture, I could only arrive at one conclusion — treason.

I have never formed final conclusion on policy makers like Kissinger, Rusk and McNamara. It could be stupidity, ignorance, ego, or worse. Frankly, I don't know. When foreign diplomats and military people asked me, "do you think Kissinger is a Soviet agent?" I replied, "I don't know. He could be ignorant."

I told no one except Arlington House about National Suicide. It was written in three months, and rushed through production in another three months. It was published as, National Suicide: Military Aid to the Soviet Union (available today as, " The Best Enemy Money Can Buy"). My advance copy is marked, "Received August 27th, 1973." When it was received, Volume Three of Western Technology and Soviet Economic Development was still being held in page proofs, confirming my belief that the delay was deliberate to prevent the information becoming public. (This was 8 months after correction of page proofs.) From rumors, it appeared the pressure was coming from the White House.

Some days after receiving my advance copy of National Suicide, I received a call to go to the Director's office (Glenn Campbell). I found a group waiting, including Alan Belmont, Dick Staar (CIA), Stefan Possony, and perhaps a few others. Campbell immediately launched into an attack, stating that I had plagiarized the text of National Suicide, and that I had no right to produce such a book.

My reply was: (1) 1 cannot plagiarize my own work; (2) Hoover itself had asked for the military sections to be removed from Hoover volumes, thus releasing the material; (3) We had men being killed in Vietnam, and I had every right and duty to draw public attention to this if our policies were aiding the enemy; and (4) 1 remember saying, "tell me where I am wrong on a single fact." No one ever did.

I gave some examples, i.e., we were sending machine tools to the Gorki truck plant outside Moscow, and GAZ (Gorki) trucks were on the Ho Chi Minh Trail. The U.S. pilots even commented they looked like Ford trucks (Gorki was built by Ford Motor Company).

Soviet ships on the supply run to North Vietnam were larger, faster vessels, sold by the West under "peaceful trade." I had obtained a list of the vessels from sources that emerged from the woodwork after publication of my first book. From the Soviet Register of Shipping, I located the type, design and origin of every Soviet marine diesel engine. Most were Burmeister and Wain (Denmark), or Soviet copies.

In brief, my information was precise and accurate. Campbell asked me to have National Suicide withdrawn. I refused. End of meeting.

I called Arlington, and they assured me they would not buckle or withdraw the book.

Another meeting followed a few weeks later. Campbell said I had no agreement or contract with Hoover Institution, and I was no longer a Research Fellow. To stall for time, I said I did have a contract (actually, I did not), and I had no intention of changing my position.

I later heard that a few Senators and Congressmen had called Campbell to support me. A week later, Al Belmont came to my office and handed me a contract, signed by himself, with the words, "You are going to need this."

Hoover Institution then removed my name and that of my secretary from the Hoover personnel list. I became a non-person. In subsequent speeches, I found this Hoover Institution action to have significant impact on audiences. Apparently, it convinced people that I was probably right. Hoover also rapidly released Volume Three. They continued to pay me until I left voluntarily a year later. On the way out the door on the last day, Roger Freeman intercepted me and said, "We can work this out; let me talk with Campbell." I said thank you, but no thanks.

My sense was one of absolute disgust. I had, with my own funds and time, undertaken ten years of research of obvious value to the United States, and put up with the naive stupidity of academics at UCLA and Cal State to get the work into print. The response? — insult and harassment!

I concluded Campbell was a weak patsy, and that Washington didn't give a damn about our men in Vietnam. (This is still my assessment today.) The academic world by and large was more interested in preserving its little stock of knowledge. Academic freedom is a sham.

My thanks came from individual citizens. After speeches, scores would come up and say, "God bless you," or, "We are with you." One speech filled the Hollywood Palladium with standees at the back. At the end of the speech, I was called back three times to the podium. The more macabre would say, "it's a wonder you are still alive."

A few gestures were practical. A group of anonymous airline pilots gave me (through a friend) a gift of $10,000. A Congressman inserted my speeches into the Congressional record. I had a call from Antoine Pinay, former Prime Minister of France. Several VFW posts passed resolutions of commendation. And so on.

Not once did anyone challenge the data or the argument. The press ignored the books (with the exception of the Manchester Union Leader in New Hampshire and the Telegraph in London). However, on a later visit to London, The Times sent a message asking me to meet with the Editor (now Lord Rees-Mogg), who asked a key question: "Why do you think they are so upset?" Roughly, my answer was, "I really don't know. I guess I must be close to the truth."

I made a number of foreign trips, and met senior military or government people from Mexico, Argentina, South Africa, France, Belgium and other countries.

About 1969, Campbell urged me to submit my first volume to the University of London for a Ph.D. This I did. As I had scores of favorable academic reviews, the procedure should have been automatic. Peter Wiles was appointed examiner, and proceeded to raise every conceivable petty point possible. I made two trips to London, and did what I could to answer his points. In the end, I gave up, and figured it was another academic game.

In about 1970, I was contacted by a Colonel Samuel Clabaugh, who at one time had been U.S. military attache in London, a friend of Averell Harriman, and, formerly, with OSS and CIA. He was apparently in routine contact with Eleanor Dulles. Over perhaps a year or 18 months, we exchanged letters and meetings (I went to his apartment in Washington, D.C. for lunch). I was quite clear and definite: our policy is suicidal, developed by the naive or self serving. I remember repeatedly making the point; if I am wrong, someone will challenge me, but all we have is silence. No one dares challenge me. I know the technology, and I am right.

About 1971, Hoover Institution wanted me to give a paper at Ditchley Park in England to a group of businessmen, bankers and academics. This is where I met M. Pinay, former Prime Minister of France, who greeted me, "Tres bien; tres bien." At one point, the Chairman of Dunlop Holdings (who had built several plants in the Soviet Union) stood up and said, "Sutton's information is correct; we have built tire plants in the USSR for many years, and we will continue to build these plants even if it is my own suicide." Even today, I can't fully understand the motivation behind this statement. It's not rational, but that's what the man said. It raises the question of whether some form of brainwashing was used on foreign businessmen. I know there was pressure.

Over the years, my conclusions have firmed up roughly as follows:

1. The U.S. was suckered royally by Soviet propaganda (the "perception problem").

In most cases, the conduits were not agents (like Ames), but individual businessmen, academics, and politicians looking out for their own interests and proposing self-serving policies without challenge.

2. My argument was correct and remains correct today. The Soviet Union was incapable of self-sustaining development and relied on the West for most technical advance. The Russians are very capable people; it was the system that failed, the lack of a mechanism to transform ideas to technical reality in a rational, useful way.

3. My experience has been that the academic world is largely concerned with preserving the status quo and its own perks and prestige. Really new ideas are automatically dismissed. To me, this makes the entire fabric of degrees and honors suspect. These reflect merely an ability to absorb what is already known, not any contribution to future knowledge.

4. My greatest surprise is the sheer lack of moral action. No one asks, what is right?

What is moral? I find this entirely disgusting and shortsighted. The truth will always out, sooner or later. I prefer to be remembered as someone honestly concerned with others, rather than as a sham, self-serving political type. Glenn Campbell even sneered at my moral approach in one well-remembered conversation:

GC: "Tony, you have a problem."
TS: "What is that?"
GC: "You are a moralist."
TS: "So?"
GC: "You can't survive being a moralist. They will break your rice bowl."

On the other hand, no individual, and certainly no country survives without a set of principles. Pragmatism is shortsighted, a crutch for the weak, a cop-out tor the greedy.

5. Certain names stand out as key in the Soviet perceptions program and successful operation at the highest levels in Washington:

Armand Hammer. Son of Julius Hammer (founder and financier for the Communist Party U.S.A.). Access to every President from Roosevelt onwards.

Protected at the highest levels in Washington.

Averell Harriman. Received $1 million gift from Soviets about 1928. (I can provide the State Department file numbers if required.) State Department was told, "hands off on Harriman. Key member of the Georgetown group that had major influence on policy and intelligence.

Henry Kissinger. I need only quote Anatoly Dobrynin (In Confidence, Random House, 1995). "... more than once when Kissinger knew I was going over to the State Department he would ask me to bear in mind that Rogers had not been told about this, that or some other aspect of the issue under discussion and I was not to tell Rogers about it."

Out of the hundreds of examples, I would select the export of Centalign B machines as the key to determine whose side Kissinger was on. I presume there was no mark program on our side (see Appendix), and in fact, it would be difficult because the product has precise measurable characteristics. Kissinger, over numerous DOD protests, provided the USSR with MIRVing capability.

Unless there was some deception program on our side which required Kissinger's action as a cover, then one is driven to the conclusion — unwelcome as it is —that Kissinger was a Soviet agent. Sutton was just one irritant in a larger game, but if the strings provided in the Sutton research were pulled, he had the capability of unraveling the entire Soviet perceptions program.

No one has stepped forward, in 1996 — or even in 2001 — to say, Sutton was right or wrong, because, even today, reputations are at stake. The United States owes me an official apology. When they should have encouraged me to work further to pull on the strings, I was squashed, threatened, harassed, and discarded — for whose benefit?

THE AMES CASE

THE SIGNIFICANCE OF AMES is not that a Soviet agent existed in CIA. This was discussed widely back in the 1970s and before. Even names were floating around. The significance is that Ames surfaces the perceptions program in a way that could not be done by any academic writer. The Soviets paid Ames well — very well, by Soviet standards — to maintain a facade. There were many ways Ames could be used; this was judged to be the most important. And it confirms what I had been saying since the late 1950s. When Lenin wrote about the "useful idiots," and the "deaf, mute blindmen," one wonders if he knew how successful his perceptions program was going to be. Lenin suckered the West royally. Ames is a pitiful pawn, but if you pull on the Ames string, you'll find the rest of the story — and more names.

Be prepared for some shocks.

APPENDIX 1; THE MARK PROGRAM

IN RESEARCH ON TECHNICAL TRANSFERS, I was alert for specification changes in equipment which could affect quality, quantity and product obsolescence. In brief, it is possible by slightly changing specifications of manufacturing equipment, to affect quality and performance of the end product. For example, changing the dimensions and shape of a blast furnace has significant effect on cost, quality and quantity of output. By slight variations in equipment sold to the USSR, one could reduce the benefits. By changing the tensile strength of steel or design parameters, for example, one can influence the quality of the end product. On one or two occasions in State files, I caught reference to a "mark" program (i.e., to sell sub-standard equipment); and elsewhere, statements to the effect that Western businessmen sold outdated designs to the Soviets.

No mention is made in any of my books to this "mark" program. I did once mention it to Alan Belmont, i.e., that I knew of the possibility of such a program; that, if implemented, it was not effective; and I had not mentioned the possibility even in passing.

Possibly, Soviet political intervention into technology made such a program partly unnecessary. A great deal of equipment was ruined because Soviet political rigures insisted on early and fast startups, insufficient maintenance and inadequate training. Russian engineers up to the 70s had about the same hands-on technical experience as a master mechanic in the United States. This has probably changed in some fields, i.e., computers and software.

Another factor is the absence of a secondary infrastructure in the Soviet Union. In the United States, thousands of machine shops, tool and die shops, and independent experts of all kinds give a wealth of backup experience where and when needed. This market-generated structure gives a richness of experience and flexibility to major corporations. The Soviet Union had nothing remotely similar; everything was handled "inhouse."

It is possible that CIA decided a "mark" program was unnecessary, i.e., it was really suckered by the Soviets, and truly believed the Soviet Union had a super-power industrial structure. Or, a mark program may have been inadequately designed. In any event, a mark program was not identified. However, it is difficult to believe that some key technologies (as the Centalign B) were not modified before shipment, if only as insurance. If we did not have such a program for key technologies, one has to ask, why not?

This raises another question. Why did policy debate always focus on the last sale or contract (i.e., the marginal unit) rather than the total of all sales in that technology. If debate was focused on the total industry, rather than single contract, then Soviet dependence is obvious.

In my exploration of the State files, I found that State Department officials filed reports with military information without distribution. The information was killed. To gauge the success of the Soviet perceptions program, one would have to thoroughly explore the hidden recesses of CIA to determine if a mark program was implemented at any point, in any way. If CIA considered such a program and rejected it, then the U.S. really did have a perceptions problem of extraordinary magnitude. For example, if Kissinger allowed the Centalign Bs to go forward without a mark program, then one has to have the most serious suspicions of Kissinger's motives.

I have no way of knowing the truth. However, one can deduce a problem from other technologies allowed to go forward, and where tracking subsequent operation proved that the Soviets had received the most advanced technology (i.e., advanced aluminum rolling equipment, marine diesels, and so on) without modifications. Example: the ships on the Haiphong run were the largest and fastest, and all had marine diesels imported from the West.

In brief, the U.S. should have had a mark program. I do not have enough data to say whether such a program existed or not. However, this would be a fruitful target for exploration of past files. If such a program was not implemented, why not? — and if it was, why did it fail?

APPENDIX TWO: LESSONS NOT LEARNED

THE HOOVER INSTITUTION SAGA starts up again in 1985 with a repeat of the perceptions disaster, and one that may have long-term consequences worse than the Soviet perceptions program. U.S. scientists are running what amounts to a scam to keep their gravy train flowing. This is losing lead time for the United States. A new technological paradigm is emerging and the science establishment is doing its best to deride and ignore the facts.

After leaving Hoover Institution, I continued to work on technological research. I found it relatively easy to earn a modest living as an author (in spite of Campbell's prediction that my rice bowl would be broken), and in the last 20 years, have authored another 20 or so books. I found regular bookstore distribution closed to my books. Campbell was right in this aspect. But apparently others were having their rice bowls broken, and a vast "alternative" book publishing industry is in great part due to the rise of new publishing houses scattered across the United States, handling the work of those who have been persecuted, or whose writing falls outside the narrow New York guidelines.

In any event, I generated enough spare time to work on technology. My exploration went back to ancient technology and science, through alchemy, Goethe, the Steiner movement, and Wilhelm Reich, as well as discarded discoveries of the last 200 years. I found hundreds of ideas and discoveries had been buried for political or financial reasons. In particular, I found that the ancients "knew something we don't today." I found that "underground" researchers were probing modern discoveries inconsistent with and wholly beyond our materialist view of the universe. The energy-matter equations, the basis of physics and the "laws" based on these equations were under assault - partly from researchers in Oriental traditions, and partly from workbench research picking up some of Faraday's observations back in 1831. Other developments were coming from the work of Wilhelm Reich and the anthroposophic tradition. Future 21st century technology will be a paradigm reflecting these discoveries, ignored in the materialist tradition.

Futurists see the future as extrapolation of the heat-pressure/centrifugal-expansion technologies of the industrial age, plus semiconductor technologies. What I see is an entirely new paradigm based on cold vacuum/centripetal vortex technologies, with semiconductors as enabling technology only. Quite different from, and far more powerful than our contemporary technology, and environmentally pure.

About 1985, 1 wrote to Glenn Campbell (who had been Reagan's Chairman of the Foreign Intelligence Advisory Board, and the logical recipient for any

such ideas), and suggested the new paradigm should be investigated. Campbell probably thought I was looking for some kind of grant (I wasn't), and passed me on to Roger Freeman. I met with Roger Freeman at his house on the Stanford campus and briefly outlined my ideas. I told Freeman, "I am not looking for anything. I am concerned with the future of this country. The science establishment, like the Sovietological establishment, is protecting its turf tor self-serving reasons."

Roger Freeman suggested I should see Edward Teller, whom he described as open minded. I found it difficult to get across the point that "open mindedness" is not enough when dealing with a scientific culture that has thoroughly permeated our society. What my analysis suggested was existence of a superior technology to our contemporary technological paradigm, and it would be most unlikely that Teller could grasp its elements, any more than Kissinger had grasped the elements of Soviet technological dependence.

I understand that Teller did agree to talk, but the meeting did not take place. Frankly, I wasn't going to waste my time. I had been insulted and abused trying to help the United States, and I wasn't going to risk any more abuse from "deaf mute blindmen" (Lenin). Time would show whether I was right or wrong. If the gatekeepers won't listen, they have the problem, not me.

Just three years after this Stanford meeting, Pons and Fleischman announced "cold fusion." This was instantly derided as fraudulent by the orthodox physics establishment, and Pons and Fleischman were driven out of the United States to France. Teller's reaction to cold fusion confirmed I was right in not pursuing the Freeman suggestion. Cold fusion is part of the new paradigm. In the last few months of 1995, the U.S. government has confirmed its viability. If Campbell had taken me seriously in 1985, it is quite possible that Pons and Fleischman would have had more favorable reception. In fact, the Japanese now finance their work in the south of France, and the U.S. now admits they are correct - but has lost a decade of lead time.

By extraordinary coincidence, Fleischman taught electrochemistry at University of Southampton (where I studied in 1948) and Pons was his graduate student also at Southampton. (Further, one of the leading researchers in the new paradigm is Harold Aspden, today, at Southampton.)

In January, 1990, 1 started Future Technology Intelligence Report to record my analysis, and as a device to pick up information. For six years, I have recorded monthly my ongoing work, a matter of record for history to read.

Once again the myopic vision of U.S. technical intelligence is highlighted. Ames is a disaster. Yet the gatekeepers of science and policy are creating another disaster, and will place the U.S. into irreversible technological decline by ignoring the new paradigm.

We have politicized decision making in technology, and U.S. politics is a poor guide to technological decision making. A moral approach would have saved the U.S. yet another embarrassment. If Campbell had taken steps to correct the

injustice done to this writer in 1971 (and earlier), then the cold fusion reaction could have emerged in a different environment. I was already aware of over unity devices, and was looking at over unity N-machines when I approached Campbell in 1985. In fact, if Campbell had backed me in 1987, the U.S. would have arrived at a quicker and more accurate assessment of the emerging paradigm, and would have been ready for the hostile resistance that was forthcoming within the U.S. science establishment.

If anything, the treatment of my research is proof that in the long run, the moral approach is the only practical approach.

Just because Edward Teller designed the H-bomb doesn't ensure he will understand N-machines, cold fusion, or etheric weather control. These are outside the orthodox physicists' framework of understanding, outside the laws of physics, and require study of an entirely new framework of analysis, which is at this time incomplete. The only agreement in cold fusion, for example, is that "something" happens in the lattice structure. The "something" is under discussion and investigation. Much like electricity in the 1850s before Maxwell perfected the theoretical understanding. Etheric weather engineering is even more challenging. I have found that mathematicians (who appreciate golden proportions) are more understanding than meteorologists. In general, electrical engineers appear to grasp the new paradigm more readily. (Kincheloe, de Palma, Constable, Aspden, Tiller, Inomata, Tewari, etc.)

My greatest criticism and sorrow is that decisions on research directions are taken by those with the most to lose by change and who rationalize obstruction by clinging to obsolete ideas and citing obsolete, man-made "laws." That's no way to make progress — or for a country to survive.

TONY'S NEWSLETTERS

ANTONY SUTTON produced several different newsletters during his lifetime as a way to stay in touch with his many readers and to continue his research on his many varied interests. The revenues were meager but did help to defray his research costs. From 1982 to 1997, he issued the Phoenix Letter and from 1990 until his passing, he published Future Technology Intelligence Review (FTIR). Here from October 2001 to April 2002 FTIRs is Tony sharing his thoughts on the September 11th attack and an article on Skull & Bones that he had written before the terror event. These are followed by articles from his Phoenix Letter about the Order of Skull & Bones. Some from when he first began writing about the Order.

A Monthly News Letter Devoted to Technical Prediction
Antony Sutton, DSc - October 2001: Vol 12, No. 10

THE FUTURE IS HERE AND NOW - BUSH IS STILL BACK IN 1831

WHY 1831? Because German philosopher Georg Hegel died in 1831 and the Hegelian secret society (Yale) Skull & Bones, to which Bush has sworn eternal silence, was created in 1832.

Like Nazism, Communism, and Prussianism, groups, like S & B and Bohemian Grove are based on statist Hegelian idealism, the precise opposite of our ideal of Constitutional liberty and individual rights. The Owl of Minerva is the symbol of Bohemian Grove and the Owl of Minerva is also the title of the Hegelian Society Journal in the United States.

So what, you say? Because you will understand coming events in future technology and the roles of S & B and Bohemian Grove much better if you put to

one side the artificial divisions of left and right, Republican and Democrat, and the hypocritical prattling of their members.

These elitist groups are Hegelian and believe the State is run for the benefit of the "Masters" (Hegel's term). We are mere "Slaves," the peons, who do their bidding. Understand this and you will understand the trials that await New Technology down the road a way. Okay, you say, but I always knew we were peons, and somebody unelected was running the show. The point is that no academic has yet pinned this control down to an operating philosophy working in defiance of the U.S. Constitution. Suspicion is not enough. Throwing names around is not enough. Big charts with lots of arrows is not enough. We have to pin down the how and why, the operational procedures. If we are right in our analysis, you will in coming years see another layer of the onion skin peeled back. The Emperor really has no clothes.

The Bush Administration is no different from the Clinton Administration when it comes to new and more efficient energy technology. Both Administrations publicly ignore new technology or define it as beefed up, old technology to favor those interests who pay vast sums to support the two major parties — and get a piece of the action.

We hesitate to recommend Hegel for your reading. We see Hegel as turgid nonsense, but very influential. If you want Hegel's statement on the relations between "Master" (them) and "Slave" (us), see pages 520 to 523 of Phenomenology of Spirit. This is the section on "Lordship and Bondage." (We term it, "Master and Slave"):

The self consciousness of the Lord is essentially related to the being of the mere things he uses and uses up, and these he enjoys through the bondsman's (slave) self consciousness. The bondsman prepares and arranges things for the enjoyment of the Lord.

In brief, the function of us — the slaves — is to work for the Master. See Bush/Cheney as the Lord and you and I as the slaves, then it all becomes clear. Our job is to go along. Theirs is to steal and grab and enjoy the product. The State is the vehicle they use to grab the product legally. The State is the Master, and we are supposed to be obedient slaves. Quite a racket, if you can keep it going. And this is the purpose of Bohemian Grove and Skull & Bones. Clever, isn't it? You are all running around thinking Republican and Democrat, while the real action is somewhere else.

So within this Hegelian frame, let's take a look at the Bush-Cheney energy plan.

The Bush-Cheney energy plan is wholly based on conventional fossil-atomic technology owned by the same interests that financed Bush and are prominent in the S & B and Bohemian Grove. If the steam and water wheel interests had kicked in for his re-election, no doubt they would have a place in the Bush-Cheney Plan. It's all about cash for re-election, put up enough cash, and you become one of the Masters.

Bush actions follow closely Hegel's plan for the "Masters." The Masters should not be interested (according to Hegel) in new discovery. Leave that for

the slaves to develop. "Masters" prefer to milk the old, which generates profit and give them control. Hegel is therefore intimately related to Skull & Bones and Bohemian Grove. The reason that outside observers have not been able to get a handle on establishment power is because they have been trapped into a right-left dichotomy and kept there by carefully baited political promises, rarely kept except to financial contributors.

Collection of names and organizations is insufficient. One needs to know their operating philosophy to learn their goals and how they achieve their goals. This is not political meandering. Unless you understand the control features in today's world, you cannot make correct decisions on future technology.

The input for the Bush-Cheney energy plan came only from conventional energy interests. The Administration refuses to release the working papers. Why? Because these will demonstrate that only a few energy firms got access to Cheney with their proposals. These were clearly self-serving proposals. No one else was even considered. Certainly not renewable energy sources or free energy, Just as Hegel would have it. Those who gather at Bohemian Grove and Bones — the Masters — got the rewards. The citizen slaves who do the thinking and the development get nothing.

Same with Clinton. The Clinton Administration engineered a sabotage plan in 1996 to collapse the Congress on Free Energy scheduled to be held in Washington, D.C. Bush-Cheney just left them out of consideration.

This closed-shop procedure is, of course, the fascist tableau, and directly out of Hegel, who also provides the philosophic fuel for fascism and communism. So far, only a few commentators have made this observation, and wherever you took your "poli-sci" courses didn't tell you this.

Our name for the Bush-Clinton version is "smiling fascism," and it stems directly from the "right Hegelians" of the 19th century. Bush himself can trace to 1832 through Skull and Bones, and its formation in 1832 in Hegelian Germany and the U.S. Even Domhoff, who has written in detail about Bohemian Grove, missed the link to Hegel through Minerva the Owl.

Today, according to our sources, Morgan Stanley is preparing the IPO for Black Light Power (proven free energy). It will come to market in about two years. Wall Street (a lot of the Masters hang out in Wall Street) needs these two years to dump conventional energy assets. But don't be surprised if a wrench gets thrown into the works. We don't trust Washington, D.C. one bit when it comes to New Technology or what they will do with the technology as they try to seize control.

Similarly, California utilities are trying to dump their resource assets onto the State and the taxpayer before they become worthless. This is right on schedule as we predicted many years ago. First, fuel cells will have a run in about 2003 and 2004. Then free energy will start to emerge.

By 2005, everybody and his dog will be looking for free energy proposals. Another dot.com mania in the works. This will be the time to be very, very wary.

The most probable systems are already known today, but, suddenly, you will be offered participation in a score of systems whose free energy potential cannot be proven.

By 2005, the insiders will have dumped conventional energy assets long before the BLP IPO hits the market. Be careful. We know of only three, maybe four useful free energy technologies: BLP, MEG, Cold Fusion, and a Canadian project, already picked off by the U.S. Navy.

MEG is not in as strong a position as BLP because Colonel Bearden is U.S. Army (Retired), and subject to pressure. We like his technical approach, but Bearden himself well knows the pressures he faces.

Cold fusion is fully proven, but not yet repeatable. It was deliberately crippled, early on. The initial blow to destroy was cast by former President Bush (also S & B) in 1989. The Canadian project is based on nanotechnology and is way over unity (>1000%). This was demonstrated to the U.S. Navy — and then disappeared.

Note also that BLP has a director (Brewer) who was former Assistant Secretary of Energy in the Reagan Administration. BLP is described by the Internet service, <psst-heyu.com> as the "one that got away."

Maybe not quite a plausible theory is that if free energy is to emerge, the U.S. Government (run by the Masters) would much prefer a government monopoly or control by interests close to the Masters. In other words, make a profit out of something essentially free. How to seize it? There are many ways. At the moment, we say no more.

Free energy would of course be a useful lever to promote their New World Order. NWO could then come charging down the road as a White Knight to rescue the world from energy paralysis.

A SECOND TECHNOLOGICAL REVOLUTION

Almost simultaneously, the revolutionary potential in radionics is emerging. But out of England, not the U.S. The AMA believes it has this potential locked up. We don't think so. What may happen is this: the AMA will suddenly get religion and adopt radionics. Stranger things have happened.

Most important here is the theoretical justification for radionics formulated in the work of the late famed quantum physicist, David Bohm, one-time Professor of Physics at University of London.

Take a look at Chapter 7 of The Undivided Universe, by Bohm & Hiley, entitled "Non locality." Bohm says the opposition to "non locality" (this is what physicists call "action at a distance") has a historical explanation, and Einstein's "spooky action" comment is not based on science or logic, but on mere assumption.

While Maperton provides proof of concept for non locality and neatly gets around AMA/FDA dictates by computerization, David Bohm is the source for theoretical support.

But most people are like Einstein and think of all action as local. This assumption does not reflect observation, and in fact, is a continuation of Isaac Newton's comment that non locality is a "philosophical absurdity."

The establishment is headed, then, towards two roadblocks. Free energy is here, proven and scheduled for installation about 2004 - 2005. The earlier Bush administration shot down cold fusion with a stacked Blue Ribbon Committee, but Randall Mills was too persistent and thorough. The government will have to make a deal with Mills or go the seizure route.

Medical radionics is here, proven and available, free today.

Note the use of the word "free" in both cases. Not quite free, but close enough. If it is free, it cannot be controlled for private gain. Nobody can own it. What the U.S. can do is impose a tax to remove the free aspect or donate the technology to friends.

This, alone, guarantees more skullduggery in coming years. No way are the powers that be going to allow free energy without their control. This is fundamental. If Randall Mills is stubborn and won't make a deal, they use national security. And if you don't know how they use national security, then read our America's Secret Establishment. Randall Mills is not Tony Sutton. We would promptly put the BLP patents into the public domain, and make the lab information freely available. But Mills has sweated blood for 10-15 years and deserves a payback; so do his loyal shareholders.

Does Washington know all this? Possibly most politicians and bureaucrats do not. But what about those who make the decisions?

We can go back 30 years, and cite CIA Director William Casey, who said CIA did not know the West built the Soviet Union until the 1970s. Yet the State Department files (State used to do the CIA's job) are crammed with information (Microcopy 316).

That's where we found the story in the 50s and 60s. (Casey was not courteous enough to cite this Editor as the source of his knowledge, but have you ever known a Government official to be courteous? — or truthful?)

Probably the strangest part of this story is that Secretary of State Dean Rusk and Assistant Secretary of State Main (in 1963) went on public record with statements like:

The Soviets have their own self-developed technology and are not dependent on U.S. technology. (Rusk)

These statements were nonsense, and directly opposed to the massive evidence in the State Department Decimal File. It took this writer three massive volumes to show the falsity. We then privately and quietly produced a fourth volume to show that the Soviets also depended on us for military technology as well. (National Suicide, 1974) — so privately that the book was on the street before the CIA picked up the news. When we refused to withdraw the volume, we were fired at a momentous meeting in August 1973.

The argument that we were killing our own men by shipping U.S. technology to the Soviets and Vietnam had no effect on the assembled CIA, FBI and academ-

ics. They had their orders. The Masters knew they were wrong, and wanted to avoid embarrassment and public exposure. A few, like Zbigniew Brzezinski and Richard Pipes, took our side, but were soon quieted. It took Casey and the CIA ten years to quietly repeat our work and find we were correct.

After this, we took nothing out of Washington at face value.

In brief, there is no sure thing about free energy. Wouldn't the government just love to gain control or make a deal and tax it? — and don't expect the truth.

Governments do a great job at making war, kicking their citizens around, especially those who make fundamental discoveries and maintain the status quo for their favored friends. They also do a great job at conning citizens.

Apart from this, politicians and bureaucrats have one aim: to keep on the government payroll, which they do very well! And if real ambitious, they want a freeway or building after their name. The welfare of citizens is very much secondary. Don't expect any change.

Look for legal theft; and as Hegel said, this must benefit the Masters. It is their right, and our duty is to go along, and if we behave, get some scraps. Huh!

POSTSCRIPT

October's FTIR was written and in for typing before the World Trade Center attack.

Note:

a. We are intrigued that only the name Osama bin Laden (a CIA creation) is cited as a suspect. The media is totally absorbed with this one name. No other considered.

b. Bin Laden has been in terrorism for a decade and known to be a factor in all kinds of terrorist acts. Why wasn't he picked up before this? Journalists were able to locate and meet with him in Afghanistan, but not the U.S. government? We spend $30 billion a year on intelligence, and get hit by a massive surprise attack?

c. We suspect bin Laden was protected by certain powerful Western interests, specifically the Saudis and the oil companies fearful of disrupting oil markets.

d. Is it possible that the U.S. knew the latest WTC attack was coming, and let it occur? Like the 1992 WTC attack (F.B.I, knew), or Pearl Harbor, or the U.S.S. Maine in 1898. Why? For the reasons in the above text.

e. This writer is not alone in distrusting anything that comes out of Washington. Depressing, but realistic.

November 2001: Vol 12, No. 11

EDITORIAL COMMENTARY

1. The United States is a vast, wealthy, productive and intelligent country. The most successful society in all history. Above all, it has a working Constitution with the all-important separation of powers, a full-time restraint on the excesses of politics and government. Remember, the office of President is not the same as

the person who temporarily occupies the office. Without this separation, we could easily lapse into dictatorship.

2. The United States will recover from September 11, while mourning the loss of 3,000 citizens. It will do this with some loss of Constitutional rights. Proposals for ID cards, "roving wiretaps" and other devices from A/G Ashcroft are unnecessary — a hasty over-reaction to the situation. Quite rightly, these proposals are viewed suspiciously.

3. The U.S. took a hit. It will have to take some more hits. The response should be calm and reasoned, not hasty and emotional. But, above all, we need some explanations from Washington, D.C.

We need to know why this happened. The Presidential talk about evil and "America under attack" is ridiculous. Why do these people hate America so much? What have the government and the multi-nationals done to achieve this level of enmity? Why has Washington suppressed free energy development? We don't need Saudi Arabia or the other oil producers; we need open-mindedness in Washington.

Even further, we spend $30 billion a year on intelligence, yet no advance warning, and no action! This strains our credulity. The hijackers came into this country in mid summer, and were recorded on the CIA "terrorist watch list" as "terrorists." The ball stopped right there. The White House was informed. The people doing the watching did that and no more. They watched while terrorists were allowed to take no-landing Right training and do their planning in peace and quiet. It appears to us the operation was "allowed to go forward" — a scenario we have not seen discussed in the media. How can you spend $30 billion a year on intelligence, and ignore 19 known terrorists? We know the CIA informed the White House. No one said, "stop them."

This reminds us of a similar snafu in the 1960s. The CIA said it did not know that the U. S. had built the Soviet Union. Nothing has changed. Either we have the most unintelligent of intelligence agencies, throwing money at useless SIGNIT systems, or somebody has another agenda out there — and the power to order "don't do anything."

With hundreds of billions a year spent on defense, four planes are able to sneak in and bring down two landmark buildings and hit the Pentagon without triggering defenses. This is incredible. A complete collapse of defenses. We need a full and documented answer. How much was known and when? This put-off of "revealing our intelligence sources" is plain silly. We have no intelligence if we can't use it — period! To us, it looks very much like the Washington action pre-Pearl Harbor in 1941. Roosevelt had the Japanese code messages and allowed the attack to occur.

This is also a repeat of the collapse of U.S. intelligence in the technical "perceptions problem" with the Soviets. The U.S. never did figure out the technical weakness of the Soviet Union or chose to ignore the weaknesses. If you read, Best

Enemy Money Can Buy, you will see how the U.S. was assaulted by an army of disinformation. From Secretary of State Dean Rusk and his deputy Edwin Martin, who had an arsenal of absurdities presented as hard fact, to Armand Hammer, son of founder of the Communist party, U.S.A., and access to every president from Roosevelt onwards; to naive academics like Walt Rostow; to businessmen like Norris (Control Data).

In Iran Contra, the U.S. became a major cocaine supplier, and this was approved from the Bush White House. Nothing ambivalent about that — Colonel Olly North was flat-out lying, and the system will not release the papers, so as to provide a cover for Olly — and to hell with the public.

In the 1993 WTC attack, the FBI had a man inside the operation. It was allowed to go forward.

We refuse to believe that Osama bin Laden woke up one morning and decided to attack next Tuesday at 9:00 A.M. This is a man who lives in a cave, for heavens' sake!

What is his connection to the CIA? We are now set up for another whitewash, blue ribbon committee. There is a high probability that biological weapons will be used in jihad — cheap, portable, and sometimes effective. What is not discussed anywhere, probably not even in the Pentagon, is the use of radionics to counter pathogens.

The AMA-FDA complex has done an extraordinary job to eliminate knowledge and use of radionics in the U.S.A., an unbelievable disservice to humanity. And all for a few dollars' profit! Biological weapons by definition have a life energy, and radionics is the manipulation of life energy. This can be reversed, if you know how.

Radionics, discovered in 1924 by a San Francisco doctor, Albert Abrams, was ruthlessly suppressed by the American Medical Association in its effort to monopolize American medicine.

In fact, radionics may be the ideal defense for biological warfare. Radionics can protect up to 1/2 square mile, but thanks to AMA greed and myopia, the U.S. has no usable radionic defense. Any system using life energy can be influenced by radionics. But neither life energy nor radionics is officially recognized in the United States. If anything is to be done, it will be by individual citizens.

We don't believe that Al Queda cares what is officially recognized by the U.S. establishment. They have one question: does the United States have a defense?

The facts are extraordinary, but not surprising to those who follow government. There is a vaccine against anthrax — efficiency unknown. Only sufficient vaccine exists for the military. None is available for civilians. Antibiotics have very limited use.

Our personal view today is "sauve qui peut"— it is up to individual citizens to discover how they have been conned.

THIS IS YOUR GOVERNMENT AND WE ARE HERE TO HELP YOU

The Bush commentary— "bin Laden is an evil man..." and this is "a declaration of war," is a sophomore-level retort to a crisis. We need explanatory answers to a host of questions, and so far, we have very little.

QUESTION NO. 1: WHEN DID WASHINGTON KNOW OF THE WTC ATTACK - TIME AND DATE.

Did they know before 9:00 A.M. September 11?

Our information is, the White House knew on August 23, 2001, and had a list of the terrorists from CIA. We ask this because other Administrations have allowed attacks "to go forward" for political reasons. We can cite three or tour such cases. The most well known is December, 1941, when Roosevelt had intercepts of the Japanese Pearl Harbor attack codes well beforehand, but allowed the attack to go forward to bring the U.S. into war. The code messages were forwarded to Hawaii by commercial routes, the slowest possible method. They arrived well after the attack.

In September, 2001, the entire New Utrecht High School in New York knew a week beforehand'that the Twin Towers were to be attacked. (Journal News, October 11, 2001.) If a high school had advance warning, then someone in Washington must have had that same information.

QUESTION NO. 2: ISN'T CIA A WASTE OF MONEY?

We spend $30 billion a year on intelligence, and we are asked to believe no one in Washington had advance warning! Not impossible, but unlikely. What are we doing? Well, we are still waiting for release of the Iran-Contra papers. Olly North was smuggling planeloads of cocaine into the U.S. under CIA auspices. This has been completely concealed by Congress. The Bush family supplied the oil rigs used as transit points for the cocaine. Very few know this today because Washington has clamped secrecy on the operation. In the early 1980s the U.S. Government was a major cocaine trafficker. Why? And why the continual denials in the face of operational documents?

QUESTION NO. 3: WHAT IS THE RELATIONSHIP BETWEEN BUSH, SR, AND THE BIN LADEN FAMILY?

www.judicialwatch.org

QUESTION NO. 4: JUST HOW MUCH DISTANCE IS THERE, REALLY, BETWEEN THE BIN LADEN FAMILY AND THE TERRORIST BIN LADEN?

Bush, Sr. meets with the bin Laden family on business, while a son is the terrorist bin Laden. It would not look good for Bush to be associated with a terrorist family; so did they invent a dispute to suggest distance? Funds were flowing for years from the family to bin Laden — this suggests cooperation. If

there is no evidence to confirm cooperation, why not publish the FBI conclusions from the bank records?

QUESTION NO. 5: CAN WE SERIOUSLY BELIEVE BUSH, JR. WHEN HE CALLS SAUDI ARABIA AN "ALLY".

This is absurd. The Saudis are actively helping bin Laden — not the United States. Bush, Sr. has a business relationship with the bin Laden family. A constant stream of funds flows from Saudi businessmen to bin Laden. Saudi Intelligence is non-existent for the United States. We haven't caught up with bin Laden in great part because he is protected by Saudis.

Saudi Arabia is not an ally. It is virtually an enemy. Bush, Jr. is not facing the situation — why not?

QUESTION NO. 6: WE SPEND $30 BILLION A YEAR ON INTELLIGENCE AND COULD NOT FORESEE THIS WTC ATTACK?

There were, in fact, several reports from foreign allies — all ignored. Why? Incompetence in Washington, D. C.

The November 2000 FTIR one year ago headlined a warning: we are on the verge of disaster. FTIR identified the Middle East, terrorism and the heavy overhang of gold supply. The significance is this: Washington has a thousand times more information than FTIR. It lacks a capability to analyze and then act on information. The prediction of a gold overhang is important, because it meant that in the event of a crisis, gold would not behave in its normal manner. This is exactly what happened in September, 2001. Gold responded only sluggishly to the WTC events.

The reluctance of Government to act is a recurring problem. Where oil and the Middle East are concerned, the word is "do nothing to upset the oil companies." As far back as 1985, we brought to the attention of the Foreign Intelligence Advisory Board the emerging free energy paradigm. Our argument: We don't need Saudi Arabia or any other oil producing country. Let's get out while we can.

This was back in 1985! — and is on record.

December 2001: Vol 12, No. 12

CIA RECRUITS OSAMA BIN LADEN TERRORIST

The following comes from London (BBC) and Australia and needs further investigation.

U.S. agents (FBI) in London were pulled off an investigation of bin Laden family and Saudi royals soon after Bush took office. (BBC has documents to show this.) In addition to Osama bin Laden, other members of the family were terrorists and under investigation by FBI.

SECRECY AND THE CIA

Intelligence agencies make a big deal out of secrecy. It makes them look important. Secrecy is sometimes needed to acquire information, and they paint a picture of clever CIA people acquiring secret documents.

In truth, this is nonsense. Almost all data can be acquired using ingenuity alone. For the four volumes of the Western Technology series, we acquired all the data needed without any skulking around, and that included the Russian technical manuals — hundreds of them — which came from inside the Soviet Union. What you do is ask for what you want, and have a reason ready.

The only problem I had was on some State {Department} documents. I had to jump up and down a little to get release. Then the reason for the trouble was obvious. State did not want public knowledge of the advanced systems the U.S. was shipping to the U.S.S.R.

This nonsense about the need for secrecy has two reasons:

1 . To conceal from the American public.

2. To make themselves look important, and keep the funds flowing from Congress.

About 5% of the material might be hard to obtain, but if you have Uncle Sam's checkbook, that is no problem.

Don't be confused by what I am saying: there have been, and maybe still are, some excellent CIA people. They will tell you that behind all the P.R. stuff, the real powers are (1) secret societies, and (2) drugs. But the bulk of CIA? — an expensive joke.

Congress is being fooled. And note this: the Chairman of the Intelligence Committee is Congressman Goss — a former CIA operative.

FUTURE TECHNOLOGY INTELLIGENCE REPORT
February 2002: Vol 13, No. 2

WORLD TRADE CENTER — 9/11

We have studied this event. Our suspicions were aroused at the time, and we now identify three areas where information and explanation are needed.

1. The precision, complexity, logistics and risk in this operation are way beyond the capability of any individual or group of individuals. Bin Laden, whatever his financial resources, does not have the technical resources of a state. There had to be a state entity involved, possibly in a covert partnership. Our short list of possible covert partners is:

United States, Great Britain, Saudi Arabia (very likely), Iraq, Iran, Israel

2. There is an interval of 75 minutes between the hijacking and alerting of the U.S. Air Force. Your choice is:

a. U.S. defenses were asleep, drinking coffee, or something else for 75 minutes.
b. Or - there was a deliberate delay, by official order — again, the state. At first, we thought it was inefficiency. Today, we are inclined to believe the WTC disaster was allowed to go forward.

3. The relations between the Bush family, bin Laden family, and the Saudi government. Of the 19 hijackers, 14 were Saudi.

F.B.I. Agent O'Neill has stated publicly he was blocked from investigation of the Saudi connection for political reasons. What political reasons are more important than investigation of the WTC destruction? This is supported by other information, confirming that Saudis are more deeply linked to Osama than has been stated, and Bush stopped the investigation — why?

WARNING

In November, 2000 (that's one year before the WTC disaster) FTIR warned of "troublesome times ahead" and pointed to the Middle East and to financial arenas.

This warning holds. However, the turbulence may be in the financial and economic sectors, rather than airplanes crashing into buildings. WTC-9/11 was a wake-up call.

We are particularly concerned about reports of F.B.I. agents being pulled off investigations relating to Saudi Arabia. Further, we keep getting rumors of Washington, DC elements up to no good, who want expansion of war under the name of antiterrorism.

For the worst case, make sure you have a stock of gold and silver coins. If you have energy stocks, take a close look at the future for oil, gas and nuclear energy.

BATTLE IN WASHINGTON

Keep your heads up, and let your Congressmen know what you think!
A group in the Pentagon wants more war with Iraq — now. Pentagon facilities are being used to leak reports and arguments supporting this policy. It appears to be behind the back of Secretary Rumsfeld and originates in the office of Deputy Secretary Wolfowitz, who has no military experience.

This group has gone back over past Iraqi actions and thinks it has a case for moving on Iraq. We see this as irresponsible with extraordinary consequences for the Near East. This is typical of the arrogant policies which upset U.S. allies.

The CIA has a better idea (for once): use covert action on Baghdad. Secretary of State Colin Powell, a former head of the Joint Chiefs, is against a military action policy.

THE FUTURE

The WTC debacle altered many things, not all yet apparent.
An attack right into the heart of New York City, and this Editor, four months later, is still uncertain of the identify of the attackers!

All this under the guidance of a President with more secrets than the public realizes — some pretty sleazy.

The U.S. has embarked on a ten-year world crusade — in effect, a global war. This, at a time of a rapidly declining economy and shocking revelations of corporate misdoings in Enron.

There is more to come, much more. And this takes us well beyond the original topic of future technology.

Our original task has broadened. The government is on the way to take over free energy technology; fuel cells are just the start. And what Kenneth Lay did with Enron, with off-the-budget entities, which carried the debt load, is no more than the U.S. government has done for decades, with its off-budget rinancing.

This changes our focus.

As you see, we have already broadened our scope to include the all-important geopolitical factors, and this will get us back to the core of America's Secret Establishment.

March 2002: Vol 13, No. 3

HIGH LEVEL GERMAN STATESMAN DISPUTES BUSH ON WTC AND 9/11

Former German Minister of Technology, Andreas von Buelow makes more sense than Bush and the White House on WTC and 9/11. Von Buelow makes sense, but is almost totally ignored in the United states. He was the former Minister of Technology in Germany, an independent, sensible, down to earth thinker.

It is now nearly four months since 9/11, and according to general U.S. press articles, TV and radio reports, it is an unequivocal but unproven fact that the WTC event of 9/11 was the sole work of an evil madman — Osama bin Laden.

Furthermore, we were promised an investigation, but all FBI investigative attempts have been blocked by the White House itself.

Then, conveniently, the Enron scandal emerged. Look at this: Enron has currently twelve Congressional investigations plus others on the board. The tragic event of WTC has none — zero.

Sure, Lay and his buddies ripped off millions, but someone was able to hijack four air planes, fly into New York landmark buildings, and kill a few thousand Americans. We spend billions of taxpayer dollars each year to stop this kind of thing — but our defenses spend 75 minutes drinking coffee!

Quite difficult to understand how a lone Arab who lives in a cave with four wives is able to bring about this stupendous act of cooperation, and our technical efficiency is not discussed or investigated! All we get in the U.S. is unsubstantiated lines about evil madmen!

But to the point, this gets no attention from Congress, only from a foreign statesman, while Lay and his fast-talking aides get twelve Congressional committees.

Our solution is simple: put Lay in jail, and put our effort into WTC - 9/11.

Something over 90% of Americans reportedly support Mr. Bush and accept his neurotic pleas without question;yet, overseas, some very important questions and investigations are in progress. At home, Enron commands all attention, while an extremely important interview of Andreas von Buelow appeared in the German daily, Tagesspiegel (January 13), with not one whisper in the U.S. And the topic is untouched, not only by the vast American Press, but also by Congressional investigators.

Here is one key point from von Buelow: "I can explain what's bothering me: I see that after the horrifying attacks of Sept. 11, all political public opinion is being forced into a direction that I consider wrong."

Some people in the U.S. feel the same way, but there is little coverage and few commentators even raise a hint that something is missing here.

Mr. von Buelow's views are important, not only by virtue of his former position, but also because his views match a few publicized in the United States. FTIR and the La Rouche people have expressed skepticism about the official monopoly view. We sense that many others have unexpressed skepticism, confusing the office of the President with the contemporary office holder.

In your mind, go back and look at how Mr. Bush came to occupy this office — courtesy of Enron — and consider how he can raise over 90% approval on the basis of a PR campaign with no evidence to support the claim.

The level at which Bush discusses Osama bin Laden is sophomoric. This discussion of an evil, seemingly uncatchable Osama is becoming ridiculous.

We need some solid answers to some solid questions, and we are not getting them. To remind you, 3000 citizens get wiped out, and the limit of our knowledge is — evil madmen.

Then we have absurd CIA statements from CIA Director George J. Tenet that this event was a victory for the United States! — nonsense! WTC was no victory. But all we get is amateurish, unproven accusations and claims of victory. The next thing we know, we shall have victory parades on the White House lawn!

The establishment press is little better. Read the New York Times. It is big on "the hole" and heroism (and indeed, there were some heroic actions) but not much else.

This is an intelligent nation. It needs more than this. The White House sees the U.S. as a beer-drinking, SUV-driving, chauvinistic Andy Griffth's Mayberry.

MORALITY

Something both vital and long overdue has happened in these United States — a deep-seated corruption is now emerging. We have to deal with it, not cover it up, else this country cannot survive.

The Enron case and Kenneth Lay are symptomatic. They reflect what some of us have long known. Basically, the problem stems from overwhelming greed in the political/economic system. Greed has brought Argentina to its knees, greed has brought Zimbabwe to the brink of starvation, and the results of greed over common good are all too obvious now in the United States and in the White House. Lay was the biggest subscriber to the Bush election, and also a major donor to Prince Charles in England — a mere $1.4 million for Charles. Lay was buying everyone who could be bought. The Russians adopted this anything goes philosophy at the Olympics — but too late in the day. They were caught!

We found this obeisance to corporate power in the Hoover Institution at Stanford University 30 years ago. We understand 3/4 of the Senate and perhaps 1/2 of the Congress have received donations from Kenneth Lay — all there, with their hands eagerly outstretched. So if an individual who has not bought his way into the game wants protection, it is not there.

Our personal case is the one we know best, and is very simple. Thirty years ago, we discovered something those in the industrial military establishment did not want you to know. We were told not to publish this by the Hoover Institution at Stanford. They even quietly went through the galleys of one of my books to pull out the material on military aid to the Russians. We refused to stay quiet, and wrote National Suicide and later The Best Enemy Money Can Buy. We published the whole dirty story.

We then found the Hoover Institution was maintained by private corporate donations, those who built the U.S.S.R. for profit — we found that our establishment actually built the Soviet Union while hypocritically claiming innocence, Just like Lay — "I know nothing."

Instead of thanks for our discovery, the establishment threatened and blustered to save its own skin and reputation. People like Dean Rusk, Robert McNamara and Henry Kissinger lied and made sure enormous pressure was brought out to stop the story. Congress stood by and did nothing.

They did not succeed, but thanks to the gullibility — and perhaps the greed of the Congressman in the street — there was enough pressure brought to silence Congress.

Many years ago, after I would present a speech, scores would come up and make statements, "We are with you." "God bless you." But that was all. We often wondered why — why people would stop at that point, and never go beyond empty words. We decided fear was the best explanation.

The fear system works. Almost everyone is accountable to someone just upstairs - his or her boss. As former Senator Mike Mansfield said, "To get along, you have to go along." But once you go along, you are committed. You have limited your own freedom of action.

What has happened is that many have limited their own freedom of action, and don't really want the greed-reward system to stop, because it has paid off for them. They have sacrificed their own freedom for security. Hence, Kenneth Lay & Co. today!

The many crooks baited the hooks and caught a raft of greedy fish. There have been many exceptions, but not enough. Sherron Watkins blew the whistle on Enron, but has to face hostility from co-workers and friends. How many whistle-blowers consider it necessary to hide, as if in fear?

We have no fear of the establishment. We can produce more than their complicity in build-up of the Soviet Union. Our delay is for others to wake up and demand these people crawl back into their holes.

Maybe the time is coming. Perhaps Enron and Kenneth Lay have brought enough of this terrible mess into focus. Hoover Institution Director Glenn Campbell mocked us as being a moralist and said "you will not survive." We have survived so far.

If you want to know this story, read Memoir and America's Secret Establishment. Hopefully, you will be spurred to action — to destroy this monolithic corruption.

If you have silly ideas like rebellion — forget it. The solution is the mind and communication, that's all. Violence is self destructive. First enlighten yourself, and then your friends.

And remember one piece of advice. "They" are the ones who are afraid, not you. Do right, and fear no man.

MR. BUSH AND THE "AXIS OF EVIL"

Mr. Bush needs to check his history books when he talks about an "axis of evil." For many, including most Europeans, "axis of evil" refers to the unholy alliance of Nazi Germany and Fascist Italy. Mr. Bush has invented a new axis — Iraq, Iran and North Korea. No matter that Iran and Iraq are enemies. No matter that Saudi Arabia is more and more apparently the seat of power for our problems. Fifteen of the nineteen hijackers were Saudi. The Saudi finance Al Queda and Saudis are highly uncooperative.

Why doesn't Bush include Saudis? Politics again. Bush is buddy-buddy with Saudi Arabia for family and oil reasons, and refuses to see any evil in that direction.

Mr. Bush now has two major problems:

1. Get off the Osama kick, and tell us who was responsible for the World Trade Center bombing. "Condi" (Condoleezza. Rice, President George W Bush's National Security Advisor) should remind him that assumption is not proof.
2. His "axis" is pure fabrication. There is no "axis" among these countries, except in his own imagination for his own purposes.

More and more, Bush sounds like one of his fraternity buddies in Skull & Bones.

TENET AND BIN LADEN

Now CIA Director George J. Tenet is claiming a victory for September 11th. That's about as far as you can stretch imagination! Some three thousand Americans died on September 11, 2001, at the World Trade Center — and we

would like to know why. Tenet claims it was a victory for the CIA, and they had known about Osama bin Laden for five years. FTIR readers will ask a simple question: Why wasn't something done? Is it the CIA's job just to look at terrorism, say, "My, my!" and go back to sleep?

Tenet is implying that in five years, the agency could not find a way into the Osama group. To FTIR, that is a blunt admission of failure. It is the job of intelligence agencies to find a way in. That is what "operations" does.

To add to Tenet's advantages, the Bush family and many others have inside contacts with Saudi Arabia. No, Mr. Tenet — not victory, but downright failure. Excuses won't do it. At $30 billion a year, we need more.

THE VON BUELOW APPROACH

1. "There are 26 intelligence services in the U.S.A. with a budget of $30 billion (more than the total German defense budget) and they were not able to prevent the attacks."

(FTIR has pointed out the same statistic. We now find the CIA knew 10 days before the attacks, and did nothing. This $30 billion is in addition to a secret budget we understand to be at around $70 billion.)

2. "Then the U.S. immediately went to war ... but a Government which goes to war must first establish who the attacker, the enemy is. It has a duty to provide evidence, the U.S. has not been able to present any evidence that would hold up in court."

(FTIR makes a similar point. Bush has made an assumption, he has not presented evidence.

3. "The assumed chief terrorist is Mohammed Atta. This presumed terrorist then took some unusual risks ... and professionals do not take unusual risks. He catches a plane to reach Boston just a short time before the connecting flight. None of the stated terrorists was on the passenger list. None went through pre-flight procedures. None of the four pilots went to the agreed hijack code of 7700."

April 2002: Vol 13, No. 4

A BREAKTHROUGH. WHAT YOU MAY SUSPECT IS TRUE
AND IS NOW IN PROGRESS BE WARNED

Sometimes surprises hit when least expected. This is certainly true in research.

In February 2002, we had a letter from an international, award-winning New York film maker, Roland Legiardi-Laura, currently making a film on John Taylor Gatto, the New York City and State Teacher of the Year. The film is entitled The Fourth Purpose.

In making the film, Roland had noted references to our book, America's Secret Establishment. These came from Gatto's fourth book, Underground History of American Education. (In case you need it, Roland's address is: The Odyssey Group, 269 East 8th Street, New York, NY 10009.)

Legiardi Laura in particular had noted references in our book (a book he describes as "extraordinary") to Thomas Gallaudet, founder of Gallaudet College (for the deaf) in Washington, DC. A book by Gallaudet has apparently been expurgated. We have a photo of the title page, which proves the book did indeed exist, but Legiardi-Laura was unable to obtain a copy for the film.

Legiardi-Laura mailed me a copy of Gatto's book, and we found numerous references to a member of the Illuminati, a secret society, Johann Heinrich Pestalozzi (1746 - 1827), a close friend of Heinrich Hebart, the founder of so-called "enriched" education in the U.S. An odd combination. A Swiss Illuminati works closely and for some years lived with the American founder of the much-criticized domestic educational system in primary schools.

Legiardi-Laura achieved accidentally what so many have attempted. He found a way into the secret society octopus that threatens to extinguish our way of life.

This gives us an enormous research problem, and all we can do at the moment is present it to you. You are going to either solve it or let everything we have go to pieces. I cannot be any more clear than that.

What you cannot do is what happened 30 years ago when we discovered how the Soviet Union was built by the United States. People made all kind of supporting noises, but when it came down to doing something, they walked away and allowed a few to shoulder the burden. Then the Soviet Union collapsed. The Soviet chess piece was simply removed from the board, and today is replaced by "terrorism."

For a number of reasons, this "I see nothing" evasion tactic is not going to work this time around. This time, you either do something, or believe me, you will go under. I can't be any more blunt.

A NEW THEORY AND A HYPOTHESIS FOR INVESTIGATION

America's Secret Establishment is based on a genuine membership list of Skull and Bones, which is tied in with the older Illuminati secret society. When viewed side by side with Gatto's book, Underground History of American Education, a dramatic picture emerges.

Briefly, you have already been conditioned to accept secret society world control through the much-criticized educational system. Some of us have evaded this mechanism, because we did not receive our primary education in the United States. We evaded the conditioning. What we see clearly may not be available to you.

Remember, to achieve the Illuminati Skull and Bones objective, they must conceal their intentions. The Illuminati were trapped in 1786, over 200 years

ago, when the Elector of Bavaria intercepted their papers, found their objectives, and promptly broke up the Illuminati organization.

This is important. The Illuminati survived. Skull and Bones was founded in 1833, and has worked steadily since for its objectives. This is what Gatto has unknowingly discovered — a vital step in this plan for world domination. The President of the United States George W. Bush is a member of Skull and Bones.

WHAT PRIMARY EDUCATION DOES

As many parents have already found, the American primary education system has less to do with the development of the individual child, but rather prepares the child to be a cog in the State apparatus. This child conditioning can be looked at in two ways:

- First, the child is being raised as a tool of the State; barely able to read, and full of unnatural and non-educational ideas.
- But second, this conditioning can be viewed as a device to make a New World Order more acceptable. The kid grows up to be a pliant zombie.

This was not the Gatto objective. He started out by criticizing the educational objective. A teacher who was a real teacher, and objected to what is happening out there.

Because of the Pestalozzi aspect, we see this differently. We see a long-ranging conditioning objective to make the child accept these deeply secret objectives.

This is what the statistics portray. Just look at the literacy rate. Back 150 years ago, literacy was universal. Is it 100% in the U.S. today? Maybe 60% of the population can read! This is what we spend billions upon? — Something is wrong.

WHAT IS TO BE DONE?

First let's complete the Odyssey film on the educational system. This needs your help. This portrays a ridiculous affair. We spend billions — on what? — kids who can't read? The pilot film, The Fourth Purpose, produced by the Odyssey Group is available.

We took a look at a typical school schedule. Have you done this? One school has a period every day for — DRUMMING! Five days a week for drumming! No history, no Constitution, no literature, no science — but drumming!

Our conclusion was, shut this place down fast. This is not a school; it's an entertainment center.

This conditioning has been going on for well over 100 years. If it is not stopped, now, we shall have the entire population, except for immigrants, ready-made for the New World Order.

We have noticed that quite often the immigrant (there are 50 million of them) or the well-traveled American has evaded the conditioning. The vast group of younger Americans, those under 50 years of age, have been caught in the net.

Gatto and the Odyssey Group have caught this deeper purpose almost by accident.

Please think about this, and do what you can. You need to talk about this with your friends and relatives. You might see a note or review in a newsletter — that's about the sum of it. Nothing will appear in your newspaper, since newspapers do not report until a topic is widely notorious, and certainly not if the proverbial "telephone call" comes in from the publisher, i.e., "do not report." Some of you may remember 15 years ago, from time to time we received a report from a friend inside one of the major wire services: "News that is not reported on the wires."

We can only tell you what turns up in our research. As long as 40-50 years ago, we tried to tell people, for example, that the Soviet Union was not the almighty giant it appeared to the outside world. Our work was suppressed (see Memoir). Nobody would listen until we forced three books into the mainstream. Today, Mr. Gorbachev himself says the Soviet Union was a "propaganda hoax." For some reason, people prefer the illusion to reality.

Think about this, please: we have a President who is a member of Skull & Bones. We have described Skull & Bones in detail in America's Secret Establishment.

Our work is research. Whether you make use of the information is up to you.

THE WORLD TRADE CENTER DISASTER (CONTINUED)

From the start, FTIR has been skeptical of the Bush explanation of the WTC disaster. Our skepticism is based on logic and common sense, up to now without evidence.

We now have evidence, which more or less confirms what at least some have already deduced.

As we stated last month, times have changed; you ignore today at your own peril.

Our doubts based on common sense were:

1. Mr. Bush claimed the culprit as an evil bin Laden. Not one piece of evidence was submitted. Bush jumped up and down, pointing a finger at bin Laden, and, according to reports, convinced over 90% of the dumbed down American public without a shred of proof.

2. Congress has over twelve investigations for the Enron case — and NONE for the WTC case. Just as we went to press, two committees were appointed — the House committee has a narrow focus. Chairman is Congressman Porter Goss, former CIA operations! Senate Chairman is Joseph Lieberman, with a wider scope. Think about this. Is the death of 3,000 Americans so insignificant that it can be brushed under the rug? Do the misdeeds of Kenneth Lay warrant twelve investigations, and the deaths of nearly 3,000 innocent Americans warrant no investigation?

Our conclusion: Congress doesn't want to investigate; maybe it fears some of the information below (and in following issues) is true, and will become public.

But Congress is supposed to represent the people!

3. After six months — no one can find Osama bin Laden, and Bush has stopped the FBI from investigation the Saudi angle.

4. And where is the press? This great big body of investigative journalists cannot even ask for proof of the Bush claim that Osama was to blame.

However: go to the Internet and you will find a different story. CNN and Rense.com (at: http://www.rense.com/generall9/formergerman.htm); print the passenger lists for the four planes involved in the World Trade Center disaster. (More specifically, we routinely checked for Arab names — there are none (one possible). However, the FBI has given us Arab names for the hijackers without aliases. These names are not on any passenger manifest we have seen. What is the reason for this contradiction?

There is much more proof of an alternative explanation. The four American planes were hijacked by NORAD — i.e., U.S. Air Force, using remote control technology designed to rescue hijacked planes — not to fly them into buildings. This is the story coming out of Britain and Germany.

Is this why Britain — always a stout U.S. ally — refused to send 25,000 troops to Afghanistan? Is this why Germany refused to take over peace keeping in Kabul after Britain exits?

We will give you references next issue (June) where you can read the full version for yourself. Some of the references are not something we would rely on; they will need checking. You can read and decide for yourself.

When you pick yourself up off the floor, you will need to contact your Congressman, your local news editor, General Myers at NORAD, any honest newsletter editors you know, and others involved in this affair.

There are rumors this information will be expurgated. What you do after that is our business. From our perspective, we trust none of the above.

Approximately 10,000 people, probably a lot more, know this story, and we are skeptical of a variant — the Chinese version. Their interest is to destabilize the U.S.

Our starting point is:

1. You are not fully dumbed down.
2. Washington is unwilling to tell you the truth.
3. We pick up rumors that this same Washington is frightened that you will somehow learn the truth.
4. Many of you will download the story from Rense.com .

We start with the passenger lists from the four hijacked planes. Much more to come!

THE FUTURE: PLEASE READ

Sooner or later, we had to reach this point. Many, many are aware that the world has changed, but at FTIR, we see no signs that any are aware that knowing is not enough. You have to do something. Probably the United States of America has had it so good for so long, it is difficult to adjust.

We were burning many of our papers the other day, and the thought occurred — this is what Embassies do when war is imminent! The smoke from the chimney tells outsiders the end is approaching.

We first warned in November, 2000. September 11th, 2001, should have been another warning, and Washington over the past six months is confirmation. Our warnings have no effect. Congress is allowed to go six months without an investigation of September 11th. Allies are making their warning noises — they are not happy. When Britain refused to send 25,000 troops to Afghanistan, that should have been warning enough.

Rather than ignoring your Congressmen, you should be demanding answers from him about WTC — this is your representative, for heaven's sakes.

We can see the disintegration, but we do not see any part of the American people in protest. Everybody seems happy enough. Perhaps they do not see that "smiling fascism" can turn quickly to the real thing. Perhaps they do not recognize how the game is being played out in the military tribunals, the clamor for universal ID, and a lot worse. It is entirely possible that September 11th had nothing to do with Arabs, and a lot to do with NORAD.

Clearly worrisome is the fact that a former German Minister of Defense has picked up on this track, and clearly warns about it. Our other information confirms von Buelow. Von Buelow tells us that the U.S. is following the same track as 1930s Germany. People would just not believe what was happening.

Who was financing the German Nazi revolt of the 1930s? None other than Averell Harriman (Democrat) and Prescott Bush (Republican) through Union Banking, both Bonesmen, and Prescott Bush was the grandfather of today's George W. Bush — also a Yale Bonesman.

Same thing today. The counter-moves are not being made by citizens. Sure, a dozen or so commentators, especially on the Internet, are warning you. And FTIR was surprised to see a jump in renewals — so you are not all asleep.

But who is getting Congress on the ball? Who is writing to the Editor? Who is distributing literature?

If you have not read America's Secret Establishment, /urge you to do so. Published 20 years ago. And read Electronically Hijacking the WTC Attack Aircraft, at: www.geocities.com/mknemesis/homerun

Wake up and smell the coffee!

It looks as though they are willing to kill 3,000 Americans to advance their program. If that doesn't tell you something, nothing will. Take a look at the Internet, rense.com and Orlin Grabbe.

The next issue of FTIR will be June 2002; we are going to a bi-monthly schedule. Your subscriptions will be filled, except you have twice as long to read each issue.

This was Tony's last newsletter.

Phoenix Letter

A REPORT ON THE ABUSE OF POWER

EDITOR: ANTONY C. SUTTON — Vol. 2 No. 9 November, 1983

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Secret Skeletons From The Bush Closet

The bland self-effacing mask of Vice-President George Herbert Walker Bush conceals another man from another world.

The Bush family—and several allied families—are at the core of a secret society known as The Order. They are sworn to conceal its objectives. Even its very existence.

Three in the Bush family are members. Here is an extract from the membership "Catalogue" of this secret society listing the "Bush" entries.

> BUSH, '48, George Herbert Walker—Grove Lane, Greenwich, Conn.
>
> BUSH, '22, James Smith—[Finance]—Industrial Bank of St. St. Louis, 901 Washington Ave., St. Louis, Mo.; res., 5125 Lindell Blvd., Sgt., S.A.T.C., World War I; Lt. Col., U.S.A.A.F., World War II.
>
> BUSH, '17, Prescott Sheldon—[Finance]—59 Wall St., New York City; res., Grove Lane, Greenwich, Conn. Member, Yale Corporation, 1944-; Capt., F.A., World War I (A.E.F.).

Prescott Sheldon Bush, father of Vice-President George Herbert Walker Bush, was initiated into The Order in 1917 along with Henry Neil Mallon, founder of Dresser Industries (an important supplier of strategic high technology to the Soviets).

After graduation from Yale both Prescott Bush and Henry Mallon were commissioned into the U.S. Army, Field Artillery.

As instant Captains, they were assigned (or perhaps rewarded) regiments as follows:

Captain Prescott Bush	322d Regiment Field Artillery
Captain Henry Mallon	323d Regiment Field Artillery

Readers of Introduction to THE ORDER will recall that "322" and "323" are room numbers in the "Bones" Temple on the Yale campus.

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THE PHOENIX LETTER

Vol 2 No 9 November 1983

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After World War One Prescott Bush joined W.A. Harriman (now Brown Brothers, Harriman) private bankers at 59 Wall Street, New York, to start a forty-year career with the firm. Brothers Averell Harriman ('13), Roland Noel Harriman ('17) and members of the Brown family are also members of The Order.

In 1921 Bush married Dorothy Walker, daughter of St. Louis banker George Herbert Walker, whose son Stoughton Walker was initiated in 1928. Walker also hired James Smith Bush (initiated 1922), brother of Prescott Bush into his bank, the Industrial Bank of St. Louis.

In brief, the Bush family is part of the tightly woven inner core of The Order, a secret society whose members are sworn to avoid discussion of objectives and membership — or even its very existence.

GEORGE HERBERT WALKER BUSH

George Bush was born June 12,1924, in Milton, Massachusetts. His childhood was spent in Greenwich, Connecticut and Phillips Exeter Academy, Andover. During World War Two — and this is one of the few positive aspects of Bush's career — he spent three years in the Pacific with Naval Air Services, leaving as a Lieutenant Junior Grade. Then, according to Current Biography.

> On his return to civilian life, Bush entered Yale University where he majored in economics, was elected to Phi Beta Kappa and joined Delta Kappa Epsilon fraternity.

Nowhere in this biography — nor in any other Bush biography — is initiation into the order cited. Membership is consistently concealed from the public record.

Moreover, suppression of this membership is consistent with the oath of initiation which forbids members to discuss membership or even be present when The Order is discussed by outsiders.

After Yale, Bush decided to go to work. According to Current Biography:

> After graduating from Yale ... Bush decided to strike out on his own rather than work for his father's banking firm (Brown Brothers, Harriman) and took a job as a salesman with Dresser Industries of Odessa, Texas, an oilfield supply company of which his father was a director.

One interesting point about Dresser Industries: it has always been a supplier of top flight high technology to the Soviets— some with more than obvious military applications. Even President Carter — who was actually tougher on holding the technological export line than President Reagan — allowed a Dresser-Soviet contract to go forward in 1977 against the protests of the Department of Defense.

AMBASSADOR BUSH AT UNITED NATIONS

In 1970 Bush ran for the U.S. Senate from Texas. He lost.
President Nixon then appointed Bush U.S. Ambassador to United Nations.

This appointment was widely criticized as a political pay-off-because Bush had absolutely no experience whatsoever in foreign affairs or diplomacy.

This deficiency led to expulsion of Taiwan from the U.N. General Assembly and a seat for Communist China.

Simultaneously Bush used his U.N. office to support "Mundialization," i.e., the adoption by individual communities of world status. Part of local taxes goes to support United Nations rather than the local community. It is a rejection of U.S. sovereignty.

The first U.S. city to join the New World Order was Richfield, Ohio (November 1970). Here's part of a letter sent by U.N. Ambassador Bush to Richfield, Ohio:

> Permit me to congratulate you and the other members of your community on your Proclamation of Mundialization. There cannot be anything more encouraging

> to us here than to hear from a community like yours that supports the United Nations and believes in it and in its importance to the establishment of world peace. Equally significant is your community's commitment to help increase understanding among the peoples of the world for without that understanding peace among peoples can never be achieved. What a profound contribution Richfield is making to man's greatest efforts to build a world in which all the pledges of the UN Charter will truly govern relations among nations!

Mr. Bush had sworn an oath of office to support the Constitution of the United States. He cannot support any measure that would in any way dilute the sovereignty of the United States. The "Mundialization" process and the Constitution of the U.S. are opposed to each other. They are mutually exclusive. You have to choose one or the other. You can't support both simultaneously.

After this Bush was moved along the fast track by Nixon and Ford:

- 1971-2 U.S. Ambassador to United Nations
- 1973-4 Chairman Republican National Committee
- 1974-5 Chief U.S. Liaison Office, Peking, Communist China
- 1976-7 Director, Central Intelligence Agency

In 1980 Bush ran for President. Financial backing came heavily from the so-called Eastern Establishment-not only did David Rockefeller send the maximum allowable contribution of $1,000, but so did five other Rockefellers.

Among members of The Order who backed Bush were:

- J. Richardson Dilworth ('38)
  (Administrator of the Rockefeller family) $1000
- John Cowles, Jr. (four Cowles in The Order) $1000
- George Weyerhaeuser $1000

As you know, Bush ended up on the Presidential ticket with Reagan — and made it into the White House.

BUSH MEETS ANDROPOV

The October 1983 Phoenix Letter reported that individual Americans have met with Andropov only twice. And Andropov chose to meet members of The Order: Bush and Harriman. Not even U.S. Ambassador Hartman has seen Andropov alone.

What was Bush's assessment after the November 1982 meeting? This is Bush — a former head of CIA — on Andropov:

> My view on Andropov is that some people make this KGB thing sound horrendous. Maybe I speak defensively as a former head of CIA. But leave out the

> naughty things they allegedly do: here's a man who has had access to a tremendous amount of intelligence over the years ... (and therefore) would be less apt to misread the intentions of the United States.

The Bush assessment was that Andropov was misunderstood and really wanted to improve U.S.-Soviet relations.

And what did Phoenix Letter print at that time (January 1983 The Russian Window)? As follows:

> Andropov is by far the most dangerous Soviet leader since the 1917 Bolshevik Revolution.
>
> Andropov has more education than Lenin, and probably equals Lenin's cunning. Andropov is as ruthless as Stalin, but this ruthlessness will be directed as much at the Free World as long suffering Russians. In the light of history Kruschev and Brezhnev will be seen as toothless tigers compared to the Andropov regime. In brief: KGB efficiency and terror will now be felt inside and outside Russia.

The "poor misunderstood" Andropov acted — in quick succession came these terror strikes:

- The attempted assassination of the Pope, traced back to Moscow,
- The massacre of KAL 007,
- The massacre of the South Korean cabinet in Bangkok,
- The Beirut Marine massacre,
- The Cuban-Soviet buildup on Grenada — aimed at revolution in Brazil.

Bush boasts he spent a year as head of CIA. He should buy a subscription to The Phoenix Letter— then his assessment of intentions will be 100% more accurate.

BUSH MEETS DICTATOR ROBERT MUGABE OF ZIMBABWE

After meeting with Andropov in November, 1982, Bush went on down to see Robert Mugabe in Zimbabwe and made a speech not exactly well covered the U.S. media (it was not reported by any network or major newspaper). Reading extracts from the speech Bush made in Harare (capital of Zimbabwe) readers will understand why Bush may not have been anxious for domestic U.S. coverage of his views on Zimbabwe.

Back in May of this year we reported that Robert Mugabe was engaged in a quiet slaughter of his tribal enemies in Zimbabwe ... while the U.S. was financing Zimbabwean housing projects at lower interest rates than could be obtained by American citizens.

We described Mugabe as: " ... a smooth two-faced killer, who sneers when atrocities are mentioned and has conned the local U.S. representatives" (May 1983 p. 8).

While the slaughter was in progress Vice President Bush was in Zimbabwe-not to investigate the slaughter, but to hail Mugabe. Here are some of the fawning statements made by Bush at a State Dinner held in Harare, Zimbabwe on November 16, 1982:

> Your excellency ... thirty-one hours ago in Moscow, I discussed my mission to Africa with the President of Pakistan, Zia Al-Huk. When I mentioned Prime Minister Mugabe, President Zia made reference to something which informed men everywhere on earth agree .... I want to acknowledge that I stand in the presence of a genuine statesman, the Prime Minister of Zimbabwe, Robert Mugabe. His stature in the world is well established, highly respected, and it will be more formidable in the years to come ....

And more,

> Mr. Prime Minister... you have faced awesome challenges... I do want to say on behalf of the Reagan Administration that we support the policy of reconciliation to which you have committed yourself... We have supported your country because its success is consistent with U.S. principles and U.S. interests... shortly after President Reagan took office my government pledged nearly one quarter of a billion U.S. dollars in new aid. America has not only avowed its faith in Zimbabwe, but proven it.

Finally, Bush couldn't resist commenting on his response to Andropov's sucker bait:

> A moment ago I mentioned our journey to Moscow. No doubt you have all seen photographs of Secretary Brezhnev's funeral. The image that struck me most — one that I will never forget — was the magnificent, stately display of young Russian soldiers.

And there's more of the same preppie gee-whiz juvenile ramblings ... this is the Vice President of the United States — once they let him outside the U.S.

Now let's come up to date— to November 1, 1983, a few days before we go to press.

Over in Harare, statesman Robert Mugabe has seized and imprisoned Bishop Abel Muzorewa of the American-based United Methodist Church.

What is Bishop Muzorewa's sin?

Two days before Mugabe stormtroopers seized the bishop, Muzorewa made a comment that human oppression in Zimbabwe was worse than under white minority rule (Zimbabwe was formerly Rhodesia). This is how Bishop Muzorewa phrased his criticism of Mugabe:

> I continue to hope and pray that God can somehow help us to be delivered from the oppression of today imposed on us not by Ian Smith, not by Israel or

South Africa and not by people with white skins, but by our ruling party and government with black skins.

Bishop Muzorewa is today held in Harare Central Police Station. Muzorewa has not been formally charged with a crime. He cannot receive visitors or a lawyer. And the man responsible is Vice President Bush's hero — distinguished statesman Mugabe — who is getting a one quarter billion dollar hand-out this year from the United States taxpayer.

CONCLUSIONS

1. Mr. Bush is a member of a "sordid" secret society (that's what one of its own members has called it). This membership has been concealed from the American rublic. It is obvious deception.

2. Mr. Bush apparently has some difficulty in making correct assessments of people and events. Anyone who provides rapturous support for such psychopaths Andropov and Mugabe has little understanding of traditional American values of freedom and human dignity.

3. These deficiencies have been identified by Andropov. Soviet psychological profiles of Bush are accurate. Bush apparently cannot restrain himself from reaction. Diplomatic precedence and goose-stepping military parades are two Bush bairs which have succeeded.

4. Bush's actions confirm the conclusion of INTRODUCTION TO THE ORDER, i.e., that members of The Order have severe personality deficiencies.

RECOMMENDATION

1. That Vice-President Bush resign — today — before these facts become general public knowledge and rebound on the Reagan administration.

THE PHOENIX LETTER

Vol 2 No 12 February 1984

PATRIARCH "POPPY" BUSH OPTS FOR COVER UP

The stupidity of political sinners never ceases to amaze us. Surely there must be one lesson from the Nixon White House — that cover-ups just don't work — that the public will accept a political sinner out not one who conceals his sinning.

P-T "Poppy" Bush (D. 146) is scrambling to hide a sordid segment of his life — his involvement with B—s, his membership in The Order.

(If you're wondering whether our typist is taking shortcuts with words, the answer is no — they know that P-T, D.l46 and B—s stand for — it's a code they use in letters between members. Key: P-T is "Patriarch," D. 146 is a date of initiation and B — s is "Bones").

Back to Patriarch "Poppy" Bush (alias Vice President George Herbert Walker Bush), in the November 1983 issue of The Phoenix Letter we printed an extract from the "Catalogue" of the-Russell Trust (a.k.a. Skull & Bones, a.k.a. The Order). This extract of the Bush family included Vice President Bush.

Within days we picked up the first of three events pointing to a cover-up:

(a) November 14,1983, The Yale University Library denied researchers further access to Kingsley Trust and Russell Trust papers.

(b) December 13, 1983, Vice President Bush denied membership in a "sordid secret society."

(c) January 16, 1984, the White House cancelled the Republican regional platform hearings — a long-time GOP tradition.

PATRIARCH BUSH DENIES MEMBERSHIP IN THE ORDER

Mr. Bush is on the spot.

We have proof— absolutely irrefutable documentary proof-that Vice President Bush (as you know him) is a member of The Order.

On the other hand, members take an oath not to discuss membership. Even in letters between members, the entity "The Order" is coded in symbols.

Vice President Bush now has a choice — deny membership and so lie to the American people and betray his oath of office — or he can tell the truth, admit membership and betray The Order.

At this time Patriarch Bush has opted to deny membership.

In November 1983, a Phoenix Letter reader wrote the Vice President, requesting him to respond to the charges made in The Phoenix Letter. We will print two extracts from the reader's letter (it's too long to reproduce in full), then the Bush reply, then our comments (the complete Bush letter is reproduced on the next page).

(1) Reader To Bush:

> Are you now-or have you ever been — a member of and/or in any way affiliated with the alleged secret society cited by Mr. Sutton, also known as The Order?

Vice President Bush:

"The Vice-President is not now and never has been a member of any 'sordid secret society'" (see full context opposite).

Comment:

Mr. Bush attempts to duck the question by inserting a word, i.e., "sordid." The letter is signed by Shirley Green, Acting Press Secretary, so the letter can always be denied. Obviously Vice President Bush is not in a position to make an outright denial.

OFFICE OF THE VICE PRESIDENT

WASHINGTON

December 13, 1983

Dear Mr.

The Vice President asked me to thank you for your recent letter concerning the November issue of The Phoenix Letter.

The allegations contained in the Letter are so erroneous that they defy an item-by-item refutation. However, one of the areas that seems to be of concern to you has to do with something called "The Order." The Vice President is not now and has never been a member of any "sordid secret society." I am sure you know he has served his country as a Navy pilot in the Second World War and received the second highest medal awarded to our servicemen -- the Distinguished Flying Cross. He has also served at the United Nations as the U.S. representative in the People's Republic of China and was Director of Central Intelligence. He received the highest civilian awards given for service to country.

Vice President Bush's public career has been one of consistent loyalty and honor and has been conducted in full openness to the press for scrutiny of his performance.

The second area that appeared to cause you concern was an out-of-context and incomplete quotation following the Vice President's meeting with First Secretary Andropov. The Vice President simply stated that a Communist leader who had had access to full information about the United States and its people was less apt to misread the intentions of the United States and its peaceful desires than a Communist leader who was not familiar with the West and the values we hold dear. He at no time indicated that the change of leadership in the Soviet Union represented a change in their basic long-stated desires and goals vis-a-vis the rest of the world. Because of the Vice President's service at the CIA, he has a very realistic assessment of the Soviet system and is certainly not "misunderstanding" U.S.-Soviet relations.

The Vice President appreciated your bringing these concerns to his attention.

Sincerely,

Shirley Green

Shirley Green
Acting Press Secretary
to the Vice President

(2) Reader To Bush:

"Has Mr. Sutton accurately stated and/or quoted your position with regard to Soviet Premier Andropov and Dictator Mugabe of Zimbabwe? If not, then I request that you send me complete transcripts of what you actually stated."

Vice President Bush:

Bush ignores Mugabe. Neither did the Vice President fill the request for a full transcript. So Phoenix Letter sent a full transcript to the reader.

"Out of context and incomplete quotation" is the reason given for the Andropov part of the question, but no transcript was sent to the reader.

Comment:

None. Mr. Bush is obviously unable to support his allegations.

YALE UNIVERSITY LIBRARY JOINS THE COVER-UP

It is an iron clad rule among librarians throughout the civilized world that catalogue listed material should be freely available to all comers, without restricts, except where limitations on use are clearly stated and approved (rare books for example).

This is a basic tenet of professional librarianship — in thirty years around the academic world we have never once known this rule violated.

Even Soviet libraries by and large keep to this rule. This editor's three-volume study of Soviet technology relied heavily on Soviet material (the U. S. government classified its files on this topic) and even the paranoid Soviets were willing to ship abroad material listed in their Moscow catalogues.

Now let's come to that bastion of free inquiry in New Haven, Connecticut, known as Yale University.

Last August (1983) this Editor requested Yale University Library for a copy of items in their Yale catalogue under Call Numbers: Yeg2 K61c (Kingsley Trust) and Yeg2 R9c (Russell Trust).

Here is a copy of a relevant catalog card — as it (once) existed — at Yale University Library:

Kingsley Trust Association
Yeg2 C.S.P. 1842- C.C.J. [Catalogue]
K61C

Have: 184244,
1882, 1890, 1896,
1906. 1919, 1929, 1939,
1959, 1969

This is a temporary record for the serial being cataloged. Permanent cards will be filed soon.

recat

Subject Cataloguer: Analyzed
Serial Cataloguer: rtp() Not analyzed

Date: 2/3/78

Yale University Library

New Haven Connecticut 06520

Rutherford David Rogers
University Librarian

November 14, 1983

Mr. Anthony C. Sutton
P.O. Box 1791
Aptos, California 95003

Dear Mr. Sutton,

In reply to your letter of November 7 about the Kingsley Trust Association: Catalogue, please write:

Radley Daly, Treasurer
Box 1934 Yale Station
New Haven, CT 06520

I have reviewed our previous correspondence with you, and I suggest that you deal directly with the Kingsley Trust on this matter.

Cordially,

Rutherford D. Rogers
University Librarian

RDR/jkw

The response denying access from the University Librarian is reproduced on the opposite page. The censor? Obviously Kingsley Trust. The Russell Trust request was ignored.

Who, or what, is Kingsley Trust? It is a.k.a. Scroll & Key-another Yale senior society. We suspect it is a part of, perhaps a chapter of The Order ... members included Dean Acheson (NSC/68) and Cy Vance.

Note this: the requested material was open to researchers as late as mid-1983 because previous requests were fulfilled promptly. Access was closed off sometime between July and November 1983, after remaining available for years, some for almost a century.

BUSH-BAKER GROUP CLOSE DOWN PLATFORM HEARINGS

Traditionally in election years the Republican Party holds nationwide public platform hearings.

This year, White House counselor Edwin Meese (in charge of writing the platform) and almost all Republican officials, legislators and Governors, wanted to continue the tradition.

The Bush-Baker forces said no. Said James Baker, "When you have the White House, why invite people to go out and criticize you."

Then Trent Lott (R-Miss.) arranged a compromise — four hearings only. In January, even this compromise was scuttled by the Bush-Baker crowd.

We understand individual Republicans are now organizing hearings on a local basis — in addition to the orchestrated show at Dallas.

We also know from internal correspondence among members of The Order (between their local cells or clubs) that they are worried — worried about the anti-elitist tide, worried that even Yale campus doesn't want them anymore.

Someone needs to come up with an idea — how to get Vice President Bush on a public platform before nationwide TV cameras to answer a few questions. For example:

"Are you or have ever been a member of a secret society?"

"Have you ever taken an oath to keep this membership secret?"

"Did you declare this secret membership to the FBI or the Senate when you were confirmed as Vice President?"

CONCLUSIONS

1. George "Poppy" Bush is not only a member of a secret society, but cannot deny this association.
2. Bush has placed himself behind a smoke screen, i.e., he answers questions through a press secretary (who can be denied), keeps a very low profile, refuses to give the public a forum for questioning.

3. In brief, a cover-up.

RECOMMENDATIONS

1. Mr. Bush should resign before he puts his other foot in it.
2. The Phoenix Letter would appreciate any recent (since 1960) Yale yearbooks that publish Scroll & Key associations. We can return "borrowed" material within 24 hours by overnight Express mail.

WARNING

Do not assume ALL Yale graduates are suspect. That would be grossly untrue and unfair. We are talking about 15 men a year (the Yale 1945 entering class was 8,000). Not all those initiated became active. We are looking at 100 or so activists among 100,000 or so Yale graduates.

THE PHOENIX LETTER

Vol 2 No 12 February 1984

SECRECY OR PRIVACY?

Political conspiracy demands secrecy.
The Order (aka Skull & Bones or Russell Trust) will not comment on our charges.
The Order will not reply to letters. Members will not even admit membership (Vice President Bush, a public official, will not admit or deny).
Now Scroll & Key (aka Kingsley Trust) has presented us with a useful start point to attack the silence.

A few months ago on January 29,1985, Radley H. Daly, Treasurer of Kingsley Trust, wrote that senior society secrecy was not secrecy but privacy. We reproduce this letter overleaf.

Daly does not disclaim concealment of information nor deny activities. Daly merely makes a bland claim for privacy. It is this claim of a right to privacy that we want to explore.

IS THE ORDER SECRET?

Let's go back 100 years: to the 1871 commentary on Yale senior societies by Lyman Bagg, FOUR YEARS AT YALE. The chapter on senior societies is reproduced in America's Secret Establishment. On pages 84-5 we find the following:

> ... the senior societies are such peculiarly Yale institutions, that it will be difficult for an outsider fully to appreciate their significance. Nothing like them exists in other colleges; and Harvard is the only college where, under similar conditions, they possibly could exist. In the first place, they are the only Yale

> societies whose transactions are really secret. Their members never even mention their names, nor refer to them in any way, in the presence of anyone not of their own number and, as they are all Seniors, there are no old members in the class above them to tell tales out of school.

Bagg's century-old observations are fully supported by subsequent ACTIONS.

A membership list for The Order — part of the Yale senior society system — is not freely available. If any reader wants to test this assertion, the address for The Order is:

Russell Trust Association
P.O. Box 2138
Yale Station
New Haven, Conn 06520

Offer to pay Xeroxing costs and ask for:

CATALOGUE, Volume One: Living Members
CATALOGUE, Volume Two: Deceased Members
Volume One is 193 pages in length and Volume Two is 141 pages.

If any reader succeeds in obtaining a copy, we would appreciate the news. We can then release for publication the copy we are now holding. We are presently reluctant to reproduce our copy in case it can be traced to a source.

Daly, of Scroll & Key, claims (opposite) that membership lists were at one time published in newspapers. This is partially true. But nothing more than bare names of those initiated were ever published. All procedures and objectives are carefully guarded and always have been.

In the past few decades secrecy has been extended even to names — as Daly admits. Daly states publication was "discontinued a few years back." In fact, it is almost a century since full lists were published to our knowledge, although we have not thoroughly researched this point.

The reason for non-publication presented by Daly is lack of newsworthiness. If it is newsworthiness alone, then why is it impossible to obtain a current list of members of Skull & Bones? Why is the catalogue treated as a state secret "For eye only."

We suggest the true reason for concealment is the precise opposite, i.e., that the list is indeed highly newsworthy. A quick scan of the 1983 list reveals an extraordinary correlation between The Order and the "powers that be" in the United States.

Furthermore, we have begun to print evidence of collusion among members for specific objectives. So we reject Radley Daly's argument out of hand.

KINGSLEY TRUST ASSOCIATION
YALE STATION NEW HAVEN
CONNECTICUT

January 29, 1985

Mr. Richard A. Landkamer

Dear Mr. Landkamer,

I am sorry to say that there are no more copies of the two volume set "A History of Scroll and Key." When this was published in 1978, only enough copies were printed to distribute to members of the society and to members of the academic administration at Yale. There is a set in the Sterling Memorial Library which you are welcome to refer to. The volume covering the first 100 years of the society was written by Professor Maynard H. Mack. A companion volume covering recent history was written by A. Bartlett Giamatti before he became president of Yale.

If you do visit the Sterling Memorial Library, you may wish to look at various documents going back a hundred years or more in which the names of the members of Yale's senior societies were routinely published at the time of election. You'll find these lists in the New York Herald Tribune, the New York Times, the New Haven newspapers, the Yale Daily News, and in class yearbooks. Not only the names, but often the pictures of the newly elected members were published openly, a practice that was discontinued a few years back, presumably for lack of newsworthiness.

In reading through the materials you have sent me, I have a sense that you and your colleagues have somehow lost the distinction between secrecy and privacy. I would have supposed you to be supportive of the concept of an individual's right to privacy.

Sincerely,

Radley H. Daly
Treasurer

Privacy becomes unacceptable secrecy when the power and influence of fraternities is used to harm society or individuals outside the fraternity.

We can cite The Brotherhood in England (See Phoenix Letter, May 1984, Vol. 3, No. 3). The KGB infiltrated the Freemasons and used the Masonic fraternal preference structure to work their way to the top of British intelligence. The KGB ended up in control of MI-6, thanks to Masonic "Privacy." This, in spite of the fact that all British intelligence organizations refuse to recruit masons. (More recently this ban has been extended to Scotland Yard police.)

We have every right — and a civic duty-to demand that the Yale senior societies drop their protective shields and open up their records.

Even without the resources available to the FBI and Congress, we can print enough to demonstrate a prima facie case of illegal and possibly subversive actions.

FRATERNAL OBJECTIVES ARE THE KEY

Concealment of fraternal objectives is the key. Privacy is only guaranteed and acceptable in a free society if the privacy is used for legitimate ends.

Evidence is accumulating that Yale senior society power has been used for illegitimate ends. In the Phoenix Letter for December 1984, January and February 1985 we demonstrated — with only preliminary evidence — that the Yale senior society system has generated the architects of defeat in U.S. foreign policy. We demonstrated that members act jointly and consistently to the disadvantage of the United States.

Not only is membership concealed, but also objectives are concealed and members are under oath not to discuss membership or objectives.

We can deduce objectives from the actions of these blood brothers. Joint actions are the indicator and result of intentions. Joint actions are the proof of intentions.

Consider again, for example, the case of "The Brotherhood" in England as surfaced by Stephen Knight. The KGB infiltrated and manipulated British freemasonry to control British intelligence organizations. Yet British Freemasons claim a right to privacy. They are indeed entitled to privacy if their ends are legitimate and if they take precautions against misuse of privacy. But in England freemasonry was used for illegitimate ends. Privacy is used as a reason to hide perverted, illegal, socially harmful actions totally unacceptable in a free society.

In three issues of the Phoenix Letter we outlined joint use of power in the United States by members of Yale senior societies. These actions were to the disadvantage of the United States. We have so far outlined only 8 events. In fact, we have — even at this early stage — another 20 events ready to lay before you, including control of the Manhattan Project, target selection in World War Two, the Alger Hiss case, and a wide range of other situations.

Given the British case and these 28 events, we are entitled to view Mr. Daly's claim for privacy with extreme skepticism.

Not only can we demonstrate highly suspicious joint use of power, but also we have a situation where members are supposed to deny membership, membership lists are not published, and even Vice President Bush in writing will neither confirm nor deny membership. The "Temple" is not open to outsiders.

And we are supposed to accept this in the name of privacy?

THE POWER OF APPOINTMENT

The secret of The Order's acquisition of power is the fraternal use of appointment.

Any member who acquires a position of power uses this position to appoint blood brothers. This preferential pattern of appointment starts on the Yale campus itself and has been the target of past Yale criticism. Priority in appointment appears to be:

(1) Blood brothers in Skull & Bones (Russell Trust)

(2) Members of Scroll & Key (Kingsley Trust) and Wolfs Head (Phelps Trust)

(3) Other Yale graduates — except that it is not enough to be just a Yale graduate. Under certain circumstances other Ivy League graduates or outsiders with specific qualifications have priority over Yale graduates.

4) Other Ivy League Universities, especially Harvard, Princeton and Johns Hopkins

(5) Families of (1) and (2) above

(6) Outsiders with specific qualifications

For example: President William Howard Taft (Club D. 76) appointed Franklin MacVeagh (Club D. 60) as his Secretary of Treasury and Henry Lewis Stimson (Club D. 86) as his Secretary of War.

In brief: Taft's appointments were selected from category (1) above for two senior cabinet posts.

But Taft appointed Theodore Marburg, German born, (6) above, as U.S. Ambassador to Belgium. Why? In 1911 Marburg was the prime exponent of the League of Nations idea and used the Belgian post to push this concept. The League of Nations concept is an event we can trace to The Order and its associates.

HOW THEY PLAN TO PERPETUATE POWER

Of even greater significance is the way The Order has tried to institutionalize its power of appointment: to remove power from the electorate.

The selective appointment device has a weakness: sooner or later it may be identified and public protest will neutralize the power.

Hence, we find attempts to lock in the power of preferential appointment. Consider these facts:

• Cord Meyer was founder of United World Federalists. Cord Meyer is on the Scroll & Key list.

• President Eisenhower's National Goals Commission had William P. Bundy (Club D. 137) as its director.

• The Hutchins-Luce Freedom of the Press Commission wanted to restrict the power of the press to inform. Henry Luce was Club D. 118 and Robert Hutchins was Phelps Trust.

These efforts came to a head with promotion of the "new Constitution." Here's how perpetuation of power almost came about in the 1960-1970 period:

Robert Maynard Hutchins (Phelps Trust) was Associate Director of the Ford Foundation, 1951-5. Ford Foundation established Fund for the Republic in 1954 and Hutchins became President. Fund for the Republic funded an outfit called Center for the Study of Democratic Institutions.

In the mid to late 1960s the Center got to work on the "new Constitution" and a member ofThe Order, McGeorge Bundy (Club D. 138), was President of the supporting Ford Foundation.

The Center's prime objective was to draft a "model Constitution for contemporary America."

Some of the provisions of this "new Constitution" follow: (taken from The Center Magazine, Volume III, No. 5, September/October 1970)

• Power of the Presidency is modified and shifted to the Senate
• Senators have lifetime tenure
• Senators appointed, not elected
• All enterprises regulated by a National Regulator
• The present Bill of Rights is either omitted or carefully circumscribed

The final version of this dictatorial manifesto was published in Rexford G. Tugwell, The Emerging Constitution (Harper & Rowe, 1974).

Current attempts to introduce the new "Constitution" through the back door include:

• Creation of 10 Federal Regions, equal to the ten "new States"
• A call to expand the Presidential term to nine years
• They plan for a Constitutional Convention in 1987. George Bush (D. 146) will be President of the Convention.

WHAT YOU SEE DEPENDS ON WHERE YOU STAND

The vast majority of people look at events and activities as disconnected and independent. For most people the effort to establish a "new constitution" in 1970 has no connection with, for example, President Taft's cabinet appointments in 1911 or the Hutchins-Luce Commission on Freedom-of the Press, or the other 28 major events we have identified.

However, if one finds a common thread linking seemingly different events, people and activities, the viewpoint changes. This generates a search for other common links between the same people and events.

The common link or thread in 28 events (so far) is membership in Yale secret societies: Russell Trust, Kingsley Trust and Phelps Trust. Control or manipulation of these events and activities was in the hands of members of one or more of these trusts.

It is this common thread, a binding link, that secrecy keeps from public view. When you look at these events and activities from the viewpoint of secret fraternal organizations, the perspective changes.

Privacy then becomes unacceptable secrecy. Privacy becomes a device for manipulation of a free society. And if any reader doubts this can be done, please read Stephen Knight's The Brotherhood (Granada Press, 1984).

CONCLUSIONS

1. Radley Daly, Treasurer of Scroll & Key, claims a right to privacy for Yale senior societies.

2. We have introduced evidence that privacy has been used as a device to conceal joint activities to manipulate a free society.

3. Therefore the claim for privacy is rejected. Honest members of Yale senior societies — and they exist — should demand publication of all practices, traditions and "secrets."

THE LANDKAMER PROTECT

1. The network expands slowly but quite surely. A structure has evolved in which individuals work on specific projects in their own time at their own pace. Research results are coordinated with Landkamer, who makes them available to other interested parties.

2. Information is required on the following points:

(a) The Identity Church

(b) An alleged CIA operation entitled "Earl of Dysart"

(c) Names of Yale senior society members that have come up in connection with the Kennedy assassination, the Warren Commission and the Rockefeller Commission

NEWSNOTES

The Order And "Look Alikes"

Out of nowhere, in the last 12 months around the U.S., we find media stories about alleged criminal groups called The Order.

The media has given major space to these groups, but none to The Order as publicized in the Phoenix Letter.

Even more fascinating, we have received letters from prisoners in Federal Penitentiaries inquiring about The Order. So far, Federal prisons in California, Kansas, Texas and Alabama are represented in this unsolicited and unexpected prison mail.

There is no connection between The Order as publicized so far in the media and The Order described in the Phoenix Letter.

THE PHOENIX LETTER

Vol 7 No 3 May 1988

SECRET SOCIETIES

Vice President Bush is, as you know, a member of the super-secret Yale Skull & Bones. The following is from Newsweek On Campus (April 1988, page 17): "All references to Yale's 156-year-old Skull & Bones, which considers itself the ultimate secret society, are torn out of the card catalogs at the college library, and magazine articles about the group have been ripped from bound volumes. Those nosing around the Skull and Bones tomb may be followed or even threatened."

We can confirm the Newsweek reports of threats from our own sources. But what Newsweek doesn't know is that this makes investigators all the more curious and stubborn. Many seem to end up contacting us because we duplicated the Yale Library files many years ago. We are happy to make this suppressed information available to genuine researchers.

Personal note for Lee Atwood and Skull & Bones thugs, the files are duplicated, scattered and far distant from Arizona and California. Note for Yale Library: please reread the American Library Association regulations on suppressing materials. Thank you.

HE PHOENIX LETTER

Vol 8 No 12 December 1989

SKULL AND BONES SOCIETY

Sudden flurry of articles on Skull and Bones in establishment media ... picking up from where this editor left off in Americas Secret Establishment.

Louisville Courier-Journal (Magazine section Sunday, October 8, 1989) "The Bonesmen's Bond" with a subtitle "Presidents, Poets, Pundits and Pinkos have sworn allegiance to Skull and Bones, Yale's rich and powerful secret society, and the most exclusive college club of all. So what's all that Nazi stuff doing in the clubhouse?" Written by Steven M.L. Aronson.

Aronson charges that a room in the Bones Temple is "a little Nazi shrine inside, one room on the second floor has a bunch of swastikas, kind of an SS macho Nazi iconography."

Aronson forgets to mention that President Bush is (and his father was) in Skull and Bones.

The New Haven Advocate (New Haven is the home town of Yale and Skull and Bones).

The front page article in the October 19, 1989 issue is headed: "Bones of contention: skullduggery at Yale" by Howard Altman.

It's an extraordinary story — the Skull and Bones Temple at Yale is illegally holding the skull of Apache Chief Geronimo ... stolen from the grave by Senator Prescott Bush, father of President Bush, and other Bonesmen.

The Apaches want the skull back... and under Connecticut law (Section 53-334 of Offenses Against Public Policy and Title 45-253 of the State Probate Law) the hoding of human remains is illegal.

New Haven lawyers, according to Altman, are reluctant to sue or press for a civil or criminal complaint because of the power of Skull and Bones, to which we say "wait a minute, this isn't Russia" ... the local prosecutor has a duty to prosecute if the evidence is credible. After all we live under the rule of law and that includes Presidents. If Mr. Bush is accessory to a criminal offense, apparently compounded by satanism, he has to be brought to the bar of justice. In this case George Herbart Walker Bush is apparently not implicated directly except that he would have knowledge of illegal actions — which is indeed an offense.

Other news sources please copy and give this charge some public exposure.]

The Altman article also cites a book, a history of Skull and Bones written in 1933 entitled The Continuation of the History of Our Order for the Century Celebration. Compiled by F.O. Matthieson. [Altman does not state that Matthieson was a prominent Marxist and a link between the old line Communists of the 1930's and the new progressives of the 1960s.]

If any reader can locate a copy of this book we will arrange for reprinting. In any event:

(1) We now have clues that President Bush may be tied to satanic practices. This was a segment included in our America's Secret Establishment.
(2) We also have links between Skull and Bones and Naziism.

If you have read Trevor Ravenscroft Sword of Destiny... you will immediately appreciate the significance. We suspect more information will surface in coming years.

Phoenix Letter



Yale *Co-eds* before 1969
courtesy Manuscripts and Archives
Yale University Library

What Hath Women Wrought?

Kris Millegan
February 2001

KA-THUNK! THE SOUND BROUGHT MY ATTENTION to the very building that brought me to New Haven in the first place, "The Tomb," an expanded mausoleum, housing Yale's oldest senior secret society, The Order of Skull and Bones.

Out came a young, serious coed leaving the building into the cold afternoon snowscape. That started me wondering, what hath the ladies wrought? What had been the effect of allowing females into that venerable male bastion?

In 1991, the 15 outgoing members tapped 6 gals and 9 guys in early April as their replacements. Retribution came fast, the locks were changed on the heavy doors at High Street and board spokesman Reverend Sid Lovett (S&B 1950) declared, "There was no election. There is no society [next year]."

The "disagreement" caused more mainstream ink about the secret group s activities than ever before. There were stories in Time, Newsweek and The Economist.

Even People magazine ran a 2-page spread about the Bones tiff in May '91, while Bonesman GHW Bush (S&B 48) sat in the Oval Office ... with no comment.

Walking around today at Yale, one can see and feel a strong feminine presence. Yale has been coed since 1969, the year after George W Bush (S&B 1968) graduated. By 1991 the undergrads were 45% female and a feeling on campus

was that "gender differences between friends of different sexes is not a dominant issue." The Bones crowd was, as Yale was by 1991, a diverse group of races, creeds and sexual orientation. Also the Tomb had become a bone of contention with feminists and there had been a break-in by some determined ladies, who took pictures and spread rumors.

The board had offered an early compromise of separate his and hers secret societies but that was rejected by the then seniors, who went ahead, "tapped" the ladies and were locked-out of their High Street hideaway.

The "locked-outs" vowed to continue and they were soon offered the use of another senior society's (Manuscript) secret clubhouse. A then senior Bonesman contended, "It makes sense to be co-ed because the world is co-ed." One view on the other side, a Patriarch DC lawyer, felt "the admission of women would lead to 'date rape' in the 'medium-term future.'"

A vote-by-mail by Bones members produced a narrow vote in favor of the admittance of the co-eds. The old guard cried foul, filed charges that the mail vote was against Bones by-laws and scuttled the September '92 plans to initiate the ladies. Finally in November a second vote was taken, with members having to either appear in person or send a proxy by another Bonesman, at the Tomb and another slim decision was made to admit the gals. The 2000 senior group, outed by Rumpus, Yale's tabloid, included at least six women and maybe more. The Rumpus printed two different lists and some names could be either male or female. And it seems, judging from a list of Wolf Head's members for the year 2001, that Wolf's Head, the last all-male senior secret society at Yale, has also gone co-ed.

What has been the effect? Do the women tapped for Bones follow the "old guidelines" of captains of ball teams, a Yale Lit editor, maybe a radical (for excitement?), some old-blood money with a few minorities tossed in now and then? Is there a new sexual element? What about the sexual confession times? Is there a hot time on High Street now? Has the "nude mud wrestling" in the basement changed to "playtime in the dungeon?" Does the narrow vote show a political change at stodgy Bones? Will Bones be taken-over by radical-Amazons? What hath the women wrought?

"My senior year, I joined Skull and Bones, a secret society, so secret I can't say anything more. It was a chance to make fourteen new friends."
From the autobiography of George W Bush, A Charge to Keep.

According to recent lists released by Yale's tabloid Rumpus, women are definitely here to stay at Bones. Women may actually revive some life and interest by students in the Order which was taking a beating from undergrads for its males-only stand. According to an article in the April 16, 1991, Hartford Courant: "My sense is that they get turned down these days more often than they get accepted," said Jacob Weisberg, a senior editor of the New Republic, who declined to become a Bonesman in 1985 when asked. "There have been years lately when their whole first string has turned them down." Jacob even turned down a personal request from John Kerry to join Bones because "he felt he could not join a club that excludes women."

SKULL & BONES

KRIS MILLEGAN

APPEARED IN HIGH TIMES, JANUARY 2000

"These secret societies are behind it all," my father told me many years ago, During the early '50s he was a CIA branch chief, head of the East Asia intelligence analysis office. "The Vietnam War," he said soberly, "is about drugs." Many years later I finally had some understanding of what Dad was telling me. I wish I had asked more questions. Like, was he was talking about the Order of Skull and Bones?

IT'S A SYMBOL USED BY PIRATES AND POISONS, but it's also a "fraternity" at Yale University. College kids having fun? Not quite.

Fifteen juniors are tapped on a Thursday in May each year. Around 2,500 have been members, mostly white males from wealthy Northeastern families: Bush, Ford, Goodyear, Harriman, Heinz, Jay, Kellogg, Phelps, Pillsbury, Pinchot, Rockefeller, Taft, Vanderbilt, Weyerhaeuser and Whitney are some of the names on its roster- Minorities were admitted in the 1950s, and the first women were admitted in 1991.

The Order of Skull and Bones is a secret society founded at Yale by William Huntington Russell (S&B 1833). His cousin Samuel Russell's family enterprise, Russell & Company, was the largest American opium smuggler, working with the Scottish firm Jardine-Matheson, the world's largest opium smuggler.

Many New England and Southern families in the "China Trade" sent their sons to Yale, and many were "tapped" into Skull and Bones. From Yale, "Bonesmen" entered and were very influential in the worlds of commerce, communications, diplomacy, education, espionage, finance, law and politics.

There have been two Skull and Bones presidents, at least 10 Senators, two Chief Justices of the Supreme Court and many US Representatives and state governors.

Bonesmen have held myriad lesser appointed posts and positions, with a particular affinity for the Central Intelligence Agency. This year, a Bonesman — George W. Bush (S&B 1968) is the leading contender for the presidency.

THE BUSH BONESMEN

GEORGE W. BUSH IS THE THIRD GENERATION of Bush Bonesmen to become prominent in national politics. His father, President George H.W. Bush, joined S&B, in 1948. His grandfather, Prescott Bush (S&B, 1917) was a senator from Connecticut, 1952-62, a partner in the Brown Brothers, Harriman investment-banking firm, and a director for CBS, Pan Am and Prudential. He was one of President Dwight Eisenhower's favorite golfing partners and a member of Washington's elite Alibi Club.

But there was more to Prescott than met the resume. He had served as a US Army Intelligence liaison officer during World War I. Prescott's boss, W. Averell Harriman (S&B 1913) worked closely with fellow "Bonesman" Secretary of Defense Robert Lovett (S&B 1918) to organize US intelligence activities in the early Cold War. They created a framework to run covert operations and psychological warfare.

In 1954, H.S. Richardson, the maker of Vick's cough drops and Vapo-Rub, wrote in a letter to Senator Bush; "1 want to get your advice and counsel on a subject — namely what should be done with the income from a foundation, which my brothers and I are setting up."

Eugene Stetson (S&B 1934), an assistant manager at Brown Brothers, Harriman, organized the H. Smith Richardson Foundation. It participated in MK-ULTRA, a secret CIA domestic psychological-warfare operation, and helped to finance the testing of psychotropic drugs, including LSD, at Bridgewater Hospital in Massachusetts in the '50s.

In the '80s, the Richardson Foundation was a "private donors steering committee," working with the National Security Council to coordinate the Office of Public Diplomacy. This was an effort to provide money and cover for arming the Nicaraguan Contra rebels, and to coordinate published attacks on opponents of the program.

In 1962, Prescott founded the National Strategy Information Center, with his son, Prescott Bush, Jr. and future CIA director William Casey, an investment banker and veteran of the Office of Strategic Services (OSS), the CIA's predecessor. The center laundered funds for the dissemination of CIA-authored "news stories" to some 300 newspapers.

Gordon Gray, another of Prescott's golfing buddies, was Eisenhower's national security adviser and first director of the Psychological Strategy Board in the early '50s. Along with Averell Harriman and others, he created the modern wall of "deniability" for US covert actions, such as the overthrow of leftist governments in Iran in 1953 and Guatemala in 1954. Gray's son C. Bowden Gray was President George Bush's White House counsel. As "protector of the president, come what may," he helped to keep Bush "out of the loop" as George became embroiled in the evolving Iran-Contra scandal. Iran-Contra, Watergate and other scandals have many of the same players — the Cubans from the "secret war" against Fidel Castro.

WHAT DID YOU DO IN THE SECRET WAR, DADDY?

HENRY NEIL MALLON (S&B 1917), Prescott s classmate at Yale and Dresser Industries chairman of the board, on April 10, 1953, wrote a letter to CIA Director Allen Dulles about a proposed meeting at the Carlton Hotel. At this meeting Mallon, Prescott Bush and Dulles discussed the use of drilling rigs in the Caribbean. Dresser Industries had "often provided cover employment to CIA operatives."

In reaction to the Cuban Revolution in 1959, Vice President Richard Nixon and the National Security Council formed a working group — the "5412 Committee." Members discussing "plausible deniability" and the option of assassinating Cuban leaders decided to use a third-party "cut-out" for the operation.The "cut-out," code-named Operation 40, was mobster Santos Trafficante, who had plenty of reasons to want Castro gone — and any actions could easily be laid at his doorstep. And with groundwork already laid with the World War II mob/docks deal and subsequent black-market activities in Italy, an informal financing arrangement between "intel," the mob, assassins and arms, and drug trafficking was made.

Zapata Off Shore, an offshore oil-drilling company headed by George Bush, provided a convenient cover. CIA veterans from 1960s covert actions against Castro maintain Zapata was used "as a front," and "Zapata's and their subsidiaries' offshore drilling platforms were used in operations." And according to former senior CIA Operations Directorate officials, Bush was a paymaster for "contracted services."

As liaison between the CIA and the Pentagon during the 1961 Bay of Pigs invasion of Cuba, Fletcher Prouty was put in charge of ordering supplies for the attack. "The CIA had code-named the invasion 'Zapata,'" recalls Prouty. "Two boats landed on th shores of Cuba. One was named Houston, the other Barbara. They were Navy ships that has been repainted with new names." At the time George Bush was living in Houston with his wife, Barbara.

In July, 1988, The Nation published a memo from FBI Director J. Edgar Hoover, seating that "Mr. George Bush of the Central Intelligence Agency" was providing information about State Department anxieties concerning the reaction of "some misguided anti-Castro" Cubans to President John F. Kennedy's assassination.

After Nixon resigned as President, his staff revealed that his code name for the assassination of John Kennedy was that "Bay of Pigs thing." One of the most important pieces of evidence in the assassination, Abraham Zapruder's film, was purchased by Time, Inc., and locked in a vault. Time, Inc. was founded by Henry Luce (S&B, 1920).

The Zapruder film got its first public screening after being subpoenaed by Judge Jim Garrison, who tried to prove CIA involvement in the killing. Ellen Ray, who now publishes Covert Action magazine, went to New Orleans to do a documentary on Garrison. After receiving many death threats, she canceled the project, but not before she met Prescott Bush at a private dinner arranged by a writer for the New Yorker. At the dinner, Prescott tried to pump her for information about Garrison's investigation.

Numerous government and CIA employees say that under Bush's successor, Richard Gow (S&B 1955), the US and other governments used drill rigs owned by Zapata Off Shore and its subsidiary Rowan International for covert operations involving support and logistics for arms and drug trafficking operations.

"A great many of the drug smugglers in Miami today are Bay of Pigs veterans," a Florida drug prosecutor said in 1986. "That's why they are so tough. They are intelligence trained."

In 1998 former Green Beret William Tyree filed a $63 million federal lawsuit against Bush, the CIA and others. His court documents allege that US military personnel were used to assist arms and drug traffic. Tyree had started to become disenchanted with this "official" mission and his wife, Elaine, who was working for the Army Criminal Investigation Division, started to keep diaries. She was found beheaded with a hunting knife. Tyree was charged with the murder.

The charges were dropped by Massachusetts Judge James Killiam. "I didn't believe a word the prosecution's chief witness said," he said in a recent A&E special. The case had been re-filed by the Middlesex County DA's office. A young John Kerry (S&B 1966) was assistant DA at the time. In the late '80s Kerry chaired a special Senate committee on drugs, law enforcement and foreign policy, which made much noise about government-assisted drug-trafficking, but took no action. Much in the committee's files is still "classified."

One Army Intelligence and five Special Forces colonels associated with Tyree and these operations have since died, some under mysterious circumstances. Several have left amazing affidavits that detail massive hard drug trafficking by government personnel under the aegis of "national security." One of them, known as a "money man," had phone numbers for Bill Casey and a Gambino family crime boss in his address book.

The explosive lawsuit progresses slowly and nary a peep is heard from the media.

BUT IT'S NOT THE FIRST TIME

ON OCTOBER 20, 1942, 10 months after Pearl Harbor, US government ordered the seizure of "all the capital stock of the Union Banking Corporation, a New York corporation," by the Alien Property Custodian; the order stated "all of which shares are held for the benefit of members of the Thyssen family, [and] is property of nationals of a designated enemy country."

It seems that Averell Harriman and Prescott Bush — along with corporate lawyer John Foster Dulles and his brother Allen Dulles, spymaster for the CIA and the OSS — and others were involved in the buildup of Nazi Germany, supplying the Third Reich with capital and financial arrangements. This was kept quiet. Only a small notice appeared in the New York Times-years later — on Dec. 16, 1944: "The Union Banking Corporation, 39 Broadway, New York has received authority to change its principal place of business to 120 Broadway."

No mention was made of the fact that Union Banking Corporation had been seized for trading with the enemy, or that 120 Broadway was the address of the Alien Property Custodian.

ORIGINS OF THE ORDER

THE ORDER OF SKULL AND BONES WAS FOUNDED IN 1832 by William Huntington Russell and Alphonso Taft. Many historians claim it appeared because Phi Beta Kappa, America's oldest Greek-letter college society, had abandoned secrecy.

Phi Beta Kappa was "founded with impressive ritual and high solemnity" on Thursday, December 5, 1776, at William and Mary College, in Williamsburg, Virginia. The chapter at William and Mary was disbanded in 1781, making the Yale branch, which was founded in November 1780, the oldest extant chapter.

Phi Beta Kappa became an "open honorary organization" in 1832. In protest, apparently, Russell, Yale valedictorian of 1833, influenced Taft and 13 others "to form what is now perhaps the most famous secret society in the United States."

From the very beginning there was resentment from fellow students. Faculty sent warning letters to early members' parents. But the chapter persisted and flourished, and

by 1884 two other senior secret societies at Yale had been formed, Scroll and Key, and Wolf's Head. Also, Phi Beta Kappa was revived after disappearing in 1871.

On September 29, 1876, the Order of File and Claw broke into the "Tomb," the windowless Bones-owned and built meeting house. They wrote that they saw its walls "adorned with pictures of the founders of Bones at Yale, and of the members of the society in Germany, when the Chapter was established here in 1832."

In the cellar, they found a small room, with an "always-burning lamp" and "a dilapidated human skull." Upstairs, three rooms were found, a lodge room with its walls covered in black velvet, a table with skull and crossbones, and the "sanctum sanctorum," furnished in red velvet. The Order of File and Claw also reported an old engraving that, along with the decor, represented aspects of the Regent's degree in the outlawed Bavarian Illuminati.

THE LINKS OF POWER

FOR SOME UNDERSTANDING OF THE COMPLEX LINKS between members of Skull and Bones, consider the first Bonesman to become president, William Howard Taft (S&B 1878), who is the only man to have been both president and chief justice of the Supreme Court. His father, S&B cofounder Alphonso Taft, was appointed secretary of war by President Ulysses Grant, and was later Attorney General.

William Howard Taft was appointed by President William McKinley to be the first civil governor of the Philippines, displacing a disgruntled General Arthur MacArthur - General Douglas MacArthur's father — who had been the military governor. Theodore Roosevelt, who became president after the assassination of McKinley, appointed Taft secretary of war (1904-08). While secretary, he was the "master overseer and troubleshooter" for the Panama Canal, provisional governor of Cuba, and played a key role in foreign policy.

Taft was elected President in 1908. He was appointed chief justice of the Supreme Court by President Warren Harding in 1921, and served until just before his death in 1930.

President Taft made Henry L. Stimson (S&B 1888) his secretary of war (1911-13). Stimson was appointed to high government posts by seven presidents. He was governor general of the Philippines (1926-1928), secretary of state under President Herbert Hoover (1929-1933) and secretary of war under presidents Franklin Delano Roosevelt and Harry S. Truman (1940-1946). He was 'ultimately responsible" for the internment of Japanese-Americans in World War II, and oversaw the Manhattan Project, building the atomic bomb. He also took credit for swaying Truman into dropping the bomb.

Stimson groomed a generation of "Cold Warriors," in what was known as "Stimson's Kindergarten." Among these proteges were General George C. Marshall, John J. McCloy, Dean Acheson, and fellow Bonesmen Robert A. Lovett, William Bundy (S&B 1939) and his brother McGeorge Bundy (S&B 1940).

"These men helped establish a distinguished network connecting Wall Street, Washington, worthy foundations and proper clubs," historian and Kennedy adviser Arthur Schlesinger, Jr., wrote. "The New York and legal community was the heart of the American Establishment. Its household deities were Henry L. Stimson and Elihu Root; its present leaders, Robert A. Lovett and John J. McCloy; its front organizations, the Rockefeller, Ford and Carnegie foundations and the Council on Foreign Relations."

Harriman and the Bundy brothers, in their positions in the State Department, Department of Defense, the CIA and as advisers to Presidents Kennedy and Johnson, exercised significant impact on the flow of information and intelligence during the Vietnam War. Harriman had busy careers in business and politics and led peace negotiations with North Vietnam in 1968. William Bundy went on to be editor of Foreign Affairs, the influential quarterly of the Council on Foreign Relations. McGeorge Bundy became president of the Ford Foundation.

THE FOX AND THE HENHOUSE

GEORGE BUSH WAS APPOINTED BY PRESIDENT NIXON to the White House Cabinet Committee on International Control in 1971. As vice president, he was the highest US official involved in the War on Drugs, as chairman of President Reagan's cabinet-level working group and as director of the National Narcotics Interdiction System.

Frances Mullen, Jr., former head of the Drug Enforcement Administration, called Bush's efforts "an intellectual fraud" and "a liability rather than an asset." Soon after these statements, Mullen resigned, and the resultant General Accounting Office report was buried.

In July 1985, the suppressed GAO paper reported that there were "no benefits from the National Narcotics Border Interdiction System, directed by George Bush. In fact. the overall effect was to encourage supply."

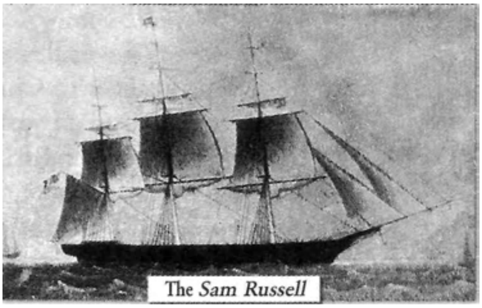
Bonesmen have helped create a prohibition where plants and their by-products are sold on the black market for precious-metal prices, using a corrupted "secret government" for trafficking and propaganda. A cabal that uses an unconstitutional Drug War for political, economic and social control.

BLACK MARKET BONES

DO THE ORIGINS OF THE OPIUM TRADE LEAD TO THE MOST DANGEROUS SECRET SOCIETY IN AMERICA?

KRIS MILLEGAN

MOTHERSHIPS SAIL up and down the coast. Fast, small craft come out, load contraband and scoot back to shore day and night. Corrupt officials take bribes to look the other way. The smugglers live large, build yachts and send their kids to private schools. Banks and fronts are set up to launder money, move "product" and avoid scrutiny. Oodles and oodles of money are being made. The 1980s in Miami? Nope, we're talking about the mid-1800s, when some of America's oldest fortunes were made in the Chinese opium trade. "The finest and fastest vessels of their size to be found in any sea, built by the best naval architects in England, Scotland and America. No cost is spared in their equipment, their crews large for rapid evolution, and their captains are the most skilled and dashing sailors to be found." So wrote missionary John Johnstone in the 1850s as he traveled by opium clipper to his station along the China coast.



The *Sam Russell*

You see, by the mid-1830s the trade in opium was the largest commodity market on the planet. And as Carl A. Trocki's excellent book Opium, Empire and the Global Economy (1999) points out:

> The trade in such drugs results in monopoly which not only centralizes the drug traffic, but also restructures the social and economic terrain in the process. Two major effects are the creation of mass markets and the generation of enormous...

unprecedented, cash flows. [Which] results in the concentrated accumulation of vast pools of wealth. [Which] have been among the primary foundations of global capitalism and the modern nation-state itself. Indeed, it may be argued that the entire rise of the West, from 1500 to 1900, depended on a series of drug trades.

Drug trades destabilized existing societies not merely because they destroyed individual human beings but also, and perhaps more importantly [they] under-cut the existing political economy of any state. They have created new forms of capital; and they have redistributed wealth in radically new ways.

It is possible to suggest that mass consumption, as it exists in modern society, began with drug addiction. And, beyond that, addiction began with a drug-as-commodity. Something was neces-
sary to prime the pump, as it were, to initiate the cycles of production, consumption and accumulation that we identify with capitalism. Opium was the catalyst of the consumer market, the money economy.



Opium created pools of capital and fed the institutions that accumulated it: the banking and financial systems, the insurance systems and the transportation and information infrastructures.

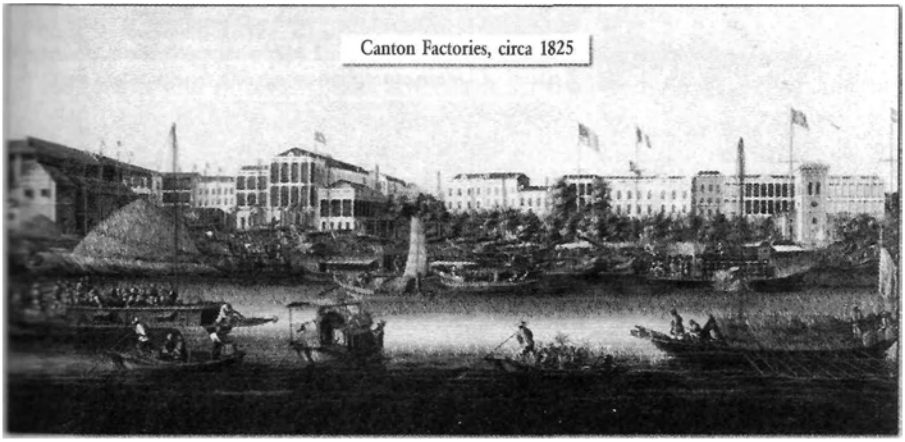
One might say, "Who controls opium controls? ...."

FAST SHIPS, DRUGS AND MONEY

When we sold the Heathen nations rum and opium in rolls,
And the Missionaries went along to save their sinful souls.
The Old Clipper Days
— Julian S. Cutler

The Portuguese, Dutch, French, British and others began trading in opium soon after the first contact with China. Because the Chinese desired few trade goods, the Western nations soon became short of silver to purchase tea, silk, porcelain and other desired items. Fueled by both economic and imperialistic motives, the opium trade grew from around 200 chests (16 tons) a year to 4,200 chests (336 tons) by 1820, with the majority imported from India and in the hands of British traders. But the times were a'changing.

The upstart Americans introduced their famous clipper ships expressly for the "China trade," and in the 1830s the price of opium went down and shipments of opium to China went up. Shipments in 1830 were four times what they had been in 1820; by 1838, they'd more than doubled again. The opium clipper, with its ability to sail against the monsoons, sometimes made three round-trip journeys within one year, instead of taking up to two years to complete just one journey there and back. Profits were huge, and there was a large flow of silver being introduced from China into booming Western economies.


Canton Factories, circa 1825

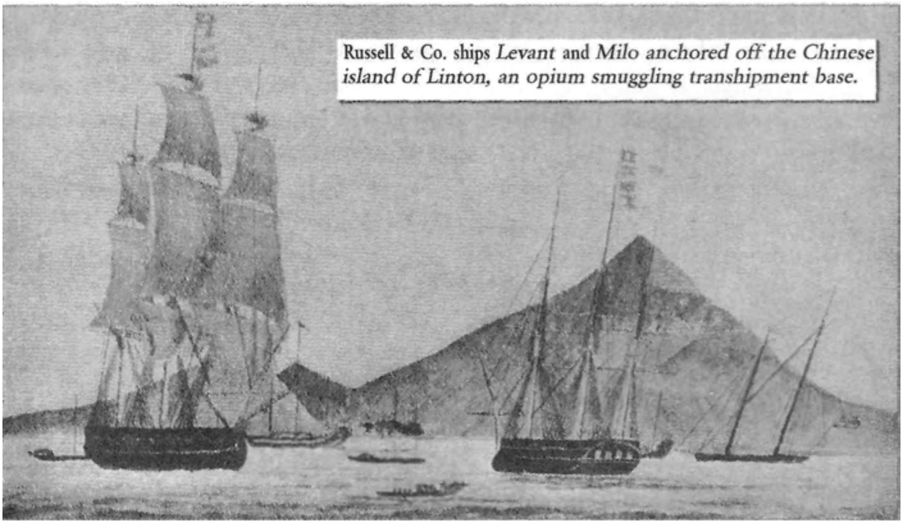
In early 1837 there was a crash in the opium market, and the speculators' losses reverberated around the world in a financial panic, in which cash became scarce both in the US and Britain. Smuggler Robert B. Forbes lost his first opium fortune in the "Panic of 1837," and returned to China for more. He had built a house (now a museum) in Milton, Massachusetts (not far from where former President George Bush was born). Forbes had a special ship built: the "Lintin," a "storeship" named after an anchorage where he spent many years warehousing and selling contraband opium to Russell & Co. Chinese customers. Forbes would tell Chinese officials and others that he didn't deal in opium. But he was actually engaging in word games, and/or "transferring" the opium trade to front companies.

Russell & Co. was the largest American opium smuggler, and the third largest in the world, behind the British Dent firm and the largest smuggler of all, the Scottish merchants Jardine-Matheson. For many years Russell & Co and Jardine-Matheson worked together and were known as the "Combination." They virtually controlled the trade, manipulating market forces towards maximizing profits.


Thomas H. Perkins

Russell & Co. was started in 1824 by Samuel Russell of Middletown, Connecticut. In 1828 it "absorbed" the T.H. Perkins opium concern of Boston and became America's dominant force in China. Russell & Co. was very much a family affair, with uncles, cousins, brothers, fathers and sons dominating the firm and its allied banks ind fronts.

The Russell family was steeped in Yale College history. The Rev. Nodiah Russell was a Yale founder. And in 1832, General William Huntington Russell, Samuel Russell's cousin, founded one of the US' most famous secret societies: the Order of Skull and Bones, along with Alphonso Taft. Taft's son, future President William Howard Taft (S&B 1878), would play many roles in the creation of international narcotics controls and the US Drug War.



Russell & Co. ships *Levant* and *Milo* anchored off the Chinese island of Linton, an opium smuggling transhipment base.



THE OPIUM WARS

"I had not come to China for health or pleasure, and that I should remain at my post as long as I could sell a yard of cloth or buy a pound of tea."
—R.B. Forbes to Captain C. Elliot, British Superintendent of Trade, in refusing to leave Canton during the first Opium War.

RELATIONS BETWEEN THE WEST AND CHINA had always been strained. The Chinese emperor would only receive Western ambassadors as if they were tribute-bearing vassals, and in the highly structured social caste of China, merchants were not worthy of respect, let alone discourse at an official level. For many years dealings with Westerners were delegated to a few "Hong" merchants, who paid for the privilege and had to vouchsafe the foreigners' commercial dealings. The term "pidgin" English came from the Hong merchant pronunciation of the word "business" in the trade dialect of English that was used to conduct affairs with the "white devils."



Commissioner Lin

Chinese High Commissioner Lin Tse-hsu came to Canton in 1839 with an order to "investigate the port affairs." The first edict against opium had come in 1729; another against smoking came in 1796. The trade had grown to 40,000 chests by 1838. Smoking, a novel, more soporific and addictive manner of using opium, plus the encouragement of the trade by the British and others, had devastated all segments of Chinese society. Corruption, smuggling and smoking were rampant, creating apathy, and the trade was also draining Chinas treasury.

Lin couldn't believe that opium was legal in Britain, and wrote a letter to Queen Victoria to implore her aid in stopping the trade. He disrupted the local merchants and published new edicts against the use and importation of the drug. Lin demanded that all chests of opium be forfeited as contraband, and all trading houses sign a bond, pledging to smuggle no more and becoming liable to Chinese law, which included the death penalty. Through threats, a servant walkout, giant gongs that were rung all night and other measures, he was able to collect over 20,000 chests of opium (about half of that year's Indian trade). Then, under orders from the emperor, he destroyed it all.

This sparked the first Opium War, made huge profits for those companies that had held on to chests, and left Russell & Company the only trading firm left open in Canton.


Warren Delano, Jr.

During that first Opium War, the chief of operations for Russell & Co. in Canton was Warren Delano, Jr., grandfather of Franklin Roosevelt. He was also the US vice-consul and once wrote home, "The High officers of the [Chinese] Government have not only connived at the trade, but the Governor and other officers of the province have bought the drug and have taken it from the stationed ships in their own Government boats." Wu Ping-chen, or Howqua II, the leading "hong" merchant, was considered by some to be one of the world's richest men, worth over $26 million in 1833.


Hoqua

SERIOUS BUSINESS

"If the trade is ever legalized, it will cease to be profitable from that time. The more difficulties that attend it, the better for you and us."
—Directors of Jardine-Matheson


A. Heard

THE PROFITS WERE HUGE and many fortunes were made. Warren Delano went home with one, lost it and went back to China to get more. Russell & Co. partners included John Cleve Green, a banker and railroad investor who made large donations to and was a trustee for Princeton; A. Abiel Low, a shipbuilder, merchant and railroad owner who backed Columbia University; and merchants Augustine Heard and Joseph Coolidge. Coolidge's son organized the United Fruit Company, and his grandson, Archibald C. Coolidge, was a cofounder of the Council on Foreign Relations. Partner John M. Forbes "dominated the management" of the Chicago, Burlington and Quincey

railroad, with Charles Perkins as president. Other partners and captains included Joseph Taylor Gilman, William Henry King, John Alsop Griswold, Captain Lovett and Captain J. Prescott. Captain Prescott called on F.T. Bush, Esq., his friend and agent in Hong Kong frequently. Russell & Co. families, relations and friends are well represented in the Order of Skull and Bones.



Shanghai - 1843

After the first Opium War, the port of Shanghai was opened up, with Russell & Co. as one of it first foreign merchants. In 1841, Russell brought the first steam ship to Chinese waters and continued to develop transportation routes as long as opium made them profitable. Russell partners were also involved in early railroad ventures in China, together with US railroad magnate E.H. Harriman, whose sons later became very active in Skull and Bones.

The second Opium War led to the legalization of opium in China in 1858, and the "country traders" began to lose their control of the business. They were just smugglers warehousing the "product" offshore and plying up and down the coast delivering opium to Chinese "compradors." Once opium was legalized, Chinese and Indian merchants started to take over the trade. Russell and others, with their limited role as smugglers, hadn't developed any structure to sell opium in inner China. The Chinese brokers could now just order opium just like any commodity, and the trade was transferred to firms with strong ties at the producing base, India, and the consuming giant, China.



Russell & Co. Shanghai, 1867

The old Western trading firms set up banks, transferred assets to other schemes and tried to capitalize on their "China trade" experience, but none of these ventures had quite the same level of profitability. Russell & Co. formed the Shanghai Steam Navigation Company, but in 1877 sold it to the China Merchant's Steam Navigation Company, and the American share of Chinese

shipping dropped by 80%. Some sources say Russell failed in 1891, with British and German firms taken over their business. According to others, the company's successor in Shanghai was Shewan & Tomes.


D.C. Gilman

In 1856, Daniel C. Gilman (S&B 1852), a Russell & Co. partner relation, incorporated the Order of Skull & Bones as the Russell Trust Association, with General W.H. Russell as its president.

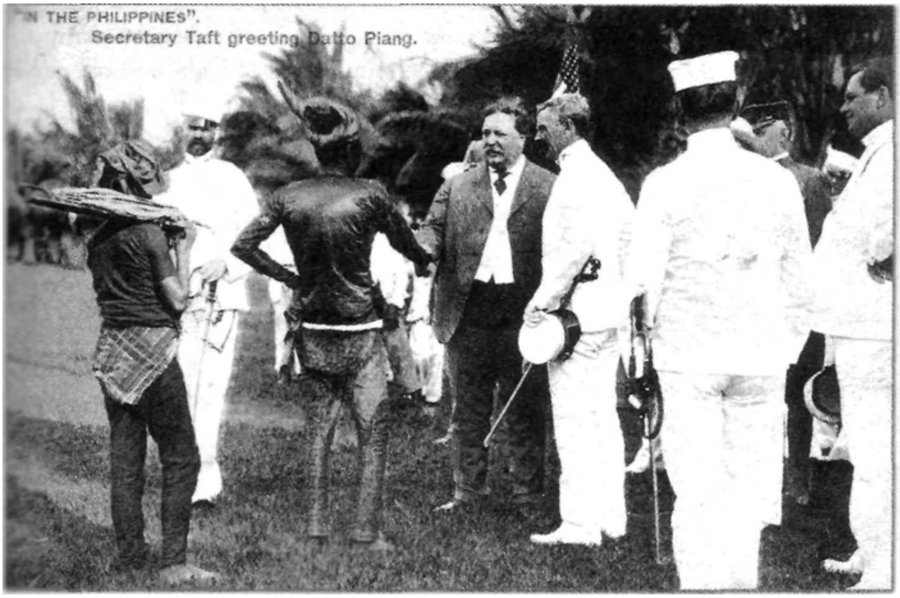
THE MODERN WORLD: PROHIBITION, SMUGGLERS AND SPIES

The money from the drugs, produced the money for the guns, and that is how the operation worked, and Bush knew the whole god-damn thing.
—CIA operative Trenton Parker, in Rodney Stich's Defrauding America

IRONICALLY, THE SCIONS of these 19th-century opium fortunes would go on to play key roles in the Drug Wars of the 20th century: in both the enactment of drug prohibition and in the clandestine arrangements between smugglers and government spies.

In 1898, the Spanish-American War signaled the United States' debut as a global imperial power. American troops invaded Manila, and three years later, after a brutal guerrilla war, the Philippines became a colony of the US. President Theodore Roos-

evelt appointed Bonesman William Howard Taft to serve as the first civil governor of the islands. (Patriarch Bonesman Henry Stimson (S&B 1888) plus some Russell & Co. relations, later held that post.) Taft stayed on in the Philippines until 1904, even turning down a much-desired appointment to the US Supreme Court.


"IN THE PHILIPPINES". Secretary Taft greeting Datto Piang.

In 1903 the Philippines became the first modern nation in Asia to declare opium illegal. Soon there was a black market, and smuggling again began developing into a major force. Taft succeeded Roosevelt as President in 1909, and actively promoted federal legislation and international conventions to outlaw and "control" certain drugs. These international treaties helped to break down judicial reluctance, and brought claims of the extraconstitutional force of international treaty obligations into the enabling of US drug laws — thus creating a profitable prohibition.



Wrapper of legal opium packet, circa 1910

And entangled in many of the recent nexuses of smugglers and spies is George H.W. Bush (S&B 1948), one of scores of men from old-money families who wound up playing a prominent role in the covert-action realms of US foreign policy.

We have been told that the CIA agent George Bush who J. Edgar Hoover mentioned in a FBI memo concerning the John F. Kennedy assassination and Cubans was not THE George Bush. We have been told that Bush, then Vice President, was "out of the loop" for the Iran-Contra scandal of the 1980s, in which the US government either looked the other way or actively aided the Nicaraguan rebels' cocaine trafficking. Some of this we know to be lies.

Spooks, smugglers, and secrets seem to converge in a netherworld rapidly being exposed by researchers fueled by the Internet's capabilities of networking, discussion and informational exchange. Former federal prosecutors, journalists, authors, professors, researchers and others tracing the drug trade from many different directions all seem to end up with certain groups of high-level operatives being involved with this illicit trade in both drugs and arms. And many leads seem to point to George H.W. Bush and friends as the "elite deviants" involved in these schemes. "Many of the scandals that have occurred in the US since 1963 are fundamentally interrelated," sociologist David Simon wrote in Elite Deviance. "That is, the same people and institutions have been involved."



President George HW Bush

The mainstream media ignores it all, even the most recent startling revelations in Volume II of CIA Inspector General Frederick Hitz's report on "Allegations of Connections Between CIA and the Contras in Cocaine Trafficking to the United States." The Vol. II Hitz report depicts in no uncertain terms involvement in drug smuggling by US intelligence contract agents and their assets

in Central America in the '80s, especially Lt. Col. Oliver North and other folks with strong contacts with George H.W. Bush. "And "Poppy" Bush also has kept alive the tradition of fast boats and smugglers. There was his friend Don Arnow, the "cigarette boat" builder/mob smuggler who was shot and died slumped over his steering wheel. As did another intelligence-connected drug-smuggler, Barry Seal, who, according to researcher Daniel Hopsicker, died in a hail of bullets with Bush's private phone number in his wallet."


Barry Seal

With the current opiate epidemic closely mimicking the classic nation-destabilization/fortune-building imperialistic opium policy used against China in the 1800s, many drug-trade researchers question just what is going on where the higher echelons of the drug trade meet the secret branches of government. Is the "official" prohibition one of collusion for political control, social engineering and the huge profits derived from illicit goods? Is all the heroin on the street there just because there exists a market full of desirous buyers? Or is a "secret government" using intelligence and military operatives in a massive drugging of our nation? Who runs it and where does the money go? Is it "government-sanctioned," under some twisted "national security" mantle?

Heroin is at an all-time high in purity, and at bargain-basement prices in a black market with younger and younger customers. It has gone from being less than 10% pure and scarce outside big-city ghettos to almost 70% pure and available nationwide, while the unaddictive marijuana has increased from $10 to $400 an ounce and has gotten somewhat harder to obtain.

Is this by chance?



January 22, 1963, Mexico City - Only extant photo of CIA assassination squad Operation 40. Barry Seal, third from left. Felix Rodriguez, front left. William Houston Seymour, front right. To Seymour's left, hiding his face, is Frank Sturgis.

THE WAR OF '82

DANIEL HOPSICKER

FROM BARRY AND 'THE BOYS' - THE CIA, THE MOB AND AMERICA'S SECRET HISTORY



THE MOST TALKED-ABOUT EVENT in Barry Seal's much-talked about life concerns the persistent rumor, around since shortly after his assassination, that he had been murdered when he threatened to make use of a videotape of a Drug Enforcement Agency (DEA) cocaine sting which had netted George Bush's two sons, Jeb and George W.

Rumors are just that — rumors — still, when something has been whispered about for as long as this has, its very persistence becomes a story in itself. And this one has all the makings of a major box office thriller ....

Governor and Presidential contender George W. Bush and his brother, Florida's Governor Jeb Bush, allegedly caught on videotape in 1985 picking up kilos of cocaine at a Florida airport in a DEA sting set up by a vengeful Barry Seal.

Seal was said to have been angry over what he considered Vice President George Bush's shabby treatment of him. In the deal the two had cut, Seal felt, Bush was to take care of his (Seal's) legal difficulties; in exchange, Seal had gone to work for Bush and North at Mena, Arkansas.

Now he felt double-crossed by Bush, so the story goes; his reaction had been to use his DEA cover to set up a sting that ended up netting two very red-faced Bush boys.

Seal then stepped in and 'took care' of things. The Bushies were now supposedly in his debt. Plus he hung on to the videotape shot of the sting for insurance.

In retaliation, Seal was very publicly executed for his impudence less than a year later. When caught, members of the hit team all tell their lawyers that once they got to the US their actions had been directed by a military officer whom they all very quickly figured out to be National Security Council (NSC) staffer Lt. Colonel Oliver North.

Where are the tapes? What evidence was there for this story?

The evidence, if it existed, would have been in the three boxes of documents, audio and videotape that Seal had his employees move with him where-ever he went, and that were confiscated by the FBI Special Agent in Charge of the Baton Rouge office who showed up on the scene less than ten minutes after Seal's slaying.

Whatever Seal was carrying around with him when he died was so hot that, to get it, the FBI broke the law and violated both the rules of evidence and the US Constitution in their haste to recover Seal's files.

Was this why Barry Seal died?

Our investigation into persistent reports that there exists an incriminating videotape of Republican George W. Bush caught in an aborted (by Seal) DEA cocaine sting was unable to turn up anything to prove the allegation.

But what the search did uncover was almost equally shocking.

We discovered, first, that the plane from Seal's smuggling fleet suspected of being flown in the alleged incident had somehow, after Seal's death, ended up in the possession of the person who had supposedly been caught flying it in 1985, George W. Bush.

It was his favorite plane.

Small world? Or just coincidence?

We know what Bogie would have said...

"Of all the planes in all the world, he had to fly in mine."

An even bigger shock awaited. The FAA ownership records of the turboprop King Air 200, which was part of Barry Seal's smuggling fleet of aircraft, and which was supposedly caught on tape in the sting, led directly to some of the major perpetrators of the financial frauds of the 1980s, Iran Contra, and the Savings and Loan Scandal.

Intrigue swirled around the successive owners of this particular Beech King Air 200 ... intrigue of a characteristically spooky kind.

The plane, in just the five years between Seal and the State of Texas Motor Pool, where it was Bush's favorite, had been involved with owners who found it necessary to make the papers on a regular and unflattering basis ....

The intrigue includes Greek shippers paying bribes to obtain loans from American companies which would never be repaid ....

An American executive snatching the charred remains of a payoff check from an ashtray in an Athens restaurant ....

Swiss police finding bank accounts used for kickbacks and bribes ....

In trying to explain to ourselves how this plane went from being part of Barry Seal's smuggling fleet to becoming, according to Texas officials, a favorite airplane

of Texan Governor George W. Bush, we had stumbled onto hard documentary evidence of Barry Seal's CIA involvement.
It was a major find. The FAA records confirm that Seal, with whom the CIA has (natch) consistently denied any relationship, piloted and controlled airplanes owned by the same Phoenix, Arizona, company, Greycas, which owned the majority interest in CIA proprietary airline, Southern Air Transport. "Barry had a lot more to do with Southern Air Transport than has ever come out," we had been told by numerous sources.

Thanks to trying to track down an unsubstantiated rumor about those wastrel Bush boys, we had clear evidentiary proof that the biggest drug smuggler in American history flew CIA planes.

It had started with a lead into the history of the aircraft (a 1982 Beechcraft King Air 200 with FAA registration number N6308F - Serial Number BB-1014) found in records kept by Barry Seal's widow Debbie.
Through these files, and other "hard paper" records left by Seal after his assassination including leasing agreements, insurance policies and maintenance records we discovered a deliberately confusing paper trail of convoluted ownership exactly like those unmasked in the Iran Contra hearings and leading to the most interesting places.

Unraveling the King Air's tangled and colorful history first requires a look at the year the plane came into service ... 1982 was a momentous year. The plane was spanking-new. And President Reagan had just introduced "Project Democracy," which he called a "crusade for freedom."

It became, instead, a license to steal.

Here's how it started ....

The detonations rumbled along the rocky course of the Rio Negro in Nicaragua throughout the night of March 14,1982.

Concrete bridges groaned under their own weight, and came crashing in avalanches of dust in a dark landscape seen through night-vision goggles. In certain quarters of Washington. D.C, it was time to uncork the champagne.

War was breaking out in Central America.

Two days later, Barry Seal took possession of the first of many planes supplied to him through CIA Director Bill Casey's "off-the-books" Enterprise, a King Air 200.
By March of 1982, more than 100 U.S. advisers were in Honduras. The chief of the Honduran Army, Barry's pal General Alvarez, said that his country would agree to U.S. intervention in Central America, if it were — but of course!— the only way to "preserve peace."
Some Generals will say anything to make a buck.

"'Up to March 1982 you could still change your policy," recalled a member of the NSC later. "The issue was still the question of support for El Salvador's

rebels. If that ended, so could pressure on Managua. But once the first forces of Nicaraguan exiles were trained and set in motion, any real negotiating became much harder. The blowing of the bridges was an announcement."

Democrats, fearing that Reagan was pushing the US into another Vietnam-style quagmire throughout early 1982 tried to cut off aid to the contras. And at precisely this time — at the height of CIA Director Bill Casey's frenetic efforts to ward off these Congressional efforts — Barry Seal acquired two brand new multi-million dollar Beech Craft King Air 200's.

The ownership of the planes was deliberately obscured through convoluted transactions involving Phoenix-based corporations which we were "fronts" for Phoenix-based General John Singlaub's "Enterprise."

In early 1982 Singlaub had organized an American chapter of the World Anti-Communist League (WACL), with a loan from Taiwan. Seal's King Air 200's came from sources close to these efforts.

Jack Singlaub has a long history of involvement in covert operations, beginning with the World War II Office of Strategic Services (OSS). He served as CIA desk officer for China in 1949 — yet another China hand — and deputy station chief in South Korea during the Korean War. During Vietnam he commanded the Special Operations Group Military Assistance Command, Vietnam—Studies and Observation Group, deeply involved in the CIA's Operation Phoenix assassination program.

Seal and Singlaub's covert efforts in 1982 were made necessary by the CIA's recent history. It had been forced, after the shocking scandals of the 1970s, to make drastic reductions in "official" CIA capabilities in the Carter years.

Until then, the CIA had controlled a huge network of planes, pilots and companies for use in paramilitary situations. But after the public revulsion at disclosures of out-of-control CIA covert operations, many of these assets, like the infamous Air America, were dissolved or sold off.

The Contra war put everything back into high gear; the Reagan Administration sought to expand covert paramilitary operations in Central America and elsewhere.

So the CIA and the Army jointly agreed to set up a special aviation operation called "Seaspray," New York Times reporter Seymour Hersh revealed in 1987. And the Agency rebuilt its capabilities illegally, relying on assets like Barry Seal.

This is old news to local and state police in areas, like Mena, affected by these extra-constitutional government operations. They more than most had seen the cynical manipulation of this operation to flood America with a river of drugs.

When law enforcement authorities debriefed convicted "drug smuggler" Seal in late 1985, one of the cops present brusquely began by stating, "We already know about Seaspray."

The spring of 1982 was an extraordinarily busy time. The boys were getting ready to go to war ....

- CIA agent Dewey Clarridge put a proposition to Contra leader Eden Pastora. "He would become the star of the second revolution as he had been the star of the first."
- John Hull, whom Congressional sources said worked for the CIA since at least the early 1970s, rented a contra safe house in San Jose, Coast Rica at CIA request.
- Retired Air Force General Richard Secord began managing an operation in which Israel shipped weapons captured in Lebanon to a CIA arms depot in San Antonio, Texas, for re-shipment to the contras.
- Felix Rodriguez drew on his Vietnam experience and wrote a proposal for the creation of an elite mobile strike force that would be "ideal for the pacification efforts in El Salvador and Guatemala."
- Medellin Cartel money man Ramon Milian Rodriguez began to launder, at Felix Rodriguez' request, $10 million from the cartel for the Contras. In secret testimony to a Senate committee he claimed he was solicited by 'old friend' Felix.
- Attorney General William French Smith signs a memorandum of understanding that gives the CIA carte blanche to ignore drug operatives working in the Contra movement. French's memo is widely considered the 'smoking gun' proving intent on the part of the CIA in the cocaine epidemic that coincided with the Contra war.
- And Barry Seal moves his base of operations from Louisiana to an obscure airport in the secluded mountains of western Arkansas to hook up with the CIA, which is anxious to use Seal's fleet of planes to ferry supplies to Contra camps in Honduras and Costa Rica.

  Between March and December 1982, according to law enforcement records and Seal's own archives, Barry fitted nine of his aircraft with the latest electronic equipment, paying the $750,000 bill in cash...reminding us of an old Saturday Night Live gag about Chico Esquela, a clueless Latin ballpayer, changed only slightly:

  "National security been berry berry good to me."

Early in 1982 a new cover unit of the Armed Forces was also set up. Known as the Intelligence Support Activity (ISA), it became a separate entity in the Army's net world of special operations, with its own commander, Col. Jerry King. The secret operation ferried undercover Army operatives to Honduras where they trained Honduran troops for bloody hit-and-run operations into Nicaragua.

The Army went to outside businessmen and arms dealers to make off-the-books airplane purchases, with funds that had been "laundered" through secret Army finance offices at Fort Meade.

$325 million was appropriated for this Special Operations Division of the Army between 1981 and the autumn of 1983.

Through private front companies like the ones which supplied Barry Seal with his fleet of smuggling aircraft, Operations Seaspray and Yellow Fruit ferried weapons like rapid-fire cannons to CIA operatives busily mining Nicaragua's harbors.

All of this was in violation of Congressional legislation barring the Defense Department and the Agency from any action aimed at overthrowing the Sandinistas.

More importantly, they ignored the manifest wishes of the American people, who strongly rejected war with puny Nicaragua. According to a 1987 New York Times report by Seymour Hersh, had these operations become public, they would almost certainly have caused enormous damage to the Reagan Administration.

But that's why God made Special Forces...or so, at least, goes the rationale. Whatever the reason for the Central American war, Seal's drug enterprise grew to become a truly formidable 'funding engine.'

Vast fortunes were made, covertly, during the 1980's...and these are some of the people who made them, giving them a 'leg up' in achieving the coveted distinction of being 'global oligarchs.'

Seal's planes flew from Mena to airstrips in the mountains of Colombia and Venezuela. After making a refueling stop in Panama or Honduras, they would return to Mena. En route, the planes would drop parachute-equipped duffel bags loaded with cocaine over Seal-controlled farms in Louisiana... .

"His well-connected and officially-protected smuggling operation based at Mena accounted for billions in drugs and arms from 1982 until his murder four years later," said Dr. Roger Morris and Sally Denton in Partners in Power.

They reported that coded records of the Pentagon's Defense Intelligence Agency (DIA) showed Barry Seal on the payroll beginning in 1982.

The effects of the Barry Seal-directed efforts to take weapons one way and bring drugs the other soon began to become visible, in ruined lives in the U.S. and maimed bodies in Central America.

"My investigation established a conspiratorial period, chronologically, with a first overt act and a last overt act. The first overt act was April 12, 1982," stated Arkansas state criminal investigator Russell Welch.

Of course, Seal's operation was not alone. When private planes began to bomb the Nicaraguan capital, resulting in the crash of a Cessna 404 at the Managua airport, an account of how three Cessna's were secretly transferred from the New York Air National Guard to Central America for the raid on Managua leaked out.

Custody of a number of planes moved from the U.S. Air Force to a top-secret Joint Chiefs operation code-named "Elephant Herd," and then on to the CIA, through a Delaware company where they were first armed and then transferred to the Contras.

This company, Summit Aviation, was doing business with Barry Seal, proved by records in his widow's possession. According to congressional sources, Summit did "contract" work for the CIA, had former CIA personnel on the payroll, and had been linked through ownership records to the Cessna that crashed while bombing Managua.

And the downed Cessna's ownership records were equally as convoluted as were Barry Seal's King Air's. The 'fake paper' desk was doing a crackerjack job... .

The Cessna was purchased by Summit in October 1982 from Trager Aviation Center in Lima, Ohio. They covered their tracks on the same day, selling it to Investair Leasing Corp. of Mclean, Va. Investair, which had an unlisted telephone number, and also did contract work for the CIA, according to congressional sources.

The deal was "put together" by Patrick J. Foley, Summit's "military director," a Seal associate whose name and number are in Barry's files.

In addition to work for Investair, Summit maintained and modified planes for Armairco, another company involved in covert Government projects. Armairco, organized in 1982, also bought several multimillion-dollar Beechcraft King Airs like Seal's, purchased directly from Beech in a procedure used only for military projects, according to Beech officials and aviation experts.

They were all, in other words, mil-spec planes.

When asked whether Armairco's government work included activities in Central America, an Armairco official said, "That may well be."

The convoluted paper history of the airplane which once belonged to Barry Seal, and which was until recently the favorite plane of George W. Bush, begins when the title to the new aircraft was first recorded by Portland, Oregon, dealer Flightcraft, Inc, in early 1982.

Flightcraft's President, David Hinson, a former military and commercial airline pilot active in the Republican Party in Oregon, at the time was, according to The Oregonian, under consideration to head the FAA. The paper stated Hinson met with Transportation Secretary Elizabeth Dole to express interest in the job, even travelling to Washington to promote himself for the post.

Helping Bill Casey subvert the will of Congress and the American people presumably did nothing to hurt his chances ....

The King Air, N6308F, was spoken for even before it arrived at Flightcraft's facilities ... FAA records show a defunct Lake Arrowhead, California firm entered into leasing agreements with developer Eugene Glick in February of 1982, two months before the manufacturer's title was transferred to Flightcraft.

On paper the plane was 'owned' by a Greyhound Bus Lines subsidiary, Greycas, which in turn leased it to a mysterious Phoenix firm close to John Singlaub's Enterprise operations named Systems Marketing, Inc.

AP reporter Bryson Hull reported to us recently that some digging had revealed that Systems Marketing was a wholly-owned subsidiary of yet-another company, called... Military Electronics.

Can you say "Iran Contra?" (We knew that you could.)

Military Electronics, through its cutout, Systems Marketing, then leased the plane to Continental Desert Properties, a firm owned by Gene Glick ....

In the final step, Glick turned the plane over to Barry Seal. Insurance policies found in Seal's private papers confirm that he signed for an insurance policy on the aircraft.

What was the purpose of this convoluted ownership? What was it designed to conceal?

The answer lies in the very definition of "tradecraft," a term for what it is that spies and covert operators do: operate in the dark. The 'front' companies were in place to act as "cut-outs," layers of insulation, between the spy agency, in this case Bill Casey's CIA, and the covert operative, in this case, Barry Seal.

Gene Glick lived in the exclusive Hope Ranch, very near Ronald Reagan's Rancho Del Cielo Ranch in Santa Barbara, California. He leased not just this but several other Barry Seal's planes and helicopters as well, during the time Seal was most active in drug and weapons smuggling.

Other documents we uncovered revealed that Glick was also actively helping Seal purchase ocean-going vessels, for use in drug smuggling activities, and as stationary platforms for the CIA to use off the coast of Nicaragua.

FBI agent Del Hahn, who had dismissed Glick's importance to us, had instead fueled our suspicions.

"He's just a money launderer," said Hahn, Special Agent in Charge of an Inter-Agency Organized Crime Drug Task Force looking into Barry Seal's organization in the mid-'80s.

Not quite, Delbert .... He was a cut-out.

The circle was completed when we discovered that the Beech King Air, as well as several others used by Barry Seal, had been in reality owned all the time ... by the CIA, through the company revealed in 1998 bankruptcy proceedings to have owned Southern Air Transport (SAT). Southern Air was owned by an entity called Finova, which was disclosed when no one was looking when SAT went into bankruptcy in 1998.

Southern Air is a legendary CIA proprietary—second only to Air America — connected to Secord, Singlaub, Rodriguez, Casey and Vice President George Bush.

The company that supposedly 'owned' Barry Seal's King Air's is an Agency front, set up in Arizona and headquartered in Canada to escape American financial disclosure requirements.

Among its dubious achievements Southern Air owned the C123 used by Seal in the Nicaragua sting operation; the same aircraft that was later shot down over Nicaragua in 1986. When lone survivor Eugene Hasenfus was captured by Sandinistas, it had precipitated what became known as the Iran-Contra scandal.

Back then, no one knew — or admitted knowing — just who owned Southern Air Transport, although Government officials swore up and down that it wasn't the CIA.

On June 14, 1984, after passage of the second Boland Amendment and the consolidation of Contra operations under Oliver North, the plane was sold twice in one day, first to a Morgan B. Mitchell of Vale, Oregon, and then to Chevrolet Dealer Merrill Bean of Ogden Utah, who curiously gave the Dover, Delaware, address of the "Prentis Hall Corporation" on his FAA registration.

Students of the CIA have long been aware of the agency's affinity for hiding its assets in Delaware corporations. But many other companies do so for reasons of

convenience. In an interview Bean stated that he had incorporated in Delaware as a legal necessity because of the needs of his investors.

"Delaware is a very convenient place for many kinds of corporations to incorporate and many large corporations and multi-nationals do so," Bean said. "Because other companies I was in partnership with were incorporated there I chose to do so also. It was much easier that way and it was a requirement of the partners who were investing."

A good answer. Unfortunately Delaware officials state that Bean's company, Prentis Hall, does not exist. And in the FAA records connected to Bean's ownership of the plane there are other gaps in the FAA records.

When major mechanical repairs are made on an aircraft, the mechanic is required to complete an FAA form; in December 1989, an FAA certified mechanic installed routine de-icing equipment on the plane, and, reviewing exact ownership documents, listed the owner as United Insurance of Ogden, Utah.

Nowhere in FAA title paperwork does United Insurance appear as an owner. And a spokesman for the Utah State Department of Insurance said there had never been a 'United Insurance' licensed to do business in the State.

So we took a closer look at Merrill Bean, and discovered that he, too, had been involved in — what else? — major financial fraud, in what The Salt Lake City Tribune called "the worst financial disaster in Utah since the Great Depression."

The disaster was the en masse failure of Utah thrifts—hybrid financial institutions that offered high interest rates and consumer loans—and the collapse of the insurance fund that was supposed to protect their deposits. And because Utah's thrifts were essentially uninsured, the failure of Bean's thrift left a trail of broken hearts and people.

One example will suffice:

"We had just moved to Utah from California two years ago," 58-year old Irene Culver told The Salt Lake City Tribune in 1986. "My husband Kent was an aircraft mechanic but he has Parkinson's disease. We put half our savings in there (Western Heritage) and bought a little fixer-upper with the other half. When the state closed everything, we were ruined."

We were going to put a new roof on and install a gas furnace, because the electricity's expensive. Now we can't do it, so we've got half the house closed off."

Bean told us, "I was Director of that failed Thrift. I came aboard when it was almost going under. And I poured some money into it to try to save it and it didn't happen. I was hoping that my $75,000 that I put into it would help revive it."

How does a savvy businessman with aircraft and car dealerships believe that $75,000 will turn around a failing Savings & Loan?

The answer may be in "The Mafia, The CIA and George Bush," where Texas journalist Pete Brewton documented how much of the S&L scandal was connected to illegal covert operations of the CIA....

In many of those schemes a $75,000 or similar "buy-in" might have purchased a seat at a highly-lucrative but completely-criminal feeding frenzy.

The 'paper trail' of Barry Seal's King Air 200 revealed other connections to the unsavory perpetrators of the major financial frauds which — like the S&L scandal — marred the 1980s.

The plane's ostensible 'owner,' Greyhound Leasing, or Greycas, for short, was also at the center of a huge and seemingly-inexplicable financial fraud which, like the half-trillion dollar S&L scandal, no one ever seemed too concerned about unraveling.

The corporation was openly and eventually very publicly looted. Afterwards, company management pretended to be "baffled."

It went down like this: Greycas Inc. and another Greyhound unit, Greyhound Leasing, were bilked out of over $75 million by Sheldon Player, a Utah resident assumed to be in the machine and oilfield equipment sales business. He gained the money through fraudulently obtained loans from Greyhound.

Obligingly, Greycas then devised an elaborate cover-up scheme to prevent disclosure of details about the losses, which eventually topped one hundred million dollars.

It began with a $600,000 loan. Player would sell Greycas heavy machine tools, lease them back, and then pretend to sublease the expensive devices to end-users. In most cases the machines, collateral for the loans, were non-existent.

By 1984 Player had borrowed $8 million from Greyhound in the scheme. So he asked for $40 million in new loans to continue his transactions, and $23.5 million had been disbursed before the company got suspicious and confronted Player, telling him they wanted to inspect the machinery which they supposedly owned.

Player resisted, leading some company executives — not in on the joke — to question the "integrity of the transactions with Player."

But, remember, this was a company controlled by CIA-front Finova. So despite the company's doubts about Player's credibility and integrity, and in spite of Greycas' inability to obtain inspections of the equipment, the company lent Player another $24 million in new loans!

Anyone who has ever borrowed money for a car or home must admire the chutzpah of Sheldon Player, whom the business press took to calling an "admitted con artist" though he had no history of financial fraud that we could discover, which took place at the same time officers of a Swiss-based subsidiary of the company were also massively defrauding Greycas, of another $120 million, in a (supposedly) unrelated scandal.

"Many borrowers failed to make even the initial monthly payment," court documents stated, about this second scandal. The company's accountants wrote that "fraudulent and dishonest acts resulted directly in a loss of $119,684,598." Not so, said the company's hapless general counsel, responding weakly that the loss was a mere $72 million.

The double looting was an Iran-Contra 'bust-out' which left hapless shareholders holding the bag. The fraud included checks written as bribes on napkins in Swiss restaurants and then set afire, the reported possibility that one of the participants

was blackmailing the company, and angry lawsuits filed by upset shareholders. But the real question, which puzzled business reporters were never able to answer, was: why were they were giving money away down at Greyhound during the 1980s?

The criminal trial of Sheldon Player is an illustration of our thesis that being connected means never having to say you're sorry. When Player was sentenced, he received just a five-year sentence. That's just one year for each $13 million he stole. This is clearly a deal which, if offered to regular Americans, would have them lined up around the Phoenix Federal Courthouse to sign up.

After receiving his 'draconian' sentence, Mr. Player was then given additional time to settle personal affairs before entering prison, which, for Mr. Player, consisted of the Lompoc Camp, a minimum-security facility known as one of the "country club" institutions in operation around the nation, according to Dick Murray of the U.S. Bureau of Prisons.

Even funnier is what happened to the President of hapless Greycas. Robert Bertrand, lucky fellow, never went to prison. Instead he resigned at Greyhound in 1986, and was appointed new president and chief executive officer of Finalco, an equipment finance and brokerage company based in Mclean, Virginia. That's the home of the CIA, folks. Probably just coincidence.

Completing the Barry Seal-to-George W. Bush plane chronology, Merrill Bean sold the plane in May of 1990 to Corporate Wings of Salt Lake City, which flipped it two days later to Gantt Aviation of Georgetown, Texas, which a month later sold it to the State of Texas Aircraft Pool, where it resides today.

Johnny Gantt, President of Gantt Aviation, said he probably knew that the State of Texas had a bid out when he acquired the plane. At the time the Governor of Texas was Bill Clements. His good friend, George W Bush, was owner of the Texas Rangers.

It was Author Terry Reed who first announced that a videotape might surface during the 2000 presidential campaign "showing George W and Jeb arriving at Tamiami airport in 1985 to pick up two kilos of cocaine for a party." Statements in Reed's 1995 book Compromised recount how Seal bragged about how he had video of "the Bush boys" doing coke. Other witnesses have refused to go on the record. Are the rumors true? Did the Bush drug sting really happen? We must state honestly: we don't know.

What we do know is that by looking we connected the owners of this one plane to an incredible string of drug and money-related activities, activities earried out, in the normal course of things, by people who are properly called by a name many of them profess to hate:

"Spooks."

from the book Barry and 'the boys'— The CIA, the Mob and America's Secret History
ISBN 09706591-0-5 (MadCow Press, PO Box 2687, Eugene, OR, 97402)

Daniel Hopsicker broke this story first in his book Barry and the boys, and in a article on the Internet (10/99) with Mike Ruppert at www.copvcia.com. Just after Hopsicker's book was in print, AP ran this official story.

From: Corpus Christi Caller-Times (9/10/2000)
TEXAS-OWNED PLANE ONCE OPERATED BY INFAMOUS DRUG RUNNER
Colombia cartel paid Adler 'Barry' Seal a reported $1 million for each flight
By C. Bryson Hull, Associated Press

HOUSTON — The state of Texas flies a plane that earned its wings at the hands of famed drug smuggler, government operative and eventual assassination victim Adler "Barry" Seal.
State officials have flown aboard N6308F, an 18-year-old twin turboprop that seats up to 10, on official business since Texas bought the plane in 1990. The Beech King Air is one of 53 in the state s fleet.
Gov. George W. Bush took office five years after the plane became Texas property and was unaware of its history. "We're glad to hear that the plane is on the straight and narrow and has landed on the right side of the law," Bush spokeswoman Linda Edwards said.

Airborne Smuggling

Seal leased the N6308F seven years before Texas brought it to ferry government officials, according to an Associated Press comparison of Federal Aviation Administration records with insurance and leasing documents.
In the early '80s, Seal was a top DEA informant by dint of his work as airborne smuggler for Colombia's Medellin cartel. He earned a reported $1 million a flight, hauling guns south and drugs north.
Seal, a former member of the Army's special forces and a one-time Trans World Airlines pilot, leased and operated the plane for at least a year, beginning on March 21, 1983, according to a leasing document.
B. Don Wineinger, who handled the insurance policies for Seal while working for a Kansas insurance firm, verified his signature on the documents and authenticated the lease.

Many Owners

The plane's owner at the time is unclear. Leasing records show the lessor as Continental Desert Properties Inc., a California real estate firm. But FAA title records show the owner to be Systems Marketing Inc., a now-defunct Arizona computer leasing business.
Continental Desert Properties owner Gene Glick has since died. The former owner of Systems Marketing was unavailable for comment.
N6308F passed through five other owners before it came to the state, but belonged for most of the time to a Utah Chevrolet dealer named Merrill Bean. Of the other owners, three were aircraft brokers and one was a leasing subsidiary of Greyhound Bus Lines called Greycas Inc. None, save Bean, owned the plane for more than 30 days.

Violent Death

The State of Texas Aircraft Pooling Board, which owns a fleet for use on official state business, purchased N6308F in May 1990 from Gantt Aviation, a Georgetown airplane broker.
Seal, 46, was machine-gunned to death in the parking lot of a Baton Rouge, La., halfway house on Feb. 19, 1986. Three Colombians were sentenced to life in prison for the killing, which occurred shortly before Seal was to testify in the Miami drug trial of Jorge Ochoa, a top Medellin cartel lieutenant.
Medellin leader Pablo Escobar and Ochoa had offered $500,000 to have Seal killed and $1 million to have him brought back alive to Colombia, according to testimony at the trial.

Iran-Contra Connection

This is not the first time one of Seal's planes resurfaced in an unlikely place. In 1984, Seal flew his C-123K military transport plane, dubbed "The Fat Lady," to Nicaragua on an undercover Drug Enforcement Administration sting operation.
Using hidden cameras installed on the plane by the CIA, Seal snapped photos showing him taking bags of cocaine from Escobar and a corrupt Sandinista government official. President Reagan later used the photos during a nationally televised plea for support for the Contras.
But the plane that bore those public-relations fruits eventually gave Reagan fits. "The Fat Lady" was shot down over Nicaragua in October 1986 while carrying a load of weapons bound for the Contras. That crash and the Sandinistas' capture of the sole survivor, CIA operative Eugene Hasenfus, led to the unmasking of the Iran-Contra scandal.

THE SECRET TREATY OF FORT HUNT

This under-appreciated article is for background information and as a help in understanding our current world. There are no Bonesmen mentioned. Henry Stimson was Secretary of War at the time plus many other Bonesmen were in relevant positions.

CARL OGLESBY

APPEARED IN COVERT ACTION INFORMATION BULLETIN, FALL 1990

WILLIAM SHIRER CLOSED HIS 1960 MASTERPIECE, The Rise and Fall of the Third Reich, with the judgment that the Nazi regime "had passed into history,"[1] but we cannot be so confident today. On the contrary, the evidence as of 1990 is that World War II did not end as Shirer believed it did, that Nazism did not surrender unconditionally and disappear, that indeed it finessed a limited but crucial victory over the Allies, a victory no less significant for having been kept a secret from all but the few Americans who were directly involved.

THE ODESSA AND ITS MISSION

HITLER CONTINUED TO RANT OF VICTORY, but after Germany's massive defeat in the battle of Stalingrad in mid-January 1943, the realists of the German General Staff (OKW) were all agreed that their game was lost. Defeat at Stalingrad meant, at a minimum, that Germany could not win the war in the East that year. This in turn meant that the Nazis would have to keep the great preponderance of their military forces tied down on the eastern front and could not redeploy them to the West, where the Anglo-American invasion of Italy would occur that summer. Apparently inspired by the Soviet victory, President Franklin Delano Roosevelt and Prime Minister Winston Churchill announced at Casablanca, on January 24, 1943, their demand for Germany's unconditional surrender and the complete de-Nazification of Europe.[2]

Within the German general staff two competing groups formed around the question of what to do: one led by Heinrich Himmler, the other by Martin Bormann.[3]

Himmler was chief of the SS (Schutzstaffel, "protective echelon"), the black-shirted core of the Nazi party that emerged as Hitler's bodyguard in the late 1920s and grew into the most powerful of the Nazi political institutions. After the failure of the attempted military coup of July 20, 1944, which wounded but did not kill Hitler, the SS seized all power and imposed a furious blood purge of the armed services in which some seven thousand were arrested and nearly five thousand executed.[4] The SS was at that point the only organ of the Nazi state.

Himmler's plan for dealing with the grim situation facing Nazism found its premise in Hitler's belief that the alliance between "the ultra-capitalists" of the U.S. and "the ultra-Marxists" of the Soviet Union was politically unstable. "Even now they are at loggerheads," said Hitler. "If we can now deliver a few more blows, this artificially bolstered common front may suddenly collapse with a gigantic clap of thunder.[5] Himmler believed that this collapse would occur and that the U.S. would then consider the formation of a new anti-Soviet alliance with Nazi Germany. The Nazis would then negotiate "a separate peace" with the United States, separate from any peace with the USSR, with which Germany would remain at war, now joined against the Soviets by the United States.

But Martin Bormann, who was even more powerful than Himmler, did not accept the premise of the separate-peace idea. Bormann was an intimate of Hitler's, the deputy fuhrer and the head of the Nazi Party, thus superior to Himmler in rank. Bormann wielded additional power as Hitler's link to the industrial and financial cartels that ran the Nazi economy and was particularly close to Hermann Schmitz, chief executive of I.G. Farben, the giant chemical firm that was Nazi Germany's greatest industrial power.

With the support of Schmitz, Bormann rejected Himmler's separate-peace strategy on the ground that it was far too optimistic.[6] The Allied military advantage was too great, Bormann believed, for Roosevelt to be talked into a separate peace. Roosevelt, after all, had taken the lead in proclaiming the Allies' demand for Germany's unconditional surrender and total de-Nazification. Bormann reasoned, rather, that the Nazi's best hope of surviving military defeat lay within their own resources, chief of which was the cohesion of tens of thousands of SS men for whom the prospect of surrender could offer only the gallows.

Bormann and Schmitz developed a more aggressive, self-contained approach to the problem of the looming military defeat, the central concept of which was that large numbers of Nazis would have to leave Europe and, at least for a time, find places in the world in which to recover their strength. There were several possibilities in Latin America, most notably Argentina and Paraguay; South Africa, Egypt, and Indonesia were also attractive rear areas in which to retreat.[7]

After the German defeat in the battle of Normandy in June 1944, Bormann took the first external steps toward implementing concrete plans for the Nazis' great escape.

An enormous amount of Nazi treasure had to be moved out of Europe and made safe. This treasure was apparently divided into several caches, of which the

one at the Reichsbank in Berlin included almost three tons of gold (much of it the so-called tooth-gold from the slaughter camps) as well as silver, platinum, tens of thousands of carats of precious stones, and perhaps a billion dollars in various currencies.[8]

There were industrial assets to be expatriated, including large tonnages of-specialty steel and certain industrial machinery as well as blueprints critical to the domination of certain areas of manufacturing

Key Nazi companies needed to be relicensed outside Germany in order to escape the reach of war-reparations claims.

And tens of thousands of Nazi war criminals, almost all of them members of the SS, needed help to escape Germany and safely regroup in foreign colonies capable of providing security and livelihoods.

For help with the first three of these tasks, Bormann convened a secret meeting of key German industrialists on August 10,1944, at the Hotel Maison Rouge in Strasbourg.[9] One part of the minutes of this meeting states:

> The [Nazi] Party is ready to supply large amounts of money to those industrialists who contribute to the post war organization abroad. In return, the Party demands all financial reserves which have already been transferred abroad or may later be transferred, so that after the defeat a strong new Reich can be built.[10]

The Nazi expert in this area was Hitler's one-time financial genius and Minister of the Economy, Dr. Hjalmar Horace Greeley Schacht, available to Bormann even tough he was in prison on suspicion of involvement in the anti-Hitler coup of 1944. According to a U.S. Treasury Department report of 1945, at least 750 enterprises financed by the Nazi Party had been set up outside Germany by the end of the war. These firms were capable of generating an annual income of approximately $30 million, all of it available to Nazi causes.[11] It was Schacht's ability to finesse the legalities of licensing and ownership that brought this situation about.[12]

Organizing the physical removal of the Nazis' material assets and the escape of SS personnel were the tasks of the hulking Otto Skorzeny, simultaneously an officer of the SS, the Gestapo, and the Waffen SS as well as Hitler's "favorite commando."[13]

Skorzeny worked closely with Bormann and Schacht in transporting the Nazi assets to safety outside Europe and in creating a network of SS escape routes ("rat lines") that led from all over Germany to the Bavarian city of Memmingen, then to Rome, then by sea to a number of Nazi retreat colonies set up in the global south.

The international organization created to accommodate Bormann's plans is most often called "The Odessa," a German acronym for "Organization of Veterans of the SS." It has remained active as a shadowy presence since the war and may indeed constitute Nazism's most notable organizational achievement. But we must understand that none of Bormann's, Skorzeny's, and Schacht's well-laid plans would have stood the least chance of success had it not been for a final component of their organization, one not usually associated with the Odessa at all but very possibly the linchpin of the entire project.

ENTER GEHLEN

THIS FINAL ELEMENT OF THE ODESSA was the so-called Gehlen Organization (the Org), the Nazi intelligence system that sold itself to the U.S. at the end of the war. It was by far the most audacious, most critical, and most essential part of the entire Odessa undertaking. The literature on the Odessa and that on the Gehlen Organization, however, are two different things. No writer in the field of Nazi studies has yet explicitly associated the two, despite the fact that General Reinhard Gehlen was tied politically as well as personally with Skorzeny and Schacht. Moreover, Gehlen's fabled post-war organization was in large part staffed by SS Nazis who are positively identified with the Odessa, men such as the infamous Franz Alfred Six and Emil Augsburg of the Wannsee Institute. An even more compelling reason for associating Gehlen with the Odessa is that, without his organization as a screen, the various Odessa projects would have been directly exposed to American intelligence. If the Counter Intelligence Corps (CIC) and the Office of Strategic Services (OSS) had not been neutralized by the Gehlen ploy, the Odessa's great escape scheme would have been discovered and broken up.

At 43, Brigadier General Reinhard Gehlen was a stiff, unprepossessing man of five foot eight and a half inches and 128 pounds when he presented himself for surrender at the U.S. command center in Fischhausen. But there was nothing small about his ego. "I am head of the section Foreign Armies East in German Army Headquarters," he announced to the GI at the desk. "I have information to give of the highest importance to your government." The GI was not impressed, however, and Gehlen spent weeks stewing in a POW compound before an evident Soviet eagerness to find him finally aroused the Americans' attention.[14]

Gehlen became chief of the Third Reich's Foreign Armies East (FHO), on April 1, 1942. He was thus responsible for Germany's military intelligence operations throughout Eastern Europe and the Soviet Union. His FHO was connected in this role with a number of secret fascist organizations in the countries to Germany's east. These included Stepan Bandera's "B Faction" of the Organization of Ukrainian Nationalists (OUN/B),[15] Romania's Iron Guard,[16] the Ustachis of Yugoslavia,[17] the Vanagis of Latvia[18] and, after the summer of 1942, "Vlassov's Army,"[19] the band of defectors from Soviet Communism marching behind former Red hero General Audrey Vlassov. Later on in the war, Gehlen placed one of his top men in control of Foreign Armies West, which broadened his power: and then after Admiral Wilhelm Canaris was purged and his Abwehr intelligence service cannibalized by the SS, Gehlen became in effect Nazi Germany's over-all top intelligence chief.

THE GREAT ESCAPE

IN DECEMBER 1943, at the latest, Gehlen reached the same conclusion about the war that had come upon Bormann, Schacht, Skorzeny, and Himmler. Germany was losing and could do nothing about it. Several months later, Gehlen says, he began quietly discussing the impending defeat with a few close associates. As he

writes in his memoir: "Early in October 19441 told my more intimate colleagues that I considered the war was lost and we must begin thinking of the future. We had to think ahead and plan for the approaching catastrophe."[21]

Gehlen's strategic response to Gotterdammerung was a kind of fusion of Himmler's philosophy with Bormann's more pessimistic Odessa line: "My view," he writes, "was that there would be a place even for Germany in a Europe rearmed for defense against Communism. Therefore we must set our sights on the Western powers, and give ourselves two objectives: to help defend against Communist expansion and to recover and reunify Germany's lost territories."[22]

Just as Bormann, Skorzeny, and Schacht were beginning to execute their escape plans, so too was Gehlen. "Setting his sights on the Western powers," and in particular on the United States, Gehlen pursued the following strategic rationale: When the alliance between the United States and the USSR collapsed, as it was bound to do upon Germany's defeat, the United States would discover a piercing need for a top-quality intelligence service in Eastern Europe and inside the Soviet Union. It did not have such a service of its own, and the pressures of the erupting East-West conflict would not give it time to develop one from scratch. Let the United States therefore leave the assets assembled by Gehlen and the FHO intact. Let the United States not break up Gehlen's relationship with East European fascist groups. Let the United States pick up Gehlen's organization and put it to work for the West, the better to prevail in its coming struggle against a Soviet Union soon to become its ex-ally.

Gehlen brought his top staff people into the planning for this amazing proposal. Together, during the last months of the war, while Hitler was first raging at Gehlen for his "defeatist" intelligence reports, then promoting him to the rank of brigadier general, then at last firing him altogether (but promoting into the FHO directorship one of Gehlen's co-conspirators), Gehlen and his staff carefully prepared their huge files on East Europe and the Soviet Union and moved them south into the Bavarian Alps and buried them. At the same time, Gehlen began building the ranks of the FHO intelligence agents. The FHO in fact was the only organization in the whole of the Third Reich that was actually recruiting new members as the war was winding down.[23] SS men who knew they would be in trouble when the Allied forces arrived now came flocking to the FHO, knowing that it was the most secure place for them to be when the war finally ended.[24]

When Gehlen's plans were complete and his preparations all concluded, he divided his top staff into three separate groups and moved them (as Skorzeny was doing at the same time) into prearranged positions in Bavaria. Gehlen himself was in place before the German surrender on May 7, hiding comfortably in a well-stocked chalet in a mountain lea called Misery Meadow. Besides Gehlen, there were eight others in the Misery Meadow group, including two wounded men and three young women. For three weeks, maintaining radio contact with the two other groups, Gehlen and his colleagues stayed on the mountain, waiting for the American army to appear in the valley far below. "These days of living in

the arms of nature were truly enchanting," he wrote. "We had grown accustomed to the peace, and our ears were attuned to nature's every sound."[25]

DESTRUCTION OF THE OSS

GEHLEN WAS STILL COMMUNING WITH NATURE when William Donovan, chief of the Office of Strategic Services (OSS), arrived in Nuremberg from Washington, dispatched by the new president to assist Supreme Court Justice Robert Jackson. Harry S. Truman had made Jackson the United States's chief prosecutor with the International Military Tribunal (IMT), established to try the Nazis' principal military leaders. Donovan's OSS was to function as an investigative arm of the IMT.

By the last half of the war if not before, President Roosevelt and Donovan were convinced that the U.S. needed a permanent intelligence service and that this service, like the OSS, should be civilian rather than military. They were convinced too that the OSS should be its foundation. On October 31, 1944, Roosevelt directed Donovan to prepare a memo on how such a service should be organized.[26]

Donovan consulted on this assignment with his colleague Allen Dulles, a force unto himself as wartime chief of OSS operations in Bern. Dulles advised Donovan to placate the military by proposing that the new agency be placed automatically under military command in time of war.[27] Donovan's proposal incorporated this idea,[28] but only in order to state all the more strongly the case for civilian control and for making the OSS the basis of the new organization. As he wrote in his memo to Roosevelt of November 18, 1944, "There are common-sense reasons why you may desire to lay the keel of the ship at once .... We now have [in the OSS] the trained and specialized personnel needed for such a task, and this talent should not be dispersed."[29]

Donovan proposed establishment of a civilian intelligence service responsible directly to the President and the Secretary of State, the chief mission of which would be to support the President in foreign policy. Except for the civilian Secretaries of War and the Navy, Donovan's plan did not even include a place for military representation on the advisory board, and he was careful to specify that the advisory board would merely advise and not control. The new service was to be all-powerful in its field, being responsible for "coordination of the functions of all intelligence agencies of the Government." The Donovan intelligence service, in other words, would directly and explicitly dominate the Army's G-2 and the Navy's ONI.[30]

Naturally, therefore, the Donovan plan drew an intense attack from the military. One G-2 officer called it "cumbersome and possibly dangerous."[31] Another referred to the OSS as "a bunch of faggots"[32] Nor was the FBI's J. Edgar Hoover silent. Hoover had fought creation of the OSS perhaps more bitterly than the military and had insisted throughout the war on maintaining an FBI intelligence network in Latin America despite the fact that this was supposed to be OSS turf.[33]

Certain elements within Army intelligence were not only opposed to Donovan's plan but were also beginning to formulate their own notions of what a post-war intelligence system should be like.

Roosevelt sent the Joint Chiefs of Staff ultra-secret copies of Donovan's proposal along with Roosevelt's own draft executive order to implement it. On January 1, 1945, the Chiefs formally reported to Roosevelt their extreme dissatisfaction with this scheme and leaked Donovan's memo to four right-wing newspapers, which leapt to the attack with blaring headlines accusing FDR and Donovan of conspiring to create "a super Gestapo." This attack put the Donovan plan on hold, and the death of FDR on April 12, 1945 destroyed it.[34]

In early May 1945, president for less than a month, Truman made the OSS the American component of the investigative arm of the IMT. It is one of the fascinating conjunctions of this story that Donovan should have left for Nuremberg just as Gehlen was coming down from his mountain. It is one of its riper ironies that Donovan would soon resign from Jackson's staff in a disagreement over trying German officers as war criminals, which Donovan objected to but Jackson and Truman supported.[35] Had Donovan lent his energies to the trial of Nazis within the German officer corps, he might have confronted the very adversaries who would shortly take his place in the American intelligence system, not only militarizing it, but Nazifying it as well.

GEHLEN MAKES HIS MOVE

GEHLEN HAD BEEN ON THE MOUNTAIN for exactly three weeks and the war had been over for almost two weeks when he decided on May 19 that it was time to make contact. He left the three women and the two wounded men as Misery Meadow and with his four aides began the descent to the valley town of Fischhausen on Lake Schliersee.

On the same day Soviet commissioners far to the north at Flensburg demanded that the United States hand over Gehlen as well as his files on the USSR. This was the first the U.S. command had heard of Gehlen.[36]

Gehlen and company took their time, staying three days with the parents of one of his aides and communicating by radio with those who had remained at Misery Meadow. On May 22, Gehlen at last decided the moment was right. He and his aides marched into the Army command center and represented themselves to the desk officer, a Captain John Schwarzwalder, to whom Gehlen spoke his prepared speech:

"I am head of the Section Foreign Armies East in German Army headquarters. I have information to give of the highest importance to your government." Schwarzwalder had Gehlen and his group jeeped to Miesbach where there was a OSS detachment. There Gehlen once again gave his speech, this time to a Captain Marian Porter: "I have information of the greatest importance for your supreme commander." Porter replied, "So have they all," and shunted him and his cohorts off to the prison camp at Salzburg.

Gehlen's disappointment at this reception was keen and his biographers all say he never forgot it, "lapsing," as one puts it, "into near despair" as he "presented the strange paradox of a spy-master thirsting for recognition by his captors."[37]

Recognition was inevitable, however, since the CIC was trying to find him. By mid June at the latest, his name was recognized by a G-2 officer, Colonel William H. Quinn, who had Gehlen brought to Augsburg for his first serious interrogation. Quinn was the first American to whom Gehlen presented his proposal and told of his staff dispersed at several camps in the mountains as well as the precious buried archives of the FHO. Unlike Captain Porter, Colonel Quinn was impressed. He promptly passed Gehlen up the command chain to General Edwin I. Sibert.

Sibert later recalled, "I had a most excellent impression of him at once." Gehlen immediately began educating him as to "the actual aims of the Soviet Union and its display of military might." As Sibert told a journalist years later, "With her present armed forces potential, he [Gehlen] continued, Russia could risk war with the West and the aim of such a war would be the occupation of West Germany."[38]

Acting without orders, Sibert listened to Gehlen for several days before informing Eisenhower's chief of staff, General Walter Bedell Smith.[39] Smith and Sibert then continued to develop their relationship with Gehlen secretly, choosing not to burden Eisenhower with knowledge of what they were doing "in order not to compromise him in his relations with the Soviets."[40] Eisenhower in fact had strictly forbidden U.S. fraternization with Germans.[41]

Gehlen was encouraged to resume contact with his FHO comrades who were still at large in Bavaria, releasing them from their vow of silence. Gehlen was sufficiently confident of his American relationships by this time that he dug up his buried files and, in special camps, put his FHO experts to work preparing detailed reports on the Red Army for his American captors. Well before the end of June he and his comrades were "discharged from prisoner of war status so that we could move around at will."[42] They were encouraged to form a unit termed a "general staff cell," first within G-2's Historical Research Section, then later in the Seventh Army's Intelligence Center in Wiesbaden, where they worked in private quarters and were treated as VIPs.[43]

Indeed, a partly declassified CIA document recapitulated this story in the early 1970s, noting at this time:

Gehlen met with Admiral Karl Doenitz, who had been appointed by Hitler as his successor during the last days of the Third Reich. Gehlen and the Admiral were now in a U.S. Army VIP prison camp in Wiesbaden; Gehlen sought and received approval from Doenitz too![44]

In other words, the German chain of command was still in effect, and it approved of what Gehlen was doing with the Americans.

Gehlen's biographers are under the impression that it took six weeks for someone in European G-2 to notice and recognize Gehlen in the POW cage, that Sibert did not tell Smith about finding him until the middle of August, and that it

was much later still before Sibert and Smith conspired to circumvent Eisenhower andcommunicate their excitement about Gehlen to someone at the Pentagon presumably associated with the Joint Chiefs of Staff.[45] But documents released in the 1980s show that this part of Gehlen's story raced along much more quickly. Already on June 29, in fact, the Pentagon had informed Eisenhower's European command that the War Department wanted to see Gehlen in Washington.[46] It was a fast time. By no later than August 22, one of Gehlen's top associates, Hermann Baun, was forming what would become the intelligence and counter-intelligence sections of Gehlen's new organization. Gehlen himself, with retinue, was departing for Washington in General Bedell Smith's DC-3 for high-level talks with American military and intelligence officials. And the whole concept of the with he was about to offer his conquerors had been approved by a Nazi chain of command that was still functioning despite what the world thought and still does think was the Nazis' unconditional surrender.[47]

Gehlen arrived in Washington on August 24 with six of his top FHO aides and technical experts in tow.[48] World War II had been over about a week, the war in Europe about three and a half months.

THE SECRET TREATY OF FORT HUNT

AS GEHLEN AND HIS SIX MEN were en route from Germany to Washington, Donovan's OSS troubles became critical. On August 23, Admiral William Leahy, chief of the JCS, the President's national security adviser and a man who despised Donovan, advised Truman to order his budget director Harold Smith to begin a study of the intelligence question. Stating "this country wanted no Gestapo under any guise or for any reason,"[49] Truman may not have known that the Gestapo's Odessa heirs were landing in the lap of the Pentagon even as he spoke. Smith in any case responded to Truman's directive by asking Donovan for his OSS demobilization plans. Now, too late, Donovan tried to fight. The Gehlen party, "Group 6," was checking out its very comfortable accommodations at Fort Hunt at the very moment at which Donovan, writing from a borrowed Washington office, fired back a memo to Smith defending the OSS and its right to live:

> Among these assets [of the OSS] was establishment for the first time in our nation's history of a foreign secret intelligence service which reported information as seen through American eyes. As an integral and inseparable part of this service, there is a group of specialists to analyze and evaluate the material for presentation to those who determine national policy.[50]

Much more significant than the question of the adequacy of U.S. intelligence on the Soviet Union, however, was the question of civilian versus military control of the intelligence mission. Germany and England had fought this battle in the 19th century, the military capturing the intelligence role in Germany and the civilians maintaining a position in England. Throughout the summer and fall of 1945, this same battle raged in the U.S. government.[51] The battle for intelligence control was indeed the background for the arrival of Gehlen and his six aides at

Fort Hunt, where Gehlen's party was housed and Gehlen himself provided with an NCO butler and several white-jacket orderlies.[52]

A momentous relationship was established at Fort Hunt, one that had the profoundest effects on the subsequent evolution of United States foreign policy during an exceptionally difficult passage of world history. The period of the Cold War as a whole, and more especially its early, formative years — from Gehlen's coming aboard the American intelligence service until he rejoined the West German republic in 1955 — was laden with the peril of nuclear war. On at least one occasion, in 1948,[53] Gehlen almost convinced the United States that the Soviet Union was about to launch a war against the West and that it would be in the U.S. interest to preempt it.

Clearly it is important to know who made and authorized the decisions that led to our national dependency on a network of underground Nazis. Yet because the relevant documents are still classified, this central part of the Gehlen story still cannot be reconstructed.

From the handful of published books about the Gehlen affair (none of which cite their sources on this point) we can list only seven Americans who were said to be involved with Gehlen at Fort Hunt:

- Admiral William D. Leahy, chief of staff and Truman's national security advisor.
- Allen Dulles, OSS station chief in Bern during the war.
- Sherman Kent, head of OSS Research and Analysis Branch and a Yale historian.
- General George V. Strong, head of Army G-2.
- Major General Alex H. Boiling of G-2.
- Brigadier General John T Magruder, first head of the Army's Strategic Services Unit, a vulture of OSS.
- Loftus E. Becker, a lawyer assc. with G-2 and the Nuremberg war-crimes operation; the CIAs first deputy director.

We do not know if these people were involved as a committee, if they talked with Gehlen and his six aides a lot or a little, separately or all at once, or if they sent their own aides to work out the details. We do not know how a POW-interrogation was transformed into a bargaining process. Above all, we do not know what kind of communication the U.S. participants in the Fort Hunt-Gehlen talks had with the political authorities to whom they were responsible. Leahy is the only one who had obvious contact with President Truman. But there is nothing in the revealed record to indicate that he ever discussed Gehlen or the Fort Hunt deal with Truman, or took the least trouble to explain to Truman the implications of hiring a Nazi spy network. We have no idea, for that matter, how Leahy himself saw it.

What we do know is the outlines of the Gehlen deal itself, however it was hammered out and however it was or was not ratified by legal, political authority. That is because Gehlen himself laid out its terms in his autobiography, The Service. Gehlen says in this work (which has been attacked for its inaccuracies that the discussion ended with "a 'gentlemen's agreement,'" that the terms of his relationship with the United States were "for a variety of reasons never set down

in black and white." He continues, "Such was the element of trust that had been built up between the two sides during this year of intensive personal contact - that neither had the slightest hesitation in founding the entire operation on a verbal agreement and a handshake."[54] According to Gehlen, this agreement consisted of the following six basic points. His language is worth savoring. "I remember the terms of the agreement well," he wrote:

"1. A clandestine German intelligence organization was to be set up, using the existing potential to continue information gathering in the East just as we had been doing before. The basis for this was our common interest in a defense against communism."

"2. This German organization was to work not 'for' or 'under' the Americans, but 'jointly with the Americans.'

"3. The organization would operate exclusively under German leadership, which would receive its directives and assignments from the Americans until a new government was established in Germany."

"4. The organization was to be financed by the Americans with funds which were not to be part of the occupation costs, and in return the organization would supply all its intelligence reports to the Americans." (The Gehlen Organization's first annual budget is said to have been $3.4 million.[55])"

"5. As soon as a sovereign German government was established, that government should decide whether the organization should continue to function or not, but that until such time the care and control (later referred to as 'the trusteeship') of the organization would remain in American hands."

"6. Should the organization at any time find itself in a position where the American and German interests diverged, it was accepted that the organization would consider the interests of Germany first."[56]

Gehlen acknowledges that the last point especially might "raise some eyebrows" and make some think that the U.S. side "had gone overboard in making concessions to us." He assures his readers that actually "this point demonstrates better than any other Sibert's great vision: he recognized that for many years to come the interests of the United States and West Germany must run parallel."[57] Gehlen and his staff left Fort Hunt for Germany on July 1, 1946, having been in the United States for almost a year. They were temporarily based at Oberursel then settled into a permanent base in a walled-in, self-contained village at Pullach near Munich. Gehlen set up his headquarters in an estate originally built by Martin Bormann.[58] There a start-up group of 50 began to turn the "gentlemen's agreement" of Fort Hunt into reality. The first order of business being staff, Gehlen's recruiters were soon circulating among the "unemployed mass" of "former" Nazi SS men, the Odessa constituency, to find more evaluators, couriers and informers.[59] Gehlen had "solemnly promised in Washington not to employ SS and Gestapo men,"[60] although it will be noted that Gehlen includes no such provision in his list of terms. There is not the least question that he did recruit such men, supplying them with new names when necessary.

Two of the worst of them were Franz Six and Emil Augsburg. Six was a key Nazi intellectual, and both Six and Augsburg were associated with the Wannsee Institute, the Nazi think-tank in Berlin where SS leader Reinhard Heydrich, in January 1942, announced "The Final Solution to the Jewish Question." Both of them had commanded extermination squads roving in East Europe in pursuit of Jews and communists. And both had gone underground with the Odessa when the Third Reich crumbled. Augsburg hid in Italy, then returned in disguise when Gehlen called. Six was actually captured by Allied intelligence, tried at Nuremberg and imprisoned, only to be sprung to work with Augsburg running Gehlen's networks of East European Nazis.[61]

From the edge of total defeat, Gehlen now moved into his vintage years, more powerful, influential and independent than he had been even in the heyday of the Third Reich. Minimally supervised first by the War Department's Strategic Services Unit under Fort Hunt figure Major General John Magruder, and then by the SSU's follow-on organization, the Central Intelligence Group under Rear Admiral Sidney Souers,[62] the Org grew to dominate the entire West German intelligence service. Through his close ties to Chancellor Konrad Adenauer's chief minister, Hans Globke, Gehlen was able to place his men in positions of control in West Germany's military intelligence and the internal counterintelligence arm. When NATO was established he came to dominate it too. By one estimate "some 70 percent" of the total intelligence take flowing into NATO's military committee and Allied headquarters (SHAPE) on the Soviet Union, the countries of East Europe, the rest of Europe, and indeed the rest of the world was generated at Pullach.[63]

Not even the establishment of the CIA in 1947 and the official transfer of the Pullach operation into the West German government in 1955 (when it was retitled the Federal Intelligence Service, BND) lessened the reliance of American intelligence on Gehlen's product.[64] From the beginning days of the Cold War through the 1970s and beyond, the United States's, West Germany's, and NATO's most positive beliefs about the nature and intentions of the Soviet Union, the Warsaw Pact, and world communism would be supplied by an international network of utterly unreconstructed SS Nazis whose primary purposes were to cover the escape of the Odessa and make the world safe for Nazism.

THE COST OF THE FORT HUNT TREATY

Gehlen's story has many branchings beyond this point. These include several spy scandals that exposed his operation as dangerously vulnerable to Soviet penetration. They include the pitiful spectacle of U.S CIC agents pursuing Nazi fugitives on war-crimes charges only to see them summarily pardoned and hired by Gehlen. They include the dark saga of Klaus Barbie, the SS "Butcher of Lyon" who worked with the Gehlen Organization and boasted of 'being a member of the Odessa'. They include assets of Operation Paperclip, in which right-wing forces in the U.S. military once again savaged the concept of de-Nazification in order to smuggle scores of SS rocket scientists into the United States. They include

continuation of the civilian-vs.-military conflict over the institution of secret intelligence and the question of politically motivated covert action within the domestic interior. They include above all the story of the enormous victory of the Odessa in planting powerful Nazi colonies around the world — in such countries as South Africa, where the enactment of apartheid laws followed; or several countries in Latin America that then became breeding grounds for the Death Squads of the current day, and indeed even in the United States where it now appears that thousands of wanted Nazis were able to escape justice and grow old in peace.

In making the Gehlen deal, the United States did not acquire for itself an intelligence service. That is not what the Gehlen group was or was trying to be. The military intelligence historian Colonel William Corson put it most succinctly, "Gehlen' s organization was designed to protect the Odessa Nazis. It amounts to an exceptionally well-orchestrated diversion."[65] The only intelligence provided by the Gehlen net to the United States was intelligence selected specifically to worsen East-West tensions and increase the possibility of military conflict between the U.S. and the Soviet Union. It was exactly as the right-wing papers had warned in 1945 when they were aroused by Donovan's proposal for a permanent intelligence corps, warning their readers that a "super spy unit" could "determine American foreign policy by weeding out, withholding or coloring information gathered at his direction."[66] It was exactly as Truman had warned when he demobilized the OSS with the observation that the US, had no interest in "Gestapo-like measures." The fact that this lively concern for a police-state apparatus should have been focused on the relatively innocuous OSS while at the same time the red carpet was being rolled out for Gehlen's gang of SS men must surely count as one of the supreme wrenching ironies of the modern period.

Another dimension of the cost of the Gehlen deal is the stress it induced within American institutions, weakening them incalculably. The Gehlen Organization was the antithesis of the Allied cause, its sinister emergence on the scene of post-war Europe the very opposite of what the western democracies thought they had been fighting for.

Perhaps at least we can say that, despite Gehlen and despite the military, the United States did after all finally wind up with a civilian intelligence service. The National Security Act of 1947 did embody Donovan's central point in creating a CIA outside the military. But in fact the Gehlen Org substantially pre-empted the CIA's civilian character before it was ever born. The CIA was born to be rocked in Gehlen's cradle. It remained dependent on the Org even when the Org turned into the BND. Thus, whatever the CIA was from the standpoint of the law, it remained from the standpoint of practical intelligence collection a front for a house of Nazi spies.

The Org was not merely military, which is bad, not merely foreign, which is much worse, and not merely Nazi, which is intolerable; it was not even professionally committed to the security of the U.S. and Western Europe. It was committed exclusively to the security of the Odessa. All the Gehlen Org ever wanted the U.S. to

be was anti-communist, the more militantly so the better. It never cared in the least for the security of the United States, its Constitution or its democratic tradition.

It is not the point of this essay that there would have been no Cold War if the Odessa had not wanted it and had not been able, through the naive collaboration of the American military Right, to place Gehlen and his network in a position that ought to have been occupied by a descendant of the OSS. But it was precisely because the world was so volatile and confusing as of the transition from World War II to peacetime that the U.S. needed to see it, as Donovan put it in his plaintive appeal to Truman in the summer of 1945, "through American eyes." No Nazi eyes, however bright, could see it for us without deceiving us and leading us to the betrayal of our own national character.

Second, there was no way to avoid the Cold War once we had taken the desperate step of opening our doors to Gehlen. From that moment on, from the summer of 1945 when the Army brought him into the United States and made a secret deal with him, the Cold War was locked in. A number of Cold War historians on the left (for example D.E Fleming and Gabriel Kolko) have made cogent arguments that from the Soviet point of view the Cold War was thrust upon us by an irrational and belligerent Stalin. The story of the secret treaty of Fort Hunt exposes this "history" as a self-serving political illusion. On the contrary, the war in the Pacific was still raging and the United States was still trying to get the Soviet Union into the war against Japan when General Sibert was already deep into his relationship with Gehlen.

The key point that comes crashing through the practical and moral confusion about this matter, once one sees that Gehlen's Organization was an arm of the Odessa, is that, whether it was ethical or not, the U.S. did not pick up a Gift Horse in Gehlen at all; it picked up a Trojan Horse.

The unconditional surrender the Germans made to the Allied command at the little red schoolhouse in Reims was the surrender only of the German armed services. It was not the surrender of the hard SS core of the Nazi Party. The SS did not surrender, unconditionally or otherwise, and thus Nazism itself did not surrender. The SS chose rather, to seek other means of continuing the war while the right wing of the United States military establishment, through fears and secret passions and a naivete of its own, chose to facilitate that choice. The history that we have lived through since then stands witness to the consequences.

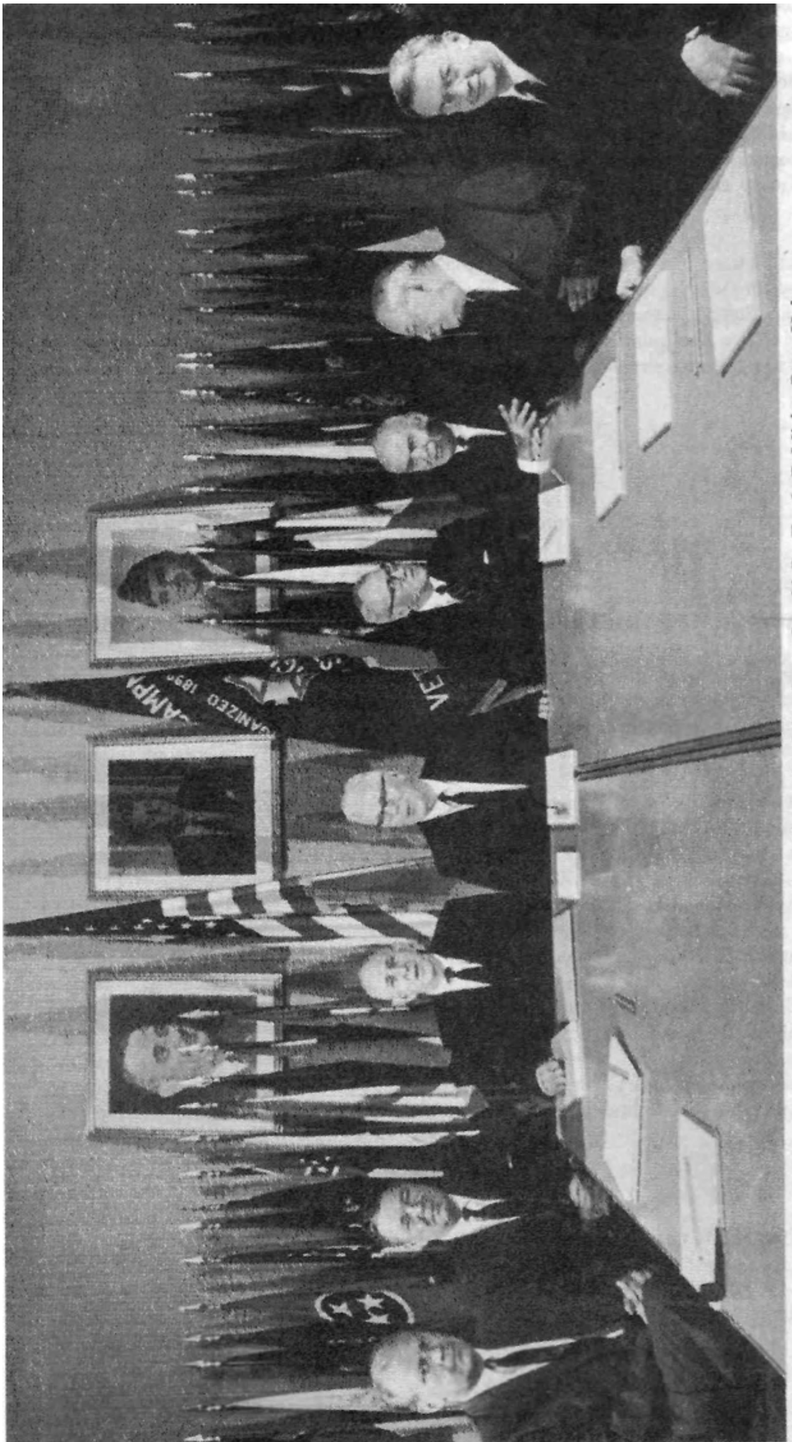
Carl Oglesby is the author of several books, notably The Yankee and Cowboy War. He has published a variety of articles on political themes. In 1965 he was the President of Students for a Democratic Society. He is the director of The Institute for Continuing de-Nazification. For information on the Institute write to: 294 Harvard Street, #3, Cambridge, MA 02139.

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9. Ibid.- p. 179; and Wiesenthal, op. cit., n. 7, pp. 87-88.
10. Wiesenthal, op. cit., n. 7, p. 88. Also quoted in Infield, op. cit.,n.6,p. 183.
11. Infield, op. cit., n. 6, p. 183.
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17. Ibid., pp. 180, 193.
18. Ibid., pp. 10, 207-08.
19. Ibid ., pp. 18-22. Also see Hohne and Zolling, op. cit., n. 14, pp. 35-37; Cookridge, op. cit., n. 14, pp. 56-58.
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24. I do not know of an estimate of the size of the Foreign Armies East (FHO) as of the end of the war. Cookridge, op. cit., n. 14, p. 161, says that by 1948, when the Gehlen Organization was probably back up to war-time speed, its key agents "exceeded four thousand." Each agent typically ran a net of about six informants, Cookridge, op cit., n. 14, p. 167. Thus, the total Gehlen net might have numbered in the range of 20,000 individuals.
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27. Cookridge, op. cit., n. 14, p.130.
28. Brown, op. cit., n. 26, p. 626.
29. Cookridge, op. cit., n. 14, p. 131.
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37. Cookridge, op. cit., n. 14, p. 120.
38. Holme and Zolling, op. cit., n. 14, p. 58.
39. As to breaking orders, Gehlen is effusive in his praise of "Sibert's great vision.... I stand in admiration of Sibert as a general who took this bold step—in a situation fraught with political pitfalls—of taking over the intelligence experts of a former enemy for his own country.... The political risk to which Sibert was exposed was very great. Anti-German feeling was running high, and he had created our organizations without any authority from Washington and without the knowledge of the War Department." Op. cit., n. 21, p. 123.
40. Holme and Zolling, op. cit., n. 14, p. 58.
41. Ibid., pp. 58-59.
42. Op. cit., n. 21,p. 120.
43. Hohne and Zolling, op. cit., n. 14, p. 58.
44. Undated CIA fragment with head, "Recent Books," apparently published circa 1972, partly declassified and released in 1986 in response to a Freedom of Information (FOIA) suit.
45. Hohne and Zolling, op. cit., n. 14, pp. 56, 58-59.
46. U.S. Army document SHAEF D-95096, September 15, 1946, declassified FOIA release. The routing of this cable through SHAEF HQ raises a question as to whether Eisenhower was really kept in the dark about Gehlen.
47. As Gehlen was about to leave for the United States, he left a message for Baun with another of his top aides, Gerhard Wessel "I am to tell you from Gehlen that he has discussed with [Hitler's successor Admiral Karl] Doenitz and [Gehlen's superior and chief of staff General Franz] Haider the question of continuing his work with the Americans. Both were in agreement." Hohne and Zolling, op. cit., n. 14. p. 61.
48. There is variance in the literature concerning how many assistants Gehlen took with him to Washington. John Ranelagh, TheAgency: The Rise and Decline of the CIA (New York; Simon and Schuster, 1986), p. 92; Cookridge, op. cit., n. 14, p. 125; and op. cit., n. 15, p. 42, say it was three while Hohne and Zolling, op. cit., n. 14, p. 61, say four. A U.S. Army note of August 28, 1945 (a 1986 FOIA release) refers to "the 7 shipped by air last week," and that no doubt is the correct number. Another FOIA release, an unnumbered Military Intelligence Division document dated September 30, 1945, originated at Fort Hunt, labels the Gehlen party as "Group 6" and names seven members: Gehlen, Major Alberg Schoeller, Major Horst Hiemenz, Colonel Heinz Herre, Colonel Konrad Stephanus, and two others whose rank is not given, Franz Hinrichs and Herbert Feukner. The number is important for what it says about the nature of Gehlen's trip. Three might be thought of as co-defendants but six constitute a staff. Cookridge, op. cit., n. 14, p. 125, says Gehlen made the trip disguised in the uniform of a one-star American general, his aides disguised as U.S. captains. Hohne and Zolling, op. cit., n. 14, pp. 60-61, inflate the rank to two stars but then call the story spurious. Gehlen's memoir says nothing about it.
49. Corson, op. cit., n. 2, p. 239.
50. Ibid., p. 240.
51. Ranelagh, op. cit., n. 48, p. 102ff.
52. BBC documentary, Superspy, op. cit., n. 36. Corson, in an interview with the author, said the butler and the orderlies must have been CIC agents. Still, the detail rankles.
53. Cookridge, op. cit., n. 14, 203; op. cit., n. 15, p. 136.
54. Op. cit., n. 21, p. 121. Holme and Zolling, op. cit., n. 14, p. 64, say that the details of this "gentlemen's agreement" wete put into writing by the CIA in 1949.
55. Hohne and Zolling, op. cit., n. 14, p. 65.
56. Op.cit.,n. 21,p. 122.
57. Ibid., pp. 122-23.
58. Hohne and Zolling, op. cit., n. 14, p. 119; Cookridge, op. cit., n. 14, p. 155. BBC documentary, Superspy, op. cit., n. 36.

59. Hohne and Zolling, op. cit., n. 14, p. 67.
60. Cookridge, Op. Cil., n. 14, p. 144.
61. Op. cit., n. 15, pp. 17, 4647, 166, 225; Cookridge, Op. cit., n. 14, pp. 242-43.
62. Hohne and Zolling, op. cit., n. 14, p. 133.
63. Cookridge, op cit., n. 14, p. 218.
64. Ibid., p. 128.
65. Author's interview with Corson, May, 1986.
66. Cookridge, op. cit., n. 14, p. 131.



This is the Warren Commission. From the left: Rep. Gerald R. Ford, R-Mich.; Rep. Hale Boggs, D-La.; Sen. Richard B. Russell, D-Ga.; Chief Justice Earl Warren, the chairman; Sen. John Sherman Cooper, R-Ky.; John J. McCloy, New York banker; Allen W. Dulles, former Central Intelligence Agency director; and J. Lee Rankin of New York, general counsel.

SENATOR JOHN SHERMAN COOPER IS S&B 1923. GERALD FORD IS A *DEKE* AND ATTENDED YALE LAW SCHOOL

MIND CONTROL, THE ILLUMINATI & THE JFK ASSASSINATION

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The nature of the universe is such that ends can never justify the means.
On the contrary, the means always determine the end. — Aldous Huxley

Amidst anguish and outrage, a question has plagued the collective subconscious of America since 1963: Who killed President Kennedy? As one who was alive when it happened, I can testify to the effects of that act upon myself and to what I observed around me. Tragedy is traumatic. I was pulled out of junior high Spanish class and sent out on the street selling newspapers containing the grim news. Only twice in my lifetime were kids hawking papers on the street in our town; the day President John F Kennedy was assassinated and the day Jack Ruby shot Lee Harvey Oswald.

Kennedy's murder represents far more than the unlikely act of a "lone nut" or even a concealed political conspiracy. A four-tiered network of power interests was responsible for the Killing of the King of Camelot, with the all-seeing eye of the Illuminati at the top of the pyramid. Hanging from the Illuminati puppet strings are the Masons, Mafia and other secret societies, followed by the national security state apparatus/



Jack Ruby Shoots Lee Harvey Oswald

subculture. A rogue's gallery of various commercial, ideological, political and bureaucratic partners fill out the foundation of this conspiracy.

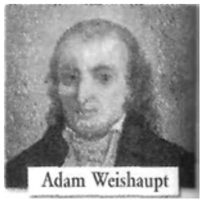
What is the Illuminati? In 1785, a courier died en route to Paris from Frankfort-on-the-Main. Original Shift in Days of Illuminations, a tract written by Adam "Spartacus" Weishaupt, founder of the Illuminati, was recovered from the dead messenger. It contained the secret society's long-range plan for The New World Order through world revolution.

The Bavarian Government promptly outlawed the society and in 1787 published the details of The Illuminati conspiracy in The Original Writings of the Order and Sect of the Illuminati.


Einige
Originalschriften
des
Illuminatenordens,

The Illuminati was publicly founded May 1, 1776, at the University of Ingolstadt by Weishaupt, a Professor of Canon Law. It was a very "learned" society; Weishaupt drew the earliest members of his new order from among his students.

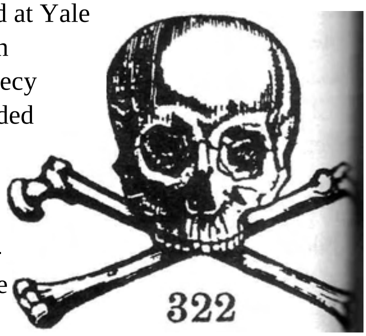
In Adam Weishaupt's own words:


Adam Weishaupt

> "By this plan, we shall direct all mankind in this manner. And, by the simplest means, we shall set all in motion and in flames. The occupations must be so allotted and contrived that we may, in secret, influence all political transactions."

There is disagreement among scholars as to whether or not the Illuminati survived its banishment. Nevertheless, under Weishaupt's guidance, the group had been quite successful in attracting members and through various manipulations had allied itself with the extensive Masonic networks in Europe and the United States.

On December 5,1776, students at William and Mary College founded a secret I society, Phi Beta Kappa. A second chapter was formed at Yale in 1780. The anti-Masonic movement which erupted in the United States during the 1820s denounced the secrecy of groups such as Phi Beta Kappa. The society responded to this pressure by going public. Some researchers note this as the direct cause of the appearance of Yale's Order of Skull and Bones.



The alumni of Skull and Bones provide a direct link between secret societies and the state department/national security apparatus.

From George Bush: The Unauthorized Biography:

> ... Prescott Bush [Skull & Bones] was a U.S. senator from Connecticut, a confidential friend and golf partner with National Security Director Gordon Gray, and an important golf partner with Dwight Eisenhower as well. Prescott's old lawyer

from the Nazi days, John Foster Dulles, was Secretary of State, and his brother Allen Dulles, formerly of the Schroder bank, was head of the CIA.

... In the later years of the Eisenhower presidency, Gordon Gray rejoined the government. As an intimate friend and golfing partner of Prescott Bush, Gray complemented the Bush influence on Ike. The Bush-Gray family partnership in the secret government continues up through the George Bush presidency.

Gordon Gray had been appointed head of the new Psychological Strategy Board in 1951 under Averell Harriman's rule as assistant to President Truman for national security affairs. From 1958 to 1961 Gordon Gray held the identical post under President Eisenhower. Gray acted as Ike's intermediary, strategist and hand-holder, in the President's relations with the CIA and the U.S. and allied military forces.



Gordon Gray taking oath of office for Director of the Psycology Stategy Board



Dwight Eisenhower

Eisenhower did not oppose the CIA's covert action projects; he only wanted to be protected from the consequences of their failure or exposure. Gray's primary task, in the guise of oversight on all U.S. covert action, was to protect and hide the growing mass of CIA and related secret government activities.

It was not only covert projects which were developed by the Gray-Bush-Dulles combination; it was also new, hidden structures of the United States government.

From The Immaculate Deception by Russell Bowen:

According to Nixon's biography, his personal and political ties with the Bush family back to 1946, when Nixon claims he read an ad placed in an LA. newspaper by the Orange County Republican Party and a wealthy group of businessmen led by Prescott Bush, the father of George Bush.



Prescott Bush

They wanted a young candidate to run for Congress. Nixon applied and won the job, becoming a mouthpiece for the Bush group, progressing to the U.S. Senate and in 1952 the vice presidency.

In 1960, Vice President Nixon was scouring the world seeking the presidency. At his side was Prescott Bush. Congressman Gerald Ford was helping raise funds, as was George Bush.

It took Nixon eight more years to reach his goal. And the canny politician always remembered who helped him get there. So again it was payback time for George Bush. Nixon appointed him Chairman of the Republican National Committee, and later ambassador to China.



Bush & Nixon

By 1976, Ford, who succeeded Nixon after Watergate, paid his due bill. He picked out big job for his old crony, Bush: the CIA. But this time Bush would not be an underling. Now he would be head man.

MUDDY WATERS AND THE UNSEEN HAND

THE TRUTH ABOUT KENNEDY'S DEATH IS SUBMERGED IN CONSPIRATORIAL CHAOS

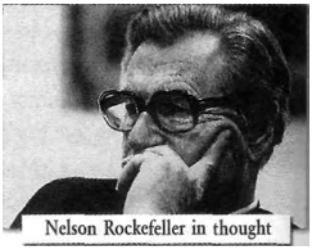
A century before the Roman Republic perished, two brothers, the Gracchi, emerged as popular leaders who were determined to check the corruption by wealth of the city's institutions. They were both killed. The murderers, who were never punished came from the senatorial class which had felt threatened by the brothers' reforms.
— Peter Dale Scott, Deep Politics

One of the most effective tactics employed by the conspirators was to "muddy the waters" by bringing in as many "suspicious" individuals as possible into the assassination arena, even having different reasons for each person's presence — if there were a covert reason for being in Dallas on November 22, 1963, all the better. Scores of people were engaged in varied peripheral plots and sub-plots, many of which were related tangentially or not at all to the actual assassination. As a result, the pertinent facts drowned in a contrived whirlpool of suspicious, but not necessarily related, activity.

But who was REALLY involved?


Johnson & Nixon

Rodney Stich's book Defrauding America tells of a deep-cover CIA officer assigned to a counter-intelligence unit, code-named Pegasus. This unit had tape-recordings of plans to assassinate Kennedy from a tap on the phone of J. Edgar Hoover. The people on the tapes were [Nelson] Rockefeller, Allen Dulles, [Lyndon] Johnson of Texas, George [HW] Bush and J. Edgar Hoover.


Nelson Rockefeller in thought

According to Stich's source, There were conversations between Rockefeller, [J. Edgar] Hoover, where Rockefeller asks, Are we going to have any problems?" And he said, "No, we aren't going to have any problems. I checked with Dulles. If they do their job we'll do our job." There are a whole bunch of tapes, because Hoover didn't realize that his phone had been tapped.

The inner core of the conspiracy is bound tightly together by oaths of secrecy and affiliations with various secret societies allied with various Nazi groups, mind control operations and business ventures. Much of the operational apparatus used in the conspiracy lay hidden in the shadow world of ultra-secret national security state entities such as Division Five of the FBI, the Defense Industrial Security Command and double/triple agents of various allegiances. The Torbitt Document and The Man Who Knew Too Much detail the workings of this actual operational framework. Agents from psy bureaus, future narcs, ultra-right-wingers, doubles and dead ringers, politicians, spies, cops all fall into the mix.


Hoover & Nixon

Another key aspect of the JFK assassination is mind control. Some researchers believe Lee Harvey Oswald was involved in the CIA's MKULTRA project and was subjected to extensive audio-hypnotic intracerebral control and electronic dissolution of memory while in Minsk, Russia. But the question of mind control extends far past the mechanics of the killing itself.


Oswald in handcuffs

SAVAGE NEW TIMES — MIND CONTROL AND THE ILLUMINATI

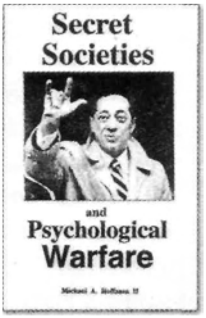
WAS KENNEDY'S MURDER ACTUALLY A RITUAL BLOOD SACRIFICE?

I think the subject which will be of most importance politically is Mass Psychology - Its importance has been enormously increased by the growth of modern methods of propaganda. Although this science will be diligently studied it will be rigidly confined to the governing class. The populace will not be allowed to know how is convictions are generated. —Bertrand Russell

The more one studies mind control, secret societies and the occult, the more one understands the subtlety and hidden symbolism of the Kennedy assassination.

James Shelby Downard's underground classic, Sorcery, Sex, Assassination and the Science of Symbolism, links American historical events with a grand occult plan to turn us into cybernetic mystery zombies. The assassination of JFK was a performance of the occult ritual called The Killing of the King, designed as a mass-trauma, mind-control assault against the national body-politic of the United States.

Mr. Downard's co-researcher and author, Michael A. Hoffman II, wrote in Secret Societies and Psychological Warfare that: "fabled alchemy had at least three goals to accomplish before the total decay of matter, the total breakdown we are witnessing all around us today, was fulfilled and these are:



The Creation and Destruction of Primordial Matter.
The Killing of the Divine King.
The Bringing of Prima Materia to Prima Terra."

Hoffman writes: [The following excerpt is copyright © 1995 by Michael A. Hoffman II. All Rights Reserved. Used by permission.]

> Since ancient times these were the goals of the Gnostic-Rosicrucian-Masonic-Hermetic Academy, an elite as real and corporeal as President Bush's Skull and Bones society at Yale University; the Bohemian Grove in California; Dr. John Whiteside Parson's Ordo Templi Orientis (OTO) also in California; General Albert Pike's Scottish and Palladian Rites of Freemasonry and a host of lesser imitators. All of these cults have or had the highest possible offices, connections and old boy networks.

The Creation and Destruction of Primordial Matter was accomplished at the White Head ("Ancient of Days"), at White Sands, New Mexico, at the Trinity Site. The Trinity Site itself is located at the beginning of an ancient Western road known in old Mexico as the Jornada del Muerto (the Journey of the Dead Man).

Early in this century a Freemason named Peter Kern was ordered to build a highly symbolic "Gate of Death" at a key point on this ancient trail. It was known as the Gate with a Thousand Doors.

At the front of this gate Kern was ceremonially murdered (decapitated) by a hooded executioner. Gary Trudeau satirized the Aztec-masonic Comazotz head-chopping cult of the American Southwest in a series of December, 1988, Doonesbury cartoons which depicted Skull and Bones initiates trying to dispose of a number of heads including that of Pancho Villa, a key political operative of the cryptocracy who was in fact also ritually decapitated.

Other occult rituals for the Creation and Destruction of Primordial Matter were played out in the general area of the 33rd degree of north parallel latitude in Truth or Consequences, New Mexico. The Trinity Site is also at this latitude.

There are 33 segments in the human spinal column which according to occult lore is the vehicle of the fiery ascent of the Kundalini serpent force which resides in the human body. 33 is the highest degree of Scottish Rite Freemasonry. Near the Trinity Site a derelict shack was symbolically dubbed "MacDonald House." The Creation and Destruction of Primordial Matter occurred exactly on the Trinity Site, the Place of Fire, with the explosion of the first atomic bomb, culminating untold thousands of years of alchemical speculation and practice.

The Killing of the King rite was accomplished at another Trinity site located approximately ten miles south of the 33rd degree of north parallel latitude between the Trinity River and the Triple Underpass at Dealey Plaza in Dallas, Texas. Dealey Plaza was the site of the first masonic temple in Dallas. In this spot, which had been known during the 19th century cowboy era as "Bloody Elm Street," the world leader who had become known as the "King of Camelot," President John Fitzgerald Kennedy, was shot to death.



The Three Tramps – Dallas, Texas, November, 1963

A widely publicized image, which has become perhaps the key symbol of the enigma of the Kennedy hoodwink, emerged immediately in the wake of the assassination: a photograph of three "tramps" in official custody, who were unexplainably released and never identified, though speculation about who they really were has reached fever pitch among investigators. This photograph is a ritual accompaniment of the Black Mass that was the ceremonial immolation of a king, the unmistakable calling card of masonic murder,

the appearance of Jubela, Jubelo and Jubelum, the three "unworthy craftsmen" of Temple burlesque, "that will not be blamed for nothing." This ritual symbolism is necessary for the accomplishment of what James Shelby Downard and I described in the first edition of Apocalypse Culture, as the alchemical intention of the killing of the 'King of Camelot':

"... the ultimate purpose of that assassination was not political or economic but sorcerous: for the control of the dreaming mind and the marshaling of its forces is the omnipotent force in this entire scenario of lies, cruelty and degradation. Something died in the American people on Nov. 22, 1963 - call it idealism, innocence or the quest for moral excellence. It is the transformation of human beings which is the authentic reason and motive for the Kennedy murder ...."



JFK 11/14/63

The seemingly random and senseless slaughter of a President the week before Thanksgiving, by having his head blown apart in those now infamous Zapruder film frames, is the signpost of humanity's entry into what David Cronenberg in his Videodrome Rosicrucian cinematic manifesto termed, "Savage New Times."

The search for the three assassins has become a trip up and down Tim Finnegan's ladder, a ladder containing "one false step after another." It is a masonic riddle several magnitudes above the pedestrian, CIA-Mafia-Anti-Castro-Castro-KGB-Texas rightwing etc. etc. political "solutions" pushed by the various books and movies which sometimes only serve to confuse and demoralize us all the more.

THE ALCHEMY OF RITUAL MURDER

What ought to be unambiguous to any student of mass psychology, is the almost immediate decline of the American people in the wake of this shocking televised slaughter. There are many indicators of the transformation. Within a year Americans had largely switched from softer-toned, naturally colored cotton clothing to garish-colored artificial polyesters. Popular music became louder, faster and more cacophonous. Drugs appeared for the first time outside the Bohemian subculture ghettos in the mainstream. Extremes of every kind came into fashion. Revolutions in cognition and behavior were on the horizon, from the Beatles to Charles Manson, from Free Love to LSD.

The killers were not caught, the Warren Commission was a whitewash. There was a sense that the men who ordered the assassination were grinning somewhere over cocktails and out of this, a nearly-psychedelic wonder seized the American population, an awesome shiver before the realization that whoever could kill a president



LBJ taking oath of office, 11/22/63

of the United States in broad daylight and get away with it, could get away with anything.

A hidden government behind the visible government of these United States became painfully obvious in a kind of subliminal way and lent an undercurrent of the hallucinogenic to our reality. Welcome to Oz thanks to the men behind Os-wald and Ruby.

There was a transfer of power in the collective group mind of the American masses: from the public power of the elected front-man Chief Executive, to an unelected invisible college capable of terminating him with impunity.

For the first time in their history since the 1826 masonic assassination of writer William Morgan, Americans were forced to confront the vertiginous reality of a hidden power ruling their world. Sir James Frazer writing in The Golden Bough: A Study in Magic and Religion, explains that when the "divine king" is murdered by one who is himself stronger or craftier, those powers of "divinity" which were the king's are "Sympathetically" and "Contagiously" transferred from the vanquished to the victor.

The entry of this awareness into the subconscious Group "Dreaming" Mind of the American masses instituted a new simulacrum. The shocking introduction of a diametrically different, new "reality" is a classic scenario of another phase of alchemical programming known to the cryptocracy as "Clamores."

Dave Marsh writing in Rolling Stone magazine (Feb. 24, 1977): "The Beatles have always had an intimate connection to the JFK assassination. He was shot the week before Thanksgiving 1963. By February 1964, the Beatles were number one in the national charts and the climactic appearance on Ed Sullivan's TV show occurred. Even Brian Epstein (the manager of the Beatles) believed the Kennedy assassination helped their rise - the Beatles appeared to bind our wounds with their messages of joy and handholding .... And the way was paved, replacing Camelot with Oz."


The Beatles and Ed Sullivan

Now the American people were forced to confront a scary alternative reality, the reality of a shadow government, over which they had neither control or knowledge. The shepherding process was thus accelerated with a vengeance. Avant-garde advertising, music, politics and news would hereafter depict (especially in the electronic media) — sometimes fleetingly, sometimes openly — a "shadow side" of reality, an underground amoral "funhouse" current associated with extreme sex, extreme violence and extreme speed.

The static images of the suit-and-tie talking heads of establishment religion, government, politics and business were subtly shown to be subordinate to the

Shadow State, which the American people were gradually getting a bigger glimpse of out of the corner of their collective eye. The interesting function of this phenomenon is that it simultaneously produces both terror and adulation and undercuts any offensive against it among its percipients, which does not possess the same jump-cut speed and funhouse ambiance.

There is a sense of existing in a palace of marvels manipulated by beautiful but Satanic princes possessed of so much knowledge, power and experience as to be vastly superior to the rest of humanity. They have been everywhere. They have done everything. They run the show which mesmerizes us. We are determined to watch it. We are transfixed and desperate to see their newest production, their latest thrilling revelation, even when the thrills are solely based upon the further confirmation of our dehumanization.

J.G. Ballard: "In this overlit realm ruled by images of the space race and the Vietnam War, the Kennedy assassination and the suicide of Marilyn Monroe, a unique alchemy of the imagination was taking place .... The demise of feeling and emotion, the death of affect, presided like a morbid sun over the playground of that ominous decade.

"The role assigned to us is that of zombies called upon by our shadow masters to perform bit parts and act as stock characters in their spectacular show. This mesmerizing process produces a demoralized, cynical, double-mind."


John F. Kennedy

— Secret Societies and Psychological Warfare, pp. 91-95.
(Secret Societies and Psychological Warfare is available for U.S. $17.95 plus $2.50 shipping (overseas remit $5.00 shipping), from: Independent History and Research, Box 849, Coeur d'Alene, Idaho 83816.)

The perpetrators deliberately murdered JFK in such a way as to affect our national identity and cohesiveness — to fracture America's soul. Even the blatancy of their conspiracy was designed to show their superiority and our futility. They were doing to the nation what they had been doing to individuals for years. Looking into the subject of mind-control, one finds that the scope is wide and methods used are sophisticated. Mind control traces its origins to religious institutional use by priesthoods. Techniques of mind control developed in our western culture were field-tested by the Jesuits, certain Vatican groups, and various mystery religions, secret societies and masonic organizations. Methods tested during the Inquisition were refined by Dr. Josef Mengele during the reign of the Third Reich.


Harry S. Truman

After World War II, hundreds of Nazi scientists, researchers and administrators were "smuggled" into the United States against direct written orders from President Harry S. Truman, through Operation Sunrise, Operation Blowback, Operation Paperclip and other covert operations.



Hitler at Nuremberg rally

Soon afterwards, a mind control project called Marionette Programming imported from Nazi Germany was revived under the new name, "Project Monarch." The basic component of the Monarch program is the sophisticated manipulation of the mind, using extreme trauma to induce Multiple Personality Disorder (MPD), now known as Disassociative Disorder.

In public testimony submitted to the President's Committee on Radiation, there are amazing allegations of severe torture and inhumane pogroms foisted upon Americans and other citizens, especially as children. These same children were used in radiation experiments. They detail the drug and traumatic methodology of sophisticated mind control. Survivors tell similar stories of brutal mind control experimentation as part of the CIA's MKULTRA program. Many mind control survivors speak of a "Dr. Greene." Some survivors and researchers have identified Dr. Greene as the infamous Dr. Mengele.



Dr, Josef Menegele

But mind control programs and assassinations are merely part of a much larger enterprise being carried out by an international network of power interests. In 1995, a researcher-lawyer anonymously posted on the Internet his ten-year investigation of this conspiracy on the Internet. Calling the JFK assassination part of a 50-year conspiracy, he detailed the structure of this international network, which he named "the group." The inner workings and New World Order agenda of this group fit snugly with what other researchers have called the Illuminati.

THE NEW WORLD ORDER

Americans' trust of government has steadily declined since JFK's death.

After all, it was you and me. — The Rolling Stones, Sympathy for the Devil"

Soon after the American Revolution, John Robinson, a professor of natural philosophy at Edinburgh University in Scotland and member of a Freemason lodge, said that he was asked to join the Illuminati. After studying the group, he concluded that the purposes of the Illuminati were not compatible with his beliefs.

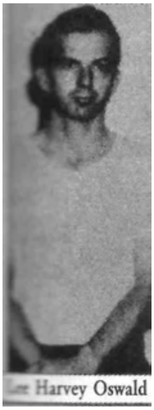
In 1798, he published a book called Proofs Of A Conspiracy, which states:

> An association has been formed for the express purpose of rooting out all the religious establishments and overturning all the existing governments.... The leaders would rule the World with uncontrollable power, while all the rest would be employed as tools of the ambition of their unknown superiors.

Proofs of A Conspiracy was sent to George Washington. Responding to the sender of the book with a letter, President Washington said he was well aware of the Illuminati presence in America. He wrote that the Illuminati had diabolical tenets and that their object was a separation of the People from their government.


George Washington

The decades following the JFK assassination have been marked by increasing cynicism and disillusionment among the American people towards a government which acts as an elite, aloof institution at the disposal of powerful forces both seen and unseen. Washington's statement of "a separation of the People from their government" has come to pass.


Lee Harvey Oswald

As the glaciers of a contrived Cold War melt down, our "government" is steadily militarizing and expanding its police powers, turning away from foreign targets of aggression to focus on domestic "insurrection." Although the foundation of this conspiracy has been under construction for centuries, the poisoned fruits of these labors burst into bloom on that dark day , in Dealey Plaza forty years ago.



So did Oz-wald do it all by himself?

Or are we all patsies on the bloody path to the New World Order?

Supporting documentation and articles at:
www. boodleboys.com


Prescott Bush
BMOC
(Big Man on Campus)
Yale 1916-17
Glee Club
Football Cheerleaders
University Qu
Varsity Baseball
Whiffenpoofs

PRESCOTT BUSH, THE UNION BANKING CORPORATION AND THE STORY

KRIS MILLEGAN
AUGUST 2003

"THERE'S THREE THINGS TO REMEMBER: claim everything, explain nothing, deny everything," recalled Prescott Bush as to how politics was explained to him by Clare Booth Luce, congresswoman and wife of fellow Bonesman and magazine magnate, Henry Luce. The remarks were recorded in a 1966 interview with Prescott for an oral history project about the Eisenhower Administration by Columbia University.

The Bush political family seems to have taken those words to heart, one example being the story of Prescott's involvement with the Union Banking Corporation and the financing of Hitler and fascism. Why there has been such a deliberate and hard cover-up of this affair is in no doubt due to its sensitive nature.

The who, what and where of this business is already covered in several of the other articles in this book. Here we will examine the story as it appears today.

The specific allegations about the Union Banking Corporation first surfaced in Antony Sutton's 1975 book, Wall Street and the Rise of Hitler. Sutton at that time did not know about the Order of Skull & Bones. After becoming aware of the Order in 1983 he expanded his writings on the subject in How the Order Creates War and Revolution in 1984, which was later published, with Antony's three other booklets on The Order of Skull & Bones, together as America's Secret Establishment in 1986. The charges were articulated again in 1988 in Sutton's The Two Faces of George Bush.

The mainstream press and establishment historians ignored Sutton's books and the accusations.

In 1992, Webster Tarpley and Anton Chaitkin authored George Bush: The Unauthorized Biography (some chapters are presented in this book), which took the investigations

further. They found in U.S. government archives the vesting order seizing the Union Banking Corporation and documented other Harriman/Bush controlled interests that were doing business with the Nazis. Their book was published by Executive Intelligence Review, a Lyndon Laurouche organization, and again the reports were ignored.

John Loftus, a former attorney for the Office of Special Operations prosecuting Nazi war criminals in the US Justice Department also added information about the situation in his 1994 book, The Secret War Against the Jews.

A Dutch producer Daniel de Witt, from Dutch National Television interviewed Sutton, Chaitkin, Tarpley and others in 1996, for a documentary on Skull & Bones that included confirmation from Dutch officials concerning the Union Banking Corporation and its activities in financing Hitler through a Dutch bank, the Bank voor Handel en Scheepvart (Bank for Trade and Shipping). From the documentary: "Original documents of the Amsterdam based International Institute of Social History (Instituut voor Sociale Geschiedenis) clearly show the connection between the BHS, the August Thyssen Bank from Fritz Thyssen and Harriman's Union Banking Corporation."

The show — as produced — never aired.* The show was listed in printed schedules and there was a preview in a TV guide but the program was pulled just before being a televised in 1998. Finally in January 2001, a re-edited thirty minute segment of the original eighty minute film was aired plus ten minutes of new footage of interviews of the movie, The Skulls, writer and director.

With the advent and growth of the Internet and its ability to by-pass the mainstream media editorial bottleneck there was a growing awareness of the Nazi-Bush financial connections. Newspaper reporter Michael Kranish finally made the accusations public through a mainstream press article in the Boston Globe that became the story about the charges. A front-page article headlined Triumphs, Troubles Shape Generations, ran on April 23, 2001. The story was told in first three paragraphs.

The story:

> Prescott Bush was surely aghast at a sensational article the New York Herald Tribune splashed on its front page in July 1942.
>
> "Hitler's Angel Has 3 Million in US Bank," read the headline above a story reporting that Adolf Hitler's financier had stowed the fortune in Union Banking Corp., possibly to be held for "Nazi bigwigs." Bush knew all about the New York bank: He was one of its seven directors. If the Nazi tie became known, it would be a potential "embarrassment," Bush and his partners at Brown Brothers Harriman worried, explaining to government regulators that their position was merely an unpaid courtesy for a client. The situation grew more serious when the government seized Union's assets under the Trading with the Enemy Act, the sort of action that could have ruined Bush's political dreams.
>
> As it turned out, his involvement wasn't pursued by the press or political opponents during his Senate campaigns a decade later. But the episode may well have been one of the catalysts for a dramatic change in his life. Just as the Union Banking story broke,

* see note, page 212

Bush volunteered to be chairman of United Service Organizations, putting himself on the national stage for the first time. He traveled the country raising millions of dollars to help boost the morale of US troops during World War II, enhancing his stature in a way that helped him get elected US senator. A son and grandson would become presidents.

The next fifty plus paragraphs extolled Prescott's liberal virtues, proclaimed him to be "akin to the Kennedys" and mentions Prescott's membership in the Yale singing group the Whiffenpoofs, but failed to inform about his membership in the Order of Skull & Bones.

Alexandra Robbins, a member of Yale's second oldest senior secret society Scroll & Key, used the story in 2002 to deflect the charges in her faux expose of the Order of Skull & Bones, Secrets of the Tomb:

> Nor was it Skull and Bones that specifically instructed members to aid Adolf Hitler, though Hitler's financier stowed $3 million in the Union Banking Corporation, a bank that counted among its seven directors Prescott Bush.

That's it. That is Ms. Robbins complete comment on the subject of the Union Banking Corporation, financing of Hitler and the Order of Skull & Bones. No mention about the American Ship and Commerce Company, Consolidated Silesian Steel Corporation, Hamburg-Amerika Lines, Harriman Fifteen Corporation, Harriman International Company, Holland-American Trading Company, Seeamless Steel Corporation or the Silesian-American Corporation, companies of which Brown Brothers Harriman were involved and all of which were enmeshed with Hitler's rise to power. No mention that under the Trading with the Enemy Act many of these companies were seized and were placed at the US Office of Alien Property Custodian. No mention that the Union Banking Corporation was established in August 1924 with George Herbert Walker serving as president and working out of the offices of W. A. Harriman and Company. No mention that in 1932, four out of the eight bank directors were members of the Order of Skull & Bones. No mention that, in the fall of 1942 when Union Banking Corporation was taken over by the government, that a total of three out of seven directors were members of the Order and that a fourth director was an employee of Brown Brothers Harriman — effectively giving Brown Brothers Harriman voting control. No mention that while there were many other non-Bones personnel in partnership at Brown Brothers Harriman, none of them were directors of Union Banking, only Bones partners were on the Union Banking Corporation board. The only exception being not another partner but a Brown Brothers Harriman employee. No mention that two of the other directors have been identified as Nazis. There was no mention of published accounts such as "[a] 1934 congressional investigation alleged that Walker's Hamburg-Amerika Line subsidized a wide-range of pro-Nazi propaganda efforts both in Germany and the United States;" or that in June of 1936 "[i]nstead of divesting of the Nazi money, [Prescott] Bush hired a lawyer

to hide his assets. The lawyer he hired ... was Allen Dulles." Was it because Ms. Robbins didn't do her homework — or was she just advancing the story?

The story next gets extended and massaged in Mickey Herskowitz's craftily written just released 2003 biography of Prescott Bush, Duty, Honor, Country:

> In everyone's life there is a summer of '42; Prescott Bush spent his on Wall Street, where nostalgia and romance are not the hot commodities they were in the motion picture that made the phrase symbolic.
>
> A headline that landed on the front page of the New York Herald Tribune in July of that year read: "Hitler's Angel Has 3 Million in U.S. Bank." The reference was to the Union Banking Corporation. Prescott may have been upset or alarmed by the disclosure — he was one of its seven directors. A person of less established ethics would have been panicked.
>
> The story claimed that the bank held $3 million in deposits for a German businessman, described as a "financier" for Adolf Hitler. There was speculation that the account may have been intended for the later use of "Nazi bigwigs."
>
> Buried in the databases that dealt with the Bush family political tradition, the article was rediscovered and reported in the Boston Globe, in April 2001, by Michael Kranish. He concluded in the article that the connection had represented a potential "embarrassment" for Prescott. No one actually knew what purpose the fortune had been meant to serve, or who controlled it. Possibly, the money had been socked away as a hedge against Germany's defeat.
>
> Bush and his partners at Brown Brothers Harriman informed the government regulators that the account, opened in the late 1930s, was "an unpaid courtesy for a client. The situation," wrote Kranish, "grew more serious when the government seized Union's assets under the Trading with the Enemy Act, the sort of action that could have ruined Bush's political dreams." The phrase was an ominous one.
>
> The client was believed to be a friend of Charles Lindbergh, according to Roland Harriman. Prescott Bush acted quickly and openly on behalf of the firm, served well by a reputation that had never been compromised. He made available all records and all documents. Viewed six decades later in the era of serial corporate scandals and shattered careers, he received what can be viewed as the ultimate clean bill.
>
> A decade later when he ran for the Senate, his involvement in the bank went untouched by the press or his political opponents.
>
> Earlier that year he had accepted the chairmanship of the USO (United Service Organizations.) He traveled the country over the next two years raising millions for the National War Fund and, as the Boston Globe noted, "putting himself on the national stage for the first time ... (and) boosting the morale of U.S. troops." Out of adversity good things came.

Again the other companies are conveniently ignored and new facts appear out of thin air and a theme is laid down. Mr. Herskowitz doesn't cite any known

sources for this new information. He cites the Kranish article but does not cite the Herald-Tribune or any other contemporaneous accounts; he says he had access to 46-hours of taped interviews and scrapbooks from the Bush family and mentions archives at the University of Connecticut. So we do not know where he gathered this particular new information. We do know that it is incorrect and misleading.

Let us examine the story:

First off the Herald-Tribune article didn't appear in July of 1942 it was actually printed in July of 1941. The article itself proved to be quite the challenge to find. I talked with several different researchers and none had been able to find it, although spending hours looking at microfilm. Since, there was never a complete date given, just July, 1942, researchers were having to look at the whole month of July and when it wasn't found there, began looking in June and August.
In a July 2003, call to Mr. Kranish at the Globe I was told that "several other people" had called him telling him that they were "unable to find it." That there wasn't a complete date reference on the Herald-Tribune article because the article — he had found it in an "archive of archives" — was cut out and there was not a full date just a month and year. He said he was sure it was July 1942. I asked Mike, if it was a special edition and if I could find out where this archive was?

He said, "The Herald-Tribune doesn't exist anymore and it is hard to find, you are just going to have to take my word for it. The story definitely appeared." He then excused himself as being busy, that he had written the story over two years ago and he needed to go.

Well, we have found proof that the article did indeed appear — in July of 1941. First we found on Alex Jones' infowars.com website an article from the July 31, 1941, Zanesville Signal'in Ohio. The Thyssen/Union Banking news story was in an INS (International News Service) wire report, which says that it was "disclosed today in a news story in the New York Journal American. We then found, at ancestry.com, an AP wire report in the Sheboygan Press, a Wisconsin newspaper of August 1, 1941 which stated: "The Herald-Tribune said Thursday [July, 31, 1941], that Fritz Thyssen, German industrialist credited with helping finance Adolf Hitler's rise to power, 'has $3,000,000 in American cash salted away in the bank vaults of downtown New York.'" Armed with the correct date, we were then able to find both the New York Herald-Tribune and New York Journal American stories. The articles are presented in full later in this chapter.

So, big deal, what difference does a year make? Well, let's see — in July of 1941 — when the article was really printed, there was no declared war, and the story allows the rehabilitation of Prescott's honor by allowing him to "enhance his stature" before the revealing newspaper article, instead of after. The truth of the matter, that Prescott was possibly running for cover in February 1942, by serving as the national chairman of USO, is not broached and the scandal is covered-up.

What "embarrassment" Prescott may have felt isn't known. The incident isn't discussed in his oral history interviews nor were there any contemporaneous news articles except for the one flurry in July/August 1941 and the articles that mention his name do so without any personal comments. Neither establishment historians nor the mainstream media have dealt with the episode in any depth. Sutton's works and others have been quietly ignored for years, it is only the power of the Internet that has brought forth the story.

In the History Of The Class Of 1917 Yale College, Volume V— Twenty-Fifth Record printed in 1942, Prescott proudly proclaims his directorship of the Union Banking Corporation, listing it third behind CBS and The Dresser Manufacturing Company and ahead of six other substantial companies. He had been on the bank's board since 1934, his father-in-law was a founder and had been the bank's president. It really wasn't a bank per se, but acted has a holding company for Thyssen, the German Steel Trust and its related components in their dealings with American industrial and financial markets. It allowed the Thyssen interests to raise money, sell and buy goods in America and then use Union Banking Corporation as their reciprocal bank to transfer monies back and forth.

And the theme of poor of diligent, naive Prescott and partners being flummoxed by Charles Lindbergh into such a position of "embarrassment" — is unfounded blame-shifting. The statements by Mr. Herskowitz of "[n]o one actually knew for what purpose the fortune had been meant to serve, or who controlled it" and "that the account [was] opened in late 1930's" are incorrect and disingenuous at best. The bank had working relations with the Thyssen interests since the 1920's and Prescott would have had access to information concerning business. Prescott had been a director of the bank since the early 1930s and he was "running the business" at Brown Brothers Harriman at the time of the scandal. In Prescott's own words, from the Columbia University oral history: "... the partners, like myself and Knight Wooley, who became — certainly after Lovett went to Washington in 1940 — from then on, we were really running the business, the day to day business, all the administrative decisions and the executive decisions. We were the ones that did it."

The Union Banking Corporation was capitalized at $400,000 (most of the stock held by Roland Harriman) and acted as a repository for Thyssen's funds earned in the United States. Tarpley and Chaitkin have written that government investigators reported "the Union Banking Corporation has since its inception [1924] handled funds chiefly supplied to it through the Dutch bank for Thyssen interests for American investment." Averell Harriman had been in Berlin in 1922 establishing a "Berlin Branch of W. A. Harriman & Co. under George Walker's presidency" at which time he "became acquainted with Fritz Thyssen."

In the 1941 articles it was reported that Union Baking Corporation's three million in funds had been frozen in May of 1940 and that the three million dollars, came from "organizations [that] did a thriving business rolling-up dollars." There were four and a half billion dollars in "foreign assets frozen by the US

Government since Adolf Hitler's armies began overrunning Europe" in US banks. Dutch, Belgian, Norwegian and French assets were frozen in 1940 — after the Nazis occupied those countries. German assets were frozen June 14, 1941.

> President Roosevelt ordered Axis funds in the United States frozen. In view of the unlimited national emergency declared by the President, ... The Executive Order is designed, among other things, to prevent the use of the financial facilities of the United States in ways harmful to national defense and other American interests, to prevent the liquidation in the United States of assets looted by duress or conquest, and to curb subversive activities in the United States. Bulletin, p. 718. See also Vol. 6, Federal Register, p. 2897 (http://www.ibiblio.org/pha/timeline/4106int.htm)

So had an intrepid reporter, tracking down leads about frozen assets uncovered the story? Or was it some sort of controlled leakage? Over a third of the article consists of the letters to and from the Superintendent of Banks of the State of New York which give some "patriotic" cover for the Brown Brothers Harriman partners. The article also sets out doctored facts, some in the bold subheads, such as "Enlisted Harriman in 1925, that is even contradicted in the newsstory. The theme of the Herald-Tribune article is a "chance" meeting, that it may be or not be that bad or duped Thyssen's fault, that no compensation was received and how above-board and approved the whole affair is from the government's view. The use of controlled scandal to deflect and cover-up deeper scandal has been used many times in US political life and it sometimes even gets a reporter off an editor's back. The story runs and is forgotten.

No matter what the reason, the reportage was quietly stifled. With Luce's Time-Life combine, Harriman's position at Newsweek and other Bones influenced media such as CBS, the New York Times and others, the scandal was effectively killed as an item of news.

There was no coverage of the Herald-Tribune article's information on the Thyssen/Union Banking Corporation connection in the national news weeklies, the New York Times, the Wall Street Journal ox even the New York Daily Worker. The afternoon daily, Hearst-owned Journal-Americans article was basically a condensed re-hash of the earlier Herald Tribune articles.

The next known mention of the Union Banking Corporation in the news was the cryptic one sentence in the December 16, 1944 New York Times* financial pages saying that:

> The Union Banking Corporation, 39 Broadway, New York, has received authority to change its principal place of business to 120 Broadway.

The real story continued to be suppressed. No reportage that the corporation was taken over by the US Government under the Trading with the Enemy Act

* See page 264

in the fall of 1942, nor that the address to where Union Banking Corporation was moved was the Office of the Alien Property Custodian.

Maybe that power to suppress, to fabricate, to deny everything and to explain nothing was why Prescott was so blase and felt no need to hide from his peers his directorship in a company that had already been reported by the New York press to be holding $3 million dollars in Nazi funds, prior to him putting the "bite" on classmates as the National Chairman in Charge of the 1942 Fund Drive for the USO.

The next mention of Thyssen in the news were reviews in newspapers, and in magazines, such as Time, Newsweek and Nation, for the book, I Paid for Hitler, by Fritz Thyssen. In Bonesman Henry Luce's Time magazine October 13, 1941 it was reported that a co-writer, Emery Reeves a journalist, who in April of 1940 met with Thyssen in Paris and persuaded Thyssen to go to Monte Carlo with Reeves, "a collaborator and a secretary." Where Thyssen would "dictate three solid hours every day, then revised and approved the copy."

In late May 1940. Reeves went "to Paris to check some names and dates." As the Germans were also on their way to Paris. Reeves left France for Britain on a British destroyer. "He never saw or heard from Thyssen again. After more than a year, it seemed obvious that Thyssen was a captive; for if he were free, he would have communicated with his family in South America. Alive or dead, he was Reeves decided, beyond the power of the book to hurt or help. So Reeves decided to publish."

The book has Thyssen pounding his head and muttering "'Ein Dummkopfwar ich!' (What a dumbhead I was')" and reports about Thyssen's financial assistance to Hitler prior to the Beer Hall Putsch of 1923. The Thyssen role in financing Hitler is covered extensively in other chapters, so we will not recount that history here. A new revelation in the book was the novel conspiracy theory that Adolph Hitler was the illegitimate son of Baron Rothschild. I Paid for Hitler was published in New York, by Farrar & Rinehart. Chairman of the Board of Farrar & Rinehart was John Chipman Farrar a member of the 1918 cell of the Order of Skull & Bones. The class that had been tapped by Prescott's Bones cell. The 1918 Bones cell included US Congressman Malcolm Baldridge, CIA personnel Director F. Trubee Davison, mega-businessman Artemus Gates and the then, in 1941, Asst. Secretary of War and Brown Brothers Harriman partner Robert A Lovett. They had all been part of the famous Palm Beach, Florida, Yale WW I flying unit.

John C Farrar during WW II was a member of the Psychological Warfare Branch in the Office of War Information and was an editor for some of the OWI propaganda publications.

After the war, Thyssen "denied authorship" of I Paid for Hitler. Was there more to the book than met the eye? Was I Paid for Hitler created to confuse and possibly rehabilitate certain individuals and diffuse and confuse situations in the war-charged American atmosphere of the early 1940s? Similar to Bonesman

Luce's Life magazine reversing the Zapruder film frame of the JFK murder so as to accommodate the physics of the official story of that action.

You have got to be willing to do a lot of things furtively and secretly, to bring about a situation that will accomplish what you want to have accomplished.
— Prescott Bush, speaking about the intelligence services in his oral history, done by Columbia University.

Prescott definitely understood this and it seems as though he and Brown Brothers Harriman were trying to keep the scandal in the dark— before some newshound broke the soon to be squashed news — because in the July 31,1941, New York Herald- Tribune it says that seven months before, in January of 1941, Brown Brothers Harriman partner and Bonesman, Knight Wooley had written to the NY State Banking Board Superintendent that "[s]hould the United States enter the war, they [the Union Banking Corporation American directors] felt they might be under some embarrassment, ..."

Kept in the dark it was and Prescott won a special election in 1952, after the death of a sitting Senator, to serve as a US Senator from Connecticut. General Dwight Eisenhower, whom Prescott in November of 1951, had urged to run for the Republican party nomination for President of the US was also elected. Prescott golfed with President Eisenhower often, and spent a half-hour alone with him on Ike's last day as President.

Senator Bush served on the Banking Committee, many times as a contact person for World Bank and Federal Reserve officials, who sometimes looked for more casual places to do business than the Senate committee rooms. In his second term — protecting his state's interests — Prescott also served as a member of the Armed Service Committee. For years Connecticut had received more per capita of the defense dollar than any other state earning itself the sobriquet, the "Arsenal of Democracy." That the Military-Industrial Complex began in Connecticut in the 1800s is relevant ... but another tale.

Prescott was a member of two private clubs in Washington, the Alibi Club and the Alfalfa Club. Every presidential election season, the Alfalfa Club nominates one of its members in jest to run for President of the United States. In January 1959 Senator Bush was the nominee for Alfalfa Party. His acceptance speech was recorded and a transcript was included, by the Senator's request, in his oral history given to Columbia University. In this speech Prescott says:

I recall here the immortal words of Granville Rice, when he wrote:
The rules of life apply the same
To any sport you choose
It matters not how you play the game,
So long as you never lose.

Prescott Bush retired from the Senate in 1962, returning to his work at Brown Brothers Harriman. He passed away in October of 1972. Antony Sutton didn't

write his book about the Order of Skull & Bones and the Union Banking Corporation's involvement with financing Hitler until 1984. The story and Prescott's defense didn't appear till April 2001, just before his Bonesman grandson's selection to serve as the President of the United States.

Prescott never heard the story. Do we wonder ... what he would have said?

*A NOTE FROM DANIEL DE WIT, DUTCH TELEVISION PRODUCER;

Amongst other things, what we had to cut was the information on the Bilderberg society and the CIA-drugs segment. What was left was as good as dead and was broadcast at the ultimate impossible hour of 5 PM on a Friday afternoon as every possible viewer is in traffic going home. There never was a rerun. The reason we had to, well, kill our 'child,' was because the new head of the documentary department at that time could not stand behind our findings. Even though they were based on facts and told by experts. There was also a cultural difference. The new head was just recently promoted to this documentary department from a news section that made very factual clips of maximum five minutes: 'There is a fire and two people died.' Whilst our documentary was about 'who lit the fire and why?' We had made a documentary — which is a view on reality based on facts — of one hour and twenty minutes and with a subject that is beyond the frame of mind of many people consuming the news that they are fed. This combination of events was the end of our documentary as such.

Making the program was quite an experience, not the least because of all the spooks we had to deal with for the CIA-drugs segment. When we first started in 1995 there was no Internet, just some old stencils of a hard to find book of a man known by only a few and the few who knew him. thought Antony Sutton was dead or lived on a high mountain. To communicate there was the fax and the telephone. In 1996 the Internet came (for us at least) but information on Skull & Bones was still hard to find. Try to explain that to anyone typing in "Skull and Bones" in Google today and getting swamped in information.

The subject of Bones and all these kinds of institutions and people was a real eye opener. As a matter of fact, it changed my life and made me see the world completely different. So much different that many times things are one hundred percent different than they seem. Not just ten of sixty percent, but really one hundred percent, turned upside down. On the one hand the subject of Skull & Bones became less 'dark,' because we found out the society is not some sort of spooky world government, on the other hand it became darker, because these Bones-like institutions and their members show a brute force and an enormous concentrated power that is overwhelming and could make anyone very cynical very easily. That also must be a reason people like to stay away from these realities.

Since corresponding and meeting with Antony Sutton he is my greatest example. He was just a player in the game that has to be played, but he played his role very well. He made a difference. I was then and still am 'in the research business', as Antony called it, digging deeper as ever, but it is extremely difficult to find resources to make new documentaries on the subjects I specialize in. Very frustrating, because the market is there. It's just not easy convincing the people who have the funds about this fact. In the meantime I began DaanSpeak.com, a web page that is an outlet for the information I collect and explain in my articles. It's a hobby, but a serious one. My main work is being a researcher for television programs. Through my website two program makers contacted me for their Dutch series that looks in a serious way at the phenomenon of conspiracies. The series will show that it is a very normal and obvious phenomenon. The program will air (although you never know) in Holland in January 2004.

Daniel de Wit
August 2003



NEW YORK Herald Tribune

LATE CITY EDITION

THURSDAY, JULY 31, 1941

LATE CITY LIFT

...tests to Japan on Bombs ...boat and China Embassy

Dewey Won't Run Again for Prosecutor

Refuses Despite Pleas of Republicans and Other Anti-Tammany Groups

Asks Nomination Of One of His Aids

Does Not Want Office to 'Hinge' on One Man; Lockwood Is Favored

Roosevelt Asks Control Over Prices and Rents To Bar Inflation 'Disaster'

Thyssen Has $3,000,000 Cash in New York Vaults

Union Banking Corp. May Hide Nest Egg for High Nazis He Once Backed

By M. Jay Racusin

President Calls Situation 'Frighteningly Similar' to That in World War

Fight on Henderson Looms in Congress

Bills, Ready Today, Likely to Avoid Lid on Wages and Products of Farms

By Bert Andrews

Fritz Thyssen

Nazis Await Fall of Leningrad; Fierce Battle Rages at Smolensk

Berlin Asserts Russia's Second City Is Threatened by Closing Pincers; Moscow Is Raided Again; Reds Report Hitler's Regiment Smashed

...tham Hosiery ...oses a Mill in Silk Shortage

Hopkins Tells Stalin U.S. Will Fill Red Needs

Gets Note for Roosevelt and Says 'Anybody Who Fights Hitler Is on Right Side'

Hillman Tells Electrical Union To End Tie-Up at Navy Yard

Includes Other Defense Projects in City; Local Expected to Comply Today, but Will Continue Edison Strike; Mayor to See State Mediator

Senate Debate On Retention of Soldiers Opens

Elbert Thomas Warns of German Strength; House Committee Reports Bill

By Jack Bell

Lockwood Is Favored

Polled County Voters

News on Inside Pages

Snub to Women in Home Defense Is Charged as Mrs. Kerr Quits

Club Federation President Notes LaGuardia Chose a Man to Fill O. C. D. Post

Tire Makers Raise Retail Prices 2.4% With Henderson Sanction

The front page of the New York Herald-Tribune, July, 31, 1941.

The Thyssen/Union Banking article was continued on page 22 in the financial news section, with three almost full columns plus another full column ancillary story on Thyssen. The articles are reproduced in full in the following pages.

Michael Kranish, the Boston Globe reporter, when we contacted in August 2003 to tell him that the articles were actually published in 1941 said, "Well, I wrote that so long ago, I can't remember now why — if it is '41 - why it says '42. It is a mystery to me. I do not know what the situation is. But it definitely was there, that is all I can say. The copy that I have, you know, someone put the date in it — maybe that was wrong. I certainly would have tried carefully to put the right date." Mike then wanted to know my purpose for looking in to this. I tell him I am a researcher and writer looking into Prescott Bush and Union Banking.

His then last words on the subject were, "I have looked very thoroughly and I did not find the evidence that the conspiracy theorist allege, so ... if the date is different I just don't know why that is."

New York Herald- Tribune, July 31, 1941

THYSSEN HAS $3,000,000 CASH IN NEW YORK VAULTS

Union Banking Corp. May Hide Nest Egg for High Nazis He Once Backed

By M. J Racusin

In the tides of economic warfare now surging over the world, the New York Herald Tribune, has discovered that Fritz Thyssen, the German industrialist who was Adolf Hitlers original patron on a prodigal scale a decade has $3,000,000 in American cash, salted away in the bank vaults of downtown New York.

In the American colony of Thyssen enterprises perhaps the most interesting is, the Union Banking Corporation, 39 Broadway, nominal guardian of the $3,000,000 cache, all in United States currency — a sort of nest egg for Herr Thyssen or perhaps for some of his high-placed Nazi friends when the present troublous days are over.

Among other Thyssen interests in New York are half a dozen corporations engaged in the shipping, export and import trades, centering chiefly about coal and steel industries and operating under the wing of the Union Banking Corporation. These organizations did a thriving business in rolling up dollars for Herr Thyssen in years past, but have been brought virtually to a standstill during the last year by the war.

One of the most fascinating aspects of this story is the mystery surrounding the Thyssen fortune. At the moment, of course, no can get at this Thyssen nest egg, because it is part of the $4,500,000,000 foreign assets frozen by the United States government since Adolf Hitlers armies began overrunning Europe.

Government circles assert that the assets of the Union Banking Corporation and its subsidiaries were frozen because capital and control came from Netherlands institution called the, Bank voor Handel en Scheepvaart (Bank for Trade, and Shipping) in Rotterdam one of the Thyssen string of banking houses on the Continent. It was subject to the freezing order, however, as a Dutch corporation and not as a German-owned property.

As the Custodian of all Dutch property outside the Netherlands, the Netherlands government in exile represents that it, too, would seem to have some rights in the, matter. Nevertheless all of Fritz Thyssen's properties were confiscated by the Nazi regime back in 1939, and thus it might appear that the assets here are legally a part of the German government's assets in the United States.

Rotterdam Bank Bombed

The Thyssen bank in Rotterdam which nominally owned the New York corporation was bombed out of existence by the invading Nazis in May, 1940. No one in New York professes to know what has happened to the officers of the Rotterdam institution. Not a word of instruction or advice has come from abroad.

Perhaps it wasn't Herr Thyssen's money at all, some persons suggest. Maybe he sent it here for safekeeping for some of the Nazi bigwigs — perhaps for Goering, for Goebbels, for Himmler, or even Hitler himself.

No matter how the story comes out, the United States government has the situation in hand. Every penny of known Thyssen assets is frozen, under the strictest control.

There are many Americans in responsible positions who do not think that the rift between Herr Thyssen and the Nazi-was genuine at all, preferring to believe that Thyssen was in reality a sort of economic advance agent of the Hitler forces, a financial surveyor and softener-up posing as a refugee.

Reliable private information is that Thyssen has been wandering about Switzerland, France and other European countries before and after the Nazi armies arriving without much hindrance, from the Hitler government. Thyssen is now in Germany — not under confinement, free to move

about but closely watched — perhaps a willing prisoner, perhaps a hostage for his wealth throughout the world. Herr Thyssen's adventure in the American business world dates back to August, 1924, when without flourishes or ruffles the Union Banking Corporation was incorporated with a capital stock of $400,000, the money coming from the Bank voor Handel en Scheepvaart, of Rotterdam. It was licensed under the New York State banking laws as an investment corporation. In addition to known lieutenants of the Thyssen interests in Europe, there appeared and continue to appear on the board of directors of this corporation the names of several partners of the private banking house of Brown Brothers Harriman & Co., 59 Wall Street.

Enlisted Harriman In 1925

This circumstance dates back to a chance meeting in Europe in 1925 between Fritz Thyssen and W Averell Harriman, a partner of the Brown Brothers, Harriman firm and now minister plenipotentiary to England as expediter of lease-lend aid to the British. Herr Thyssen said to Mr. Harriman that he was opening a bank in the United States to take care of his financial and industrial interests here and, asked Mr. Harriman to serve on the board. Mr. Harriman agreed to have several other members of his firm, go on the directorate.

This took place, of course, at a time when the present world tangle could hardly have been foreseen and when such courtesies were part of the normal routine of international banking relations.

When a new world war began the Brown Brothers Harriman partners sensed possible embarrassment through association with a corporation stemming from German interests and considered withdrawal from the Union Banking Corporation's board. In a consultation with William R. White, State Superintendent of Banks, on the subject Mr. White requested them to remain on the board to assure efficient administration of the corporation's affairs by trustworthy and responsible persons during the emergency. They agreed to comply with Mr. White's request.

Brown Brothers Harriman & Co. have never had any financial interest in the Union Banking Corporation or any of its subsidiaries, and have never profited in any way from its activities. The association of some of its partners with the Thyssen corporation, it points, out, was entirely a matter of courtesy.

Relationship Explained

The circumstances of relationship were frankly set forth in a letter addressed by Knight Woolley, a partner of the, Brown Brothers Harriman firm, to Mr. White on Jan. 14 of this year. This letter follows:

"January 14, 1941.
"William R. White, Esq.,
"Superintendent of Banks, State Of New York,
80 Centre Street,
"New York, N, Y.

"'Dear Mr. White:

"As you are aware, my partners, E. R. Harriman, Ray Morris, Prescott S. Bush and our manager, H. D. Pennington, are directors of the Union Banking Corporation, a state institution under your supervision. This corporation is located, at 39 Broadway, and it is in effect a New York office, or agency, of the Bank voor Handel en Scheepvaart, in Rotterdam. Because of possible uncertainty as to whether the Bank voor Handel en Scheepvaart might be held to be a Dutch institution, or whether it is, in fact, a German institution under a Dutch name, my partners have been giving serious consideration to withdrawing from the board. Should the United States enter the war, they feel they might be under some embarrassment because of their connection with the bank, even though we have no financial interest in the Union Banking

Corporation, nor do we participate in its earnings. They act as directors merely as a matter of business courtesy.

"In order that you may understand clearly the reasons for our doubts, I should like to give you the background of our connection with the Union Banking Corporation. Our partner W.A. Harriman was in Europe in 1925, and at that time he became acquainted with Mr. Fritz Thyssen, the German industrialist. To the best of my knowledge, Mr. Thyssen formed the Bank voor Handel en Scheepvaart and presumably controlled that institution. At one of his meetings with Mr. Harriman, he told him he was forming a bank in New York to look after his interests in the United States and he asked Mr. Harriman to serve on the board. Mr. Harriman agreed that certain of his associates would serve in this capacity, and as a result various members of the Harriman organizations and now of Brown Brothers Harriman & Co., have been on the board ever since.

"The Union Banking Corporation does no commercial business, and its only depositor is the Bank voor Handel en Scheepvaart. Its activities are limited to occasional payments and a few purchases and sales of securities. All shares of the Union Banking Corporation are registered in the name of E. R. Harriman, who is chairman of the board, except the qualifying shares held by directors. As the company is Dutch-owned, its banking accounts were frozen under the Presidential Proclamation of May 10, 1940.

"The Union Banking Corporation maintains accounts with the Chase National Bank, the National City Bank, the Guaranty Trust Company, and ourselves. At present its account with us is the only one which is active, and the drawings are limited to the Payment of salaries and usual office expenses. To further control its operations, we have arranged that either Ray Morris or H. D. Pennington must sign checks jointly with the president of the company, Mr. C. Lievense, or with the, assistant treasurer, Mr. W Kauffmann, and that one of our gentleman from our organization must be present when access is desired to the company's safe deposit box at the Chase Bank.

"You have perhaps read in the newspapers recently that, Fritz Thyssen is no longer in Germany, and it has been reported that he has had differences with the Nazi regime. We have no knowledge as to whether he still retains an interest in the Bank voor Handel en Scheepvaart, nor are we able to obtain any information with respect to the stock ownership in the bank.

"In view, of these uncertainties, together with the censorship affecting communications to and from Rotterdam, I realize that the Union Banking Corporation might be placed in an embarrassing position if all the directors were to resign at this time. I feel sure however that you will understand the position of my Associates, and I would greatly appreciate, a frank expression from you as to the action which you feel that they should take should you believe that the interests of the Banking Department would be best served by their continuing as directors until the situation abroad has been somewhat clarified, I know that they will be glad to be guided by, your judgment and I shall greatly appreciate your reaction to this situation and your opinion as to what action, if any, should be taken by my associates.

Very truly yours,
"KNIGHT WOOLLEY."

Whites Reply

To this Mr. White replied:

"May 13, 1941.
"Mr. Knight Woolley,
"Brown Brothers Harriman & Co.,
"59 Wall Street,
"New York City.

Dear Mr. Woolley:

"Reference is made to your letter of January 14 and to conversations which you and certain of your partners have since had with me relative to the status of the Union Banking Corporation.

"During recent months this department has been obliged to give unusual attention to certain of the banking organizations in this country which have been affected by the freezing orders. This, however has not been true in the case of the Union Banking Corporation because of the confidence which the department has in the directors of this institution

"While the department would, not feel free to object if your partners, Mr. Harriman, Mr. Bush, and your firm's manager, Mr. Pennington, should desire to resign as directors of the corporation, nevertheless the department would be gratified if these gentlemen could find it possible to remain on the board during this period of uncertainty.

"I appreciate your thoughtfulness in bringing this matter to my attention and the willingness of yourself and your associates to consideration to the department's point of view in the matter.

"Sincerely yours,

"WILLIAM R. WHITE."

Personell and Assets

The personnel and financial setup of the Union Banking Corporation is provided in the following report of the institution, issued on Jan 1, 1941:

UNION BANKING CORPORATION. NEW YORK, 39 BROADWAY, ORGANIZED 1924
Cornelis Lievense, President
Walter Kauffmann, Treasurer
Directors- Cornells Lievense, E. Roland Harriman,
R.D. Pennington, P. S. Bush, J. Kouwenhoven, Ray
Moeris, J. G. Groeninger

RESOURCES

Cash on hand and due from banks (domestic)	$2,817,763.95
Band and Stock investments	232,880.25
Other loans, notes and bills (including other acceptances)	53,000.00
Accrued Income	947.66
Total resources	$3,104,591.86

LIABILITIES

Deposits: Demand	$115,880,14
Due to banks (domestic and foreign)	2,262,040,20
Other Liabilities	822.64
Capital stock	400,000
Surplus and undivided profits	302,339.70
Reserves	23,503,18
Total liabilities	3,104,591.86

Lievense a United States Citizen

The dominating personality in the administration of the Thyssen domain in the United States is the shy and little known Cornells Lievense, a colorful little Hollander who arrived in this country by way of Montreal in May, 1926, two years after the Union Banking Corporation was set up Mr. Lievense is a naturalized American citizen having received his final citizen papers on Jan. 29, 1932, at Mineola, L.I.

Besides the Union Bank Corporation, Mr. Lievense is president of the Holland American Corporation, the Domestic Fuel Corporation, and the Seamless Steel Equipment Corporation.

All of these occupy offices with the Union Bank Corporation at 39 Broadway. Others in the group at that address are the Kemari Trading Corporation, the Riberena Fuel and Chartering Corporation, Kauffmann & Co. and Religious Publications Inc.

Mr. Lievense admitted that the assets of the Domestic Fuel Corporation, the Holland American Trading Corporation and the Seamless Steel Equipment Corporation had all been frozen along with those of the Union Banking Corporation by the Treasury Department. He said the business of the whole group, aside, from the bank, hardly approached $1,000,000 annually.

Blacklisted by Canada

He admitted also that the Domestic Fuel Corporation, which had been bringing cargoes of, coal from the Thyssen mining

interests in Europe to Canada and other Western Hemisphere points, had been blacklisted by the Canadian Trade Commission in the fall of 1940.

Mr. Lievense would reveal little of the operations of the corporations beyond saying that they are now under the strict supervision of the Treasury Department and that there was "very little activity."

He insisted, however, that Religious Publications, Inc., although occupying offices with the Union Banking Corporation and the others, was not a Thyssen venture but was purely his personal affair.

"This is a philanthropic venture of mine," he explained with disarming sincerity, "undertaken to bring out the religious works of Dr. K Schilder, a Dutchman who has recently been released from a German concentration camp. This is in no sense a profit-making venture and must not be associated with these other business organizations."

Three of Dr. Schilder's books have been, brought out by the William B. Eerdmans Publishing Company, of Grand Rapids, Mich., and were translated from the Dutch by Henry Zylstra. They bear the titles, "Christ In His Suffering, "Christ on Trial" and "Christ Crucified."

On Other, Thyssen, Boards

Mr. Lievense speaks in soft, low tones and merely smiled broadly when questioned about his association with Herr Thyssen. His name appears as a director of the Thyssen Holland American Investment Corporation, at Rotterdam. He is a member of the board of the August Thyssen Bank, Aktiengesellschaft, at Berlin, and, he is also a director of the Handelscompagnie Ruilvkeer, a Thyssen bartering company at Amsterdam.

Two of Mr. Lievense's associates, on the board of the Union Banking Corporation,, J. G. Groeninger and N.J. Kouwenhoven, are among Herr Thyssen's chief managerial assistants in the conduct of many of his European Projects. Kouwenhoven is an old school friend of Mr. Lievense and is managing director of the Bank voor Handel en Scheepvaart. He is also managing director of the Holland American Investment Corporation and is on the board of the Thyssen-owned Vlaardingen Harborworks.

Groeninger is managing director of the Thyssen-owned Halcyon Line, with headquarters at Rotterdam. It was this corporation which refused to transfer its headquarters and assets outside Holland when the Netherlands government warned all industrialists to take their properties to Dutch colonies at the time of the Nazi Invasion. Just before the arrival of the German forces at Rotterdam, the British and Dutch navies seized eleven of the thirteen ships of the line and incorporated them in the British shipping pool. It is understood that three of these ships have since been destroyed. Only two ships of the line fell into the Nazis, hands.

Only One Has Visited U. S.

Both Groeninger and Kouwenhoven are directors of the local Holland American Trading Corporation. Groeninger is also on the board of the Bank voor Handel en Scheepvaart and is a director of the Vulcan Rhine Shipping Co., another unit in Thyssen's industrial kingdom. Kouwenhoven visited the United States about four or five years ago, Mr. Lievense said, but Groeninger appears never to have been here.

"I have told the government, Authorities everything I know and that is all I can say," Mr. Lievense said in a tolerant manner. "As, a matter of fact, I cannot say now who owns this money and this bank and these corporations. I cannot tell you if Mr. Thyssen owns it or not. You know, of course, that the building the Bank voor Handel en Scheepvaart has been bombed out of existence. Where is it now? Who owns it? Who knows?"

Pacing the floor of his office on the twenty-fifth floor of 39 Broadway, he said,

"All I know is that I am here and that the United States government is exercising strict supervision of all activities of the bank and these corporation. I cannot tell you whom I am working. You may be sure there is really little to do. All these corporations in their best years have done less than $1,000,000 annually."

Mr. Lievense added that his business had slowed down to such a degree that he had to let out two or three of his office force and had reduced his three-room office to two rooms.

Has Time to Play the Organ

"In fact" he said, " I have been, spending too much time indulging in my favorite pastime — playing the organ at my home.

I also play the organ for the Whiteman Memorial Baptist Church at Oyster Bay, What else is there to do?"

Mr. Lievense and his wife, Maria Jacobs, have lived In a rambling two-story semi-Colonial home in Cedar Swamp Road, in the High Hills Farm section of Glen Head L. I., for the last eight or ten, He passes much time visiting the tulip beds in the vicinity of his home. He is a member of the Netherlands Club, and was born In Maasslius, Holland, July 28,

Below is a sidebar article from Herald Tribune July 31, 1941, page 22.

Thyssen's Role In World Affairs Still a Mystery

Original Hitler Backer May Be Refugee or Nazi Agent if He's Alive and at Large

Fritz Thyssen, once ruler of the German steel trust and most important backer of Adolf Hitler in the early days of the Brown Shirt revolution in Germany, is the international mystery man of today. It is anybody's guess whether he is a genuine refugee from the Nazi terror or a Hitler agent wrapped in a fugitive's cloak. The world at large does not know where he is or even whether he is alive. And it has, apparently, no way of finding out.

On March 17 it was reported in Vichy. France, that he had been arrested on the Riviera in December, returned to Germany and lodged behind the barbed wire of Dachau concentration camp. Four days later German authorities announced that he was not in France or in Dachau but in South America. Earlier this month informed sources in Germany said he had been released from custody and was in a German sanatorium enjoying "limited freedom of movement."

Contradictory reports of Herr Thyssen's status are not new in the history of the man who, more than any other, financed Hitler's rise to power. Since 1934 vague rumors of breaks between Thyssen and Hitler have circulated from time to time. They came to a head on Nov. 11, 1939, when it was announced that he had left Germany for Switzerland "for an indefinite stay." The next day he arrived in Lucerne and for several months kept correspondents regarding his hints that he quit his country after protesting against the Nazi-Soviet pact and urging Hitler through Hermann Wilhelm Goering, not to go to war.

Property Confiscated

A week after his arrival in Switzerland it was announced in Berlin with fanfare that the Reich had confiscated his fortune and property estimated to be worth at least $88,000,000. It was done on the basis of a law aimed at persons inimical to the people and the state. On Feb. 12, 1940, a decree was published in the official German gazette stripping him and his wife of their citizenship. They were then living In luxury in a Locarno hotel.

From then until his disappearance from the Riviera his movements were of a nature to arouse suspicion, or at least puzzlement.

He was in Belgium in March, 1940, and within a few weeks Hitler's armies forced the surrender of that country. From Belgium he moved to France, where he remained unmolested long after the French bowed before Hitler's legions.

Thyssen's residence at the Hotel Crillon in Paris while the German armies gathered in front of the, Maginot Line puzzled the Parisians. It seemed strange to them that a man who was a declared enemy of France and the prime mover of Hitler's coup should be ensconced in the French capital at that particular time, able to get the ear not only of French industrialists but also of French politicians.

The same puzzlement arose after the French surrender when Thyssen supposedly an enemy of the Reich was allowed to sun himself for months on the sands of Cannes, although the German authorities could have had him for the asking.

Mentioned as Roehm Associate

All this maneuvering was an echo of in earlier incident in his career. In 1934 after Hitler had assumed the Chancellorship with the staunch help of Thyssen, Berlin began to buzz with rumors of a split among the Nazis. It was also said that Thyssen was seen frequently in the company of Captain Ernst Roehm, one of the leaders of the supposed plot against the Fuehrer.

In the blood bath of July 30, 1934, when Hitler purged his party by killing Roehm and others, there was no mention of Thyssen's having a part in the conspiracy. Yet, when he sailed in August for South America, it was reported that he was fleeing. Despite his intimacy with Roehm however, Thyssen apparently suffered none of Hitler's suspicion. After studying the steel business of South America, he returned in the spring to Germany and took up where he had left off.

In the various accounts of the string-pulling responsible for Hitler's rise in Germany, there in no suggestion that Thyssen shelled out his marks to the Nazi party for any reasons but selfish ones. He was firm believer In capitalism so far as capitalism was represented by the palatial Thyssen chateau, the roaring Thyssen steel furnaces in the Ruhr and Rhine valleys and the 120,000 workers who owed their daily bread to the Thyssen pay rolls. Hitler's main appeal to him was as a defender of Capitalism against tile Bolshevik bogey.

The Thyssen holdings were hard hit in the German inflation and the subsequent struggle of German industry against the restrictions imposed under the Versailles Treaty. Thyssen hated the French, distrusted the German Republic and dreaded socialism. He began to look around for an antidote to the three-headed monster of his imagination. In 1927 he found it in the person an Austrian former house painter.

Started Pushing In '30

Thyssen kept an eye on Hitler and, when the depression in 1930 rocked the Thyssen industrial empire, decided that it was time to push the Nazi leader. He introduced him to prominent industrialists, promised them that Hitler's National Socialism was only window dressing and helped to pry money for the cause from their pockets. In 1930 he and a business associate distributed 1,000,000 marks to the party and two years later, before the fateful presidential election leading to Hitler's Chancellorship, Thyssen donated 3,000,000 more.

His reward was to be made economic dictator of western Germany and a member of the Reich's Grand Economic Council and Prussian State Council. He also had a seat in the Reichstagg.

If the version that would picture him tossed over by Hitler is correct, he mistook his man when he patronizingly gathered the Fuehrer under his wing, His idea was to guide Hitler in the paths of safety for the Thyssen fortune. Like other German industrialists with same thought, however, it would appear that his supported puppet turned out to be a Frankenstein monster.



IN THE NEWS

BRITISH RAID FINNS, BOMB PORT, HIT SHIPS

NEW YORK Journal American

AN AMERICAN PAPER FOR THE AMERICAN PEOPLE

CITY EDITION

No. 19,579—DAILY THURSDAY, JULY 31, 1941

Navy Acts To Support Russia

EXTRA

LONDON, July 31 (UP).—Britain made war against Finland for the first time yesterday when naval aircraft attacked Petsamo, Finnish Arctic port, and Kirkenes, northern Norwegian port, the Admiralty said today.

Thyssen Fund Of $3,000,000 Found Here

JAPAN APOLOGIZES FOR GUNBOAT ATTACK

New Hopkins, Stalin Parley Due Today

Bill O'Dwyer—His Life Story—By Austen Lake

Today's is the fifth installment in the absorbing life story of William (Bill) O'Dwyer, Democratic candidate for Mayor of New York, as written for the New York Journal-American by Austen Lake, noted newspaperman and author. Earlier chapters described O'Dwyer's youth in Ireland, his education in Spain and his first struggles for a foothold in New York.

The "Frank Jones" was a floating farmhouse with decks like the flounces of an old lady's skirt, a seven-knot speed and the smell of a cabbage cellar.

Tokio Pledges U. S. Property Protection

Nazi Ace Who Fled U.S. Killed

Leningrad Capture Near, INS Reports

The first and seventh edition's front-pages from the Hearst-owned afternoon daily, the *New York Journal American*, July 31, 1941. The day the Thyssen/Union Banking Corporation article was published. The first two editions name Prescott Bush on the front page with the rest of the article on page two. By the third edition the story went from 33 paragraphs to 12, with no mention of Harriman, Bush and friends on the front page. In the fourth, the Wall Street Closing edition, Thyssen's picture was much smaller. By the seventh edition, the Sports Final, the smaller story was moved to the fourth page and then — *forgotten.*



NEW YORK Journal American

AN AMERICAN PAPER FOR THE AMERICAN PEOPLE

7TH SPORT BASEBALL SPORTS FINAL

No. 19,579—DAILY THURSDAY, JULY 31, 1941

Oil Stations Will Comply, Says Ickes

Firms in 17 States and D. of C. Pledge End of Night Sales

BRITISH BOMBERS RAID FINN HARBOR

YANKEES GAME

Bill O'Dwyer—His Life Story—By Austen Lake

Welles Calls Jap Apology Insufficient

More Complete Reply from Tokio Awaited by U. S.

New U.S. Defense Board

Wallace Heads 'Economic' Agency Aimed at Axis

16-Plane Loss Admitted by London

Ships in Norse Port Supplying Nazis in Russia Also Hit

Thyssen Fund Of $3,000,000 Found Here

His Nazi nest egg in Uncle Sam's cold storage.

Existence of a $3,000,000 fund established here by Fritz Thyssen, German industrialist and original backer of Adolf Hitler at the beginning of the latter's rise to power, was disclosed today.

"Whether the money is for Thyssen personally, or, perhaps, for some of his high-placed Nazi friends in the event of an "emergency" compelling them to leave Germany, no one knew.

However, it will do neither Thyssen nor any of his Nazi friends any good now, as it has been "frozen" along with the $4,500,000,000 Axis assets now held in this country.

INVESTMENT COMPANY.

The money exists in funds of the Union Banking Corporation, an investment company incorporated and licensed under new York State laws in August, 1924.

Money for its $400,000 capital stock came from Thyssen's Bank voor Handel en Scheepvaart in Rotterdam.

Among members of its board of directors are E. R. Harriman, Ray Morris and Prescott S. Bush, partner in the firm of Brown Brothers Harriman & Company, of which W. Averell harriman is now American minister plenipotentiary to England.

Also a director is H. D. Pennington, Brown Brothers Harriman & Co. manager.

On Jan. 14, 1941, Knight Woolley, another partner in the harriman company, wrote to State Banking Superintendent William R. White in behalf of Harriman, Morris, Bush and Pennington.

"Should the United States enter the war, they feel they might be under some embarrassment because of their connection with the bank, even thought we have no financial interest in the Union Banking Corporation, nor do we participate in its earnings," Woolley wrote.

SEEKS STEPS TO TAKE

He asked White for "a frank expression from you as to the action" the Harriman directors should take. Their own impulse, he indicated, was to resign en masse from Thyssen's bank.

White, however, replied on May 13:

"While the department would not feel free to object if your partners, Mr. Harriman, Mr. Morris and Mr. Bush, and your firm's manager, Mr. Pennington, should desire to resign as directors of the corporation, nevertheless the department would be gratified if these gentlemen could find it possible to remain on the board during this period of uncertainty."

He plainly indicated that he considered it best, if Thyssen or other Nazi money was tied up in the Union Banking Corporation, to keep the corporation under Harriman's Morris's, Bush's and Pennington's control, thus effectively checkmating whatever Thyssen's plan might be.

All of the shares of the Union Banking Corporation are registered in the name of E. R. Harriman, who is chairman of the board, except the qualifying shares held by other directors.

Mr. Woolley related the circumstances leading to the selection of the Harriman partners on the board of directors. He said:

'BUSINESS COURTESY.'

"Our partner, W A. Harriman, was in Europe in 1925 and at that time he became acquainted with Fritz Thyssen.

"To the best of my knowledge, Thyssen formed the Bank voor Handel en Scheepvaart, and presumably controlled that institution.

"At one of his meetings with Mr. Harriman he told him he was forming a bank in New York to look after his interests in the United States, and he asked Mr. harriman to serve on the board.

"Mr. Harriman agreed that certain of his associates would serve in this capacity, and as a result various members of the Harriman organization, now Brown Brothers Harriman & Co., have been on the board ever since."

Mr. Woolley emphasized that these directors act "merely as a matter of business courtesy."

President of the Union Banking Corp. is Cornells Lievense, Holland-born, who came to the United States by way of Montreal in May, 1926, two years after the bank was set up.

He is now a naturalized American citizen, having received his final papers in Mineola, L. I., Jan. 29, 1932.

He is president also of the Domestic Fuel Corp., Seamless Steel Equipment Corp., and Holland-American Trading Corp., all of which share the Union Banking Corp.'s offices at 39 Broadway.

ASSETS FROZEN

The assets of all three of these firms also have been "frozen" by the U. S. Government, Lievense admitted.

Last Fall, the Canadian Government blacklisted the Domestic Fuel Corp., which had been bringing coal from Thyssen's European mines to Canada.

Also housed in the same offices with the bank are the Kemari Trading Corp., Riberena Fuel Y Chartering Co. Religious Publications, Inc., and Kauffmann & Co.

Reached early today at his home on Cedar Swamp Road in the Glen Hills Farm section of Glen Head, L. I., Lievense said:

"I have nothing to say. I have no comment to make on anything, especially when I'm asleep."

Besides the Harriman officers on the board of the Union Banking Corp., there are J. G. Groeninger and N. J. Kouwenhoven.

Kouwenhoven is managing director of the Bank voor Handel en Scheepvaart, managing director of the Holland-American Investment Corp., and a member of the board of the Thyssen-owned Vlaardingsen Harborworks.

Groeninger is managing director of the Thyssen-owned Halcyon Line, which refused to obey the Netherlands government's order to all industries to remove their properties to the Dutch colonies, just before the Nazi invasion."

Thyssen himself, according to best obtainable advices, is now back in Germany. For a time he wandered about Switzerland, France and other European countries. His present status is said to be that of, perhaps, a willing prisoner, not in confinement but under surveillance, perhaps a hostage for his wealth throughout the world.

The next two and a-half pages are from the History of the Yale Class of 1917, Twenty-Fifth Record - 1942

Prescott Sheldon Bush

Business: General Partner in the firm of Brown Brothers Harriman & Co. (private bankers), 59 Wall Street, New York City.

Residence: Grove Lane, Greenwich, Conn.

Married: Dorothy Walker, August, 1921, Kennebunkport, Me. Daughter of George Herbert Walker and Loulie Wear.

Children: Prescott Sheldon, born August 10, 1922; George Herbert Walker, born June 12, 1924; Nancy Bush, born February 4, 1926; Jonathan James, born May 6, 1931; William Henry Trotter, born July 14, 1938.

Pres has been a General Partner of Brown Brothers, Harriman & Company since January 1, 1931. He is a director of the following corporations: Columbia Broadcasting System, The Dresser Manufacturing Co., The Union Banking Corporation, The Simmons Company, Massachusetts Investors Second Fund, The Rockbestos Products Corporations, The Vanadium Products Corporation of America, The United States Guarantee Company, Commercial Pacific Cable Company, and he is Chairman of the Board of the Pennsylvania Water & Power Company.

His son Prescott, Jr. is a member of the Class of 1944 at Yale, and his son George Herbert graduated this year from Andover Academy. Nancy is at Miss Porter's School at Farmington while Jonathan James attends the Greenwich Country Day School. William Henry Trotter Bush, age 3, better known as "Buck" is still too young to attend any school. Pres is quite active in local town politics. He has been a member of the Representative Town Meeting of Greenwich since 1933 and has been Moderator of this body since 1935. He is a member of the Greenwich Defense Council. He is a member of the Republican party and has been active in local campaigns for the last eight years. Since 1938 he has been a director of the Greenwich Hospital Association. He is also a trustee of the Greenwich Boys Club. He belongs to the Yale Club of New York and has been a member of the Council since 1938. He belongs to the Lunch Club of New York, The Roundhill Club of Greenwich of which he was President from 1935 to 1938 and belongs to the Field Club of Greenwich.

period he also served successively as Secretary, Vice-President and President.

Pres writes: "It has been my good fortune to be closely associated in business for a good many years with Classmates pf 1917. These are Bunny Harriman, Knight Woolley and Ellery James, who unfortunately died in 1932. In addition to these the firm of Brown Brothers Harriman & Co. has been rather heavily populated with Yale men, including — Averell Harriman, 1913; Bob Lovett, 1918; Thatcher M. Brown, 1897; Ray Morris, 1900, and a number of younger men who were graduated in the middle or late twenties, whose names are probably not familiar to the Class. The firm in which we have been associated has been established in business since 1818 and has the rather unique record of having maintained its place of business since that time in exactly the same location at 59 Wall Street, although the present building is the third one which has housed the business. In spite of the many changes in the political and economic life of the country over this long span of years the firm has been handed down from one group of partners to another in an unbroken line, and even today our senior partner is a direct descendant of the founder and his son is also now a member of the firm.

While the record of this firm is in no way spectacular, and while in comparison with our many huge banking institutions throughout the country the firm is relatively inconspicuous, it is nevertheless true that the firm today is larger and perhaps fully as vigorous as it has ever been. Thus, I feel that the association with this organization has been indeed a privilege and a satisfaction. I mention this because there is no doubt that my own participation in the business is traceable entirely to my acquaintance at Yale. I gratefully acknowledge the debt that I owe her for having made such a happy business life possible."

To the cognoscenti, and who of 1917 is not one of them, it is entirely unnecessary to announce that early this year Pres was appointed National Chairman in Charge of the 1942 Drive for funds for the United Service Organization (USO). At this writing, July, 1942, he is still in the midst of his campaign so it is impossible to state the measure of his success. Knowing Pres, however, we venture to predict that his total will eclipse that collected last year, and will give those that may follow him in this worthy project something to shoot at.

PRESCOTT SHELDON BUSH, care Simmons Hardware Company, St. Louis, Mo.

Enrolled for Plattsburg, 1916, but transferred to Battery A, Tobyhanna; Yale R. O. T. C.; first Officers' Training Camp, Fort Benjamin Harrison; commissioned Captain, Field Artillery, U. S. R., August 15, 1917; assigned as Instructor to second Officers' Training Camp at same post; attached to 322d Field Artillery, in command of Battery D, Camp Sherman, November 30, 1917; ordered to School of Fire, Fort Sill, about March 14, graduating May 24, 1918; went overseas June 14, assigned to Headquarters, 158th Field Artillery Brigade, as Intelligence Officer on General Fleming's staff; in August ordered to Verdun for special training in connection with the Intelligence Service, and assigned for period of three weeks to a staff of French officers; 158th Brigade, 32d Division, ordered to the front about September 15, serving continuously in the Meuse-Argonne Offensive until the Armistice; November 16, transferred to Headquarters, 7th Corps, serving as Operations and Intelligence Officer in march to the Rhine; transferred to the 132d Field Artillery, January, 1919; returned to the United States, March 25, and received discharge April 4, 1919.

From: History of the Class of 1917
Yale College, War Record - 1919

PRESCOTT SHELDON BUSH

Vice-president of W. A. Harriman & Company, Inc. (investment bankers),
39 Broadway, New York City.
Residence, Stanwich Road, Greenwich, Conn.

BUSH accepted a position with the Simmons Hardware Company of St. Louis soon after his discharge from service in 1919, and in January, 1921, he was made a member of the board of directors and assistant general manager of the company. About two years later he became general manager and treasurer of the Hupp Products Company of Columbus, Ohio, but resigned in November, 1928, to become president, in charge of sales, of the Stedman Products Company in South Braintree, Mass. He was made manager of the foreign division of the United States Rubber Company in New York City in February, 1925, but gave up that position in May, 1926, to become associated with W. A. Harriman & Company, Inc.

Bush is secretary of the United States Golf Association, and he belongs to the Yale and Lunch clubs in New York City and to the Bound Hill and Field clubs in Greenwich. He is a member of St. Paul's Church, Greenwich.

He was married on August 6, 1921, at Kennebunkport, Maine, to Dorothy Walker. Mrs. Bush, who attended Miss Porter's School in Farmington, is the daughter of George Herbal and Lu-Jr., born at Kennebunkport in August, 1922; George Herbert Walker, born in Milton, Mass., in June, 1924; and Nancy, born in New York City in February, 1926.

From: History of the Class of 1917 Yale College, Decennial Record - 1928

REPRINT OF CHAPTER SEVEN OF ANTONY SUTTON'S

WALL STREET AND THE RISE OF HITLER

1976

Who Financed Adolf Hitler?

The funding of Hitler and the Nazi movement has yet to be explored in exhaustive depth. The only published examination of Hitler's personal finances is an article by Oron James Hale, "Adolph Hitler: Taxpayer,"[1] which records Adolph's brushes with the German tax authorities before he became Reichskanzler. In the 1920s Hitler presented himself to the German tax man as merely an impoverished writer living on bank loans, with an automobile bought on credit. Unfortunately, the original records used by Hale do not yield the source of Hitler's income, loans, or credit, and German law "did not require self-employed or professional persons to disclose in detail the sources of income or the nature of services rendered."[2] Obviously the funds for the automobiles, private secretary Rudolf Hess, another assistant, a chauffeur, and expenses incurred by political activity, came from somewhere. But, like Leon Trotsky's 1917 stay in New York, it a hard to reconcile Hitler's known expenditures with the precise source of his income.

Some Early Hitler Backers

We do know that prominent European and American industrialists were sponsoring all manner of totalitarian political groups at that time, including Communists and various Nazi groups. The U.S Kilgore Commitee records that:

> By 1919 Krupp was already giving financial aid to one of the reactionary political groups which sowed the seed of the present Nazi ideology. Hugo Stinnes was an early contributor to the Nazi Party (National Socialistische Deutsche Arbeiter Partei). By 1924 other prominent industrialists and financiers, among them Fritz Thyssen, Albert Voegler, Adolph [sic] Kirdorf, and Kurt von Schroder, were secretly giving substantial sums to the Nazis. In 1931 members of the coalowners' association which Kirdorf

> headed pledged themselves to pay 50 pfennigs for each ton of coal sold, the money to go to the organization which Hitler was building.[3]

Hitler's 1924 Munich trial yielded evidence that the Nazi Party received $20,000 from Nuremburg industrialists. The most interesting name from this period is that of Emil Kirdorf, who had earlier acted as conduit for financing German involvement in the Bolshevik Revolution.[4] Kirdorf's role in financing Hitler was, in his own words:

> In 1923 I came into contact for the first time with the National-Socialist movement. . . . I first heard the Fuehrer in the Essen Exhibition Hall. His clear exposition completely convinced and overwhelmed me. In 1927 I first met the Fuehrer personally. I travelled to Munich and there had a conversation with the Fuehrer in the Bruckmann home. During four and a half hours Adolf Hitler explained to me his programme in detail. I then begged the Fuehrer to put together the lecture he had given me in the form of a pamphlet. I then distributed this pamphlet in my name in business and manufacturing circles.
>
> Since then I have placed myself completely at the disposition of his movement. Shortly after our Munich conversation, and as a result of the pamphlet which the Fuehrer composed and I distributed, a number of meetings took place between the Fuehrer and leading personalities in the field of industry. For the last time before the taking over of power, the leaders of industry met in my house together with Adolf Hitler, Rudolf Hess, Hermann Goering and other leading personalities of the party.[5]

In 1925 the Hugo Stinnes family contributed funds to convert the Nazi weekly Volkischer Beobachter to a daily publication. Putzi Hanfstaengl, Franklin D. Roosevelt's friend and protege, provided the remaining funds.[6] Table 7-1 summarizes presently known financial contributions and the business associations of contributors from the United States. Putzi is not listed in Table 7-1 as he was neither industrialist nor financier.

In the early 1930s financial assistance to Hitler began to flow more readily. There took place in Germany a series of meetings, irrefutably documented in several sources, between German industrialists, Hitler himself, and more often Hitler's representatives Hjalmar Schacht and

Rudolf Hess. The critical point is that the German industrialists financing Hitler were predominantly directors of cartels with American associations, ownership, participation, or some form of subsidiary connection. The Hitler backers were not, by and large, firms of purely German origin, or representative of German family business. Except for Thyssen and Kirdorf, in most cases they were the German multi-national firms — i.e.,I.G. Farben, A.E.G., DAPAG, etc. These multi-nationals had been built up by American loans in the 1920s, and in the early 1930s had American directors and heavy American financial participation.

One flow of foreign political funds not considered here is that reported from the European-based Royal Dutch Shell, Standard Oil's great competitor in the 20s and 30s, and the giant brainchild of Anglo-Dutch businessman Sir Henri Deterding. It has been widely asserted that Henri Deterding personally financed Hitler. This argument is made, for instance, by biographer Glyn Roberts in The Most Powerful Man in the World. Roberts notes that Deterding was impressed with Hitler as early as 1921:

> ... and the Dutch press reported that, through the agent Georg Bell, he [Deterding] had placed at Hitler's disposal, while the party was "still in long clothes," no less than four million guilders.[7]

It was reported (by Roberts) that in 1931 Georg Bell, Deterding's agent, attended meetings of Ukrainian Patriots in Paris "as joint delegate of Hitler and Deterding."[8] Roberts also reports:

> Deterding was accused, as Edgar Ansell Mowrer testifies in his Germany Puts the Clock Back, of putting up a large sum of money for the Nazis on the understanding that success would give him a more favored position in the German oil market. On other occasions, figures as high as £55,000,000 were mentioned.[9]

Biographer Roberts really found Deterding's strong anti-Bolshevism distasteful, and rather than present hard evidence of funding he is inclined to assume rather than prove that Deterding was pro-Hitler. But pro-Hitlerism is not a necessary consequence of anti-Bolshevism; in any event Roberts offers no proof of finance, and hard evidence of Deterding's involvement was not found by this author.

Mowrer's book contains neither index nor footnotes as to the source of

his information and Roberts has no specific evidence for his accusations There is circumstantial evidence that Deterding was pro-Nazi. He later went to live in Hitler's Germany and increased his share of the German petroleum market. So there may have been some contributions, but these have not been proven.

Similarly, in France (on January 11, 1932), Paul Faure, a member of the Chambre des Deputes, accused the French industrial firm of Schneider-Creuzot of financing Hitler — and incidentally implicated Wall Street in other financing channels.[10]

The Schneider group is a famous firm of French armaments manufacturers. After recalling the Schneider influence in establishment of Fascism in Hungary and its extensive international armaments operations, Paul Faure turns to Hitler, and quotes from the French paper Le Journal, "that Hitler had received 300,000 Swiss gold francs" from subscriptions opened in Holland under the case of a university professor named von Bissing The Skoda plant at Pilsen, stated Paul Faure, was controlled by the French Schneider family, and it was the Skoda directors von Duschnitz and von Arthaber who made the subscriptions to Hitler. Faure concluded:

> . . . I am disturbed to see the directors of Skoda, controlled by Schneider, subsidizing the electoral campaign of M. Hitler; I am disturbed to see your firms, your financiers, your industrial cartels unite themselves with the most nationalistic of Germans ....

Again, no hard evidence was found for this alleged flow of Hitle-funds.

Fritz Thyssen and W.A. Harriman Company of New York

Another elusive case of reported financing of Hitler is that of Fritz Thyssen, the German steel magnate who associated himself with the Nazi movement in the early 20s. When interrogated in 1945 under Project Dustbin,[11] Thyssen recalled that he was approached in 1923 by General Ludendorf at the time of French evacuation of the Ruhr. Shortly after this meeting Thyssen was introduced to Hitler and provided funds for the Nazis through General Ludendorf. In 1930-1931 Emil Kirdorf approached Thyssen and subsequently sent Rudolf Hess to negotiate further funding for the Nazi Party. This time Thyssen arranged a credit of 250,000 marks at the Bank Voor Handel en Scheepvaart N.V. at 18 Zuidblaak in Rotter-

dam, Holland, founded in 1918 with H. J. Kouwenhoven and D. C. Schutte as managing partners.[12] This bank was a subsidiary of the August Thyssen Bank of Germany (formerly von der Heydt's Bank A.G.). It was Thyssen's personal banking operation, and it was affiliated with the W. A. Harriman financial interests in New York. Thyssen reported to his Project Dustbin interrogators that:

> I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands.[13]

Thyssen's book I Paid Hitler, published in 1941, was purported to be written by Fritz Thyssen himself, although Thyssen denies authorship, The book claims that funds for Hitler — about one million marks — came mainly from Thyssen himself. I Paid Hitler has other unsupported assertions, for example that Hitler was actually descended from an illegitimate child of the Rothschild family. Supposedly Hitler's grandmother, Frau Schickelgruber, had been a servant in the Rothschild household and while there became pregnant:

> . . . an inquiry once ordered by the late Austrian chancellor, Engelbert Dollfuss, yielded some interesting results, owing to the fact that the dossiers of the police department of the Austro-Hungarian monarch were remarkably complete.[14]

This assertion concerning Hitler's illegitimacy is refuted entirely in a more solidly based book by Eugene Davidson, which implicates the Frankenberger family, not the Rothschild family.

In any event, and more relevant from our viewpoint, the August Thyssen front bank in Holland — i.e., the Bank voor Handel en Scheepvaart N.V. — controlled the Union Banking Corporation in New York. The Harrimans had a financial interest in, and E. Roland Harriman (Averell's brother) was a director of, this Union Banking Corporation. The Union Banking Corporation of New York City was a joint Thyssen-Harriman operation with the following directors in 1932:[15]

E. Roland HARRIMAN	Vice president of W. A. Harriman & Co., New York
H. J. KOUWENHOVEN	Nazi banker, managing partner of August Thyssen Bank and Bank voor Handel Scheepvaart N.V. (the transfer bank for Thyssen's funds)

TABLE 7-1: FINANCIAL LINKS BETWEEN U.S. INDUSTRIALISTS AND ADOLF HITLER

Date	American Bankers and Industrialists	U.S. Affiliated Firm		German Source		Intermediary for Funds/Agent
1923	Henry FORD	FORD MOTOR COMPANY		—		—
1931	E.R. HARRIMAN	UNION BANKING CORP		Fritz THYSSEN	250,000 RM	Bank voor Handel en Scheepvaart N.V. (Subsidiary of August Thyssen Bank)
1932-3		Flick (a director of AEG)		Friedrich FLICK	150,000 RM	Direct to NSDAP
February-March 1933		NONE		Emil KIRDORF	600,000 RM	"Nationale Treuhand" a/c at Delbrück Schickler Bank
February-March 1933	Edsel B. FORD C.E. MITCHELL Walter TEAGLE Paul M. WARBURG	AMERICAN I.G.		I.G. FARBEN	400,000 RM	"Nationale Treuhand"
February-March 1933		NONE		Reichsverband der Automobilindustrie	100,000 RM	"Nationale Treuhand"
February-March 1933	Gerard SWOPE Owen D. YOUNG C.H. MINOR E. Arthur BALDWIN	INTERNATIONAL GENERAL ELECTRIC	25 percent	A.E.G.	60,000 RM	"Nationale Treuhand" "Nationale Treuhand"

		NONE		DEMAG	50,000 RM	
February-March 1933	Owen D. YOUNG	INTERNATIONAL GENERAL ELECTRIC	16⅔ percent	OSRAM G.m.b.H.	40,000 RM	"Nationale Treuhand"
February-March 1933	Sosthenes BEHN	I.T.T.		Telefunken	35,000 RM	"Nationale Treuhand"
February-March 1933		NONE		Karl Herrman	300,000 RM	"Nationale Treuhand"
Febru ry-March 1933		NONE		A. Steinke (Director of BYBUAG)	200,000 RM	"Nationale Treuhand"
February-March 1933		NONE		Karl Lange Machine industry)	50,000 RM	"Nationale Treuhand"
February-March 1933		NONE		F. Springorum (Hoesch A.G.)	36,000 RM	"Nationale Treuhand"
February-March 1933	Edsel B. FORD	Ford Motor Co.		Carl BOSCH (I.G. Farben & Ford Motor A.G.)		
1932-1944	Walter TEAGLE J.A. MOFFETT W.S. FARISH	Standard Oil of N.J.	94 percent	Emil HELFFRICH (German-American Petroleum Co)		Heinrich Himmler S.S. via Keppler's Circle
1932-1944	Sosthenes BEHN	I.T.T.		Kurt von SCHRÖDER Mix & Genest Lorenz		Heinrich Himmler S.S. via Keppler's Circle

J. G. GROENINGEN	Vereinigte Stahlwerke (the steel cartel which also funded Hitler)
C. LIEVENSE	President, Union Banking Corp., New York City
E. S. JAMES	Partner Brown Brothers, later Brown Brothers Harriman & Co.

Thyssen arranged a credit of 250,000 marks for Hitler, through this Dutch bank affiliated with the Harrimans. Thyssen's book, later repudiated, states that as much as one million marks came from Thyssen.

Thyssen's U.S. partners were, of course, prominent members of the Wall Street financial establishment. Edward Henry Harriman, the nineteenth-century railroad magnate, had two sons, W. Averell Harriman (born in 1891), and E. Roland Harriman (born in 1895). In 1917 W. Averell Harriman was a director of Guaranty Trust Company and he was involved in the Bolshevik Revolution.[16] According to his biographer, Averell started at the bottom of the career ladder as a clerk and section hand after leaving Yale in 1913, then "he moved steadily forward to positions of increasing responsibility in the fields of transportation and finance."[17] In addition to his directorship in Guaranty Trust, Harriman formed the Merchant Shipbuilding Corporation in 1917, which soon became the largest merchant fleet under American flag. This fleet was disposed of in 1925 and Harriman entered the lucrative Russian market.[18]

In winding up these Russian deals in 1929, Averell Harriman received a windfall profit of $1 million from the usually hard-headed Soviets, who have a reputation of giving nothing away without some present or later quid pro quo. Concurrently with these successful moves in international finance, Averell Harriman has always been attracted by so-called "public" service. In 1913 Harriman's "public" service began with an appointment to the Palisades Park Commission. In 1933 Harriman was appointed chairman of the New York State Committee of Employment. and in 1934 became Administrative Officer of Roosevelt's NRA — the Mussolini-like brainchild of General Electric's Gerard Swope.[19] There followed a stream of "public" offices, first the Lend Lease program, then as Ambassador to the Soviet Union, later as Secretary of Commerce.

By contrast, E. Roland Harriman confined his activities to private business in international finance without venturing, as did brother Averell, into "public" service. In 1922 Roland and Averell formed W. A. Harriman & Company. Still later Roland became chairman of the board of Union Pacific Railroad and a director of Newsweek magazine, Mutual

Life Insurance Company of New York, a member of the board of governors of the American Red Cross, and a member of the American Museum of Natural History.

Nazi financier Hendrik Jozef Kouwenhoven, Roland Harriman's fellow-director at Union Banking Corporation in New York, was managing director of the Bank voor Handel en Scheepvaart N.V. (BHS) of Rotterdam. In 1940 the BHS held approximately $2.2 million assets in the Union Banking Corporation, which in turn did most of its business with BHS.[2] In the 1930s Kouwenhoven was also a director of the Vereinigte Stahlwerke A.G., the steel cartel founded with Wall Street funds in the mid-1920s. Like Baron Schroder, he was a prominent Hitler supporter.

Another director of the New York Union Banking Corporation was Johann Groeninger, a German subject with numerous industrial and financial affiliations involving Vereinigte Stahlwerke, the August Thyssen group, and a directorship of August Thyssen Hutte A.G.[21]

This affiliation and mutual business interest between Harriman and the Thyssen interests does not suggest that the Harrimans directly financed Hitler. On the other hand, it does show that the Harrimans were intimately connected with prominent Nazis Kouwenhoven and Groeninger and a Nazi front bank, the Bank voor Handel en Scheepvaart. There is every reason to believe that the Harrimans knew of Thyssen's support for the Nazis. In the case of the Harrimans, it is important to bear in mind their long-lasting and intimate relationship with the Soviet Union and the Harriman's position at the center of Roosevelt's New Deal and the Democratic Party. The evidence suggests that some members of the Wall Street elite are connected with, and certainly have influence with, all significant political groupings in the contemporary world socialist spectrum — Soviet socialism, Hitler's national socialism, and Roosevelt's New Deal socialism.

Financing Hitler in the March 1933 General Election

Putting the Georg Bell-Deterding and the Thyssen-Harriman cases to one side, we now examine the core of Hitler's backing. In May 1932 the so-called "Kaiserhof Meeting" took place between Schmitz of I.G. Farben, Max Ilgner of American I.G. Farben, Kiep of Hamburg-America Line, and Diem of the German Potash Trust. More than 500,000 marks was raised at this meeting and deposited to the credit of Rudolf Hess in the Deutsche Bank. It is noteworthy, in light of the "Warburg myth" des-

cribed in Chapter Ten that Max Ilgner of the American I.G. Farben contributed 100,000 RM, or one-fifth of the total. The "Sidney Warburg" book claims Warburg involvement in the funding of Hitler, and Paul Warburg was a director of American I.G. Farben[22] while Max Warburg was a director of I.G. Farben.

There exists irrefutable documentary evidence of a further role of international bankers and industrialists in the financing of the Nazi Party and the Volkspartie for the March 1933 German election. A total of three million Reichmarks was subscribed by prominent firms and businessmen, suitably "washed" through an account at the Delbruck Schickler Bank, and then passed into the hands of Rudolf Hess for use by Hitler and the NSDAP. This transfer of funds was followed by the Reichstag fire, abrogation of constitutional rights, and consolidation of Nazi power. Access to the Reichstag by the arsonists was obtained through a tunnel from a house where Putzi Hanfstaengel was staying; the Reichstag fire itself was used by Hitler as a pretext to abolish constitutional rights. In brief, within a few weeks of the major funding of Hitler there was a linked sequence of major events: the financial contribution from prominent bankers and industrialists to the 1933 election, burning of the Reichstag, abrogation of constitutional rights, and subsequent seizure of power by the Nazi Party.

The fund-raising meeting was held February 20, 1933 in the home of Goering, who was then president of the Reichstag, with Hjalmar Horace Greeley Schacht acting as host. Among those present, according to I.G. Farben's von Schnitzler, were:

> Krupp von Bohlen, who, in the beginning of 1933, was president of the Reichsverband der Deutschen Industrie Reich Association of German Industry; Dr. Albert Voegler, the leading man of the Vereinigte Stahlwerke; Von Loewenfeld; Dr. Stein, head of the Gewerkschaft Auguste-Victoria, a mine which belongs to the IG.[23]

Hitler expounded his political views to the assembled businessmen in a lengthy two-and-one-half hour speech, using the threat of Communism and a Communist take-over to great effect:

> It is not enough to say we do not want Communism in our economy. If we continue on our old political course, then we shall perish . ... It is the noblest task of the leader to find ideals that are stronger than the factors that pull the people together. I

recognized even while in the hospital that one had to search for new ideals conducive to reconstruction. I found them in nationalism, in the value of personality, and in the denial of reconciliation between nations
Now we stand before the last election. Regardless of the outcome, there will be no retreat, even if the coming election does not bring about decision, one way or another. If the election does not decide, the decision must be brought about by other means. I have intervened in order to give the people once more the chance to decide their fate by themselves....
There are only two possibilities, either to crowd back the opponent on constitutional grounds, and for this purpose once more this election; or a struggle will be conducted with other weapons, which may demand greater sacrifices. I hope the German people thus recognize the greatness of the hour.[2]*

After Hitler had spoken, Krupp von Bohlen expressed the support of the assembled industrialists and bankers in the concrete form of a three-million-mark political fund. It turned out to be more than enough to acquire power, because 600,000 marks remained unexpended after the election.

Hjalmar Schacht organized this historic meeting. We have previously described Schacht's links with the United States: his father was cashier for the Berlin Branch of Equitable Assurance, and Hjalmar was intimately involved almost on a monthly basis with Wall Street.
The largest contributor to the fund was I.G. Farben, which committed itself for 30 percent (or 500,000 marks) of the total. Director A. Steinke, of BUBIAG (Braunkohlen-u. Brikett-Industrie A.G.), an I.G. Farben subsidiary, personally contributed another 200,000 marks. In brief, 45 percent of the funds for the 1933 election came from I.G. Farben. If we look at the directors of American I.G. Farben — the U.S. subsidiary of I.G. Farben — we get close to the roots of Wall Street involvement with Hitler. The board of American I.G. Farben at this time contained some of the most prestigious names among American industrialists: Edsel B. Ford of the Ford Motor Company, C.E. Mitchell of the Federal Reserve Bank of New York, and Walter Teagle, director of the Federal Reserve Bank of New York, the Standard Oil Company of New Jersey, and President Franklin D. Roosevelt's Georgia Warm Springs Foundation.

Paul M. Warburg, first director of the Federal Reserve Bank of New York and chairman of the Bank of Manhattan, was a Farben director and

in Germany his brother Max Warburg was also a director of I.G. Farben H. A. Metz of I.G. Farben was also a director of the Warburg's Bank of Manhattan. Finally, Carl Bosch of American I.G. Farben was also a director of Ford Motor Company A-G in Germany.

Three board members of American I.G. Farben were found guilty at the Nuremburg War Crimes Trials: Max Ilgner, F. Ter Meer, and Hermann Schmitz. As we have noted, the American board members — Edsel Ford, C E. Mitchell, Walter Teagle, and Paul Warburg — were not placed on trial at Nuremburg, and so far as the records are concerned, it appears that they were not even questioned about their knowledge of the 1933 Hitler fund.

The 1933 Political Contributions

Who were the industrialists and bankers who placed election funds at the disposal of the Nazi Party in 1933? The list of contributors and the amount of their contribution is as follows:

FINANCIAL CONTRIBUTIONS TO HITLER: Feb. 23-Mar. 13, 1933:
(The Hjalmar Schacht account at Delbruck, Schickler Bank)

Political Contributions by Firms (with selected affiliated directors)	Amount Pledged	Percent of Firm Total
Verein fuer die Bergbaulichen Interessen (Kirdorf)	$600,000	45.8
I.G. Farbenindustrie (Edsel Ford, C.E. Mitchell, Walter Teagle, Paul Warburg)	400,000	30.5
Automobile Exhibition, Berlin (Reichsverbund der Automobilindustrie S.V.)	100,000	7.6
A.E.G., German General Electric (Gerard Swope, Owen Young, C.H. Minor, Arthur Baldwin)	60,000	4.6
Demag	50,000	3.8
Osram GmbH. (Owen Young)	40,000	3.0

Telefunken Gesellschaft fuer	35,000	2.7
Accumulatoren-Fabrik A.G.	25,000	1.9
Total from industry	1,310,000	99.9

Plus Political Contributions by Individual Businessmen:

Karl Hermann	300,000
Director A. Steinke (BUBIAG-Braunkohlen—u. Brikett—Industrie A.G.)	200,000
Dir. Karl Lange (Geschaftsfuhrendes Vostandsmitglied des Vereins Deutsches Maschinenbau—Anstalten)	50,000
Dr. F. Springorum (Chairman: Eisen-und Stahlwerke Hoesch A.G.)	36,000

Source: See Appendix for translation of original document.

How can we prove that these political payments actually took place? The payments to Hitler in this final step on the road to dictatorial Naziism were made through the private bank of Delbruck Schickler. The Delbruck Schickler Bank was a subsidiary of Metallgesellschaft A.G. ("Metall"), an industrial giant, the largest non-ferrous metal company in Germany, and the dominant influence in the world's nonferrous metal trading. The principal shareholders of "Metall" were I.G. Farben and the British Metal Corporation. We might note incidentally that the British directors on the " Metall" Aufsichsrat were Walter Gardner (Amalgamated Metal Corporation) and Captain Oliver Lyttelton (also on the board of Amalgamated Metal and paradoxically later in World War II to become the British Minister of Production).

There exists among the Nuremburg Trial papers the original transfer slips from the banking division of I.G. Farben and other firms listed on page 110 to the Delbriick Schickler Bank in Berlin, informing the bank of the transfer of funds from Dresdner Bank, and other banks, to their Natonale Treuhand (National Trusteeship) account. This account was disbursed by Rudolf Hess for Nazi Party expenses during the election. Translation of the I.G. Farben transfer slip, selected as a sample, is as follows:[25]

Translation of I.G. Farben letter of February 27, 1933, advising a transfer of 400,000 Reichsmarks to National Trusteeship account:

I.G. FARBENINDUSTRIE AKTIENGESELLSCHAFT
Bank Department

Firm: Delbruck Schickler & Co.,
BERLIN W.8
Mauerstrasse 63/65, Frankfurt (Main) 20
Our Ref: (Mention in Reply) 27 February 1931
B./Goe.

We are informing you herewith that we have authorized the Dresdner Bank in Frankfurt/M., to pay you tomorrow forenoon: RM 400,000 which you will use in favor of the account "NATIONALE TREUHAND" (National Trusteeship).

Respectfully,
I.G. Farbenindustrie Aktiengesellschaft

by Order:
(Signed) SELCK (Signed) BANGERT
By special delivery.[28]

At this juncture we should take note of the efforts that have been made to direct our attention away from American financiers (and German financiers connected with American-affiliated companies) who were involved with the funding of Hitler. Usually the blame for financing Hitler has been exclusively placed upon Fritz Thyssen or Emil Kirdorf. In the case of Thyssen this blame was widely circulated in a book allegedly authored by Thyssen in the middle of World War II but later repudiated by him.[27] Why Thyssen would want to admit such actions before the defeat of Naziism is unexplained.

Emil Kirdorf, who died in 1937, was always proud of his association with the rise of Naziism. The attempt to limit Hitler financing to Thyssen and Kirdorf extended into the Nuremburg trials in 1946, and was challenged only by the Soviet delegate. Even the Soviet delegate was unwilling to produce evidence of American associations; this is not surprising because the Soviet Union depends on the goodwill of these same financiers to transfer much needed advanced Western technology to the U.S.S.R.

At Nuremburg, statements were made and allowed to go unchallenged which were directly contrary to the known direct evidence presented above. For example, Buecher, Director General of German General Electric, was absolved from sympathy for Hitler:

> Thyssen has confessed his error like a man and has courageously paid a heavy penalty for it. On the other side stand men like Reusch of the Gutehoffnungshuette, Karl Bosch, the late chairman of the I.G. Farben Aufsichtsrat, who would very likely have come to a sad end, had he not died in time. Their feelings were shared by the deputy chairman of the Aufsichtsrat of Kalle. The Siemens and AEG companies which, next to I.G. Farben, were the most powerful German concerns, and they were determined opponents of national socialism.
>
> I know that this unfriendly attitude on the part of the Siemens concern to the Nazis resulted in the firm receiving rather rough treatment. The Director General of the AEG (Allgemeine Elektrizitats Gesellschaft), Geheimrat Buecher, whom I knew from my stay in the colonies, was anything but a Nazi. I can assure General Taylor that it is certainly wrong to assert that the leading industrialists as such favored Hitler before his seizure of power.[28]

Yet on page 56 of this book we reproduce a document originating with General Electric, transferring General Electric funds to the National Trusteeship account controlled by Rudolf Hess on behalf of Hitler and used in the 1933 elections.

Similarly, von Schnitzler, who was present at the February 1933 meeting on behalf of I.G. Farben, denied I.G. Farben's contributions to the 1933 Nationale Treuhand:

> I never heard again of the whole matter [that of financing Hitler], but I believe that either the buro of Goering or Schacht or the Reichsverband der Deutschen Industrie had asked the office of Bosch or Schmitz for payment of IG's share in the election fund. As I did not take the matter up again I not even at that time knew whether and which amount had been paid by the IG. According to the volume of the IG, I should estimate IG's share being something like 10 percent of the election fund, but as far as I know there is no evidence that I.G. Farben participated in the payments.[29]

As we have seen, the evidence is incontrovertible regarding political cash contributions to Hitler at the crucial point of the takeover of power in Germany — and Hitler's earlier speech to the industrialists clearly

revealed that a coercive takeover was the premeditated intent.

We know exactly who contributed, how much, and through what channels. It is notable that the largest contributors — I.G. Farben, German General Electric (and its affiliated company Osram), and Thyssen — were affiliated with Wall Street financiers. These Wall Street financiers were at the heart of the financial elite and they were prominent in contemporary American politics. Gerard Swope of General Electric was author of Roosevelt's New Deal, Teagle was one of NRA's top administrators, Paul Warburg and his associates at American I.G. Farben were Roosevelt advisors. It is perhaps not an extraordinary coincidence that Roosevelt's New Deal — called a "fascist measure" by Herbert Hoover — should have so closely resembled Hitler's program for Germany, and that both Hitler and Roosevelt took power in the same month of the same year — March 1933.

1. The American Historical Review, Volume LC, No. 4, July, 1955, p. 830.
2. Ibid, fn. (2).
3. Elimination of German Resources, p. 648. The Albert Voegler mentioned in the Kilgore Committee list of early Hitler supporters was the German representative on the Dawes Plan Commission, Owen Young of General Electric (see Chapter Three) was a U.S. representative for the Dawes Plan and formulated its successor, the Young Plan.
4. Antony C. Sutton, Wall Street and the Bolshevik Revolution, op. cit.
5. Preussiche Zeitung, January 3, 1937.
6. See p. 116.
7. Glyn Roberts, The Most Powerful Man in the World, (New York. Covici, Friede, 1938), p. 305.
8. Ibid., p. 813.
9. Ibid., p, 822.
10. See Chambre des Deputes— Debats, February 11, 1932, pp. 496-500.
11. U.S. Group Control Council (Germany, Office of the Director Of intelligence. Field Information Agency, Technical). Intelligence Report No. EF/ME/I, 4 September 1945. "Examination of Dr. Fritz Thyssen," p. 13. Hereafter cited as Examination of Dr. Fritz Thyssen.
12. The Bank was known in Germany as Bank fur Handel und Schiff.
13. Examination of Dr. Fritz Thyssen.
14. Fritz Thyssen, I Paid Hitler, (New York: Farrar & Rinehart, Inc., 1941), p. 159.
15. Taken from Bankers Directory, 1932 edition, p. 2557 and Poors, Directory of Directors. J.L Guinter and Knight Woolley were also directors.
16. See Antony C. Sutton, Wall Street and the Bolshevik Revolution, op. cit.
17. National Cyclopaedia, Volume G, page 16.
18. For a description of these ventures, based an State Department files, see Antony C. Sutton, Western Technology and Soviet Economic Development, Volume 1, op. cit.
19. See Antony C. Sutton, Wall Street and FDR, Chapter Nine, "Swope's Plan," op. cit.
20. See Elimination of German Resources, pp, 728-30.
21. For yet other connections between the Union Banking Corp. and German enterprises, see Ibid., pp 728-30.
22. See Chapter Ten. [Antony Sutton's Wall Street and the Rise of Hitler]
23. NMT, [Nuremburg Military Tribunals] Volume VII, p 555.
24. Josiah E. DuBois, Jr., Generals in Grey Suits, op cit., p323
25. Original reproduced on page 64. [Antony Sutton's Wall Street and the Rise of Hitler]
26. NMT, Volume VII, p. 565. See p.64 for photograph of original document.
27. Fritz Thyssen, I Paid Hitler, (New York: Tronoto: Farrar & Rinehart, Inc., 1941)
28. NMT, Volume VI, pp. 1169-1170.
29. NMT, Volume VII, p565.

ANTITHESIS:
FINANCING THE NAZIS

ANTONY C. SUTTON

FROM AMERICA'S SECRET ESTABLISHMENT - AN INTRODUCTION TO THE ORDER OE SKULL AND BONES, - 1986

The Marxist version of the Hegelian dialectic poses financial capitalism as thesis and Marxist revolution as antithesis. An obvious puzzle in this Marxian statement is the nature of the synthesis presumed to evolve out of the clash of these opposites, i.e., the clash of financial capitalism and revolutionary Marxism. Lenin's statement that the State will wither away at the synthesis stage is nonsensical. In fact, as all contemporary Marxist states testify, the State in practice becomes all powerful. The immediate task of "the revolution" is to convey all power to the state, and modern Marxist states operate under a constant paranoia that power may indeed pass away from the hands of the State into the hands of the people. We suggest that world forces may be seen differently, although still in terms of the Hegelian dialectic. If Marxism is posed as the thesis and national socialism as antithesis, then the most likely synthesis becomes a Hegelian New World Order, a synthesis evolving out of the clash of Marxism and national socialism. Moreover, in this statement those who finance and manage the clash of opposites can remain in control of the synthesis.

If we can show that The Order has artificially encouraged and developed both revolutionary Marxism and national socialism while retaining some control over the nature and degree of the conflict, then it follows The Order will be able to determine the evolution and nature of the New World Order.

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IN FIAT I 350.09-77

4 September 1945

INTELLIGENCE REPORT NO. EF/Me/1

1871

SUBJECT: Report No. 1, Parts I and II, on the Examination of Dr. FRITZ THYSSEN.

TO : FIAT Distribution.

1. The report consists of two parts:

a. Three statements prepared and signed by THYSSEN, in conjunction with his interrogations.

(1) THYSSEN's Relations with the Nazi Party.
(2) A second statement on the same subject.
(3) THYSSEN's Interview with GOERING, 29 January 1941.

b. Notes on various subjects, from stenographic transcripts of his interrogations.

(1) Real Estate and Personal Records
(2) Financial Resources
(3) Movements during the War
(4) Opinions at the Outbreak of Hostilities
(5) Examination by the Gestapo
(6) Personalities
(7) Financial Support of the Nazi Party
(8) Defence of his Support of the Nazi Party
(9) The Famous Meeting in DUESSELDORF, 1932
(10) The Book I Paid HITLER
(11) Opposition to the Nazi Party
(12) Resistance in the Ruhr, 1923
(13) The YOUNG Plan
(14) The HERMANN GOERING WERKE

2. The report is based on interrogations of THYSSEN by Mr. CLIFFORD HYNNING, U.S. Group Control Council (Germany), Finance Division, at DUSTBIN, on 13, 20, and 23 July 1945.

For the Director of Intelligence:

Walter K. Schwinn

WALTER K. SCHWINN
Chief, Economic and Financial Branch
FIAT (US)

PREPARED BY:

R. H. Super

R. H. SUPER
Economic & Financial Br.
FIAT (US)

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I. WHERE DID THE NAZIS GET THEIR FUNDS FOR REVOLUTION?

In Wall Street And The Rise of Hitler we described several financial conduits between Wall Street and the Nazi Party. This was later supplemented by publication of a long suppressed book, Hitler's Secret Backers.[1] Still other books have emphasized the Fritz Thyssen financial connection to Hitler. After he split with Hitler, Thyssen himself wrote a book, I Paid Hitler. We are now in a position to merge the evidence in these books with other material and our documentation on The Order. The records of the U.S. Control Council for Germany contain the post-war intelligence interviews with prominent Nazis. From these we have verification that the major conduit for funds to Hitler was Fritz Thyssen and his Bank fur Handel and Schiff, previously called von Heydt's Bank. This information coincides with evidence in Wall Street And The Rise Of Hitler and Hitler's Secret Backers, even to the names of the people and banks involved, i.e., Thyssen, Harriman, Guaranty Trust, von Heydt, Carter, and so on.

The document reproduced on page 167 slipped through U.S. centorship because the Office of Director of Intelligence did not know of the link. between Fritz Thyssen and the Harriman interests in New York. Documents linking Wall Street to Hitler have for the most part been removed from U.S. Control Council records. In any event, we reproduce here the Intelligence report identifying Fritz Thyssen and his Bank fur Handel und Schiff (No. EF/Me/1 of September 4, 1945) and page 13 of the interrogation of Fritz Thyssen entitled "Financial Support of the Nazi Party."

II. WHO WAS THYSSEN?

Fritz Thyssen was the German steel magnate who associated himself with the Nazi movement in the early '20s. When interrogated in 1945 under Project Dustbin, Thyssen recalled that he was approached in 1923 by General Ludendorf at the time of French evacuation of the Ruhr. Shortly after this meeting Thyssen was introduced to Hitler and provided funds for the Nazis through General Ludendorf.

In 1930-31 Emil Kirdorf approached Thyssen and subsequently sent Rudolf Hess to negotiate further funding for the Nazi Party. This time Thyssen arranged a credit of 250,000 marks at the Bank Voor Handel en Scheepvaart N.V. (the Dutch name for the bank named by Thyssen in the attached document), at 18 Zuidblaak in Rotterdam, Holland.

Thyssen was former head of the Vereinigte Stahlwerke, The German

[1] Wall Street And The Rise Of Hitler and Hitler's Secret Backers are obtainable from Research Publications, P.O. Box 39850, Phoenix Arizona 85069. Some other aspects are covered in Charles Higham, Trading With The Enemy (Delacorte Press).

G. Financial Support of the Nazi Party.

My first connection with the Nazi party was through General LUDENDORF, following the evacuation of the Ruhr by the French troops. He told me about the Party and asked for my help. I agreed, but I did not want to give any money directly to the Party, so I gave it to LUDENDORF and he gave it to the Party. LUDENDORF introduced me to HITLER in 1923 before the Putsch. After the Putsch the two got separated, and I too got separated from the Nazis.

In 1930 or 1931, I think, EMIL KIRDORF asked me to obtain some foreign credits for the Nazi Party. I had known him for a long time, though not in connection with business. He was my neighbor. After the death of my father, he was the oldest industrialist in the Ruhr. KIRDORF sent HESS to me; HESS had gone first to KIRDORF and reported that he had purchased the Brown House in MUNICH and could not pay for it, and KIRDORF said he could not help him, but that he should apply to me. I told HESS that I could not do as he wished, but that in order to show my good will and because Mr. KIRDORF sent him I would arrange a credit for him with a Dutch bank in ROTTERDAM, the Bank für Handel und Schiff.

I arranged the credit by writing a letter in which I arranged that if the bank would give credit to HESS, he would pay it back in three years in equal rates. I was not officially guarantor of the loan, but because I had proposed it, I was really responsible. I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands. HITLER pretended he never got any help. It was difficult to do nothing in those days when things were going, nobody knew where, and I always thought I would have some influence. It was for the same reason that I would not give up my position later as member of parliament, because I always thought perhaps I could prevent war.

The credit was about 250-300,000 marks--about the same sum I had given before. The loan has been repaid in part to the Dutch bank, but I think some money is still owing on it; it had not all been paid when I left Germany in 1939. I have had to make payments on it myself--perhaps 200,000-280,000 marks which the Nazi Party didn't pay; they did repay some.

The Nazis applied first to KIRDORF rather than direct to me because KIRDORF was a great friend of HITLER-- he was fascinated by him. But KIRDORF told me that he was not himself in a position to give such an amount, and so I made this arrangement. But I certainly would not have done it if KIRDORF had not sent this man HESS to me.

I do not know of anyone else among the industrialists who was supporting the Party financially in 1926; I was then its principal supporter. Later TENGELMANN, KIRDORF, VOEGLER, KEPPLER all contributed; that was some sort of tax imposed on the whole industry. The reason for it was that HITLER would fight the communists: it was clear that the power would fall either to the communists or to the Nazis. When the Reichstag was burned, everyone was sure it had been done by the communists. I later learned in Switzerland that it was all a lie.

My contributions to the Party since that day have not been important--part of what the industry gave. I did help them in the riding school in my place. In 1932 I made two small contributions to Gauleiter TERBOVEN. He came and asked for the winter help and assistance: the winter contribution was made every year. At that time I gave him a pretty nice sum, something like 20,000 marks. This became an annual contribution; I am not sure whether the sum was increased. You see, we had a winter contribution of our own. When the unemployment began, my family undertook a winter help of our own, and gave poor people food, clothing, and shelter.

I joined the Party when they offered me membership in the Reichstag, I think in the election of 1931 or 1932. Before that time I was a German Nationalist. It is correct to say that my only contributions from my personal resources to the Party were the small annual dues, the subscription to various publications of the Party, and the winter help to the amount of 20-30 thousand marks. In other words the total amount I paid to the Nazi Party and its affiliates in any one year may have been a little over 50,000 marks; certainly not so much as

- 13 -

R-E-S-T-R-I-C-T-E-D

steel trust, financed by Dillon, Read (New York), and played a decisive role in the rise of Hitler to power by contributing liberally to the Nazi Party and by influencing his fellow industrialists to join him in support of the Fuehrer. In reward for his efforts, Thyssen was showered with political and economic favors by the Third Reich and enjoyed almost unlimited power and prestige under the Nazi regime until his break with Hitler in 1939 over the decision to invade Poland and precipitate the Second World War.

This incident and Thyssen's subsequent publication, I Paid Hitler, has a parallel wtih the history of his father, August Thyssen. Through a similar confession in 1918 the elder Thyssen, despite his record as a staunch backer of pan-Germanism, succeeded in convincing the Allies that sole responsibility for German aggression should be placed on the Kaiser and German industrialists should not be blamed for the support they had given to the Hohenzollerns. Apparently influenced by August Thyssen and his associates, the Allies made no effort to reform German industry after World War I. The result was that Thyssen was allowed to retain a vast industrial empire and pass it on intact to his heirs and successors.

It was against this background that Fritz Thyssen took over control of the family holdings following the death of his father in 1926. The new German steel baron had already achieved fame throughout the Reich by his defiance of the French during their occupation of the Ruhr in 1923. Like Hitler, Thyssen regarded the Treaty of Versailles as "a pact of shame" which must be overthrown if the Fatherland were to rise again This is the story in Hitler's Secret Backers.

Thyssen set out along the same road as his father, aided by ample Wall Street loans to build German industry. August Thyssen had combined with Hugenburg, Kirdorf, and the elder Krupp to promote the All-Deutscher Verband (the Pan-German League), which supplied the rationale for the Kaiser's expansionist policies.

His son became an active member of the Stahlhelm and later, through Goring, joined the Nazis. Finally, after the crash of 1931 had brought German industry to the verge of bankruptcy, he openly embraced national socialism.

During the next 2 years Thyssen dedicated his fortune and his influence to bring Hitler to power. In 1932 he arranged the famous meeting in the Dusseldorf Industrialists' Club, at which Hitler addressed the leading businessmen of the Ruhr and the Rhineland. At the close of Hitler's speech Thyssen cried, "Heil Herr Hitler," while the others applauded enthusiastically. By the time of the German Presidential elections later that year, Thyssen obtained contributions to Hitler's campaign fund from the industrial combines. He alone is reported to have spent 3,000,000 marks on the Nazis in the year 1932.

III. THE UNION BANKING CONNECTION

This flow of funds went through Thyssen banks. The Bank fur Handel and Schiff cited as the conduit in the U.S. Intelligence report was a subsidiary of the August Thyssen Bank, and founded in 1918 with H.J. Kouwenhoven and D.C. Schutte as managing partners. In brief, it was Thyssen's personal banking operation, and affiliated with the W.A. Harriman financial interests in New York. Thyssen reported to his Project Dustbin interrogators that:

"I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands."
Hitler's Secret Backers identifies the conduit from the U.S. as "von Heydt," and von Heydt's Bank was the early name for Thyssen's Bank. Furthermore, the Thyssen front bank in Holland — i.e., the Bank voor Handel en Scheepvaart N.V. — controlled the Union Banking Corporation in New York.

The Harrimans had a financial interest in, and E. Roland Harriman (The Order 1917), Averell's brother, was a director of this Union Banking Corporation. The Union Banking Corporation of New York City was a joint Thyssen-Harriman operation with the following directors in 1932:

E. Roland Harriman (The Order 1917)	Vice President of W.A. Harriman & Co., New York
H.J. Kouwenhoven (Nazi)	Nazi banker, managing partner of August Thyssen Bank and Bank voor Handel Scheepvaart N.V. (the transfer bank for Thyssen's funds)
Knight Woolley (The Order 1917)	Director of Guaranty Trust, New York and Director Federal Reserve Bank of N.Y.
Cornelius Lievense	President, Union Banking Corp. and Director of Holland-American Investment Corp.
Ellery Sedgewick James (The Order 1917)	Partner, Brown Brothers, & Co., New York
Johann Groninger (Nazi)	Director of Bank voor Handel en Scheepvaart and Vereinigte Stahlwerke (Thyssen's steel operations)
J.L. Guinter	Director Union Banking Corp.
Prescott Sheldon Bush (The Order 1917)	Partner, Brown Brothers. Harriman. Father of President G. H. W. Bush.

The eight directors of Union Banking Corporation are an interesting bunch indeed. Look at the following:

- Four directors of Union Banking are members of The Order: all initiated at Yale in 1917 — members of the same Yale class. All four were members of the same cell (club) D 115.
- E. Harriman was the brother of W. Averell Harriman and a Vice-President of W.A. Harriman Company.
- Guaranty Trust was represented by Knight Woolley.
- Two of the Union directors, Kouwenhoven and Groninger, were Nazi directors of Bank voor Handel en Scheepvaart, formerly the von Heydt Bank. Von Heydt was the intermediary between Guaranty Trust and Hitler named in Hitler's Secret Backer.
- Ellery S. James and Prescott S. Bush were partners in Brown Brothers, later Brown Brothers, Harriman.

Out of eight directors of Thyssen's bank in New York, we can therefore identify six who are either Nazis or members of The Order.

This private bank was formerly named Von Heydt Bank and von Heydt is named by Sharp in Hitler's Secret Backers as the intermediary from Guaranty Trust in New York to Hitler between 1930 and 1933. Above all, remember that Shoup was writing in 1933 when this information was still only known to those on the inside. Out of tens of thousands of banks and bankers, Shoup, in 1933, names those that evidence surfacing decades later confirms as financing Hitler.

In brief, when we merge the information in PROJECT DUSTBIN with Shoup's Hitler's Secret Backers, we find the major overseas conduit for Nazi financing traces back to THE ORDER and specifically cell D 115.

IV. PROFIT FROM CONFLICT

Out of war and revolution come opportunities for profit.

Conflict can be used for profit by corporations under control and influence of The Order. In World War II, the Korean War and the Vietnamese War we can cite examples of American corporations that traded with "the enemy" for profit.

This "blood trade" is by no means sporadic or limited to a few firms; it is general and reflects higher policy decisions and philosophies. Corporations — even large corporations — are dominated by banks and trust companies, and in turn these banks and trust companies are dominated by The Order and its allies. (This will be the topic of a forthcoming volume).

Although the U.S. did not officially go to war with Germany until 1941, legally, and certainly morally, the U.S. was at war with Nazi Germany after the Destroyer deal with Great Britain in December 1940, i.e., the exchange of 50 old U.S. destroyers for strategic bases in British territory. Even before December 1940 the MS "Frederick S. Fales" owned by Standard Vacuum Company was sunk by a German submarine on September 21, 1940. Yet in 1941 Standard Oil of New Jersey (now EXXON) had six Standard Oil tankers under Panamanian registry, manned by Nazi officers to carry fuel oil from Standard Oil refineries to the Canary Islands, a refueling base of Nazi submarines.

A report on this dated July 15, 1941 from Intelligence at Fifth Corps in Columbus, Ohio is reproduced on page 172. The report is in error recording that no Standard Oil ships had been sunk by the Nazis; Major Burrows apparently did not know "Frederick S. Fales" in 1940.

Another example of profit from war is recorded in the document on page 173. This records the association of RCA and the Nazis in World War II. RCA was essentially a Morgan-Rockefeller firm and so linked to The Order.

Yet another example is that of Chase Bank. Chase was linked to The Order through the Rockefeller family (Percy Rockefeller, The Order 1900) and Vice-President Reeve Schley (Yale, Scroll & Key). Directors of Chase in The Order included Frederick Allen (The Order 1900). W.E.S. Griswold (The Order 1899) and Cornelius Vanderbilt, whose brother Gwynne Vanderbilt (The Order 1899) represented the family before his death. President of Chase was Winthrop Aldrich. This was the Harvard branch of the Aldrich family, another branch is Yale and The Order.

Chase Manhattan Bank is not only a firm that plays both sides of the political fence, but with Ford Motor Company, was selected by Treasury Secretary Morgenthau for post-war investigation of pro-Nazi activities: These two situations [i.e., Ford and Chase Bank] convince us that it is imperative to investigate immediately on the spot the activities of subsidiaries of at least some of the larger American firms which were operating in France during German occupation . . .

The extent of Chase collaboration with Nazis is staggering — and this was at a time when Nelson Rockefeller had an intelligence job in Washington aimed AGAINST Nazi operations in Latin America.

In December 1944 Treasury Department officials examined the records of the Chase Bank in Paris. On December 20, 1944 the senior U.S. examiner sent a memorandum to Treasury Secretary Morgenthau with the preliminary results of the Paris examination. Here's an extract from that report:

OFFICE CHIEF ... MIL. INTEL ... 2267-...-32 WAR DEPARTMENT

JUL 17 1941

HEADQUARTERS FIFTH CORPS AREA
OFFICE OF THE CORPS AREA COMMANDER
FORT HAYES, COLUMBUS, OHIO

July 15, 1941

SUBJECT: Standard Oil Company of New Jersey Ships Under Panamanian Registry.

TO: A. C. of S., G-2,
War Department
Washington, D. C.

1. A report has been received from Cleveland, Ohio, in which it is stated that the source of this information is unquestionable, to the effect that the Standard Oil Company of New Jersey now ships under Panamanian registry, transporting oil (fuel) from Aruba, Dutch West Indies to Teneriffe, Canary Islands, and is apparently diverting about 20% of this fuel oil to the present German government.

2. About six of the ships operating on this route are reputed to be manned mainly by Nazi officers. Seamen have reported to the informant that they have seen submarines in the immediate vicinity of the Canary Islands and have learned that these submarines are refueling there. The informant also stated that the Standard Oil Company has not lost any ships to date by torpedoing as have other companies whose ships operate to other ports.

1941 JUL 18 AM 4 : 34

For the A. C. of S., G-2,

CHAS. A. BURROWS,
Major, Military Intelligence,
Asst. A. C. of S., G-2

DEPARTMENT OF STATE

Memorandum of Conversation

DATE: May 24, 1943.

SUBJECT: Communications.

PARTICIPANTS: Colonel Sarnoff, RCA

Mr. Long.

COPIES TO: PA, TH.

I talked to Colonel Sarnoff on the telephone and explained to him that we had reason to believe that more messages than the agreed 700 code-groups a week were being sent from B. A. by the Axis powers to their Governments. I told him I could not disclose down there the source of our information. In an effort to obtain additional information our representatives down there had approached Hayes. Hayes had seemed to them noncooperative. There may have been very sound reasons why he refused to disclose the exact number of messages sent in code-groups by each of the Axis representatives to their Government. However, there didn't seem to be any reason why the managership should not request a report on all code-groups being sent over a period of time, day by day, and to include a report on all belligerents, and that if he would obtain that information through confidential channels we would be appreciative. I suggested it be not done by telegraph or telephone and suggested the mail, but offered to make the pouch available.

Colonel Sarnoff replied that he would talk to Mr. Winterbottom but he saw no reason why we should not do it and that he would communicate with us if they wanted to use the pouch.

After receipt of this information we will be in a better position to judge what our policy should be.

B. L.

A-L:BL:lag

a. Niederman, of Swiss nationality, manager of Chase, Paris, was unquestionably a collaborator;
b. The Chase Head Office in New York was informed of Niederman's collaborationist policy but took no steps to remove him. Indeed there is ample evidence to show that the Head Office in New York viewed Niederman's good relations with the Germans as an excellent means of preserving, unimpaired, the position of the Chase Bank in France.
c. The German authorities were anxious to keep the Chase open and indeed took exceptional measures to provide sources of revenue.
d. The German authorities desired "to be friends" with the important American banks because they expected that these banks would be useful after the war as an instrument of German policy in the United States.
e. The Chase, Paris showed itself most anxious to please the German authorities in every possible way. For example, the Chase zealously maintained the account of the German Embassy in Paris, "as every little thing helps" (to maintain the excellent relations between Chase and the German authorities).
f. The whole objective of the Chase policy and operation was to maintain the position of the bank at any cost.

In brief, Chase Bank was a Nazi collaborator, but the above preliminary report is as far as the investigation proceeded. The report was killed on orders from Washington, D.C.

On the other hand, Chase Bank, later Chase Manhattan Bank, has been a prime promoter of exporting U.S. technology to the Soviet Union. This goes all the way back to the early 1920s when Chase broke U.S. regulations in order to aid the Soviets. As early as 1922 Chase was trying to export military LIBERTY aircraft engines to the Soviet Union! In conclusion, we have seen that the two arms of the dialectic described in Memoranda Three and Four clashed in World War II. Furthermore, the corporate segment of the elite profited from Lend Lease to the Soviets and by underground cooperation with Nazi interests. The political wing of The Order was at the same time preparing a new dialectic for the post World War II era.



Picture taken in 1959, while Averell Harriman was serving as Governor of New York and Prescott was serving in the US Senate.
Partners of Brown Brother Harriman & Co. are pictured against the background of a painting of the founders of the firm. The men responsible for operation of the bank were: seated *Moreau D. Brown, E. R. Harriman, Robert A. Lovett, Knight Woolley, Louis Curtis,* and, standing, *Elbridge T. Gerry, John B. Madden, L. Parks Shipley, Thomas McCance, Stephen Y. Hord, David G. Ackerman, F. H. Kingsbury, Jr., and John C. West.*



William Averell Harriman - S&B '13
Founder - Brown Brothers Harriman
1913 Yale yearbook photo



Prescott S. Bush - S&B '17
w/Brown Brothers Harriman
1917 Yale yearbook photo



Brown Brothers Harri
59 Wall Street, New York

THE HOUSE OF BUSH: BORN IN A BANK

WEBSTER GRIFFIN TARPLEY AND ANTON CHAITKIN

CHAPTER ONE OF GEORGE BUSH — THE UNAUTHORIZED BIOGRAPHY - 1992. USED WITH PERMISSION.

WHO IS GEORGE BUSH? HOW did he become the 4lst U.S. President? He is said to be a man of the "old establishment," who "chose to seek his fortune as an independent oilman ... ."[1]

In fact, Bush was never "independent." Every career step in his upward climb relied on his family's powerful associations. The Bush family joined the Eastern Establishment comparatively recently, and only as servitors. Their wealth and influence resulted from their loyalty to another, more powerful family, and their willingness to do anything to get ahead.

For what they did, Bush's forebears should have become very famous, or infamous. They remained obscure figures, managers from behind the scenes. But their actions — including his father's role as banker for Adolf Hitler — had tragic effects for the whole planet.

It was these services to his family's benefactors, which propelled George Bush to the top.

PRESCOTT GOES TO WAR

President George Herbert Walker Bush was born in 1924, the son of Prescott S. Bush and Dorothy Walker Bush. We will begin the George Bush story about a decade before his birth, on the eve of World War I. We will follow the career of his father, Prescott Bush, through his marriage with Dorothy Walker, on the path to fortune, elegance and power.

Prescott Bush entered Yale University in 1913. A native of Columbus, Ohio, Prescott had spent the last five years before college in St. George's Episcopal preparatory school in Newport, Rhode Island.

Prescott Bush's first college year, 1913, was also the freshman year at Yale for E. Roland ("Bunny") Harriman, whose older brother (Wm.) Averell Harriman had just graduated from Yale. This is the Averell Harriman who went on to fame as the U.S. ambassador to the Soviet Union during World War II, as a governor of New York State, and as a presidential advisor who was greatly responsible for starting the Vietnam War.

The Harrimans would become the sponsors of the Bushes, to lift them onto the stage of world history.

In the spring of 1916, Prescott Bush and "Bunny" Harriman were chosen for membership in an elite Yale senior-year secret society known as Skull and Bones. This unusually morbid, death-celebrating group helped Wall Street financiers find active young men of "good birth" to form a kind of imitation British aristocracy in America.

World War I was then raging in Europe. With the prospect that the U.S.A. would soon join the war, two Skull and Bones "Patriarchs," Averell Harriman (class of 1913) and Percy A. Rockefeller (class of 1900), paid special attention to Prescott's class of 1917. They wanted reliable cadres to help them play the Great Game, in the lucrative new imperial era that the war was opening up for London and New York moneycrats. Prescott Bush, by then a close friend of "Bunny" Harriman, and several other Bonesmen from their class of 1917 would later comprise the core partners in Brown Brothers Harriman, the world's largest private investment bank.

World War I did make an immense amount of money for the clan of stock speculators and British bankers who had just taken over U.S. industry. The Harrimans were stars of this new Anglo-American elite.

Averells father, stock broker E.H. Harriman, had gained control of the Union Pacific Railroad in 1898 with credit arranged by William Rockefeller, Percy's father, and by Kuhn Loeb & Co.'s British-affiliated private bankers, Otto Kahn, Jacob Schiff and Felix Warburg.

William Rockefeller, treasurer of Standard Oil and brother of Standard founder John D. Rockefeller, owned National City Bank (later "Citibank") together with Texas-based James Stillman. In return for their backing, E.H. Harriman deposited in City Bank the vast receipts from his railroad lines. When he issued tens of millions of dollars of "watered" (fraudulent) railroad stock, Harriman sold most of the shares through the Kuhn Loeb company.

The First World War elevated Prescott Bush and his father, Samuel P. Bush, into the lower ranks of the Eastern Establishment.

As war loomed in 1914, National City Bank began reorganizing the U.S. arms industry. Percy A. Rockefeller took direct control of the Remington Arms company, appointing his own man, Samuel F. Pryor, as the new chief executive of Remington.

The U.S entered World War I in 1917. In the spring of 1918, Prescott's father, Samuel P. Bush, became chief of the Ordnance, Small Arms and Ammunition Section of the War Industries Board.[2] The senior Bush took national responsibility for government assistance to and relations with Remington and other weapons companies.

This was an unusual appointment, as Prescott's father seemed to have no background in munitions. Samuel Bush had been president of the Buckeye Steel Castings Co. in Columbus, Ohio, maker of railcar parts. His entire career had been in the railroad business — supplying equipment to the Wall Street-owned railroad systems.

The War Industries Board was run by Bernard Baruch, a Wall Street speculator with close personal and business ties to old E.H. Harriman. Baruch's brokerage firm had handled Harriman speculations of all kinds.[3]

In 1918, Samuel Bush became director of the Facilities Division of the War Industries Board. Prescott's father reported to the Board's Chairman, Bernard Baruch, and to Baruch's assistant, Wall Street private banker Clarence Dillon.

Robert S. Lovett, President of Union Pacific Railroad, chief counsel to E.H. Harriman and executor of his will, was in charge of national production and purchase "priorities" for Baruch's board.

With the war mobilization conducted under the supervision of the War Industries Board, U.S. consumers and taxpayers showered unprecedented fortunes on war producers and certain holders of raw materials and patents. Hearings in 1934 by the committee of U.S. Senator Gerald Nye attacked the "Merchants of Death" — war profiteers such as Remington Arms and the British Vickers company — whose salesmen had manipulated many nations into wars, and then supplied all sides with the weapons to fight them.

Percy Rockefeller and Samuel Pryor's Remington Arms supplied machine guns and Colt automatic pistols; millions of rifles to Czarist Russia; over half of the small-arms ammunition used by the Anglo-American allies in World War I; and 69 percent of the rifles used by the United States in that conflict.[4]

Samuel Bush's wartime relationship to these businessmen would continue after the war, and would especially aid his son Prescott's career of service to the Harrimans.

Most of the records and correspondence of Samuel Bush's arms- related section of the government have been burned, "to save space" in the National Archives. This matter of destroyed or misplaced records should be of concern to citizens of a constitutional republic. Unfortunately, it is a rather constant impediment with regard to researching George Bush's background: He is certainly the most "covert" American chief executive.

Now, arms production in wartime is by necessity carried on with great security precautions. The public need not know details of the private lives of the government or industry executives involved, and a broad interrelationship between government and private-sector personnel is normal and useful.

But during the period preceding World War I, and in the war years 1914-1917 when the U.S. was still neutral, interlocking Wall Street financiers subservient to British strategy lobbied heavily, and twisted U.S. government and domestic police functions. Led by the J.P. Morgan concern, Britain's overall purchasing agent in America, these financiers wanted a world war and they wanted the United States in it as Britain's ally. The U.S. and British arms companies, owned by these international financiers, poured out weapons abroad in deals not subject to the scrutiny of any electorate back home. The same gentlemen, as we shall see, later supplied weapons and money to Hitler's Nazis.

That this problem persists today, is in some respect due to the "control" over the documentation and the history of the arms traffickers.

World War I was a disaster for civilized humanity. It had terrible, unprecedented casualties, and shattering effects on the moral philosophy of Europeans and Americans. But for a brief period, the war treated Prescott Bush rather well,

In June, 1918, just as his father took over responsibility for relations of the government with the private arms producers, Prescott went to Europe with the U.S. Army. His unit did not come near any fire until September. But on August 8, 1918, the following item appeared on the front page of Bush's home-town newspaper:

> 3 High Military Honors Conferred on Capt. Bush
>
> For Notable Gallantry, When Leading Allied Commanders Were Endangered, Local Man is Awarded French, English and U.S. Crosses.
>
> International Honors, perhaps unprecedented in the life of an American soldier, have been conferred upon Captain Prescott Sheldon Bush, son of Mr. and Mrs. S.P. Bush of Columbus. Upon young Bush ... were conferred: Cross of the Legion of Honor,... Victoria Cross, ... Distinguished Service Cross...

> Conferring of the three decorations upon one man at one time implies recognition of a deed of rare valor and probably of great military importance as well.
>
> From word which has reached Columbus during the last few days, it appears as if the achievement of Captain Bush well measures up to these requirements.
>
> The incident occurred on the western front about the time the Germans were launching their great offensive of July 15 ... The history of the remarkable victory scored later by the allies might have been written in another vein, but for the heroic and quick action of Captain Bush.
>
> The ... three allied leaders, Gen. [Ferdinand] Foch, Sir Douglas Haig and Gen. [John J.] Pershing ... were making an inspection of American positions. Gen. Petshing had sent for Captain Bush to guide them about one sector ... Suddenly Captain Bush noticed a shell coming directly for them. He shouted a warning, suddenly drew his bolo knife, stuck it up as he would a ball bat, and parried the blow, causing the shell to glance off to the right...
>
> Within 24 hours young Bush was notified ... [that] the three allied commanders had recommended him for practically the highest honors within their gift... Captain Bush is 23 years old, a graduate of Yale in the class of 1917. He was one of Yale's best- known athletes ... was leader of the glee club ... and in his senior year was elected to the famous Skull and Bones Society ...[5]

The day after this astonishing story appeared, there was a large cartoon on the editorial page. It depicted Prescott Bush as a small boy, reading a story-book about military heroism, and saying: "Gee! I wonder if anything like that could ever truly happen to a boy." The caption below was a rehash of the batting- away- the-deadly-shell exploit, writter. in storybook style.[6]

Local excitement about the military "Babe Ruth" lasted just four weeks. Then this somber little box appeared on the front page:

> Editor State Journal:
>
> A cable received from my son, Prescott S. Bush, brings word that he has not been decorated, as published in the papers a month ago. He feels dreadfully troubled that a letter, written in a spirit of fun, should have been misinterpreted. He says he is no hero and asks me to make explanations. I will appreciate your kindness in publishing this letter...
>
> Flora Sheldon Bush.
> Columbus, Sept. 5 .[7]

Prescott Bush later claimed that he spent "about 10 or 11 weeks" in the area of combat in France. "We were under fire there... It was quite exciting, and of course a wonderful experience."[8]

Prescott Bush was discharged in mid-1919, and returned for a short time to Columbus, Ohio. But his humiliation in his home town was so intense that he could no longer live there. The "war hero" story was henceforth not spoken of in his presence. Decades later, when he was an important, rich U.S. Senator, the story was whispered and puzzled over among the Congressmen.

Looking to be rescued from this ugly situation, Captain Bush went to the 1919 reunion of his Yale class in New Haven, Connecticut. Skull and Bones Patriarch Wallace Simmons, closely tied to the arms manufacturers, offered Prescott Bush a job in his St. Louis railroad equipment company. Bush took the offer and moved to St. Louis — and his destiny.

A THOROUGHBRED MARRIAGE

Prescott Bush went to St. Louis to repair his troubled life. Sometime that same year, Averell Harriman made a trip there on a project which would have great consequences for Prescott. The 28- year-old Harriman, until then something of a playboy, wanted to bring his inherited money and contacts into action in the arena of world affairs. President Theodore Roosevelt had denounced Harriman's father for "cynicism and deep-seated corruption" and called him an "undesirable citizen."[9] For the still- smarting Averell to take his place among the makers and breakers of nations, he needed a financial and intelligence-gathering organization of his own. The man Harriman sought to create such an institution for him was Bert Walker, a Missouri stock broker and corporate wheeler-dealer. George Herbert ("Bert") Walker, for whom President George H.W Bush was named, did not immediately accept Harriman's proposal. Would Walker leave his little St. Louis empire, to try his influence in New York and Europe?

Bert was the son of a dry goods wholesaler who had thrived on imports from England.[10] The British connection had paid for Walker summer houses in Santa Barbara, California, and in Maine — "Walker's Point" at Kennebunkport. Bert Walker had been sent to England for his prep school and college education.

By 1919 Bert Walker had strong ties to the Guaranty Trust Company in New York and to the British-American banking house J.P. Morgan and Co. These Wall Street concerns represented all the important owners of American railroads: the Morgan partners and their associates or cousins in the intermarried Rockefeller, Whitney, Harriman and Vanderbilt families.

Bert Walker was known as the midwest's premier deal-arranger, awarding the investment capital of his international-banker contacts to the many railroads, utilities and other midwestern industries of which he and his St. Louis friends were executives or board members.

Walker's operations were always quiet, or mysterious, whether in local or global affairs. He had long been the "power behind the throne" in the St. Louis Democratic Party, along with his crony, former Missouri Governor David R. Francis. Walker and Francis together had sufficient influence to select the party's candidates.[11]

Back in 1904, Bert Walker, David Francis, Washington University President Robert Brookings and their banker/broker circle had organized a world's fair in St. Louis, the Louisiana Purchase Exposition. In line with the old Southern Confederacy family backgrounds of many of these sponsors, the fair featured a "Human Zoo"; live natives from backward jungle regions were exhibited in special cages under the supervision of anthropologist William J. McGee.

So Averell Harriman was a natural patron for Bert Walker. Bert shared Averell's passion for horse breeding and horse racing, and easily accommodated the Harriman family's related social philosophy. They believed that the horses and racing stables they owned showed the way toward a sharp upgrading of the human stock — just select and mate thoroughbreds, and spurn or eliminate inferior animals.

The First World War had brought the little St. Louis oligarchy into the Confederate-slave owner-oriented administration of President Woodrow Wilson and his advisors, Col. Edward House and Bernard Baruch.

Walker's friend Robert Brookings got into Bernard Baruch's War Industries Board as director of national Price Fixing (sic). David R. Francis became U.S. ambassador to Russia in 1916. As the Bolshevik Revolution broke out, we find Bert Walker busy appointing people to Francis's staff in Petrograd.[12]

Walker's earliest activities in relation to the Soviet state are of significant interest to historians, given the activist role he was to play there together with Harriman. But Walker's life is as covert as the rest of the Bush clan's, and the surviving public record is extremely thin.

The 1919 Versailles peace conference brought together British imperial strategists and their American friends to make postwar global arrangements. For his own intended international adventures, Harriman needed Bert Walker, the seasoned intriguer, who quietly represented many of the British-designated rulers of American politics and finance.

After two persuasion trips west by Harriman,[13] Walker at length agreed to move to New York. But he kept his father's summer house in Kennebunkport, Maine.

Bert Walker formally organized the W.A. Harriman & Co. private bank in November 1919. Walker became the bank's president and chief executive; Averell Harriman was chairman and controlling co-owner with his brother Roland ("Bunny"), Prescott Bush's close friend from Yale; and Percy Rockefeller was a director and a founding financial sponsor.

In the autumn of 1919, Prescott Bush made the acquaintance of Bert Walker's daughter Dorothy. They were engaged the following year, and were married in August, 1921.[14] Among the ushers and grooms at the elaborate wedding were Ellery S. James, Knight Woolley and four other fellow Skull and Bonesmen from the Yale Class of 1917.[15] The Bush-Walker extended family has gathered each summer at the "Walker country home" in Kennebunkport, from this marriage of President Bush's parents down to the present day.

When Prescott married Dorothy, he was only a minor executive of the Simmons Co., railroad equipment suppliers, while his wife's father was building one of the most gigantic businesses in the world. The following year the couple tried to move back to Columbus, Ohio; there Prescott worked for a short time in a rubber products company owned by his father. But they soon moved again to Milton, Mass., after outsiders bought the little family business and moved it near there.

Thus Prescott Bush was going nowhere fast, when his son George Herbert Walker Bush — the future U.S. President — was born in Milton, Mass., on June 12, 1924.

Perhaps it was as a birthday gift for George, that "Bunny" Harriman stepped in to rescue his father Prescott from oblivion, bringing him into the Harriman-controlled U.S. Rubber Co. in New York City. In 1925 the young family moved to the town where George was to grow up: Greenwich, Connecticut, a suburb both of New York and of New Haven/Yale.

Then on May 1, 1926, Prescott Bush joined W.A. Harriman & Co. as its vice president, under the bank's president, Bert Walker, his father-in-law and George's maternal grandfather — the head of the family.[16]

THE GREAT GAME

Prescott Bush would demonstrate strong loyalty to the firm he joined in 1926. And the bank, with the scope and power of many ordinary nations, could amply reward its agents. George Bush's Grandfather Walker had put the enterprise together, quietly, secretly, using all the international connections at his disposal. Let us briefly look back at the beginning of the Harriman firm — the Bush family enterprise — and follow its course into one of history's darkest projects.

The firm's first global lever was its successful arrangement to get into Germany by dominating that country's shipping. Averell Harriman announced in 1920 that he

would re-start Germany's Hamburg-Amerika Line, after many months of scheming and arm-twisting. Hamburg-Amerika's commercial steamships had been confiscated by the United States at the end of the First World War. These ships had then become the property of the Harriman enterprise, by some arrangements with the U.S. authorities that were never made public.

The deal was breathtaking; it would create the world's largest private shipping line.

Hamburg-Amerika Line regained its confiscated vessels, for a heavy price. The Harriman enterprise took "the right to participate in 50 percent of all business originated in Hamburg"; and for the next twenty years (1920-1940), the Harriman enterprise had "complete control of all activities of the Hamburg line in the United States."[17]

Harriman became co-owner of Hamburg-Amerika. The Harriman-Walker firm gained a tight hold on its management, with the not-so-subtle backing of the post-World War I occupation of Germany by the armies of England and America.

Just after Harriman's public statement, the St. Louis press celebrated Bert Walkers role in assembling the money to consummate the deal:

"Ex-St. Louisan Forms Giant Ship Merger"

"G. H. Walker is Moving Power Behind Harriman-Morton Shipping Combine ... ."

The story celebrated a "merger of two big financial houses in New York, which will place practically unlimited capital at the disposal of the new American-German shipping combine..."18

Bert Walker had arranged a "marriage" of J.P. Morgan credit and Harriman family inherited wealth.

W.A. Harriman & Co., of which Walker was president and founder, was merging with the Morton & Co. private bank — and Walker was " [p]rominent in the affairs of Morton & Co.," which was interlocked with the Morgan-controlled Guaranty Trust Co. The Hamburg-Amerika takeover created an effective instrument for the manipulation and fatal subversion of Germany. One of the great "merchants of death," Samuel Pryor, was in it from the beginning. Pryor, then chairman of the executive committee of Remington Arms, helped arrange the deal and served with Walker on the board of Harrimahs shipping front organization, the American Ship and Commerce Co. Walker and Harriman took the next giant step in 1922, setting up their European headquarters office in Berlin. With the aid of the Hamburg-based Warburg bank, WA. Harriman & Co. began spreading an investment net over German industry and raw materials.

From the Berlin base, Walker and Harriman then plunged into deals with the new dictatorship of the Soviet Union. They led a select group of Wall Street and British Empire speculators who re-started the Russian oil industry, which had been devastated by the Bolshevik Revolution. They contracted to mine Soviet manganese, an element essential to modern steelmaking. These concessions were arranged directly with Leon Trotsky, then with Feliks Dzerzhinsky, founder of the Soviet dictatorship's secret inferligence service (K.G.B), whose huge statue was finally pulled down by pro-democracy demonstrators in 1991.

These speculations created both channels of communication, and the style of accommodation, with the communist dictatorship, that have continued in the family down to President Bush.

With the bank launched, Bert Walker found New York the ideal place to satisfy his passion for sports, games and gambling. Walker was elected president of the U.S. Golf Asociation in 1920. He negotiated new international rules for the game with the Royal

and Ancient Golf Club of St. Andrews, Scotland. After these talks he contributed the three-foot-high silver Walker Cup, for which British and American teams have since competed every two years.

Bert's son-in-law Prescott Bush was later secretary of the U.S. Golf Association during the grave political and economic crises of the early 1930s. Prescott became USGA President in 1935, while he was otherwise embroiled in the family firm's work with Nazi Germany.

When George was one year old, in 1925, Bert Walker and Averell Harriman headed a syndicate which rebuilt Madison Square Garden as the modern Palace of Sport. Walker was at the center of New York's gambling scene in its heyday, in that Prohibition era of colorful and bloody gangsters. The Garden bloomed with million-dollar prize fights; bookies and their clients pooled more millions, trying to match the pace of the speculation-crazed stock and bond men. This was the era of "organized" crime — the national gambling and bootleg syndicate structured on the New York corporate model.

By 1930, when George was a boy of six, Grandpa Walker was New York State Racing Commissioner. The vivid colors and sounds of the racing scene must have impressed little George as much as his grandfather. Bert Walker bred race horses at his own stable, the Log Cabin Stud. He was president of the Belmont Park race track. Bert also personally managed most aspects of Averell's racing interests— down to picking the colors and fabrics for the Harriman racing gear.[19]

From 1926, George's father Prescott Bush showed a fierce loyalty to the Harrimans and a dogged determination to advance himself; he gradually came to run the day-to-day operations of WA. Harriman & Co. After the firm's 1931 merger with the British-American banking house Brown Brothers, Prescott Bush became managing partner of the resulting company: Brown Brothers Harriman. This was ultimately the largest and politically the most important private banking house in America.

Financial collapse, world depression and social upheaval followed the fevered speculation of the 1920s. The 1929-31 crash of securities values wiped out the small fortune Prescott Bush had gained since 1926. But because of his devotion to the Harrimans, they "did a very generous thing," as Bush later put it. They staked him to what he had lost and put him back on his feet.

Prescott Bush described his own role, from 1931 through the 1940s, in a confidential interview:

> I emphasize ... that the Harrimans showed great courage and loyalty and confidence in us, because three or four of us were really running the business, the day to day business. Averell was all over the place in those days ... and Roland was involved in a lot of directorships, and he didn't get down into the "lift- up-and-bear-down" activity of the bank, you see - the day- to-day decisions ... we were really running the business, the day to day business, all the administrative decisions and the executive decisions. We were the ones that did it. We were the managing partners, let's say.[20]

But of the "three or four" partners in charge, Prescott was effectively at the head of the firm, because he had taken over management of the gigantic personal investment funds of Averell and E. Roland "Bunny" Harriman.

In those interwar years, Prescott Bush made the family fortune which George Bush inherited. He piled up the money from an international project which continued until a new world war, and the action of the U.S. government, intervened to stop him.

NOTES FOR CHAPTER I

1. Washington Post, Aug. 16, 1991, p. Al.
2. Gen. Hugh S. Johnson to Major J.H.K. Davis, June 6, 1918, file no. 334.8/168 or 334.8/451 in U.S. National Archives, Suitland, Maryland.
3. Bernard M. Baruch, My Own Story (New York: Henry Holt and Co., 1957), pp. 138-39. Baruch related that "our firm did a large business for Mr. Harriman... In 1906 Harriman had [us] place heavy bets on Charles Evans Hughes in his race for Governor of New York against William Randolph Hearst. After several hundred thousand dollars had been wagered, [our firm] stopped. Hearing of this, Harriman called ... up. 'Didn't I tell you to bet?' He demanded. 'Now go on.'l"
4. Alden Hatch, Remington Arms: An American History, 1956, copyright by the Remington Arms Co., pp. 224-25.
5. The Ohio State Journal, Columbus, Ohio, Thursday, Aug. 8, 1918.
6. The Ohio State Journal, Friday, Aug. 9, 1918.
7. The Ohio State Journal, Friday, Sept. 6, 1918.
8. Interview with Prescott Bush in the Oral History Research Project conducted by Columbia University in 1966, Eisenhower Administration Part II; pp. 5-6. The interview was supposed to be kept confidential and was never published, but Columbia later sold microfilms of the transcript to certain libraries, including Arizona State University.
9. Theodore Roosevelt to James S. Sherman, Oct. 6, 1906, made public by Roosevelt at a press conference April 2, 1907. Quoted in Henry F. Pringle, Theodore Roosevelt (New York: Harcourt, Brace and Company, 1931), p. 452. Roosevelt later confided to Harriman lawyer Robert S. Lovett that his views on Harriman were based on what J.P Morgan had told him.
10. See The Industries of St. Louis, published 1885 by J.M. Elstner & Co., pp. 61-62 for Crow, Hagardine & Co., David Walker's first business; and p. 86 for Ely & Walker.
11. See Letter of G.H. Walker to D.R. Francis, March 20, 1905, in the Francis collection of the Missouri Historical Society, St. Louis, Missouri, on the organization of the Republicans and Democrats to run the election of the mayor, a Democrat acceptable to the socially prominent. The next day Walker became the treasurer and Francis the president of this "Committee of 1000." See also George H. Walker obituary, St. Louis Globe-Democrat, June 25, 1953.
12. Letter of Perry Francis to his father, Ambassador David R. Francis, Oct. 15, 1917, Francis collection of the Missouri Historical Society. "... Joe Miller left for San Francisco last Tuesday night, where he will receive orders to continue to Petrograd. I was told by Mildred Kotany [Walker's sister-in-law] that Bert Walker got him his appointment through Breck Long. I didn't know Joe was after it, or could have helped him myself. He will be good company for you when he gets there..."
13. Private interview with a Walker family member, cousin of President Bush.
14. Prescott Bush, Columbia University, op. cit., p. 7.
15. St. Louis Globe Democrat, Aug. 7, 1921. 16. This is the sequence of events, from Simmons to U.S. Rubber, which Prescott Bush gave in his Columbia University interview, op. cit.,) pp. 7-8.
17. Public statement of Averell Harriman, New York Times, Oct. 6, 1920, p. 1.
18. St. Louis Globe-Democrat, Oct. 12, 1920, p. 1.
19. Sports-as-business has continued in the family up through George Bush's adult life. Bert's son George Walker, Jr. — President Bush's uncle and financial angel in Texas — co-founded the New York Mets and was the baseball club's vice president and treasurer for 17 years until his death in 1977. The President's son, George Walker Bush, was co-owner of the Texas Rangers baseball club during his father's presidency.
20. Prescott Bush, Columbia University, op. cit., pp. 16-22.

"All the News That's Fit to Print"

The New York Times.

LATE CITY

VOL. XCIV..No. 31,738. NEW YORK, SATURDAY, DECEMBER 16, 1944. THREE

U. S. FORCE LANDS UNOPPOSED ON MINDO
WITHIN 155 MILES OF PHILIPPINE CAPIT
CHURCHILL BACKS RUSSIA ON POLISH IS

CALL OF OLDER MEN INTO ARMED FORCES TO INCREASE FEB. 1

War Department Says Draft of Those Below 26 Will Not Keep the Ranks Full

FURLOUGHS AID OUTPUT

4,700 Soldiers to Go Into Key Plants and Get Army and Industrial Pay

Finns' Debt Payment Held Up by Treasury

CURZON LINE BASIS

Prime Minister Advises Poles to Cede Area to Moscow Now

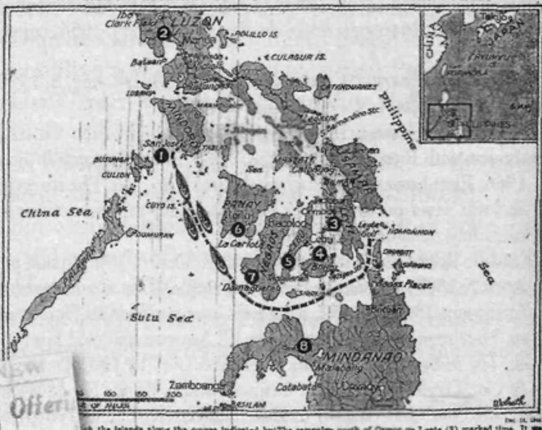
OFFERS LAND IN WEST

No U. S. Objection Made, He Says, Calling for Early Big 3 Parley

By RAYMOND DANIELL

DEFERMENT IS SEEN FOR MEAT HOLIDAY

M'ARTHUR STRIKES ANOTHER BLOW IN THE PHILIPPINES



BANKING DEPARTMENT REPORTS ON ACTIONS

Special to THE NEW YORK TIMES.

ALBANY, Dec. 15—The Continental Bank and Trust Company, 30 Broad Street, New York, has received permission to establish common trust funds under the titles "the first legal common trust fund of the Continental Bank and Trust Company of New York" and "the first discretionary common trust fund of the Continental Bank and Trust Company of New York," the State Banking Department announced today.

The Bankers Trust Company, 16 Wall Street, New York, has received approval of an increase of capital stock from $25,000,000 consisting of 2,500,000 shares valued at $10 each, to $30,000,000 consisting of 3,000,000 shares valued at $10 each.

It was announced that affairs of the Crescent Credit Union of Brooklyn, have been liquidated, and its corporate existence terminated.

By reason of a change in partnership, necessitating a new certificate of Brown Brothers Harriman & Co., 59 Wall Street, New York, to continue in business, the department's approval has been asked for in a verified certificate just filed. The members of the partnership were noted as Thatcher M. Brown, Moreau Delano Brown, Prescott S. Bush, Louis Curtis, W. Averell Harriman, E. Roland Harriman, Stephen Y. Hord, Thomas McCance, Ray Morris, Harold D. Pennington and Knight Woolley.

The Union Banking Corporation, 39 Broadway, New York, has received authority to change its principal place of business to 120 Broadway.

Railway to Change Route

By reason of a change in partnership, necessitating a new certificate of Brown Brothers Harriman & Co., 59 Wall Street, New York, to continue in business, the department's approval has been asked for in a verified certificate just filed. The members of the partnership were noted Thatcher M. Brown, Moreau Delano Brown, Prescott S. Bush, Louis Curtis, W. Averell Harriman, E. Roland Harriman, Stephen Y. Hord, Thomas McCance, Ray Morris, Harold D. Pennington and Knight Woolley.

The Union Banking Corporation, 39 Broadway, New York, has received authority to change its principal place of business to 120 Broadway.

Page 25 - *New York Times* - December 16, 1944
The public notice of the Union Banking Corporation being taken over by the US Government through the Under Trading with the Enemy Act. No mention that 120 Broadway is the address of the Office of Alien Property Custodian

THE HITLER PROJECT

WEBSTER GRIFFIN TARPLEY AND ANTON CHAITKIN

CHAPTER TWO OF GEORGE BUSH — THE UNAUTHORIZED BIOGRAPHY -1992. USED WITH PERMISSION.

IN OCTOBER 1942, TEN MONTHS AFTER ENTERING WORLD WAR II, America was preparing its first assault against Nazi military forces. Prescott Bush was managing partner of Brown Brothers Harriman. His 18-year-old son George, the future U.S. President, had just begun training to become a naval pilot. On Oct. 20, 1942, the U.S. government ordered the seizure of Nazi German banking operations in New York City which were being conducted by Prescott Bush.

BUSH PROPERTY SEIZED - TRADING WITH THE ENEMY

Under the Trading with the Enemy Act, the government took over the Union Banking Corporation, in which Bush was a director. The U.S. Alien Property Custodian seized Union Banking Corp.'s stock shares, all of which were owned by Prescott Bush, E. Roland "Bunny" Harriman, three Nazi executives, and two other associates of Bush.[1]

The order seizing the bank "vests" (seizes) "all of the capital stock of Union Banking Corporation, a New York corporation," and names the holders of its shares as:

"E. Roland Harriman — 3991 shares"
[chairman and director of Union Banking Corp. (UBC); this is "Bunny" Harriman, described by Prescott Bush as a place holder who didn't get much into banking affairs; Prescott managed his personal investments]

"Cornells Lievense — 4 shares"
[president and director of UBC; New York resident banking functionary for the Nazis]

"Harold D. Pennington — 1 share"
[treasurer and director of UBC; an office manager employed by Bush at Brown Brothers Harriman]

"Ray Morris — 1 share"
[director of UBC; partner of Bush and the Harrimans]

"Prescott S. Bush — 1 share"
[director of UBC, which was co-founded and sponsored by his father-in-law George Walker; senior managing partner for E. Roland Harriman and Averell Harriman]

"H.J. Kouwenhoven — 1 share"
[director of UBC; organized UBC as the emissary of Fritz Thyssen in negotiations with George Walker and Averell Harriman; managing director of UBC's Netherlands affiliate under Nazi occupation; industrial executive in Nazi Germany; director and chief foreign financial executive of the German Steel Trust]

"Johann G. Groeninger — 1 share"
[director of UBC and of its Netherlands affiliate; industrial executive in Nazi Germany]

"all of which shares are held for the benefit of... members of the Thyssen family, [and] is property of nationals ... of a designated enemy country...."

By Oct. 26, 1942, U.S. troops were under way for North Africa. On Oct. 28, the government issued orders seizing two Nazi front organizations run by the Bush-Harriman bank: the Holland-American Trading Corporation and the Seamless Steel Equipment Corporation.[2]

U.S. forces landed under fire near Algiers on Nov. 8,1942; heavy combat raged throughout November. Nazi interests in the Silesian-American Corporation, long managed by Prescott Bush and his father-in-law George Herbert Walker, were seized under the Trading with the Enemy Act on Nov. 17, 1942. In this action, the government announced that it was seizing only the Nazi interests, leaving the Nazis' U.S. partners to carry on the business.[3]

These and other actions taken by the U.S. government in wartime were, tragically, too little and too late. President Bush's family had already played a central role in financing and arming Adolf Hitler for his takeover of Germany, in financing and managing the buildup of Nazi war industries for the conquest of Europe and war against the U.S.A.; and in the development of Nazi genocide theories and racial propaganda, with their well-known results.

The facts presented here must be known, and their implications reflected upon, for a proper understanding of President George Herbert Walker Bush and of the danger to mankind that he represents. The President's family fortune was largely a result of the Hitler project. The powerful Anglo-American family associations, which later boosted him into the Central Intelligence Agency and up to the White House, were his father's partners in the Hitler project.

President Franklin Roosevelt's Alien Property Custodian, Leo T. Crowley, signed Vesting Order Number 248 seizing the property of Prescott Bush under the Trading with the Enemy Act. The order, published in obscure government record books and kept out of the news,[4] explained nothing about the Nazis involved; only that the Union Banking Corporation was run for the "Thyssen family" of "Germany and/or Hungary" — "nationals ... of a designated enemy country."

By deciding that Prescott Bush and the other directors of the Union Banking Corp. were legally front men for the Nazis, the government avoided the more important historical issue: In what way were Hitler's Nazis themselves hired, armed and instructed by the New York and London clique of which Prescott Bush was an executive manager? Let us examine the Harriman-Bush Hitler project from the 1920s until it was partially broken up, to seek an answer for that question.

ORIGIN AND EXTENT OF THE PROTECT

Fritz Thyssen and his business partners are universally recognized as the most important German financiers of Adolf Hitler's takeover of Germany. At the time of the order seizing the Thyssen family's Union Banking Corp., Mr. Fritz Thyssen had already published his famous book, I Paid Hitler,[5] admitting that he had financed Adolf Hitler and the Nazi movement since October 1923. Thyssen's role as the leading early backer of Hitler's grab for power in Germany had been noted by U.S. diplomats in Berlin in 1932.[6] The order seizing the Bush-Thyssen bank was curiously quiet and modest about the identity of the perpetrators who had been nailed.
But two weeks before the official order, government investigators had reported secretly that "W. Averell Harriman was in Europe sometime prior to 1924 and at that time became acquainted with Fritz Thyssen, the German industrialist." Harriman and Thyssen agreed to set up a bank for Thyssen in New York. "[C]ertain of [Harriman's] associates would serve as directors ...." Thyssen agent "H. J. Kouwenhoven ... came to the United States - prior to 1924 for conferences with the Harriman Company in this connection ..."[7]
When exactly was "Harriman in Europe sometime prior to 1924[?]" In fact, he was in Berlin in 1922 to set up the Berlin branch of W.A. Harriman & Co. under George Walker's presidency.
The Union Banking Corporation was established formally in 1924, as a unit in the Manhattan offices of W.A. Harriman & Co., interlocking with the Thyssen-owned Bank voor Handel en Scheepvaart (BHS) in the Netherlands. The investigators concluded that "the Union Banking Corporation has since its inception handled funds chiefly supplied to it through the Dutch bank by the Thyssen interests for American investment."
Thus by personal agreement between Averell Harriman and Fritz Thyssen in 1922, W.A. Harriman & Co. (alias Union Banking Corporation) would be transferring funds back and forth between New York and the "Thyssen interests " in Germany. By putting up about $400,000, the Harriman organization would be joint owner and manager of Thyssen's banking operations outside of Germany.

How important was the Nazi enterprise for which President Bush's father was the New York banker?
A 1942 U.S. government investigative report said that Bush's Nazi-front bank was an interlocking concern with the Vereinigte Stahlwerke (United Steel Works Corporation or German Steel Trust) led by Fritz Thyssen and his two brorhers. After the war, Congressional investigators probed the Thyssen interests, Union Banking Corp. and related Nazi units. The investigation showed that the Vereinigte Stahlwerke had produced the following approximate proportions of total German national output:

50.8% of Nazi Germany's pig iron
41.4% of Nazi Germany's universal plate
36.0% of Nazi Germany's heavy plate
38.5% of Nazi Germany's galvanized sheet

45.5% of Nazi Germany's pipes and tubes
22.1% of Nazi Germany's wire
35.0% of Nazi Germany's explosives.[8]

Prescott Bush became vice president of W.A. Harriman & Co. in 1926. That same year, a friend of Harriman and Bush set up a giant new organization for their client Fritz Thyssen, prime sponsor of politician Adolf Hitler. The new German Steel Trust, Germany's largest industrial corporation, was organized in 1926 by Wall Street banker Clarence Dillon. Dillon was the old comrade of Prescott Bush's father Sam Bush from the "Merchants of Death" bureau in World War I.

In return for putting up $70 million to create his organization, majority owner Thyssen gave the Dillon Read company two or more representatives on the board of the new Steel Trust.[9]

Thus there is a division of labor: Thyssen's own confidential accounts, for political and related purposes, were run through the Walker-Bush organization; the German Steel Trust did its corporate banking through Dillon Read.

The Walker-Bush firm's banking activities were not just politically neutral money-making ventures which happened to coincide with the aims of German Nazis. All of the firms European business in those days was organized around anti-democratic political forces.

In 1927, criticism of their support for totalitarianism drew this retort from Bert Walker, written from Kennebunkport to Averell Harriman: "It seems to me that the suggestion in connection with Lord Bearsted's views that we withdraw from Russia smacks somewhat of the impertinent.... I think that we have drawn our line and should hew to it."[10]

Averell Harriman met with Italy's fascist dictator, Benito Mussolini. A representative of the firm subsequently telegraphed good news back to his chief executive Bert Walker: "... During these last days ... Mussolini ... has examined and approved our c[o]ntract 15 June."[11]

The great financial collapse of 1929-31 shook America, Germany and Britain, weakening all governments. It also made the hard-pressed Prescott Bush even more willing to do whatever was necessary to retain his new place in the world. It was in this crisis that certain Anglo-Americans determined on the installation of a Hitler regime in Germany.

W.A. Harriman & Co., well-positioned for this enterprise and rich in assets from their German and Russian business, merged with the British-American investment house, Brown Brothers, on January 1, 1931. Bert Walker retired to his own G.H. Walker & Co. This left the Harriman brothers, Prescott Bush and Thatcher M. Brown as the senior partners of the new Brown Brothers Harriman firm. (The London, England branch of the Brown family firm continued operating under its historic name — Brown, Shipley.)

Robert A. Lovett also came over as a partner from Brown Brothers. His father, E.H. Harriman's lawyer and railroad chief, had been on the War Industries Board with Prescott's father. Though he remained a partner in Brown Brothers Harriman, the junior Lovett soon replaced his father as chief executive of Union Pacific Railroad.

Brown Brothers had a racial tradition that fitted it well for the Hitler project! American patriots had cursed its name back in U.S. Civil War days. Brown Brothers, with offices in the U.S.A. and in England, had carried on their ships fully 75 percent of the slave cotton from the American South over to British mill owners. Now in 1931, the virtual dictator of world finance, Bank of England Governor Montagu Collet Norman, was a former Brown Brothers partner, whose grandfather had been boss of Brown Brothers during the U.S. Civil War. Montagu Norman was known as the most avid of Hitler's supporters within British

ruling circles, and Norman's intimacy with this firm was essential to his management of the Hitler project.

In 1931, while Prescott Bush ran the New York office of Brown Brothers Harriman, Prescott's partner was Montagu Norman's intimate friend Thatcher Brown. The Bank of England chief always stayed at the home of Prescott's partner on his hush-hush trips to New York. Prescott Bush concentrated on the firm's German activities, and Thatcher Brown saw to their business in old England, under the guidance of his mentor Montagu Norman.[12]

HITLER'S LADDER TO POWER

Adolf Hitler became Chancellor of Germany January 30, 1933, and absolute dictator in March 1933, after two years of expensive and violent lobbying and electioneering. Two affiliates of the Bush-Harriman organization played great parts in this criminal undertaking: Thyssen's German Steel Trust and the Hamburg-Amerika Line and several of its executives.[13]

Let us look more closely at the Bush family's German partners.

Fritz Thyssen told Allied interrogators after the war about some of his financial support for the Nazi Party: "In 1930 or 1931 ... I told [Hitler's deputy Rudolph] Hess ... I would arrange a credit for him with a Dutch bank in Rotterdam, the Bank fur Handel and Schiff [i.e. Bank voor Handel en Scheepvaart (BHS), the Harriman-Bush affiliate], I arranged the credit ... he would pay it back in three years .... I chose a Dutch bank because I did not want to be mixed up with German banks in my position, and because I thought it was better to do business with a Dutch bank, and I thought I would have the Nazis a little more in my hands ....

"The credit was about 250-300,000 [gold] marks — about the sum I had given before. The loan has been repaid in part to the Dutch bank, but I think some money is still owing on it ...."[14]

The overall total of Thyssen's political donations and loans to the Nazis was well over a million dollars, including funds he raised from others — in a period of terrible money shortage in Germany.

Friedrich Flick was the major co-owner of the German Steel Trust with Fritz Thyssen, Thyssen's long-time collaborator and occasional competitor. In preparation for the war crimes tribunal at Nuremberg, the U.S. government said that Flick was "one of leading financiers and industrialists who from 1932 contributed large sums to the Nazi Party ... member of 'Circle of Friends' of Himmler who contributed large sums to the SS."[15]

Flick, like Thyssen, financed the Nazis to maintain their private armies called Schutzstaffel (S.S. or Black Shirts) and Sturmabteilung(S.A., storm troops or Brown Shirts).

The Flick-Harriman partnership was directly supervised by Prescott Bush, President Bush's father, and by George Walker, President Bush's grandfather.

The Harriman-Walker Union Banking Corp. arrangements for the German Steel Trust had made them bankers for Flick and his vast operations in Germany by no later than 1926.

The Harriman Fifteen Corporation (George Walker, president, Prescott Bush and Averrell Harriman, sole directors) held a substantial stake in the Silesian Holding Co. at the time of the merger with Brown Brothers, Jan. 1, 1931. This holding correlated to Averell Harriman's chairmanship of the Consolidated Silesian Steel Corporation, the American group owning one-third of a complex of steel-making, coal-mining and zinc-mining activities in Germany and Poland, in which Friedrich Flick owned two-thirds.[16]

The Nuremberg prosecutor characterized Flick as follows:

"Proprietor and head of a large group of industrial enterprises (coal and iron mines, steel producing and fabricating plants)...'Wehrwirtschaftsfuhrer', 1938 [title awarded to prominent industrialists for merit in armaments drive —'Military Economy Leader'] ... [17]

For this buildup of the Hitler war machine with coal, steel and arms production, using slave laborers, the Nazi Flick was condemned to seven years in prison at the Nuremberg trials; he served three years. With friends in New York and London, however, Flick lived into the 1970s and died a billionaire.

On March 19, 1934, Prescott Bush — then director of the German Steel Trust's Union Banking Corporation — initiated an alert to the absent Averell Harriman about a problem which had developed in the Flick partnership.[18] Bush sent Harriman a clipping from the New York Times of that day, which reported that the Polish government was fighting back against American and German stockholders who controlled "Poland's largest industrial unit, the Upper Silesian Coal and Steel Company ..."

The Times article continued: "The company has long been accused of mismanagement, excessive borrowing, fictitious bookkeeping and gambling in securities. Warrants were issued in December for several directors accused of tax evasions. They were German citizens and they fled. They were replaced by Poles. Herr Flick, regarding this as an attempt to make the company's board entirely Polish, retaliated by restricting credits until the new Polish directors were unable to pay the workmen regularly."

The Times noted that the company's mines and mills "employ 25,000 men and account for 45 percent of Poland's total steel output and 12 percent of her coal production. Two-thirds of the company's stock is owned by Friedrich Flick, a leading German steel industrialist, and the remainder is owned by interests in the United States."

In view of the fact that a great deal of Polish output was being exported to Hitler Germany under depression conditions, the Polish government thought that Prescott Bush, Harriman and their Nazi partners should at least pay full taxes on their Polish holdings. The U.S. and Nazi owners responded with a lockout. The letter to Harriman in Washington reported a cable from their European representative: "Have undertaken new steps London Berlin ... please establish friendly relations with Polish Ambassador [in Washington]."

A 1935 Harriman Fifteen Corporation memo from George Walker announced an agreement had been made "in Berlin" to sell an 8,000 block of their shares in Consolidated Silesian Steel.[19] But the dispute with Poland did not deter the Bush family from continuing its partnership with Flick.

Nazi tanks and bombs "settled" this dispute in September, 1939 with the invasion of Poland, beginning World War II. The Nazi army had been equipped by Flick, Harriman, Walker and Bush, with materials essentially stolen from Poland.

There were probably few people at the time who could appreciate the irony that when the Soviets also attacked and invaded Poland from the East, their vehicles were fueled by oil pumped from Baku wells revived by the Harriman/Walker/Bush enterprise.

Three years later, nearly a year after the Japanese attack on Pearl Harbor, the U.S. government ordered the seizure of the Nazis' share in the Silesian-American Corporation under the Trading with the Enemy Act. Enemy nationals were said to own 49 percent of the common stock and 41.67 percent of the preferred stock of the company.

The order characterized the company as a "business enterprise within the United States, owned by [a front company in] Zurich, Switzerland, and held for the benefit of Bergwerksgesellschaft George von Giesche's Erben, a German corporation ...."[20]

Bert Walker was still the senior director of the company, which he had founded back in 1926 simultaneously with the creation of the German Steel Trust. Ray Morris, Prescott's partner from Union Banking Corp. and Brown Brothers Harriman, was also a director.

The investigative report prior to the government crackdown explained the "NATURE OF BUSINESS: The subject corporation is an American holding company for German and Polish subsidiaries, which own large and valuable coal and zinc mines in Silesia, Poland and Germany. Since September 1939, these properties have been in the possession of and have been operated by the German government and have undoubtedly been of considerable assistance to that country in its war effort."[21]

The report noted that the American stockholders hoped to regain control of the European properties after the war.

CONTROL OF NAZI COMMERCE

Bert Walker had arranged the credits Harriman needed to take control of the Hamburg-Amerika Line back in 1920. Walker had organized the American Ship and Commerce Corp. as a unit of the W.A Harriman & Co., with contractual power over Hamburg-Amerika's affairs.

As the Hitler project went into high gear, Harriman-Bush shares in American Ship and Commerce Corp. were held by the Harriman Fifteen Corp., run by Prescott Bush and Bert Walker.[22]

It was a convenient stroll for the well-tanned, athletic, handsome Prescott Bush. From the Brown Brothers Harriman skyscraper at 59 Wall Street — where he was senior managing partner, confidential investments manager and adviser to Averell and his brother "Bunny" — he walked across to the Harriman Fifteen Corporation at One Wall Street, otherwise known as G.H. Walker & Co. — and around the corner to his subsidiary offices at 39 Broadway, former home of the old W.A. Harriman & Co., and still the offices for American Ship and Commerce Corp., and of the Union Banking Corporation.

In many ways, Bush's Hamburg-Amerika Line was the pivot for the entire Hitler project.

Averell Harriman and Bert Walker had gained control over the steamship company in 1920 in negotiations with its post-World War I chief executive, Wilhelm Cuno, and with the line's bankers, M.M. Warburg. Cuno was thereafter completely dependent on the Anglo-Americans, and became a member of the Anglo-German Friendship Society. In the 1930-32 drive for a Hitler dictatorship, Wilhelm Cuno contributed important sums to the Nazi Party.[23]

Albert Voegler was chief executive of the Thyssen-Flick German Steel Trust for which Bush's Union Banking Corp. was the New York office. He was a director of the Bush-affiliate BHS Bank in Rotterdam, and a director of the Harriman-Bush Hamburg-Amerika Line. Voegler joined Thyssen and Flick in their heavy 1930-33 Nazi contributions, and helped organize the final Nazi leap into national power.[24]

The Schroeder family of bankers was a linchpin for the Nazi activities of Harriman and Prescott Bush, closely tied to their lawyers Allen and John Foster Dulles.

Baron Kurt von Schroeder was co-director of the massive Thyssen-Hutte foundry along with Johann Groeninger, Prescott Bush's New York bank partner. Kurt von Schroeder was treasurer of the support organization for the Nazi Party's private armies, to which Friedrich Flick contributed. Kurt von Schroeder and Montagu Norman's protege Hjalmar Schacht together made the final arrangements for Hitler to enter the government.[25]

Baron Rudolph von Schroeder was vice president and director of the Hamburg-Amerika Line. Long an intimate contact of Averell Harriman's in Germany, Baron Rudolph sent his grandson Baron Johann Rudolph for a tour of Prescott Bush's Brown Brothers Harriman offices in New York City in December 1932 — on the eve of their Hitler — triumph.[26]

Certain actions taken directly by the Harriman-Bush shipping line in 1932 must be ranked among the gravest acts of treason in this century.

The U.S. embassy in Berlin reported back to Washington that the "costly election campaigns" and "the cost of maintaining a private army of 300,000 to 400,000 men" had raised questions as to the Nazis' financial backers. The constitutional government of the German republic moved to defend national freedom by ordering the Nazi Party private armies disbanded. The U.S. embassy reported that the Hamburg-Amerika Line was purchasing and distributing propaganda attacks against the German government, for attempting this last-minute crackdown on Hitler's forces.[27]

Thousands of German opponents of Hitlerism were shot or intimidated by privately armed Nazi Brown Shirts. In this connection we note that the original "Merchant of Death," Samuel Pryor, was a founding director of both the Union Banking Corp. and the American Ship and Commerce Corp. Since Mr. Pryor was executive committee chairman of Remington Arms and a central figure in the world's private arms traffic, his use to the Hitler project was enhanced as the Bush family's partner in Nazi Party banking and trans-Atlantic shipping.

The U.S. Senate arms-traffic investigators probed Remington after it was joined in a cartel agreement on explosives to the Nazi firm I.G. Farben. Looking at the period leading up to Hitler's seizure of power, the Senators found that "German political associations, like the Nazi and others, are nearly all armed with American ... guns... . Arms of all kinds coming from America are transshipped in the Scheldt to river barges before the vessels arrive in Antwerp. They then can be carried through Holland without police inspection or interference. The Hitlerists and Communists are presumed to get arms in this manner. The principal arms coming from America are Thompson submachine guns and revolvers. The number is great."[28]

The beginning of the Hitler regime brought some bizarre changes to the Hamburg-Amerika Line — and more betrayals.

Prescott Bush's American Ship and Commerce Corp. notified Max Warburg of Hamburg, Germany, on March 7, 1933, that Warburg was to be the corporation's official, designated representative on the board of Hamburg-Amerika.[29]

Max Warburg replied on March 27, 1933, assuring his American sponsors that the Hitler government was good for Germany: "For the last few years business was considerably better than we had anticipated, but a reaction is making itself felt for some months. We are actually suffering also under the very active propaganda against Germany, caused by some unpleasant circumstances. These occurrences were the natural consequence of the very excited election campaign, but were extraordinarily exaggerated in the foreign press. The Government is firmly resolved to maintain public peace and order in Germany, and I feel perfectly convinced in this respect that there is no cause for any alarm whatsoever."[30]

This seal of approval for Hitler, coming from a famous Jew, was just what Harriman and Bush required, for they anticipated rather serious "alarm" inside the U.S.A. against their Nazi operations.

On March 29, 1933, two days after Max's letter to Harriman, Max's son, Erich Warburg, sent a cable to his cousin Frederick M. Warburg, a director of the Harriman

railroad system. He asked Frederick to "use all your influence" to stop all anti-Nazi activity in America, including "atrocity news and unfriendly propaganda in foreign press, mass meetings, etc." Frederick cabled back to Erich: "No responsible groups here [are] urging [a] boycott [of] German goods[,] merely excited individuals." Two days after that, On March 31, 1933, the American-Jewish Committee, controlled by the Warburgs, and the B'nai B'rith, heavily influenced by the Sulzbergers (New York Times), issued a formal, official joint statement of the two organizations, counseling "that no American boycott against Germany be encouraged," and advising "that no further mass meetings be held or similar forms of agitation be employed."[31]

The American Jewish Committee and the B'nai B'rith (mother of the "Anti-Defamation League") continued with this hardline, no-attack-on-Hitler stance all through the 1930s, blunting the fight mounted by many Jews and other anti-fascists. Thus the decisive interchange reproduced above, taking place entirely within the orbit of the Harriman/Bush firm, may explain something of the relationship of George Bush to American Jewish and Zionist leaders. Some of them, in close cooperation with his family, played an ugly part in the drama of Naziism. Is this why "professional Nazi-hunters" have never discovered how the Bush family made its money?

The executive board of the Hamburg Amerika Line (Hapag) met jointly with the North German Lloyd Company board in Hamburg on Sept. 5, 1933. Under official Nazi supervision, the two firms were merged. Prescott Bush's American Ship and Commerce Corp. installed Christian J. Beck, a long-time Harriman executive, as manager of freight and operations in North America for the new joint Nazi shipping lines (Hapag-Lloyd) on Nov. 4, 1933.

According to testimony of officials of the companies before Congress in 1934, a supervisor from the Nazi Labor Front rode with every ship of the Harriman-Bush line; employees of the New York offices were directly organized into the Nazi Labor Front organization; Hamburg-Amerika provided free passage to individuals going abroad for Nazi propaganda purposes; and the line subsidized pro-Nazi newspapers in the U.S.A., as it had done in Germany against the constitutional German government.[32]

In mid-1936, Prescott Bush's American Ship and Commerce Corp. cabled M.M. Warburg, asking Warburg to represent the company's heavy share interest at the forthcoming Hamburg-Amerika stockholders meeting. The Warburg office replied with the information that "we represented you" at the stockholders meeting and "exercised on your behalf your voting power for Rm [gold marks] 3,509,600 Hapag stock deposited with us."

The Warburgs transmitted a letter received from Emil Helfferich, German chief executive of both Hapag-Lloyd and of the Standard Oil subsidiary in Nazi Germany: "It is the intention to continue the relations with Mr. Harriman on the same basis as heretofore....

In a colorful gesture, Hapag's Nazi chairman Helfferich sent the line's president across the Atlantic on a Zeppelin to confer with their New York string-pullers.

After the meeting with the Zeppelin passenger, the Harriman-Bush office replied: "I am glad to learn that Mr. Hellferich [sic] has stated that relations between the Hamburg American Line and ourselves will be continued on the same basis as heretofore."[33]

Two months before moving against Prescott Bush's Union Banking Corporation, the U.S. government ordered the seizure of all property of the Hamburg-Amerika Line and North German Lloyd, under the Trading with the Enemy Act. The investigators noted in the pre-seizure report that Christian J. Beck was still acting as an attorney representing the Nazi firm.[34]

In May 1933, just after the Hitler regime was consolidated, an agreement was reached in Berlin for the coordination of all Nazi commerce with the U.S.A. The Harriman International Co., led by Averell Harriman's first cousin Oliver, was to head a syndicate of 150 firms and individuals, to conduct all exports from Hitler Germany to the Unites States.[35]

This pact had been negotiated in Berlin between Hitler's economics minister, Hjalmar Schacht, and John Foster Dulles, international attorney for dozens of Nazi enterprises, with the counsel of Max Warburg and Kurt von Schroeder.

John Foster Dulles would later be U.S. Secretary of State, and the great power in the Republican Party of the 1950s. Foster's friendship and that of his brother Allen (head of the Central Intelligence Agency), greatly aided Prescott Bush to become the Republican U.S. Senator from Connecticut. And it was to be of inestimable value to George Bush, in his ascent to the heights of "covert action government," that both of these Dulles brothers were the lawyers for the Bush family's far-flung enterprise.

Throughout the 1930s, John Foster Dulles arranged debt restructuring for German firms under a series of decrees issued by Adolf Hitler. In these deals, Dulles struck a balance between the interest owed to selected, larger investors, and the needs of the growing Nazi war-making apparatus for producing tanks, poison gas, etc.

Dulles wrote to Prescott Bush in 1937 concerning one such arrangement. The German-Atlantic Cable Company, owning Nazi Germany's only telegraph channel to the United States, had made debt and management agreements with the Walker-Harriman bank during the 1920s. A new decree would now void those agreements, which had originally been reached with non-Nazi corporate officials. Dulles asked Bush, who managed these affairs for Averell Harriman, to get Averell's signature on a letter to Nazi officials, agreeing to the changes. Dulles wrote:

> Sept. 22, 1937
> Mr. Prescott S. Bush
> 59 Wall Street, New York, N.Y.
> Dear Press,
>
> I have looked over the letter of the German-American [sic] Cable Company to Averell Harriman .... It would appear that the only rights in the matter are those which inure in the bankers and that no legal embarrassment would result, so far as the bondholders are concerned, by your acquiescence in the modification of the bankers' agreement.
>
> Sincerely yours,
>
> John Foster Dulles

Dulles enclosed a proposed draft reply, Bush got Harriman's signature, and the changes went through.[36]

In conjunction with these arrangements, the German Atlantic Cable Company attempted to stop payment on its debts to smaller American bondholders. The money was to be used instead for arming the Nazi state, under a decree of the Hitler government.

Despite the busy efforts of Bush and Dulles, a New York court decided that this particular Hitler "law" was invalid in the United States; small bondholders, not parties to deals between the bankers and the Nazis, were entitled to get paid.[37]

In this and a few other of the attempted swindles, the intended victims came out with their money. But the Nazi financial and political reorganization went ahead to its tragic climax.

For his part in the Hitler revolution, Prescott Bush was paid a fortune.
This is the legacy he left to his son, President George Bush.

AN IMPORTANT HISTORICAL NOTE:

HOW THE HARRIMANS HIRED HITLER

IT WAS NOT INEVITABLE that millions would be slaughtered under fascism and in World War II. At certain moments of crisis, crucial pro-Nazi decisions were made outside of Germany. These decisions for pro-Nazi actions were more aggressive than the mere "appeasement" which Anglo-American historians later preferred to discuss. Private armies of 300,000 to 400,000 terrorists aided the Nazis' rise to power. W.A. Harriman's Hamburg-Amerika Line intervened against Germany's 1932 attempt to break them up.

The 1929-31 economic collapse bankrupted the Wall-Street-backed German Steel Trust. When the German government took over the Trust's stock shares, interests associated with Konrad Adenauer and the anti-Nazi Catholic Center Party attempted to acquire the shares. But the Anglo-Americans — Montagu Norman, and the Harriman-Bush bank — made sure that their Nazi puppet Fritz Thyssen regained control over the shares and the Trust. Thyssen's bankrolling of Hitler could then continue unhindered.

Unpayable debts crushed Germany in the 1920s, reparations required by the Versailles agreements. Germany was looted by the London-New York banking system, and Hitler's propaganda exploited this German debt burden.

But immediately after Germany came under Hitler's dictatorship, the Anglo-American financiers granted debt relief, which freed funds to be used for arming the Nazi state.

The North German Lloyd steamship line, which was merged with Hamburg-Amerika Line, was one of the companies which stopped debt payments under a Hitler decree arranged by John Foster Dulles and Hjalmar Schacht.

Kuhn Loeb and Co.'s Felix Warburg carried out the Hitler finance plan in New York.

Kuhn Loeb asked North German Lloyd bondholders to accept new lower interest steamship bonds, issued by Kuhn Loeb, in place of the better pre-Hitler bonds.

New York attorney Jacob Chaitkin, father of coauthor Anton Chaitkin, took the cases of many different bondholders who rejected the swindle by Harriman, Bush, Warburg, and Hitler. Representing a women who was owed $30 on an old steamship bond — and opposing John Foster Dulles in New York municipal court — Chaitkin threatened a writ from the sheriff, tying up the 30,000 ton transatlantic liner Europa until the client received her $30. {New York Times, January 10, 1934, p. 31 col. 3).

The American Jewish Congress hired Jacob Chaitkin as the legal director of the boycott against Nazi Germany. The American Federation of Labor cooperated with Jewish and other groups in the anti-import boycott. On the other side, virtually all the Nazi trade with the United States was under the supervision of the Harriman interests and functionaries such as Prescott Bush, father of President George Bush.

Meanwhile, the Warburgs demanded that American Jews not "agitate" against the Hitler government, or join the organized boycott. The Warburgs' decision was carried out by the American Jewish Committee and the B'nai B'rith, who opposed the boycott as the Nazi military state grew increasingly powerful.

The historical cover-up on these events is so tight that virtually the only expose of the Warburgs came in journalist John L. Spivak's "Wall Street's Fascist Conspiracy," in the pro-communist New Masses periodical (Jan. 29 and Feb. 5, 1934). Spivak pointed out that the Warburgs controlled the American Jewish Committee, which opposed the anti-Nazi boycott, while their Kuhn Loeb and Co. had underwritten Nazi shipping and he exposed the financing of pro-fascist political activities by the Warburgs and their partners and allies, many of whom were bigwigs in the American Jewish Committee and B'nai B'rith.

Given where the Spivak piece appeared, it is not surprising that Spivak called Warburg an ally of the Morgan Bank, but made no mention of Averell Harriman. Mr. Harriman, after all, was a permanent hero of the Soviet Union.

John L. Spivak later underwent a curious transformation, himself joining the cover-up. In 1 967, he wrote an autobiography (A Man in His Time, New York: Horizon Press), which praises the American Jewish Committee. The pro-fascism of the Warburgs does not appear in the book. The former "rebel " Spivak also praises the action arm of the B'nai B'rith, the Anti-Defamation League. Pathetically, he comments favorably that the League has spy files on the American populace which it shares with government agencies.

Thus is history erased; and those decisions, which direct history into one course or another, are lost to the knowledge of the current generation.

NOTES

1. Office of Alien Property Custodian, Vesting Order No. 248. The order was signed by Leo T Crowley, Alien Property Custodian, executed October 20, 1942; F.R. Doc. 42-11568; Filed, November 6, 1942, 11:31 A.M.; 7 Fed. Reg. 9097 (Nov. 7, 1942). See also the New York City Directory of Directors (available at the Library of Congress). The volumes for the 1930s and 1940s list Prescott Bush as a director of Union Banking Corporation for the years 1934 through 1943.
2. Alien Property Custodian Vesting Order No. 259: Seamless Steel Equipment Corporation; Vesting Order No. 261: Holland-American Trading Corp.
3. Alien Property Custodian Vesting Order No. 370: Silesian-American Corp.
4. The New York Times on December 16, 1944, ran a five-paragraph page 25 article on actions of the New York State Banking Department. Only the last sentence refers to the Nazi bank, as follows: "The Union Banking Corporation, 39 Broadway, New York, has received authority to change its principal place of business to 120 Broadway."
   The Times omitted the fact that the Union Banking Corporation had been seized by the government for trading with the enemy, and even the fact that 120 Broadway was the address of the government's Alien Property Custodian.
5. Fritz Thyssen, I PaidHitler, 1941, reprinted in (Port Washington, N.Y.: Kennikat Press, 1972), p. 133. Thyssen says his contributions began with 100,000 marks given in October 1923, for Hitler's attempted "putsch" against the constitutional government.
6. Confidential memorandum from U.S. embassy, Berlin, to the U.S. Secretary of State, April 20, 1932, on microfilm in Confidential Reports of U.S. State Deft., 1930s, Germany, at major U.S. libraries.
7. Oct. 5, 1942, Memorandum to the Executive Committee of the Office of Alien Property Custodian, stamped CONFIDENTIAL, from the Division of Investigation and Research, Homer Jones, Chief. Now declassified in United States National Archives, Suitland, Maryland annex. See Record Group 131, Alien Property Custodian, investigative reports, in file box relating to Vesting Order No. 248.
8. Elimination of German Resources for War: Hearings Before a Subcommittee of the Committee on Military Affairs, United States Senate, Seventy-Ninth Congress; Part 5, Testimony of [the United States] Treasury Department, July 2, 1945. P. 507: Table of Vereinigre Stahlwerke output, figures are percent of German total as of 1938; Thyssen organization including Union Banking Cotporation pp. 727-31.
9. Robert Sobel, The Life and Times ofDillon Read (New York: Dutton-Penguin, 1991), pp. 92-111. The

Dillon Read firm cooperated in the development of Sobel's book.
10. George Walker to Averell Harriman, Aug. 11, 1927, in the W. Averell Harriman papers at the Library of Congress (designated hereafter WAH papers).
11. "Iaccarino"to G. H. Walker, RCA Radiogram Sept. 12, 1927. The specific nature of their business with Mussolini is not explained in correspondence available for public access,
12. Andrew Boyle, Montagu Norman (London: Cassell, 1967).
Sir Henry Clay, Lord Norman (London, MacMillan & Co., 1957), pp. 18, 57, 70-71.
John A. Kouwenhouven, Partners in Banking... Brown Brothers Harriman (Garden City: Doubleday & Co., 1969).
13. Coordination of much of the Hitler project took place at a single New York address, The Union Banking Corporation had been set up by George Walker at 39 Broadway. Management of the Hamburg-Amerika Line, carried out through Harriman's American Ship and Commerce Corp., was also set up by George Walker at 39 Broadway,
14. Interrogation of Fritz Thyssen, EF/Me/1 of Sept. 4, 1945 in U.S. Control Council records, photostat on page 167 in Anthony Sutton, An Introduction to The Order (Billings, Mt.: Liberty House Press, 1986).
15. Nazi Conspiracy and Aggression—Supplement B, by the Office of United States Chief of Counsel for Prosecution of Axis Criminality, United States Government Printing Office, (Washington: 1948), pp. 1597,1686.
16. "Consolidated Silesian Steel Corporation - [minutes of the] Meeting of Board of Directors," Oct. 31, 1930 (Harriman papers, Library of Congress), shows Averell Harriman as Chairman of the Board.
Prescott Bush to WA. Harriman, Memorandum Dec. 19, 1930 on their Harriman Fifteen Corp.
Annual Report of United Konigs and Laura Steel and Iron Works for the year 1930 (Harriman papers, Library of Congress) lists "Dr. Friedrich Flick ... Berlin" and "William Averell Harriman ... New York " on the Board of Directors.
"Harriman Fifteen Corporation Securities Position February 28, 1931," Harriman papers, Library of Congress. This report shows Harriman Fifteen Corporation holding 32,576 shares in Silesian Holding Co. V.T.C. worth (in scarce depression dollars) $1,628,800, just over half the value of the Harriman Fifteen Corporation's total holdings.
The New York City Directory of Directors volumes for the 1930s (available at the Library of Congress) show Prescott Sheldon Bush and W. Averell Harriman as the directors of Harriman Fifteen Corp.
"Appointments," (three typed pages) marked "Noted May 18 1931 W.A.H.," (among the papers from Prescott Bush's New York Office of Brown Brothers Harriman, Harriman papers, Library of Congress), lists a meeting between Averell Harriman and Friedrich Flick in Berlin at 4:00 P.M., Wednesday April 22, 1931. This was followed immediately by a meeting with Wilhelm Cuno, chief executive of the Hamburg-Amerika Line.
The "Report To the Stockholders of the Harriman Fifteen Corporation," Oct. 19, 1933 (in the Harriman papers, Library of Congress) names G.H. Walker as president of the corporation. It shows the Harriman Fifteen Corporation's address as 1 Wall Street — the location of G.H. Walker and Co.
17. Nazi Conspiracy and Aggression—Supplement B, op. cit., p. 1686.
18. Jim Flaherty (a BBH manager, Prescott Bush's employee), March 19, 1934 to W.A. Harriman. "Dear Averell:
In Roland's absence Pres[cott] thought it advisable for me to let you know that we received the following cable from [our European representative] Rossi dated March 17th [relating to conflict with the Polish government] ...."
19. Harriman Fifteen Corporation notice to stockholders Jan. 7, 1935, under the name of George Walker, President.
20. Order No. 370: Silesian-American Corp. Executed Nov. 17, 1942. Signed by Leo T Crowley, Alien Property Custodian. F.R. Doc. 42-14183; Filed Dec. 31, 1942, 11:28 A.M.; 8 Fed. Reg. 33 (Jan. 1, 1943).
The order confiscated the Nazis' holdings of 98,000 shares of common and 50,000 shares of preferred stock in Silesian-American.
The Nazi parent company in Breslau, Germany wrote directly to Averell Harriman at 59 Wall St. on Aug. 5, 1940, witfi "an invitation to take part in the regular meeting of the members of the Bergwerksgesellsc[h]aft Georg von Giesche's Erben ...." WAH papers.

21. Sept. 25, 1942, Memorandum To the Executive Committee of the Office of Alien Property Custodian, stamped CONFIDENTIAL, from the Division of Investigation and Research, Homer Jones, Chief. Now declassified in United States National Archives, Suitland, Maryland annex. See Record Group 131, Alien Property Custodian, investigative reports, in file box relating to Vesting Order No. 370.
22. George Walker was a director of American Ship and Commerce from its organization through 1928. Consult New York City Directory of Directors.
    "Harriman Fifteen Corporation Securities Position February 28, 1931," op. cit. The report lists 46,861 shares in the American Ship & Commerce Corp.
    See "Message from Mr. Bullfin," Aug. 30, 1934 (Harriman Fifteen section, Harriman papers, Library of Congress) for the joint supervision of Bush and Walker, respectively director and president of the corporation.
23. Cuno was later exposed by Walter Funk, Third Reich Press Chief and Under Secretary of Propaganda, in Funk's postwar jail cell at Nuremberg; but Cuno had died just as Hitler was taking power. William L. Shirer, The Rise and Fall of the Third Reich (New York: Simon and Schuster, 1960), p. 144. Nazi Conspiracy and Aggression — Supplement B, op. cit, p. 1688.
24. See "Elimination of German Resources for War," op. cit., pp. 881-82 on Voegler.

See Annual Report of the (Hamburg-Amerikanische-Packetfahrt-Aktien-Gesellschaft (Hapag or Hamburg-Amerika Line), March 1931, for the board of directors. A copy is in the New York Public Library Annex at 11th Avenue, Manhattan.

25. Nazi Conspiracy and Aggression—Supplement B, op. cit., pp. 1178, 1453-54, 1597, 1599.
    See "Elimination of German Resources for War," op. cit., pp. 870-72 on Schroeder; p. 730 on Groeninger.
26. Annual Report of Hamburg-Amerika, op. cit.
    Baron Rudolph Schroeder, Sr. to Averell Harriman, Nov. 14, 1932. K[night] W[ooley] handwritten note and draft reply letter, Dec. 9, 1932.
    In his letter, Baron Rudolph refers to the family's American affiliate, J. Henry Schroder [name anglicized], of which Allen Dulles was a director, and his brother John Foster Dulles was the principal attorney.
    Baron Bruno Schroder of the British branch was adviser to Bank of England Governor Montagu Norman, and Baron Bruno's partner Frank Cyril Tiarks was Norman's co-director of the Bank of England throughout Norman's career. Kurt von Schroeder was Hjalmar Schacht's delegate to the Bank for International Settlements in Geneva, where many of the financial arrangements for the Nazi regime were made by Montagu Norman, Schacht and the Schroeders for several years of the Hitler regime right up to the outbreak of World War II.
27. Confidential memorandum from U.S. embassy, Berlin, op. cit.
28. U.S. Senate "Nye Committee " hearings, Sept. 14, 1934, pp. 1197-98, extracts from letters of Col. William N. Taylor, dated June 27, 1932 and Jan. 9, 1933.
29. American Ship and Commerce Corporation to Dr. Max Warburg, March 7, 1933.
    Max Warburg had brokered the sale of Hamburg-Amerika to Harriman and Walker in 1920. Max's brothers controlled the Kuhn Loeb investment banking house in New York, the firm which had staked old E.H. Harriman to his 1890s buyout of the giant Union Pacific Railroad.
    Max Warburg had long worked with Lord Milner and others of the racialist British Round Table concerning joint projects in Africa and Eastern Europe. He was an advisor to Hjalmar Schacht for several decades and was a top executive of Hitler's Reichsbank. The reader may consult David Farrer, The Warburgs: The Story of A Family (New York: Stein and Day, 1975).
30. Max Warburg, at M.M. Warburg and Co., Hamburg, to Averill [sic] Harriman, c/o Messrs. Brown Brothers Harriman & Co., 59 Wall Street, New York, N.Y., March 27, 1933.
31. This correspondence, and the joint statement of the Jewish organizations, are reproduced in Moshe R. Gottlieb, American Anti-Nazi Resistance, 1933-41: An Historical Analysis (New York: Ktav Publishing House, 1982).
32. Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities: Public Hearings before A Subcommittee of the Special Committee on Un-American Activities, United States House of Representatives, Seventy Third Congress, New York City, July 9-12, 1934—Hearings No. 73-NY-7 (Washington: U.S. Govt. Printing Office, 1934). See testimony of Capt. Frederick C. Mensing, John Schroeder, Paul von Lilienfeld-Toal, and summaries by Committee members.
    See New York Times, July 16, 1933, p. 12, for organizing of Nazi Labor Front at North German Lloyd, leading to Hamburg-Amerika after merger.

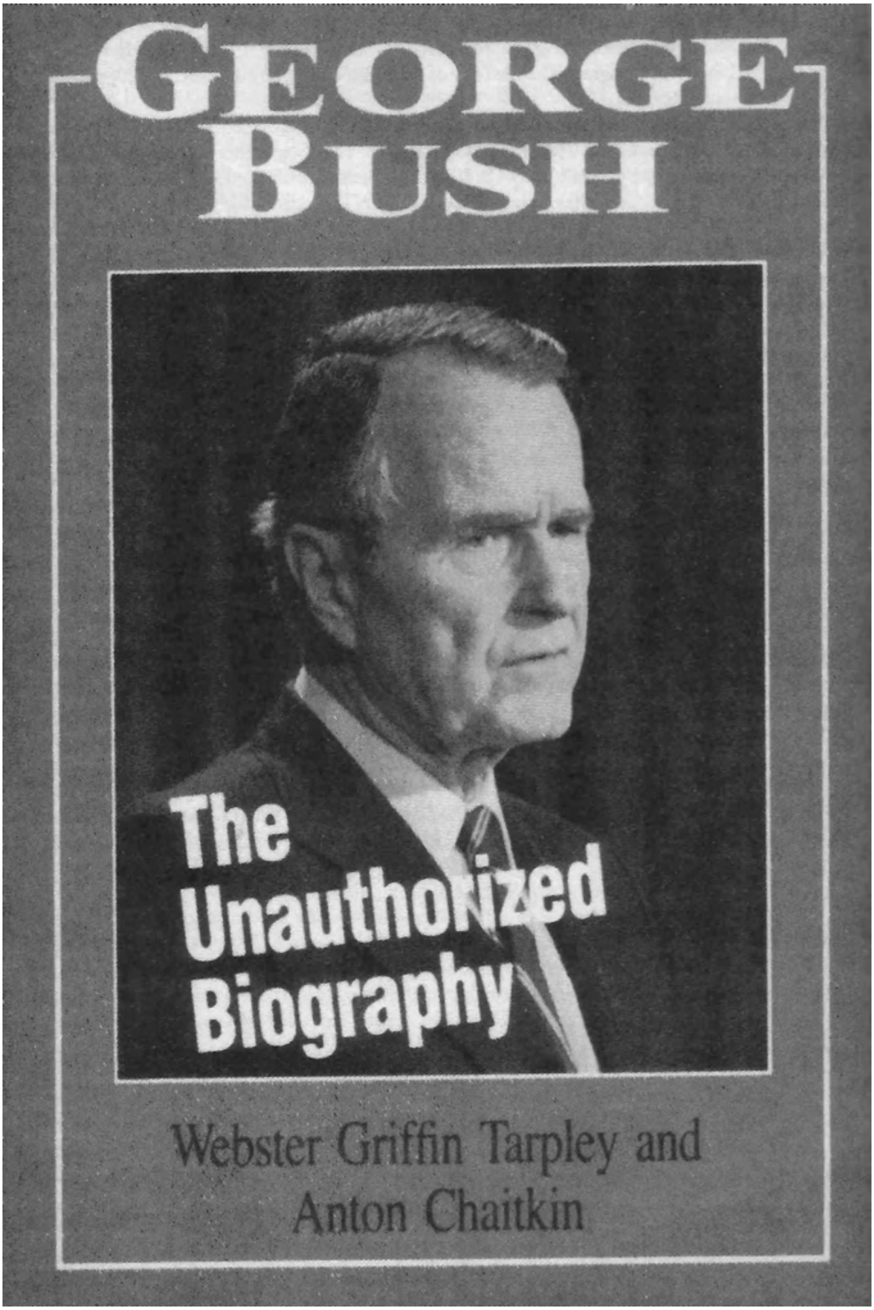
33. American Ship and Commerce Corporation telegram to Rudolph Brinckmann at M.M. Warburg, June 12, 1936.
Rudolph Brinckmann to Averell Harriman at 59 Wall St., June 20, 1936, with enclosed note transmitting Helfferich's letter.
Reply to Dr. Rudolph Brinckmann c/o M.M. Warburg and Co, July 6, 1936, in the Harriman papers at the Library of Congress. The file copy of this letter carries no signature, but is presumably from Averell Harriman.

34. Office of Alien Property Custodian, Vesting Order No. 126. Signed by Leo T. Crowley, Alien Property Custodian, executed August 28, 1942. ER. Doc. 42-8774; Filed September 4, 1942, 10:55 AM.; 7 F.R. 7061 (No. 176, Sept. 5, 1942.) July 18, 1942, Memorandum To the Executive Committee of the Office of Alien Property Custodian, stamped CONFIDENTIAL, from the Division of Investigation and Research, Homer Jones, Chief. Now declassified in United States National Archives, Suitland, Maryland annex. See Record Group 131, Alien Property Custodian, investigative reports, in file box relating to Vesting Order No. 126.

35. New York Times, May 20, 1933. Leading up to this agreement is a telegram which somehow escaped the shredder and may be seen in the Harriman papers in the Library of Congress. It is addressed to Nazi official Hjalmar Schacht at the Mayflower Hotel, Washington, dated May 11, 1933: "Much disappointed to have missed seeing you Tuesday afternoon .... I hope to see you either in Washington or New York before you sail.
with my regards WA. Harriman"

36. Dulles to Bush letter and draft reply in WAH papers.

37. New York Times, January 19, 1958



FIVE CHAPTERS here are from the very well researched, and very much ignored by the main-stream Media, George Bush: The Unauthorized Biography by Webster Griffin Tarpley and Anton Chaitkin. The 659-page book is hard to find and sell for $175 to $250 a copy.
The complete text is available online courtesy the authors at www.tarpley.net/bushb.htm

RACE HYGIENE: THREE BUSH FAMILY ALLIANCES

WEBSTER GRIFFIN TARPLEY AND ANTON CHAITKIN

CHAPTER THREE OF GEORGE BUSH — THE UNAUTHORIZED BIOGRAPHY -1992. USED WITH PERMISSION.

"The [government] must put the most modern medical means in the service of this knowledge... Those who are physically and mentally unhealthy and unworthy must not perpetuate their suffering in the body of their children... The prevention of the faculty and opportunity to procreate on the part of the physically degenerate and mentally sick, over a period of only 600 years, would... free humanity from an immeasurable misfortune."

"The per capita income gap between the developed and the developing countries is increasing, in large part the result of higher birth rates in the poorer countries... Famine in India, unwanted babies in the United States, poverty that seemed to form an unbreakable chain for millions of people — how should we tackle these prolems?... It is quite clear that one of the major challenges of the 1970s ... will be to curb the world's fertility."

These two quotations ate alike in their mock show of concern for human suffering, and in their cynical remedy for it: Big Brother must prevent the "unworthy" or "unwanted" people from living.

Let us now further inquire into the family background of our President, so as to help illustrate how the second quoted author, George Bush[1], came to share the outlook of the first, Adolf Hitler[2].

We shall examine here the alliance of the Bush family with three other families: Farish, Draper and Gray.

The private associations among these families have led to the President's relationship to his closest, most confidential advisers. These alliances were forged in the earlier Hitler project and its immediate aftermath. Understanding them will help us to explain George Bush's obsession with the supposed overpopulation of the world's non-Anglo-Saxons, and the dangerous means he has adopted to deal with this "problem."

BUSH AND FARISH

WHEN GEORGE BUSH WAS ELECTED VICE PRESIDENT IN 1980, Texas mystery man William ("Will") Stamps Farish III took over management of all of George Bush's personal wealth in a "blind trust." Known as one of the richest men in Texas, Will Farish keeps his business affairs under the most intense secrecy. Only the source of his immense wealth is known, not its employment.[3]

Will Farish has long been Bush's closest friend and confidante. He is also the unique private host to Britain's Queen Elizabeth II: Farish owns and boards the studs which mate with the Queen's mares. That is her public rationale when she comes to America and stays in Farish's house. It is a vital link in the mind of our Anglophile President.

President Bush can count on Will Farish not to betray the violent secrets surrounding the Bush family money. For Farish's own family fortune was made in the same Hitler project, in a nightmarish partnership with George Bush's father.

On March 25, 1942, U.S. Assistant Attorney General Thurman Arnold announced that William Stamps Farish (grandfather of the President's money manager) had pled "no contest" to charges of criminal conspiracy with the Nazis. Farish was the principal manager of a worldwide cartel between Standard Oil Co. of New Jersey and the I.G. Farben concern. The merged enterprise had opened the Auschwitz slave labor camp on June 14, 1940, to produce artificial rubber and gasoline from coal. The Hitler government supplied political opponents and Jews as the slaves, who were worked to near death and then murdered.

Arnold disclosed that Standard Oil of N.J. (later known as Exxon), of which Farish was president and chief executive, had agreed to stop hiding from the United States patents for artificial rubber which the company had provided to the Nazis.[4]

A Senate investigating committee under Senator (later U.S. President) Harry Truman of Missouri had called Arnold to testify at hearings on U.S. corporations' collaboration with the Nazis. The Senators expressed outrage at the cynical way Farish was continuing an alliance with the Hitler regime that had begun back in 1933, when Farish became chief of Jersey Standard. Didn't he know there was a war on?

The Justice Department laid before the committee a letter, written to Standard president Farish by his vice president, shortly after the beginning of World War II (Sept 1, 1939) in Europe. The letter concerned a renewal of their earlier agreements with the Nazis:

> Report on European Trip
> Oct. 12, 1939
> Mr. W.S. Farish
> 30 Rockefeller Plaza
>
> Dear Mr. Farish:... I stayed in France until Sept. 17th... In England I met by appointment the Royal Dutch [Shell Oil Co.] gentlemen from Holland, and ... a general agreement was reached on the necessary changes in our relations with the I.G. [Farben], in view of the state of war... [T]he Royal Dutch Shell group is essentially British... I also had several meetings with ... the [British] Air Ministry...
>
> I required help to obtain the necessary permission to go to Holland... After discussions with the [American] Ambassador [Joseph Kennedy] ... the situation was cleared completely... The gentlemen in the Air Ministry ... very kindly offered to assist me [later] in reentering England...

Pursuant to these arrangements, I was able to keep my appointments in Holland [having flown there on a British Royal Air Force bomber], where I had three days of discussion with the representatives of I.G. They delivered to me assignments of some 2,000 foreign patents and we did our best to work out complete plans for a modus vivendi which could operate through the term of the war, whether or not the U.S. came in... [emphasis added]

Very truly yours, F[rank] A. Howard[5]

Here are some cold realities behind the tragedy of World War II, which help explain the Bush-Farish family alliance — and their peculiar closeness to the Queen of England:

* Shell Oil is principally owned by the British royal family. Shell's chairman, Sir Henri Deterding, helped sponsor Hitlers rise to power/by arrangement with the royal family's Bank of England Governor, Montagu Norman. Their ally Standard Oil would take part in the Hitler project right up to the bloody, gruesome end.
* When grandfather Farish signed the Justice Department's consent decree in March 1942, the government had already started picking its way through the tangled web of world-monopoly oil and chemical agreements between Standard Oil and the Nazis. Many patents and other Nazi-owned aspects of the partnership had been seized by the U.S. Alien Property Custodian.

Uncle Sam would not seize Prescott Bush's Union Banking Corporation for another seven months.

The Bush-Farish axis had begun back in 1929. In that year the Harriman bank bought Dresser Industries, supplier of oil-pipeline couplers to Standard and other companies, Prescott Bush became a director and financial czar of Dresser, installing his Yale class-mate Neil Mahlon as chairman.[7] George Bush would later name one of his sons after the Dresser executive.

William S. Farish was the main organizer of the Humble Oil Co. of Texas, which Farish merged into the Standard Oil Company of New Jersey. Farish built up the Humble-Standard empire of pipelines and refineries in Texas.[8]

The stock market crashed just after the Bush family got into the oil business. The world financial crisis led to the merger of the Walker-Harriman bank with Brown Brothers in 1931. Former Brown partner Montagu Norman and his protege Hjalmar Schacht paid frantic visits to New York that year and the next, preparing the new Hitler regime for Germany.

The most important American political event in those preparations for Hitler was the infamous "Third International Congress on Eugenics," held at New York's American Museum of Natural History August 21 -23, 1932, supervised by the International Federation of Eugenics Societies.[9] This meeting took up the stubborn persistence of African-Americans and other allegedly "inferior" and "socially inadequate" groups in reproducing, expanding their numbers, and amalgamating with others. It was recommended that these "dangers" to the "better" ethnic groups and to the "well-born," could be dealt with by sterilization or "cutting off the bad stock" of the "unfit."

Italy's fascist government sent an official representative. Averell Harriman's sister Mary, director of "Entertainment" for the Congress, lived down in Virginia fox-hunting country; her state supplied the speaker on "racial purity," W.A. Plecker, Virginia commissioner of vital statistics. Plecker reportedly held the delegates spellbound with his account of the struggle to stop race-mixing and inter-racial sex in Virginia.

The Congress proceedings were dedicated to Averell Harriman's mother; she had paid for the founding of the race-science movement in America back in 1910, building the

Eugenics Record Office as a branch of the Galton National Laboratory in London. She and other Harrimans were usually escorted to the horse races by old George Herbert Walker — they shared with the Bushes and the Farishes a fascination with "breeding thoroughbreds" among horses and humans.[10]

Averell Harriman personally arranged with the Walker/Bush Hamburg-Amerika Line to transport Nazi ideologues from Germany to New York for this meeting.[11] The most famous among those transported was Dr. Ernst Rudin, psychiatrist at the Kaiser Wilhelm Institute for Genealogy and Demography in Berlin, where the Rockefeller family paid for Dr. Rudin to occupy an entire floor with his eugenics "research." Dr. Rudin had addressed the International Federation's 1928 Munich meeting, speaking on "Mental Aberration and Race Hygiene," while others (Germans and Americans) spoke on race-mixing and sterilization of the unfit. Riidin had also led the German delegation to the 1930 Mental Hygiene Congress in Washington, D.C.

At the Harrimans' 1932 New York Eugenics Congress, Ernst Riidin was unanimously elected president of the International Federation of Eugenics Societies. This was recognition of Riidin as founder of the German Society for Race Hygiene, with his co-founder, Eugenics Federation vice president Alfred Plotz.

As depression-maddened financiers schemed in Berlin and New York, Riidin was now official leader of the world eugenics movement. Components of his movement included groups with overlapping leadership, dedicated to:

- sterilization of mental patients ("mental hygiene societies");
- execution of the insane, criminals and the terminally ill ("euthanasia societies"): and
- eugenical race-purification by prevention of births to parents from "inferior" blood stocks ("birth control societies").

Before the Auschwitz death camp became a household word, these British-American-European groups called openly for the elimination of the "unfit" by means including force and violence.[12]

Ten months later, in June 1933, Hitler's interior minister Wilhelm Frick spoke to a eugenics meeting in the new Third Reich. Frick called the Germans a "degenerate" race, denouncing one-fifth of Germany's parents for producing "feeble-minded" and "defective" children. The following month, on a commission by Frick, Dr. Ernst Riidin wrote the "Law for the Prevention of Hereditary Diseases in Posterity," the sterilization law modeled on previous U.S. statutes in Virginia and other states.

Special courts were soon established for the sterilization of German mental patients, the blind, the deaf and alcoholics. A quarter million people in these categories were sterilized. Riidin, Plotz and their colleagues trained a whole generation of physicians and psychiatrists — as sterilizers and as killers.

When the war started, the eugenicists, doctors and psychiatrists staffed the new "T4" agency, which planned and supervised the mass killings: first at "euthanasia centers," where the same categories which had first been subject to sterilization were now to be murdered, their brains sent in lots of 200 to experimental psychiatrists; then at slave camps such as Auschwitz; and finally, for Jews and other race victims, at straight extermination camps in Poland, such as Treblinka and Belsen.[13]

In 1933, as what Hitler called his "New Order" appeared, John D. Rockefeller, Jr. appointed William S. Farish the chairman of Standard Oil Co. of New Jersey (in 1937 he was made president and chief executive). Farish moved his offices to Rockefeller Center, New York, where he spent a good deal of time with Hermann Schmitz, chairman of

I.G. Farben; his company paid a publicity man, Ivy Lee, to write pro-I.G. Farben and pro-Nazi propaganda and get it into the U.S. press.

Now that he was outside of Texas, Farish found himself in the shipping business — like the Bush family. He hired Nazi German crews for Standard Oil tankers. And he hired Emil Helfferich, chairman of the Walker/Bush/Harriman Hamburg-Amerika Line, as chairman also of the Standard Oil Company subsidiary in Germany. Karl Lindemann, board member of Hamburg-Amerika, also became a top Farish-Standard executive in Germany.'"[14]

This interlock between their Nazi German operations put Farish together with Prescott Bush in a small, select group of men operating from abroad through Hitler's "revolution," and calculating that they would never be punished.

In 1939, Farish's daughter Martha married Averell Harriman's nephew, Edward Harriman Gerry, and Farish in-laws became Prescott Bush's partners at 59 Broadway.[15]

Both Emil Helfferich and Karl Lindemann were authorized to write checks to Heinrich Himmler, chief of the Nazi S.S., on a special Standard Oil account. This account was managed by the German-British-American banker, Kurt von Schroeder. According to U.S. intelligence documents reviewed by author Antony Sutton, Emil Helfferich continued his payments to the S.S. into 1944, when the S.S. was supervising the mass murder at the Standard-I.G. Farben Auschwitz and other death camps. Helfferich told Allied interrogators after the war that these were not his personal contributions — they were corporate Standard Oil funds.[16]

After pleading "no contest" to charges of criminal conspiracy with the Nazis, William Stamps Farish was fined $5,000. (Similar fines were levied against Standard Oil — $5,000 each for the parent company and for several subsidiaries.) This of course did not interfere with the millions of dollars that Farish had acquired in conjunction with Hitler's New Order, as a large stockholder, chairman and president of Standard Oil. All the government sought was the use of patents which his company had given to the Nazis — the Auschwitz patents — but had withheld from the U.S. military and industry.

But a war was on, and if young men were to be asked to die fighting Hitler ... something more was needed. Farish was hauled before the Senate committee investigating the national defense program. The committee chairman, Senator Harry Truman, told newsmen before Farish testified: "I think this approaches treason."[17]

Farish began breaking apart at these hearings. He shouted his "indignation" at the Senators, and claimed he was not "disloyal."

After the March-April hearings ended, more dirt came gushing out of the Justice Department and the Congress on Farish and Standard Oil. Farish had deceived the U.S. Navy to prevent the Navy from acquiring certain patents, while supplying them to the Nazi war machine; meanwhile, he was supplying gasoline and tetraethyl lead to Germany's submarines and air force. Communications between Standard and I.G. Farben from the outbreak of World War II were released to the Senate, showing that Farish's organization had arranged to deceive the U.S. government into passing over Nazi-owned assets: They would nominally buy I.G.'s share in certain patents because "in the event of war between ourselves and Germany ... it would certainly be very undesirable to have this 20 percent Standard-I.G. pass to an alien property custodian of the U.S. who might sell it to an unfriendly interest."[18]

John D. Rockefeller, Jr. (father of David, Nelson and John D. Rockefeller III), controlling owner of Standard Oil, told the Roosevelt administration that he knew nothing of the day-to-day affairs of his company, that all these matters were handled by Farish and other executives.[19]

In August, Farish was brought back for more testimony. He was now frequently accused of lying. Farish was crushed under the intense, public grilling; he became morose, ashen. While Prescott Bush escaped publicity when the government seized his Nazi banking organization in October, Farish had been nailed. He collapsed and died of a heart attack on Nov. 29, 1942.

The Farish family was devastated by the exposure. Son William Stamps Farish, Jr., a lieutenant in the Army Air Force, was humiliated by the public knowledge that his father was fueling the enemy's aircraft; he died in a training accident in Texas six months later.[20]

With this double death, the fortune comprising much of Standard Oil's profits from Texas and Nazi Germany was now to be settled upon the little four-year-old grandson, William ("Will") Stamps Farish III. Will Farish grew up a recluse, the most secretive multi-millionaire in Texas, with investments of "that money" in a multitude of foreign countries, and a host of exotic contacts overlapping the intelligence and financial worlds — particularly in Britain.

The Bush-Farish axis started George Bush's career. After his 1948 graduation from Yale (and Skull and Bones), George Bush flew down to Texas on a corporate airplane and was employed by his father's Dresser Industries. In a couple of years he got help from his uncle, George Walker, Jr., and Farish's British banker friends, to set him up in the oil property speculation business. Soon thereafter, George Bush founded the Zapata Oil Company, which put oil drilling rigs into certain locations of great strategic interest to the Anglo-American intelligence community.

Will Farish at 25 years old was a personal aide to Zapata chairman George Bush in Bush's unsuccessful 1964 campaign for Senate. Will Farish used "that Auschwitz money" to back George Bush financially, investing in Zapata. When Bush was elected to Congress in 1966, Farish joined the Zapata board.[21]

When George Bush became U.S. Vice President in 1980, the Farish and Bush family fortunes were again completely, secretly commingled. As we shall see, the old projects were now being revived on a breathtaking scale.

BUSH AND DRAPER

TWENTY YEARS BEFORE HE WAS U.S. PRESIDENT, George Bush brought two "race-science" professors in front of the Republican Task Force on Earth Resources and Population. As chairman of the Task Force, then-Congressman Bush invited Professors William Shockley and Arthur Jensen to explain to the committee how allegedly runaway birth-rates for African-Americans were "down-breeding" the American population.

Afterwards Bush personally summed up for the Congress the testimony his black-inferiority advocates had given to the Task Force.[22] George Bush held his hearings on the threat posed by black babies on August 5, 1969, while much of the world was in a better frame of mind — celebrating mankind's progress from the first moon landing 16 days earlier. Bush's obsessive thinking on this subject was guided by his family's friend, Gen. William H. Draper, Jr., the founder and chairman of the Population Crisis Committee, and vice chairman of the Planned Parenthood Federation. Draper had long been steering U.S. public discussion about the so-called "population bomb" in the non-white areas of the world.

If Congressman Bush had explained to his colleagues how his family had come to know General Draper, they would perhaps have felt some alarm, or even panic, and paid more healthy attention to Bush's presentation. Unfortunately, the Draper-Bush population doctrine is now official U.S. foreign policy.

William H. Draper, Jr. had joined the Bush team in 1927, when he was hired by Dillon Read & Co., New York investment bankers. Draper was put into a new job slot at the firm: handling the Thyssen account.

We recall that in 1924, Fritz Thyssen set up his Union Banking Corporation in George Herbert Walker's bank at 39 Broadway, Manhattan. Dillon Read & Co.'s boss, Clarence Dillon, had begun working with Fritz Thyssen sometime after Averell Harriman first met with Thyssen — at about the time Thyssen began financing Adolf Hitler's political career.

In January 1926, Dillon Read created the German Credit and Investment Corporation in Newark, New Jersey and Berlin, Germany, as Thyssen's short-term banker. That same year Dillon Read created the Vereinigte Stahlwerke (German Steel Trust), incorporating the Thyssen family interests under the direction of New York and London finance.[23]

William H. Draper, Jr. was made director, vice president and assistant treasurer of the German Credit and Investment Corp. His business was short-term loans and financial management tricks for Thyssen and the German Steel Trust. Draper's clients sponsored Hitler's terroristic takeover; his clients led the buildup of the Nazi war industry; his clients made war against the United States. The Nazis were Drapers direct partners in Berlin and New Jersey: Alexander Kreuter, residing in Berlin, was president; Frederic Brandi, whose father was a top coal executive in the German Steel Trust, moved to the U.S. in 1926 and served as Draper's co-director in Newark.

Draper's role was crucial for Dillon Read & Co., for whom Draper was a partner and eventually vice president. The German Credit and Investment Corp. (GCI) was a "front" for Dillon Read: It had the same New Jersey address as U.S. & International Securities Corp. (USIS), and the same man served as treasurer of both firms.[24]

Clarence Dillon and his son C. Douglas Dillon were directors of USIS, which was spotlighted when Clarence Dillon was hauled before the Senate Banking Committee's famous "Pecora" hearings in 1933. USIS was shown to be one of the great speculative pyramid schemes which had swindled stockholders of hundreds of millions of dollars. These investment policies had rotted the U.S. economy to the core, and led to the Great Depression of the 1930s.

But William H. Draper, Jr. s GCI "front" was not apparently affiliated with the USIS "front" or with Dillon, and the GCI escaped the Congressmen's limited scrutiny. This oversight was to prove most unfortunate, particularly to the 50 million people who subsequently died in World War II.

Dillon Read hired public relations man Ivy Lee to prepare their executives for their testimony and to confuse and further baffle the Congressmen.[25] Lee apparently took enough time out from his duties as image-maker for William S. Farish and the Nazi I.G. Farben Co.; he managed the congressional thinking so that the Congressmen did not disturb the Draper operation in Germany — and did not meddle with Thyssen, or interfere with Hitler's U.S. moneymen.

Thus in 1932, William H. Draper, Jr. was free to finance the International Eugenics Congress as a "Supporting Member."[26] Was he using his own income as a Thyssen trust banker? Or did the funds come from Dillon Read corporate accounts, perhaps to be written off income tax as "expenses for German project: race purification"? Draper helped select Ernst Riidin as chief of the world eugenics movement, who used his office to promote what he called Adolf Hitler's "holy, national and international racial hygienic mission."[27]

W.S. Farish, as we have seen, was publicly exposed in 1942, humiliated and destroyed. Just before Farish died, Prescott Bush's Nazi banking office was quietly seized and shut

down. But Prescott's close friend and partner in the Thyssen-Hitler business, William H. Draper, Jr., neither died nor moved out of German affairs. Draper listed himself as a director of the German Credit and Investment Corp. through 1942, and the firm was not liquidated until November 1943.[28] But a war was on; Draper, a colonel from previous military service, went off to the Pacific theater and became a general.

General Draper apparently had a hobby: magic — illusions, sleight of hand, etc. — and he was a member of the Society of American Magicians. This is not irrelevant to his subsequent career.

The Nazi regime surrendered in May 1945. In July 1945, General Draper was called to Europe by the American military government authorities in Germany. Draper was appointed head of the Economics Division of the U.S. Control Commission. He was assigned to take apart the Nazi corporate cartels. There is an astonishing but perfectly logical rationale to this — Draper knew a lot about the subject! General Draper, who had spent about 15 years financing and managing the dirtiest of the Nazi enterprises, was now authorized to decide who was exposed, who lost and who kept his business, and in practical effect, who was prosecuted for war crimes.[29]

(Draper was not unique within the postwar occupation government. Consider the case of John J. McCloy, U.S. Military Governor and High Commissioner of Germany, 1949-1952. Under instructions from his Wall Street law firm, McCloy had lived for a year in Italy, serving as an advisor to the fascist government of Benito Mussolini. An intimate collaborator of the Harriman/Bush bank, McCloy had sat in Adolf Hitler's box at the 1936 Olympic games in Berlin, at the invitation of Nazi chieftains Rudolf Hess and Hermann Goring.)[30]

William H. Draper, Jr., as a "conservative," was paired with the "liberal" U.S. Treasury Secretary Henry Morgenthau in a vicious game. Morgenthau demanded that Germany be utterly destroyed as a nation, that its industry be dismantled and it be reduced to a purely rural country. As the economic boss in 1945 and 1946, Draper "protected" Germany from the Morgenthau Plan ... but at a price.

Draper and his colleagues demanded that Germany and the world accept the collective guilt of the German people as the explanation for the rise of Hitler's New Order, and the Nazi war crimes. This, of course, was rather convenient for General Draper himself, as it was for the Bush family. It is still convenient decades later, allowing Prescott's son, President Bush, to lecture Germany on the danger of Hitlerism. Germans are too slow, it seems, to accept his New World Order.

After several years of government service (often working directly for Averell Harriman in the North Atlantic Alliance), General Draper was appointed in 1958 chairman of a committee which was to advise President Dwight Eisenhower on the proper course for U.S. military aid to other countries. At that time, Prescott Bush was a U.S. Senator from Connecticut, a confidential friend and golf partner with National Security Director Gordon Gray, and an important golf partner with Dwight Eisenhower as well. Prescott's old lawyer from the Nazi days, John Foster Dulles, was Secretary of State, and his brother Allen Dulles, formerly of the Schroder bank, was head of the CIA.

This friendly environment emboldened General Draper to pull off a stunt with his military aid advisory committee. He changed the subject under study. The following year the Draper committee recommended that the U.S. government react to the supposed threat of the "population explosion" by formulating plans to depopulate the poorer countries. The growth of the world's non-white population, he proposed, should be regarded as dangerous to the national security of the United States![31]

President Eisenhower rejected the recommendation. But in the next decade, General Draper founded the "Population Crisis Committee" and the "Draper Fund," joining with the Rockefeller and Du Pont families to promote eugenics as "population control." The administration of President Lyndon Johnson, advised by General Draper on the subject, began financing birth control in the tropical countries through the U.S. Agency for International Development (USAID).

General Draper was George Bush's guru on the population question.[32] But there was also Draper's money — from that uniquely horrible source — and Draper's connections on Wall Street and abroad. Draper's son and heir, William H. Draper III, was co-chairman for finance (chief of fundraising) of the Bush-for-President national campaign organization in 1980. With George Bush in the White House, the younger Draper heads up the depopulation activities of the United Nations throughout the world.

General Draper was vice president of Dillon Read until 1953. During the 1950s and 1960s, the chief executive there was Frederic Brandi, the German who was Draper's co-director for the Nazi investments and his personal contact man with the Nazi German Steel Trust. Nicholas Brady was Brandi's partner from 1954, and replaced him as the firm's chief executive in 1971. Nicholas Brady, who knows where all the bodies are buried, was chairman of his friend George Bush's 1980 election campaign in New Jersey, and has been United States Treasury Secretary throughout Bush's presidency.[35]

BUSH AND GRAY

The U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT says that surgical sterilization is the Bush administration's "first choice" method of population reduction in the Third World.[34]

The United Nations Population Fund claims that 37 percent of contraception users in Ibero-America and the Caribbean have already been surgically sterilized. In a 1991 report, William H. Draper Ill's agency asserts that 254 million couples will be surgically sterilized over the course of the 1990s; and that if present trends continue, 80 percent of the women in Puerto Rico and Panama will be surgically sterilized.[35]

The U.S. government pays directly for these sterilizations.

Mexico is first among targeted nations, on a list which was drawn up in July 1991, at a USAID strategy session. India and Brazil are second and third priorities, respectively. On contract with the Bush administration, U.S. personnel are working from bases in Mexico to perform surgery on millions of Mexican men and women. The acknowledged strategy in this program is to sterilize those young adults who have not already completed their families.

George Bush has a rather deep-seated personal feeling about this project, in particular as it pits him against Pope John Paul II in Catholic countries such as Mexico. (See Chapter 4 below, on the origin of a Bush family grudge in this regard.)

The spending for birth control in the non-white countries is one of the few items that is headed upwards in the Bush administration budget. As its 1992 budget was being set, USAID said its Population Account would receive $300 million, a 20 percent increase over the previous year. Within this project, a significant sum is spent on political and psychological manipulations of target nations, and rather blatant subversion of their religions and governments.[36]

These activities might be expected to cause serious objections from the victimized nationalities, or from U.S. taxpayers, especially if the program is somehow given widespread publicity.

Quite aside from moral considerations, legal questions would naturally arise, which could be summed up: How does George Bush think he can get away with this?

In this matter the President has expert advice. Mr. (Clayland) Boyden Gray has been counsel to George Bush since the 1980 election. As chief legal officer in the White House, Boyden Gray can walk the President through the dangers and complexities of waging such unusual warfare against Third World populations. Gray knows how these things are done.

When Boyden Gray was four and five years old, his father organized the pilot project for the present worldwide sterilization program, from the Gray family household in North Carolina.

It started in 1946. The eugenics movement was looking for a way to begin again in America.

Nazi death camps such as Auschwitz had just then seared the conscience of the world. The Sterilization League of America, which had changed its name during the war to "Birthright, Inc.," wanted to start up again. First they had to overcome public nervousness about crackpots proposing to eliminate "inferior" and "defective" people. The League tried to surface in Iowa, but had to back off because of negative publicity: A little boy had recently been sterilized there and had died from the operation.

They decided on North Carolina, where the Gray family could play the perfect host. Through British imperial contacts, Boyden Gray's grandfather, Bowman Gray, had become principal owner of the R.J. Reynolds Tobacco Co. Boyden's father, Gordon Gray, had recently founded the Bowman Gray (memorial) Medical School in Winston-Salem, using his inherited cigarette stock shares. The medical school was already a eugenics center.

As the experiment began, Gordon Gray's great aunt, Alice Shelton Gray, who had raised him from childhood, was living in his household. Aunt Alice had founded the "Human Betterment League," the North Carolina branch of the national eugenical sterilization movement.

Aunt Alice was the official supervisor of the 1946-47 experiment. Working under Miss Gray was Dr. Claude Nash Herndon, whom Gordon Gray had made assistant professor of "medical genetics" at Bowman Gray Medical School.

Dr. Clarence Gamble, heir to the Proctor and Gamble soap fortune, was the sterilizers' national field operations chief.

The experiment worked as follows. All children enrolled in the school district of Winston-Salem, N. C. were given a special "intelligence test." Those children who scored below a certain arbitrary low mark were then cut open and surgically sterilized.

We quote now from the official story of the project:[37]

> In Winston-Salem and in [nearby] Orange County, North Carolina, the [Sterilization League's] field committee had participated in testing projects to identify school age children who should be considered for sterilization. The project in Orange County was conducted by the University of North Carolina and was financed by a 'Mr. Hanes,' a friend of Clarence Gamble and supporter of the field work project in North Carolina. The Winston-Salem project was also financed by Hanes." ["Hanes" was underwear mogul James Gordon Hanes, a trustee of Bowman Gray Medical School and treasurer of Alice Gray's group]...
>
> The medical school had a long history of interest in eugenics and had compiled extensive histories of families carrying inheritable disease. In 1946, Dr. C. Nash Herndon ... made a statement to the press on the use of sterilization to prevent the spread of inheritable diseases...

> The first step after giving the mental tests to grade school children was to interpret and make public the results. In Orange County the results indicated that three percent of the school age children were either insane or feebleminded... [Then] the field committee hired a social worker to review each case ... and to present any cases in which sterilization was indicated to the State Eugenics Board, which under North Carolina law had the authority to order sterilization...

Race science experimenter Dr. Claude Nash Herndon provided more details in an interview in 1990:[38]

> Alice Gray was the general supervisor of the project. She and Hanes sent out letters promoting the program to the commissioners of all 100 counties in North Carolina... What did I do? Nothing besides riding herd on the whole thing! The social workers operated out of my office. I was at the time also director of outpatient services at North Carolina Baptist Hospital. We would see the [targeted] parents and children there... I.Q. tests were run on all the children in the Winston-Salem public school system. Only the ones who scored really low [were targeted for sterilization], the real bottom of the barrel, like below 70.
>
> Did we do sterilizations on young children? Yes. This was a relatively minor operation... It was usually not until the child was eight or ten years old. For the boys, you just make an incision and tie the tube... We more often performed the operation on girls than with boys. Of course, you have to cut open the abdomen, but again, it is relatively minor.

Dr. Herndon remarked coolly that "we had a very good relationship with the press" for the project. This is not surprising, since Gordon Gray owned the Winston-Salem Journal, the Twin City Sentinel and radio station WSJS.

In 1950 and 1951, John Foster Dulles, then chairman of the Rockefeller Foundation, led John D. Rockefeller III on a series of world tours, focusing on the need to stop the expansion of the non-white populations. In November 1952, Dulles and Rockefeller set up the Population Council, with tens of millions of dollars from the Rockefeller family.

At that point, the American Eugenics Society, still cautious from the recent bad publicity vis-a-vis Hitler, left its old headquarters at Yale University. The Society moved its headquarters into the office of the Population Council, and the two groups melded together. The long-time secretary of the American Eugenics Society, Frederick Osborne, became the first president of the Population Council. The Gray family's child-sterilizer, Dr. Claude Nash Herndon, became president of the American Eugenics Society in 1953, as its work expanded under Rockefeller patronage.

Meanwhile, the International Planned Parenthood Federation was founded in London, in the offices of the British Eugenics Society.

The undead enemy from World War II, renamed "Population Control," had now been revived.

George Bush was U.S. ambassador to the United Nations in 1972, when with prodding from Bush and his friends, the U.S. Agency for International Development first made an official contract with the old Sterilization League of America. The League had changed its name twice again, and was now called the "Association for Voluntary Surgical Contraception." The U.S. government began paying the old fascist group to sterilize non-whites in foreign countries.

The Gray family experiment had succeeded.

In 1988, the U.S. Agency for International Development signed its latest contract with the old Sterilization League (a.k.a. Association for Voluntary Surgical Contraception), committing the U.S. government to spend $80 million over five years.

Having gotten away with sterilizing several hundred North Carolina school children, "not usually less than eight to ten years old," the identical group is now authorized by President Bush to do it to 58 countries in Asia, Africa and Ibero-America. The group modestly claims it has directly sterilized "only" two million people, with 87 percent of the bill paid by U.S. taxpayers.

Meanwhile, Dr. Clarence Gamble, Boyden Gray's favorite soap manufacturer, formed his own "Pathfinder Fund" as a split-off from the Sterilization League. Gamble's Pathfinder Fund, with additional millions from USAID, concentrates on penetration of local social groups in the non-white countries, to break down psychological resistance to the surgical sterilization teams.

NOTES:

1. Phyllis Tilson Piotrow, World Population Crisis: The United States Response (New York: Praeger Publishers, 1973), "Forward" by George H.W. Bush, pp. vii-viii.
2. Adolf Hitler, Mein Kampf (Boston, Houghton Mifflin Company, 1971), p. 404.
3. "The Ten Richest People in Houston," in Houston Post Magazine, March 11, 1984. "$150 million to $250 million from ... inheritance, plus subsequent investments ... chief heir to a family fortune in oil stock... As to his financial interests, he is ... coy. He once described one of his businesses as a company that 'invests in and oversees a lot of smaller companies ... in a lot of foreign countries.'"
4. The announcements were made in testimony before a Special Committee of the U.S. Senate Investigating the National Defense Program. The hearings on Standard Oil were held March 5, 24, 26, 27, 31, and April 1, 2, 3 and 7, 1942. Available on microfiche, law section, Library of Congress. See also New York Times, March 26 and March 27, 1942, and Washington Evening Star, March 26 and March 27, 1942.
5. Ibid., Exhibit No. 368, printed on pp. 4584-87 of the hearing record. See also Charles Higham, Trading With The Enemy (New York: Delacorte Press, 1983), p. 36.
6. Confidential memorandum from U.S. embassy, Berlin, op. cit. , chapter 2. Sir Henri Deterding was among the most notorious pro-Nazis of the early war period.
7. See sections on Prescott Bush in Darwin Payne, Initiative in Energy: Dresser Industries, Inc. (New York: Distributed by Simon and Schuster, 1979) (published by the Dresser Company).
8. William Stamps Farish obituary, New York Times, Nov. 30, 1942.
9. A Decade of Progress in Eugenics: Scientific Papers of the Third International Congress of Eugenics held at American Museum of Natural History New York, Aug. 21-23, 1932. (Baltimore: Williams & Wilkins Company, Sept., 1934).
   The term "eugenics" is taken from the Greek to signify "good birth" or "well-born," as in aristocrat. Its basic assumption is that those who are not "well-born" should not exist.
10. See among other such letters, George Herbert Walker, 39 Broadway, N.Y., to W. A. Harriman, London, Feb. 21, 1925, in WAH papers.
11. Averell Harriman to Dr. Charles B. Davenport, President, The International Congress of Eugenics, Cold Spring Harbor, LI., N.Y
    January 21, 1932
    Dear Dr. Davenport:
    I will be only too glad to put you in touch with the Hamburg-American Line ... they may be able to co-operate in making suggestions which will keep the expenses to a minimum. I have referred your letter to Mr. Emil Lederer [of the Hamburg-Amerika executive board in New York] with the request that he communicate with you.
    Davenport to Mr. W.A. Harriman,
    59 Wall Street, New York, N.Y.
    January 23, 1932

Dear Mr. Harriman:

Thank you very much for your kind letter of January 21st and the action you took which has resulted at once in a letter from Mr. Emil Lederer. This letter will serve as a starting point for correspondence, which I hope will enable more of our German colleagues to come to America on the occasion of the congresses of eugenics and genetics, than otherwise.

Congressional hearings in 1934 established that Hamburg-Amerika routinely provided free Transatlantic passage for those carrying out Nazi propaganda chores. See Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities, op. cit., chapter 2.

12. Alexis Carrel, Man the Unknown (New York: Halcyon House, published by arrangement with Harper & Brothers, 1935), pp. 318-19.

The battle cry of the New Order was sounded in 1935 with the publication of Man the Unknown, by Dr. Alexis Carrel of the Rockefeller Institute in New York. This Nobel Prize-winner said "enormous sums are now required to maintain prisons and insane asylums... Why do we preserve these useless and harmful beings? This fact must be squarely faced. Why should society not dispose of the criminals and the insane in a more economical manner? ... The community must be protected against troublesome and dangerous elements... Perhaps prisons should be abolished... The conditioning of the petty criminal with the whip, or some more scientific procedure, followed by a short stay in hospital, would probably suffice to insure order. [Criminals including those] who have ... misled the public on important matters, should be humanely and economically disposed of in small euthanasic institutions supplied with proper gases. A similar treatment could be advantageously applied to the insane, guilty of criminal acts."

Carrel claimed to have transplanted the head of a dog to another dog and kept it alive for quite some time.

13. Bernhard Schreiber, The Men Behind Hitler: A German Warning to the World, France: La Hay-Mureaux, ca. 1975), English language edition supplied by H & P. Tadeusz, 369 Edgewere Road, London W2. A copy of this book is now held by Union College Library, Syracuse, N.Y.

14. Higham, op. cit., p. 35.

15. Engagement announced Feb. 10, 1939, New York Times, p. 20. See also Directory of Directors for New York City, 1930s and 1940s.

16. Higham, op. cit., pp. 20, 22 and other references to Schroeder and Lindemann.

Anthony Sutton, Wall Street and the Rise of Hitler (Seal Beach: '76 Press, 1976). Sutton is also a good source on the Harrimans.

17. Washington Evening Star, March 27, 1942, p. 1.

18. Higham, op. cit. p. 50.

19. Ibid., p. 48.

20. Washington Port, April 29, 1990, p. F4. Higham, op. cit., pp. 52-53.

21. Zapata annual reports, 1950s-60s, Library of Congress microforms.

22. See Congressional Record for Bush speech in the House of Representatives, Sept. 4, 1969. Bush inserted in the record the testimony given before his Task Force on Aug. 5, 1969.

23. Sobel, op. cit., pp. 92-111. See also Boyle, op. cit., chapter 1, concerning the Morgan-led Dawes Committee of Germany's foreign creditors.

Like Harriman, Dillon used the Schroeder and Warburg banks to strike his German bargains. All Dillon Read & Co. affairs in Germany were supervised by J.P. Morgan & Co. partner Thomas Lamont, and were authorized by Bank of England Governor Montagu Norman.

24. See Poor's Register of Directors and Executives, (New York: Poor's Publishing Company, late 1920s, '30s and '40s). See also Standard Corporation Records (NewYork: Standard & Poor), 1935 edition pp. 2571-25, and 1938 edition pp. 7436-38, for description and history of the German Credit and Investment Corporation. For Frederic Brandi, See also Sobel, op. cit., pp. 213-14.

25. Sobel, op. cit., pp. 180, 186. Ivy Lee had been hired to improve the Rockefeller family image, particularly difficult after their 1914 massacre of striking miners and pregnant women in Ludlow, Colorado. Lee got old John D. Rockefeller to pass out dimes to poor people lined up at his porch.

26. Third International Eugenics Congress papers op. cit., footnote 7, p. 512, "Supporting Members."

27. Schreiber, op. cit., p. 160. The Third Int. Eugenics Congress papers, p. 526, lists the officers of the International Federation as of publication date in September, 1934. Riidin is listed as president — a year after he has written the sterilization law for Hitler.

28. Directory of Directors for New York City, 1942. Interview with Nancy Bowles, librarian of Dillon Read &Co.

29. Higham, op. cit., p. 129, 212-15, 219-23.

30. Walter Isaacson and Evan Thomas, The Wise Men: Six Friends and the World They Made — Acheson, Bohlen, Harriman, Kennan, Lovett, McCloy (New York: Simon and Schuster, 1986), pp. 122, 305.
31. Piotrow, op. cit., pp. 36-42.
32. Ibid., p. viii. "As chairman of the special Republican Task Force on Population and Earth Resources, I was impressed by the arguments of William H. Draper, Jr... Gen. Draper continues to lead through his tireless work for the U.N. Population Fund."
33. Sobel, op. cit., pp. 298, 354.
34. Interview July 16, 1991, with Joanne Grossi, an official with the USAID's Population Office.
35. Dr. Nafis Sadik, "The State of World Population," 1991, New York, United Nations Population Fund.
36. See User's Guide to the Office of Population, 1991, Office of Population, Bureau for Science and Technology, United States Agency for International Development. Available from S&T/POP, Room 811 SA-18, USAID, Washington D.C. 20523-1819.
37. "History of the Association for Voluntary Sterilization [formerly Sterilization League of America], 1935-64," thesis submitted to the faculty of the graduate school of the University of Minnesota by William Ray Van Essendelft, March, 1978, available on microfilm, Library of Congress. This is the official history, written with full cooperation of the Sterilization League.
38. Interview with Dr. C. Nash Herndon, June 20, 1990.

THE CENTER OF POWER IS IN WASHINGTON

WEBSTER GRIFFIN TARPLEY AND ANTON CHAITKIN

CHAPTER FOUR OF GEORGE BUSH — THE UNAUTHORIZED BIOGRAPHY -1992. USED WITH PERMISSION.

Brown Brothers Harriman & Co.
59 Wall Street, New York
Cable Address "Shipley-New York"
Business Established 1818
Private Bankers
September 5, 1944

The Honorable W.A. Harriman
American Ambassador to the U.S.S.R.
American Embassy,
Moscow, Russia

Dear Averell:

Thinking that possibly Bullitt's article in the recent issue of "LIFE" may not have come to your attention, I have clipped it and am sending it to you, feeling that it will interest you.

At present writing all well here.

With warm regards, I am,

Sincerely yours,

Pres ----

AT PRESENT WRITING ALL IS WELL HERE." Thus the ambassador to Russia was reassured by the managing partner of his firm, Prescott Bush. Only 22-1/2 months before, the U.S. government had seized and shut down the Union Banking Corp., which had been operated on behalf of Nazi Germany by Bush and the Harrimans (see Chapter 2). But that was behind them now and they were safe. There would be no publicity on the Harriman-Bush sponsorship of Hitlerism.

Prescott's son George, the future U.S. President, was also safe. Three days before this note to Moscow was written, George Bush had parachuted from a Navy bomber airplane over the Pacific Ocean, killing his two crew members when the unpiloted plane crashed.

Five months later, in February 1945, Prescott's boss, Averell Harriman, escorted President Franklin Roosevelt to the fateful summit meeting with Soviet leader Joseph Stalin at Yalta. In April Roosevelt died. The agreement reached at Yalta, calling for free elections in Poland once the war ended, was never enforced.

Over the next eight years (1945 through 1952), Prescott Bush was Harriman's anchor in the New York financial world. The increasingly powerful Mr. Harriman and his allies gave Eastern Europe over to Soviet dictatorship. A Cold War was then undertaken, to "counterbalance" the Soviets.

This British-inspired strategy paid several nightmarish dividends. Eastern Europe was to remain enslaved. Germany was "permanently" divided. Anglo-American power was jointly exercised over the non-Soviet "Free World." The confidential functions of the British and American governments were merged. The Harriman clique took possession of the U.S. national security apparatus, and in doing so, they opened the gate and let the Bush family in.

Following his services to Germany's Nazi Party, Averell Harriman spent several years mediating between the British, American and Soviet governments in the war to stop the Nazis. He was ambassador to Moscow from 1943 to 1946.

President Harry Truman, whom Harriman and his friends held in amused contempt, appointed Harriman U.S. ambassador to Britain in 1946.

Harriman was at lunch with former British Prime Minister Winston Churchill one day in 1946, when Truman telephoned. Harriman asked Churchill if he should accept Truman's offer to come back to the U.S. as Secretary of Commerce. According to Harriman's account, Churchill told him: "Absolutely. The center of power is in Washington."[1]

JUPITER ISLAND

THE REORGANIZATION OF THE AMERICAN GOVERNMENT after World War II — the creation of the U.S. Central Intelligence Agency along British lines, for example — had devastating consequences. We are concerned here with only certain aspects of that overall transformation, those matters of policy and family which gave shape to the life and mind of George Bush, and gave him access to power.

It was in these postwar years that George Bush attended Yale University, and was inducted into the Skull and Bones society. The Bush family's home at that time was in Greenwich, Connecticut. But it was just then that George's parents, Prescott and Dorothy Walker Bush, were wintering in a peculiar spot in Florida, a place that is excluded from mention in literature originating from Bush circles.

Certain national news accounts early in 1991 featured the observations on President Bush's childhood by his elderly mother Dorothy. She was said to be a resident of Hobe Sound, Florida. More precisely, the President's mother lived in a hyper-security arrangement created a half-century earlier by Averell Harriman, adjacent to Hobe Sound. Its correct name is Jupiter Island.

During his political career, George Bush has claimed many different "home" states, including Texas, Maine, Massachusetts and Connecticut. It has not been expedient for him to claim Florida, though that state has a vital link to his role in the world, as we shall see. And George Bush's home base in Florida, throughout his adult life, has been Jupiter Island.

The unique, bizarre setup on Jupiter Island began in 1931, following the merger of W.A. Harriman & Co. with the British-American firm Brown Brothers.

The reader will recall Mr. Samuel Pryor, the "Merchant of Death." A partner with the Harrimans, Prescott Bush, George Walker and Nazi boss Fritz Thyssen in banking and shipping enterprises, Sam Pryor remained executive committee chairman of Remington Arms. In this period, the Nazi private armies (S.A. and S.S.) were supplied with American arms — most likely by Pryor and his company — as they moved to overthrow the German republic. Such gun-running as an instrument of national policy would later become notorious in the "Iran-Contra" affair.

Samuel Pryor's daughter Permelia married Yale graduate Joseph V. Reed on the last day of 1927. Reed immediately went to work for Prescott Bush and George Walker as an apprentice at WA. Harriman & Co.

During World War II, Joseph V. Reed had served in the "special services" section of the U.S. Army Signal Corps. A specialist in security, codes and espionage, Reed later wrote a book entitled Fun with Cryptograms.[2]

Now, Sam Pryor had had property around Hobe Sound, Florida, for some time. In 1931, Joseph and Permelia Pryor Reed bought the entirety of Jupiter Island.

This is a typically beautiful Atlantic coast "barrier island," a half-mile wide and nine miles long. The middle of Jupiter Island lies just off Hobe Sound. The south bridge connects the island with the town of Jupiter, to the north of Palm Beach. It is about 90 minutes by auto from Miami — today, a few minutes by helicopter.

Early in 1991, a newspaper reporter asked a friend of the Bush family about security arrangements on Jupiter Island. He responded, "If you called up the White House, would they tell you how many security people they had? It's not that Jupiter Island is the White House, although he [George Bush] does come down frequently."

But for several decades before Bush was President, Jupiter Island had an ordinance requiring the registration and fingerprinting of all housekeepers, gardeners and other non-residents working on the island. The Jupiter Island police department says that there are sensors in the two main roads that can track every automobile on the island. If a car stops in the street, the police will be there within one or two minutes. Surveillance is a duty of all employees of the town of Jupiter Island. News reporters are to be prevented from visiting the island.[3]

To create this astonishing private club, Joseph and Permelia Pryor Reed sold land only to those who would fit in. Permelia Reed was still the grande dame of the island when George Bush was inaugurated President in 1989. In recognition of the fact that the Reeds know where all the bodies are buried, President Bush appointed Permelia's son, Joseph V. Reed, Jr., chief of protocol for the U.S. State Department, in charge of private arrangements with foreign dignitaries.

Averell Harriman made Jupiter Island a staging ground for his 1940s takeover of the U.S. national security apparatus. It was in that connection that the island became possibly the most secretive private place in America.

Let us briefly survey the neighborhood, back then in 1946-48, to see some of the uses various of the residents had for the Harriman clique.

RESIDENTS ON JUPITER ISLAND

Jupiter Islander ROBERT A. LOVETT, [4] Prescott Bush's partner at Brown Brothers Harriman, had been Assistant Secretary of War for Air from 1941 to 1945. Lovett was the leading American advocate of the policy of terror-bombing of civilians. He organized

the Strategic Bombing Survey, carried out for the American and British governments by the staff of the Prudential Insurance Company, guided by London's Tavistock Psychiatric Clinic.

In the postwar period, Prescott Bush was associated with Prudential Insurance, one of Lovett's intelligence channels to the British secret services. Prescott was listed by Prudential as a director of the company for about two years in the early 1950s.

Their Strategic Bombing Survey failed to demonstrate any real military advantage accruing from such outrages as the fire-bombing of Dresden, Germany. But the Harrimanites nevertheless persisted in the advocacy of terror from the air. They glorified this as "psychological warfare," a part of the Utopian military doctrine opposed to the views of military traditionalists such as Gen. Douglas MacArthur.

Robert Lovett later advised President Lyndon Johnson to terror-bomb Vietnam. President George Bush revived the doctrine with the bombing of civilian areas in Panama, and the destruction of Baghdad.

On Oct. 22, 1945, Secretary of War Robert Patterson created the Lovett Committee, chaired by Robert A. Lovett, to advise the government on the post-World War II organization of U.S. intelligence activities. The existence of this committee was unknown to the public until an official CIA history was released from secrecy in 1989. But the CIA's author (who was President Bush's prep school history teacher; see chapter 5) gives no real details of the Lovett Committee's functioning, claiming: "The record of the testimony of the Lovett Committee, unfortunately, was not in the archives of the agency when this account was written."[5]

The CIA's self-history does inform us of the advice that Lovett provided to the Truman cabinet, as the official War Department intelligence proposal.

Lovett decided that there should be a separate Central Intelligence Agency. The new agency would "consult" with the armed forces, but it must be the sole collecting agency in the field of foreign espionage and counterespionage. The new agency should have an independent budget, and its appropriations should be granted by Congress without public hearings.

Lovett appeared before the Secretaries of State, War and Navy on November 14, 1945. He spoke highly of the FBI's work because it had "the best personality file in the world." Lovett said the FBI was expert at producing false documents, an art "which we developed so successfully during the war and at which we became outstandingly adept." Lovett pressed for a virtual resumption of the wartime Office of Strategic Services (OSS in a new CIA.

U.S. military traditionalists centered around Gen. Douglas MacArthur opposed Lovett's proposal.

The continuation of the OSS had been attacked at the end of the war on the grounds that the OSS was entirely under British control, and that it would constitute an Americar. Gestapo.[6]

But the CIA was established in 1947 according to the prescription of Robert Lovett, of Jupiter Island.

CHARLES PAYSON and his wife, JOAN WHITNEY PAYSON, were extended family members of Harriman's and business associates of the Bush family.

Joan's aunt, Gertrude Vanderbilt Whitney, was a relative of the Harrimans. Gertrude's son, Cornelius Vanderbilt ("Sonny") Whitney, long-time chairman of Pan American Airways (Prescott was a Pan Am director), became Assistant Secretary of the U.S. Air Force in 1947. Sonny's wife Marie had divorced him and married Averell Harriman in 1930.

Joan and Sonny's uncle, Air Marshall Sir Thomas Elmhirst, was director of intelligence for the British Air Force from 1945 to 1947.

Joan's brother, John Hay ("Jock") Whitney, was to be ambassador to Great Britain from 1955 to 1961 — when it would be vital for Prescott and George Bush to have such a friend. Joan's father, grandfather and uncle were members of the Skull and Bones secret society.

Charles Payson organized a uranium refinery in 1948. Later he was chairman of Vitro Corp., makers of parts for submarine-launched ballistic missiles, equipment for frequency surveillance and torpedo guidance, and other subsurface weaponry.

Naval warfare has long been a preoccupation of the British Empire. British penetration of the U.S. Naval Intelligence service has been particularly heavy since the tenure of Joan's Anglophile grandfather, William C. Whitney, as Secretary of the Navy for President Grover Cleveland. This traditional covert British orientation in the U.S. Navy, Naval Intelligence and the Navy's included service, the Marine Corps, forms a backdrop to the career of George Bush — and to the whole neighborhood on Jupiter Island. Naval Intelligence maintained direct relations with gangster boss Meyer Lansky for Anglo-American political operations in Cuba during World War II, well before the establishment of the CIA. Lansky officially moved to Florida in 1953/

GEORGE HERBERT WALKER, JR (Skull and Bones 1927), was extremely close to his nephew George Bush, helping to sponsor his entry into the oil business in the 1950s. "Uncle Herbie" was also a partner of Joan Whitney Payson when they co-founded the New York Mets baseball team in 1960. His son, G.H. Walker III, was a Yale classmate of Nicholas Brady and Moreau D. Brown (Thatcher Brown's grandson), forming what was called the "Yale Mafia" on Wall Street.

WALTER S. CARPENTER, JR had been chairman of the finance committee of the Du Pont Corporation (1930-40). In 1933, Carpenter oversaw Du Pont's purchase of Remington Arms from Sam Pryor and the Rockefellers, and led Du Pont into partnership with the Nazi I.G. Farben Company for the manufacture of explosives. Carpenter became Du Pont's president in 1940. His cartel with the Nazis was broken up by the U.S. government. Nevertheless, Carpenter remained Du Pont's president as the company's technicians participated massively in the Manhattan Project to produce the first atomic bomb. He was chairman of Du Pont from 1948 to 1962, retaining high-level access to U.S. strategic activities.

Walter Carpenter and Prescott Bush were fellow activists in the Mental Hygiene Society. Originating at Yale University in 1908, the movement had been organized into the World Federation of Mental Health by Montagu Norman, himself a frequent mental patient, former Brown Brothers partner and Bank of England Governor. Norman had ippointed as the federation's chairman, Brigadier John Rawlings Rees, director of the Tavistock Psychiatric Clinic, chief psychiatrist and psychological warfare expert for the British intelligence services. Prescott was a director of the society in Connecticut; Carpenter was a director in Delaware.

PAUL MELLON was the leading heir to the Mellon fortune, and a long-time neighbor of Averell Harriman's in Middleburg, Virginia, as well as Jupiter Island, Florida. Paul's rather, Andrew Mellon, U.S. Treasury Secretary 1921-32, had approved the transactions of Harriman, Pryor and Bush with the Warburgs and the Nazis. Paul Mellon's son-in-law, DAVID K.E. BRUCE, worked in Prescott Bush's W.A. Harriman & Co. during the late 1920s; was head of the London branch of U.S. intelligence during World War II; and was Averell Harriman's Assistant Secretary of Commerce in 1947-48. Mellon family

money and participation would be instrumental in many domestic U.S. projects of the new Central Intelligence Agency.

CARLL TUCKER manufactured electronic guidance equipment for the Navy. With the Mellons, Tucker was an owner of South American oil properties. Mrs. Tucker was the great aunt of Nicholas Brady, later George Bush's Iran-Contra partner and U.S. Treasury Secretary. Their son Carll Tucker, Jr. (Skull and Bones 1947), was among the 15 Bonesmen who selected George Bush for induction in the class of 1948.

C. DOUGLAS DILLON was the boss of William H. Draper, Jr. in the Draper-Prescott Bush-Fritz Thyssen Nazi banking scheme of the 1930s and 40s. His father, Clarence Dillon, created the Vereinigte Stahlwerke (Thyssen's German Steel Trust) in 1926. C. Douglas Dillon made Nicholas Brady the chairman of the Dillon Read firm in 1971 and himself continued as chairman of the executive committee. C. Douglas Dillon would be a vital ally of his neighbor Prescott Bush during the Eisenhower administration.

Publisher NELSON DOUBLEDAY headed his family's publishing firm, founded under the auspices of J.P. Morgan and other British Empire representatives. When George Bush's "Uncle Herbie" died, Doubleday took over as majority owner and chief executive of the New York Mets baseball team.

GEORGE W. MERCK, chairman of Merck & Co., drug and chemical manufacturers, was director of the War Research Service: Merck was the official chief of all U.S. research into biological warfare from 1942 until at least the end of World War II. After 1944. Merck's organization was placed under the U.S. Chemical Warfare Service. His family firm in Germany and the U.S. was famous for its manufacture of morphine.

A.L. COLE was useful to the Jupiter Islanders as an executive of Readers Digest. In 1965, just after performing a rather dirty favor for George Bush (see Chapter 9), Cole became chairman of the executive committee of the Digest, the world's largest-circulation periodical.

From the late 1940s, Jupiter Island has served as a center for the direction of covert action by the U.S. government and, indeed, for the covert management of the government. Jupiter Island will reappear later on, in our account of George Bush in the Iran-Contra affair.

TARGET: WASHINGTON

GEORGE W. BUSH GRADUATED FROM YALE IN 1948. He soon entered the family's Dresser oil supply concern in Texas. We shall now briefly describe the forces that descended on Washington, D.C. during those years when Bush, with the assistance of family and powerful friends, was becoming "established in business on his own."

From 1948 to 1950, Prescott Bush's boss Averell Harriman was U.S. "ambassador-at-large" to Europe. He was a non-military "theater commander," the administrator of the multi-billion-dollar Marshall Plan, participating in all military/strategic decision-making by the Anglo-American alliance.

The U.S. Secretary of Defense, James Forrestal, had become a problem to the Harrimanites. Forrestal had long been an executive at Dillon Read on Wall Street. But ir recent years he had gone astray. As Secretary of the Navy in 1944, Forrestal proposed the racial integration of the Navy. As Defense Secretary he pressed for integration in the armed forces and this eventually became the U.S. policy.

Forrestal opposed the Utopians' strategy of appeasement coupled with brinkmanship. He was simply opposed to communism. On March 28, 1949, Forrestal was forced out of office and flown on an Air Force plane to Florida. He was taken to "Hobe Sound" (Jupiter Island), where Robert Lovett and an army psychiatrist dealt with him.[8]

He was flown back to Washington, locked in Walter Reed Army Hospital and given insulin shock treatments for alleged "mental exhaustion." He was denied all visitors except his estranged wife and children — his son had been Averell Harriman's aide in Moscow, On May 22, James Forrestal's body was found, his bathrobe cord tied tightly around his neck, after he had plunged from a sixteenth-story hospital window. The chief psychiatrist called the death a suicide even before any investigation was started. The results of the Army's inquest were kept secret. Forrestal's diaries were published, 80 percent deleted, after a year of direct government censorship and rewriting.

North Korean troops invaded South Korea in June 1950, after U.S. Secretary of State Dean Acheson (Harriman's very close friend) publicly specified that Korea would not be defended. With a new war on, Harriman came back to serve as President Truman's adviser, to "oversee national security affairs."

Harriman replaced Clark Clifford, who had been special counsel to Truman. Clifford, however, remained close to Harriman and his partners as they gained more and more power. Clifford later wrote about his cordial relations with Prescott Bush:

> Prescott Bush ... had become one of my frequent golfing partners in the fifties, and I had both liked and respected him... Bush had a splendid singing voice, and particularly loved quartet singing. In the fifties, he organized a quartet that included my daughter Joyce... They would sing in Washington, and, on occasion, he invited the group to Hobe Sound in Florida to perform. His son [George], though, had never struck me as a strong or forceful person. In 1988, he presented himself successfully to the voters as an outsider — no small trick for a man whose roots wound through Connecticut, Yale, Texas oil, the CIA, a patrician background, wealth, and the Vice-Presidency.[9]

With James Forrestal out of the way, Averell Harriman and Dean Acheson drove to Leesburg, Virginia, on July 1, 1950, to hire the British-backed U.S. Gen. George C. Marshall as Secretary of Defense. At the same time, Prescott's partner, Robert Lovett, himself became Assistant Secretary of Defense.

Lovett, Marshall, Harriman and Acheson went to work to unhorse Gen. Douglas MacArthur, commander of U.S. forces in Asia. MacArthur kept Wall Street's intelligence agencies away from his command, and favored real independence for the non-white nations. Lovett called for MacArthur's firing on March 23, 1951, citing MacArthur's insistence on defeating the Communist Chinese invaders in Korea. MacArthur's famous message, that there was "no substitute for victory," was read in Congress on April 5; MacArthur was fired on April 10, 1951.

That September, Robert Lovett replaced Marshall as Secretary of Defense. Meanwhile, Harriman was named director of the Mutual Security Agency, making him the U.S. chief of the Anglo-American military alliance. By now, Brown Brothers Harriman was everything but Commander-in-Chief.

THESE WERE, OF COURSE EXCITING TIMES FOR THE BUSH FAMILY, whose wagon was hitched to the financial gods of Olympus — to Jupiter, that is.

> Brown Brothers Harriman & Co.
> 59 Wall Street, New York 5, N.Y.
> Business Established 1818
> Cable Address "Shipley-New York"

Private Bankers
April 2, 1951

The Honorable WA. Harriman,
The White House, Washington, D.C.

Dear Averell:
I was sorry to miss you in Washington but appreciate your cordial note. I shall hope for better luck another time. I hope you had a good rest at Hobe Sound.
With affectionate regard, I am,
Sincerely yours,
Pres [signed]
Prescott S. Bush.

A central focus of the Harriman security regime in Washington (1950-53) was the organization of covert operations, and "psychological warfare." Harriman, together with his lawyers and business partners, Allen Dulles and John Foster Dulles, wanted the government's secret services to conduct extensive propaganda campaigns and mass-psychology experiments within the U.S.A., and paramilitary campaigns abroad. This would supposedly ensure a stable world-wide environment favorable to Anglo-American financial and political interests.

The Harriman security regime created the Psychological Strategy Board (PSB) in 1951. The man appointed director of the PSB, Gordon Gray, is familiar to the reader as the sponsor of the child sterilization experiments, carried out by the Harrimanite eugenics movement in North Carolina following World War II (see Chapter 3).

Gordon Gray was an avid Anglophile, whose father had gotten controlling ownership of the R.J. Reynolds Tobacco Company through alliance with the British Imperial Tobacco cartel's U.S. representatives, the Duke family of North Carolina. Gordon's brother, R.J. Reynolds chairman Bowman Gray, Jr., was also a Naval Intelligence officer, known around Washington as the "founder of operational intelligence." Gordon Gray became a close friend and political ally of Prescott Bush; and Gray's son became for Prescott's son, George, his lawyer and the shield of his covert policy.

But President Harry Truman, as malleable as he was, constituted an obstacle to the covert warriors. An insular Missouri politician vaguely favorable to the U.S. Constitution, he remained skeptical about secret service activities that reminded him of the Nazi Gestapo.

So, "covert operations" could not fully take off without a change of the Washington regime. And it was with the Republican Party that Prescott Bush was to get his turn.

Prescott had made his first attempt to enter national politics in 1950, as his partners took control of the levers of governmental power. Remaining in charge of Brown Brothers Harriman, he ran against Connecticut's William Benton for a seat in the U.S. Senate. (The race was for a two-year unexpired term, left empty by the death of the previous Senator.)

In those days, Wisconsin's drunken Senator Joseph R. McCarthy was making a circus-like crusade against communist influence in Washington. McCarthy attacked liberals and leftists, State Department personnel, politicians and Hollywood figures. He generally left unscathed the Wall Street and London strategists who donated Eastern Europe and China to communist dictatorship — like George Bush, their geopolitics was beyond left and right.

Prescott Bush had no public ties to the notorious Joe McCarthy, and appeared to be neutral about his crusade. But the Wisconsin Senator had his uses. Joe McCarthy came into Connecticut three times that year to campaign for Bush and against the Democrats.

Bush himself made charges of "Korea, Communism and Corruption" into a slick campaign phrase against Benton, which then turned up as a national Republican slogan.

The response was disappointing. Only small crowds turned out to hear Joe McCarthy, and Benton was not hurt. McCarthy's pro-Bush rally in New Haven, in a hall that seated 6,000, drew only 376 people. Benton joked on the radio that "200 of them were my spies."

Prescott Bush resigned from the Yale Board of Fellows for his campaign, and the board published a statement to the effect that the "Yale vote" should support Bush — despite the fact that William Benton was a Yale man, and in many ways identical in outlook to Bush. Yale's Whiffenpoof singers appeared regularly for Prescott's campaign. None of this was particularly effective, however, with the voting population.[10]

Then Prescott Bush ran into a completely unexpected problem. At that time, the old Harriman eugenics movement was centered at Yale University. Prescott Bush was a Yale trustee, and his former Brown Brothers Harriman partner, Lawrence Tighe, was Yale's treasurer. In that connection, a slight glimmer of the truth about the Bush-Harriman firm's Nazi activities now made its way into the campaign.

Not only was the American Eugenics Society itself headquartered at Yale, but all parts of this undead fascist movement had a busy home at Yale. The coercive psychiatry and sterilization advocates had made the Yale/New Haven Hospital and Yale Medical School their laboratories for hands-on practice in brain surgery and psychological experimentation. And the Birth Control League was there, which had long trumpeted the need for eugenical births — fewer births for parents with "inferior" bloodlines. Prescott's partner Tighe was a Connecticut director of the league, and the Connecticut league's medical advisor was eugenics advocate Dr. Winternitz of Yale Medical School.

Now in 1950, people who knew something about Prescott Bush knew that he had very unsavory roots in the eugenics movement. There were then, just after the anti-Hitler war, few open advocates of sterilization of "unfit" or "unnecessary" people. (That would be revived later, with the help of General Draper and his friend George Bush.) But the Birth Control League was public — just about then it was changing its name to the euphemistic "Planned Parenthood."

Then, very late in the 1950 senatorial campaign, Prescott Bush was publicly exposed for being an activist in that section of the old fascist eugenics movement. Prescott Bush lost the election by about 1,000 out of 862,000 votes. He and his family blamed the defeat on the expose. The defeat was burned into the family's memory, leaving a bitterness and perhaps a desire for revenge.

In his foreword to a population control propaganda book, George Bush wrote about that 1950 election: "My own first awareness of birth control as a public policy issue came with a jolt in 1950 when my father was running for United States Senate in Connecticut. Drew Pearson, on the Sunday before Election day, "revealed' that my father was involved with Planned Parenthood... Many political observers felt a sufficient number of voters were swayed by his alleged contacts with the birth controllers to cost him the election..."[11]

Prescott Bush was defeated, while the other Republican candidates fared well in Connecticut. When he tried again, Prescott Bush would not leave the outcome to the blind whims of the public.

Prescott Bush moved into action again in 1952 as a national leader of the push to give the Republican presidential nomination to Gen. Dwight D. ("Ike") Eisenhower. Among the other team members were Bush's Hitler-era lawyer John Foster Dulles, and Jupiter Islander C. Douglas Dillon.

Dillon and his father were the pivots as the Harriman-Dulles combination readied Ike for the presidency. As a friend put it: "When the Dillons ... invited [Eisenhower] to dinner it was to introduce him to Wall Street bankers and lawyers."[12]

Ike's higher-level backers believed, correctly, that Ike would not interfere with even the dirtiest of their covert action programs. The bland, pleasant Prescott Bush was in from the beginning: a friend to Ike, and an original backer of his presidency.

On July 28, 1952, as the election approached, Connecticut's senior U.S. Senator. James O'Brien McMahon, died at the age of 48.*

This was extremely convenient for Prescott. He got the Republican nomination for U.S. Senator at a special delegated meeting, with backing by the Yale-dominated state party leadership. Now he would run in a special election for the suddenly vacant Senate seat. He could expect to be swept into office, since he would be on the same electoral ticket as the popular war hero, General Ike. By a technicality, he would instantly become Connecticut's senior Senator, with extra power in Congress. And the next regularly scheduled senatorial race would be in 1956 (when McMahon's term would have ended), so Prescott could run again in that presidential election year — once again on Ike's coattails!

With this arrangement, things worked out very smoothly. In Eisenhower's 1952 election victory, Ike won Connecticut by a margin of 129,507 votes out of 1,092,471. Prescott Bush came in last among the statewide Republicans, but managed to win by 30,373 out of 1,088,799 votes case, his margin nearly 100,000 behind Eisenhower. He took the traditionally Republican towns.

In Eisenhower's 1956 reelection, Ike won Connecticut by 303,036 out of 1,114,954 votes, the largest presidential margin in Connecticut's history. Prescott Bush managed to win again, by 129,544 votes out of 1,085,206 — his margin this time 290,082 smaller than Eisenhower's.[13]

In January 1963, when this electoral strategy had been played out and his second term expired, Prescott Bush retired from government and returned to Brown Brothers Harriman

The 1952 Eisenhower victory made John Foster Dulles Secretary of State, and his brother Allen Dulles head of the CIA. The reigning Dulles brothers were the "Republican" replacements for their client and business partner, "Democrat" Averell Harriman. Occasional public posturings aside, their strategic commitments were identical to his.

Undoubtedly the most important work accomplished by Prescott Bush in the new regime was on the golf links, where he was Ike's favorite partner.

TOWARD THE "NATIONAL SECURITY STATE"

Prescott Bush was a most elusive, secretive Senator. By diligent research, his views on some issues may be traced: He was opposed to the development of public power projects like the Tennessee Valley Authority; he opposed the constitutional amendment introduced by Ohio Senator John W Bricker, which would have required congressional approval of international agreements by the executive branch.

But Prescott Bush was essentially a covert operative in Washington.

* McMahon had been Assistant U.S. Attorney General, in charge of the Criminal Division, from 1935 to 1939. Was there a chance he might someday speak out about the unpunished Nazi-era crimes of rhe wealthy and powerful?

On June 10, 1954, Bush received a letter from Connecticut resident H. Smith Richardson, owner of Vick Chemical Company (cough drops, Vapo-Rub):

"... At some time before Fall, Senator, I want to get your advice and counsel on a [new] subject — namely what should be done with the income from a foundation which my brother and I set up, and which will begin its operation in 1956.. ."[14]

This letter presages the establishment of the H. Smith Richardson Foundation, a Bush family-dictated private slush fund which was to be utilized by the Central Intelligence Agency, and by Vice President Bush, for the conduct of his Iran-Contra adventures. The Bush family knew Richardson and his wife through their mutual friendship with Sears Roebuck's chairman, Gen. Robert E. Wood. General Wood had been president of the America First organization, which had lobbied against war with Hitler Germany. H. Smith Richardson had contributed the start-up money for America First and had spoken out against the U.S. "joining the Communists" by fighting Hitler. Richardson's wife was a proud relative of Nancy Langehorne from Virginia, who married Lord Astor and backed the Nazis from their Cliveden Estate.

General Wood's daughter Mary had married the son of Standard Oil president William Scamps Farish. The Bushes had stuck with the Farishes through their disastrous exposure during World War II (see Chapter 3). Young George Bush and his bride Barbara were especially close to Mary Farish, and to her son WS. Farish III, who would be the great confidante of George's presidency.[15]

The H. Smith Richardson Foundation was organized by Eugene Stetson, Jr., Richardson's son-in-law. Stetson (Skull and Bones, 1934) had worked for Prescott Bush as assistant manager of the New York branch of Brown Brothers Harriman.

In the late 1950s, the H. Smith Richardson Foundation took part in the "psychological warfare" of the CIA. This was not a foreign, but a domestic, covert operation, carried out mainly against unwitting U.S. citizens. CIA Director Allen Dulles and his British allies organized "MK-Ultra," the testing of psychotropic drugs including LSD on a very large scale, allegedly to evaluate "chemical warfare" possibilities. In this period, the Richardson Foundation helped finance experiments at Bridgewater Hospital in Massachusetts, the center of some of the most brutal MK-Ultra tortures. These outrages have been graphically portrayed in the movie, Titticut Follies.

During 1990, an investigator for this book toured H. Smith Richardson's Center for Creative Leadership just north of Greensboro, North Carolina. The tour guide said that in these rooms, agents of the Central Intelligence Agency and the Secret Service are trained. He demonstrated the two-way mirrors through which the government employees are watched, while they are put through mind-bending psychodramas. The guide explained that "virtually everyone who becomes a general" in the U.S. armed forces also goes through this "training" at the Richardson Center.

Another office of the Center for Creative Leadership is in Langley, Virginia, at the headquarters of the Central Intelligence Agency. Here also, Richardson's Center trains leaders of the CIA.

Prescott Bush worked throughout the Eisenhower years as a confidential ally of the Dulles brothers. In July 1956, Egypt's President Gamel Abdul Nasser announced he would accept the U.S. offer of a loan for the construction of the Aswan Dam project. John Foster Dulles then prepared a statement telling the Egyptian ambassador that the U.S.A. had decided to retract its offer. Dulles gave the explosive statement in advance to Prescott Bush for his approval. Dulles also gave the statement to President Eisenhower, and to the British government.[16]

Nasser reacted to the Dulles brush-off by nationalizing the Suez Canal to pay for the dam. Israel, then Britain and France, invaded Egypt to try to overthrow Nasser, leader of the anti-imperial Arab nationalists. However, Eisenhower refused (for once) to play the Dulles-British game, and the invaders had to leave Egypt when Britain was threatened with U.S. economic sanctions.

During 1956, Senator Prescott Bush's value to the Harriman-Dulles political group increased when he was put on the Senate Armed Services Committee. Bush toured U.S. and allied military bases throughout the world, and had increased access to the national security decision-making process.

In the later years of the Eisenhower presidency, Gordon Gray rejoined the government. As an intimate friend and golfing partner of Prescott Bush, Gray complemented the Bush influence on Ike. The Bush-Gray family partnership in the "secret government" continues up through the George Bush presidency.

Gordon Gray had been appointed head of the new Psychological Strategy Board in 1951 under Averell Harriman's rule as assistant to President Truman for national security affairs. From 1958 to 1961, Gordon Gray was national security chief under President Eisenhower. Gray acted as Ike's intermediary, strategist and hand-holder, in the President's relations with the CIA and the U.S. and allied military forces.

Eisenhower did not oppose the CIA's covert action projects; he only wanted to be protected from the consequences of their failure or exposure. Gray's primary task, in the guise of "oversight" on all U.S. covert action, was to protect and hide the growing mass of CIA and related secret government activities.

It was not only covert projects which were developed by the Gray-Bush-Dulles combination; it was also new, hidden structures of the United States government.

Senator Henry Jackson challenged these arrangements in 1959 and 1960. Jackson created a Subcommittee on National Policy Machinery of the Senate Committee on Governmental Operations, which investigated Gordon Gray's reign at the National Security Council. On January 26, 1960, Gordon Gray warned President Eisenhower that a document revealing the existence of a secret part of the U.S. government had somehow gotten into the bibliography being used by Senator Jackson. The unit was Gray's "5412 Group" within the administration, officially but secretly in charge of approving covert action. Under Gray's guidance, Ike "'was clear and firm in his response' that Jackson's staff not be informed of the existence of this unit [emphasis in the original]."[17]

Several figures of the Eisenhower administration must be considered the fathers of this permanent covert action monolith, men who continued shepherding the monster after its birth in the Eisenhower era:

GORDON GRAY, the shadowy assistant to the President for national security affairs. Prescott Bush's closest executive branch crony and golf partner along with Eisenhower. By 1959-60, Gray had Ike's total confidence and served as the Harrimanites' monitor on all U.S. military and non-military projects.

British intelligence agent Kim Philby defected to the Russians in 1963. Philby had gained virtually total access to U.S. intelligence activities beginning in 1949, as the British secret services' liaison to the Harriman-dominated CIA. After Philby's defection, it seemed obvious that the aristocratic British intelligence service was in fact a menace to the western cause. In the 1960s, a small team of U.S. counterintelligence specialists went to England to investigate the situation. They reported back that the British secret service could be thoroughly trusted. The leader of this "expert" team, Gordon Gray, was

The head of the counterespionage section of the President's Foreign Intelligence Advisory Board for Presidents John Kennedy through Gerald Ford.

ROBERT LOVETT, Bush's Jupiter Island neighbor and Brown Brothers Harriman partner, from 1956 on a member of the President's Foreign Intelligence Advisory Board. Lovett later claimed to have criticized — from the "inside" — the plan to invade Cuba at the Bay of Pigs. Lovett was asked to choose the cabinet for John Kennedy in 1961.

CIA DIRECTOR ALLEN DULLES, Bush's former international attorney. Kennedy fired Dulles after the Bay of Pigs invasion, but Dulles served on the Warren Commission, which whitewashed President Kennedy's murder.

C. DOUGLAS DILLON, neighbor of Bush on Jupiter Island, became Undersecretary of State in 1958 after the death of John Foster Dulles. Dillon had been John Foster Dulles's ambassador to France (1953-57), coordinating the original U.S. covert backing for the French imperial effort in Vietnam, with catastrophic results for the world. Dillon was Treasury Secretary for both John Kennedy and Lyndon Johnson.

AMBASSADOR TO BRITAIN JOCK WHITNEY, extended family member of the Harrimans and neighbor of Prescott Bush on Jupiter Island. Whitney set up a press service in London called Forum World Features, which published propaganda furnished directly by the CIA and the British intelligence services. Beginning in 1961, Whitney was chairman of the British Empire's "English Speaking Union."

SENATOR PRESCOTT BUSH, friend and counselor of President Eisenhower. Bush's term continued on in the Senate after the Eisenhower years, throughout most of the aborted Kennedy presidency.

In 1962, the National Strategy Information Center was founded by Prescott Bush and his son Prescott, Jr., William Casey (the future CIA chief) and Leo Cherne. The center came to be directed by Frank Barnett, former program officer of the Bush family's H. Smith Richardson Foundation. The center conduited funds to the London-Based Forum World Features, for the circulation of CIA-authored "news stories" to some 300 newspapers internationally.[18]

"Democrat" Averell Harriman rotated back into official government in the Kennedy administration. As Assistant Secretary and Undersecretary of State, Harriman helped push the United States into the Vietnam War. Harriman had no post in the Eisenhower administration. Yet he was perhaps more than anyone the leader and the glue for the incredible evil that was hatched by the CIA in the final Eisenhower years: a half-public, half-private Harrimanite army, never since demobilized, and increasingly associated with the name of Bush.

Following the rise of Castro, the U.S. Central Intelligence Agency contracted with the organization of Mafia boss Meyer Lansky to organize and train assassination squads for use against the Cuban government. Among those employed were John Rosselli, Santos Trafficante and Sam Giancana. Uncontested public documentation of these facts has been published by congressional bodies and by leading Establishment academics.[19]

But the disturbing implications and later consequences of this engagement are a crucial matter for further study by the citizens of every nation. This much is established:

On Aug. 18, 1960, President Eisenhower approved a $13 million official budget for a secret CIA-run guerrilla war against Castro. It is known that Vice President Richard M. Nixon took a hand in the promotion of this initiative. The U.S. military was kept out of the covert action plans until very late in the game.

The first of eight admitted assassination attempts against Castro took place in 1960.

The program was, of course, a failure, if not a circus. The invasion of Cuba by the CIA's anti-Castro exiles was put off until after John Kennedy took over the presidency. The invasion at the Bay of Pigs was a fiasco, and Castro's forces easily prevailed. But the program continued.

In 1960, Felix Rodriguez, Luis Posada Carriles, Rafael "Chi Chi" Quintero, Frank Sturgis (or "Frank Fiorini") and other Florida-based Cuban exiles were trained as killers and drug-traffickers in the Cuban initiative; their supervisor was E. Howard Hunt. Their overall CIA boss was Miami station chief Theodore G. Shackley, seconded by Thomas Clines. In later chapters we will follow the subsequent careers of these characters — increasingly identified with George Bush — through the Watergate coup, and the Iran-Contra scandal.

NOTES

1. Walter Isaacson and Evan Thomas, The Wise Men: Six Friends and the World They Made—Acheson, Bohlen, Harriman, Kennan, Lovett, McCloy (New York: Simon and Schuster, 1986), p. 377.
2. Reed was better known in high society as a minor diplomat, the founder of the Triton Press and the president of the American Shakespeare Theater.
3. Palm Beach Post, Jan. 13, 1991.
4. For Lovett's residency there see Isaacson and Thomas, op. cit. , p. 417. Some Jupiter Island residencies were verified by their inclusion in the 1947 membership list of the Hobe Sound Yacht Club, in the Harriman papers, Library of Congress; others were established from interviews with long-time Jupiter Islanders.
5. Arthur Burr Darling, The Central Intelligence Agency: An Instrument of Government, to 1950 (College Station: Pennsylvania State University, 1990), p. 59.
6. The Chicago Tribune, Feb. 9, 1945, for example, warned of "Creation of an all-powerful intelligence service to spy on the postwar world and to pry into the lives of citizens at home." Cf. Anthony Cave Brown, Wild Bill Donovan: The Last Hero (New York: Times Books, 1982), p. 625, on warnings to FDR about the British control of U.S. intelligence.
7. Dennis Eisenberg, Uri Dan, Eli Landau, Meyer Lansky: Mogul of the Mob (New York: Paddington Press. 1979) pp. 227-28.
8. See John Ranelagh, The Agency: The Rise and Decline of the CIA (New York: Simon and Schuster, 1987). pp. 131-32.
9. Clark Clifford, Counsel to the President (New York: Random House, 1991).
10. Sidney Hyman, The Lives of William Benton (Chicago: The University of Chicago Press, 1969), pp. 438-41.
11. Phyllis Tilson Piotrow, World Population Crisis: The United States Response (New York: Praeger Publishers, 1973), "Foreward," by George HW. Bush, p. vii.
12. Herbert S. Parmet, Eisenhower and the American Crusades (New York: The Macmillan Company, 1972 p. 14.
13. New York Times, Sept. 6, 1952, Nov. 5, 1952, Nov. 7, 1956.
14. Richardson to Prescott Bush, H. Smith Richardson Papers, University of North Carolina, Chapel Hill.
15. Wayne S. Cole, America First: The Battle Against Intervention, 1940-1941 (Madison: the University of Wisconsin Press, 1953); interviews with Richardson family employees; H. Smith Richardson Foundation annual reports; Richardson to Prescott Bush, March 26, 1954, Richardson Papers. Washington Post , April 29, 1990.
16. Parmet, op. cit. , p. 481.
17. John Prados, Keepers of the Keys: A History of the National Security Council from Truman to Bush (New York: William Morrow, 1991) pp. 92-95.
18. Robert Callaghan in Covert Action, No. 33, Winter 1990. Prescott, Jr. was a board member of the National Strategy Information Center as of 1991. Both Prescott Sr. and Jr. were deeply involved along with Casey in the circles of Pan American Airlines, Pan Am's owners the Grace family, and the CIA's Latin American affairs. The center, based in Washington, D.C., declines public inquiries about its

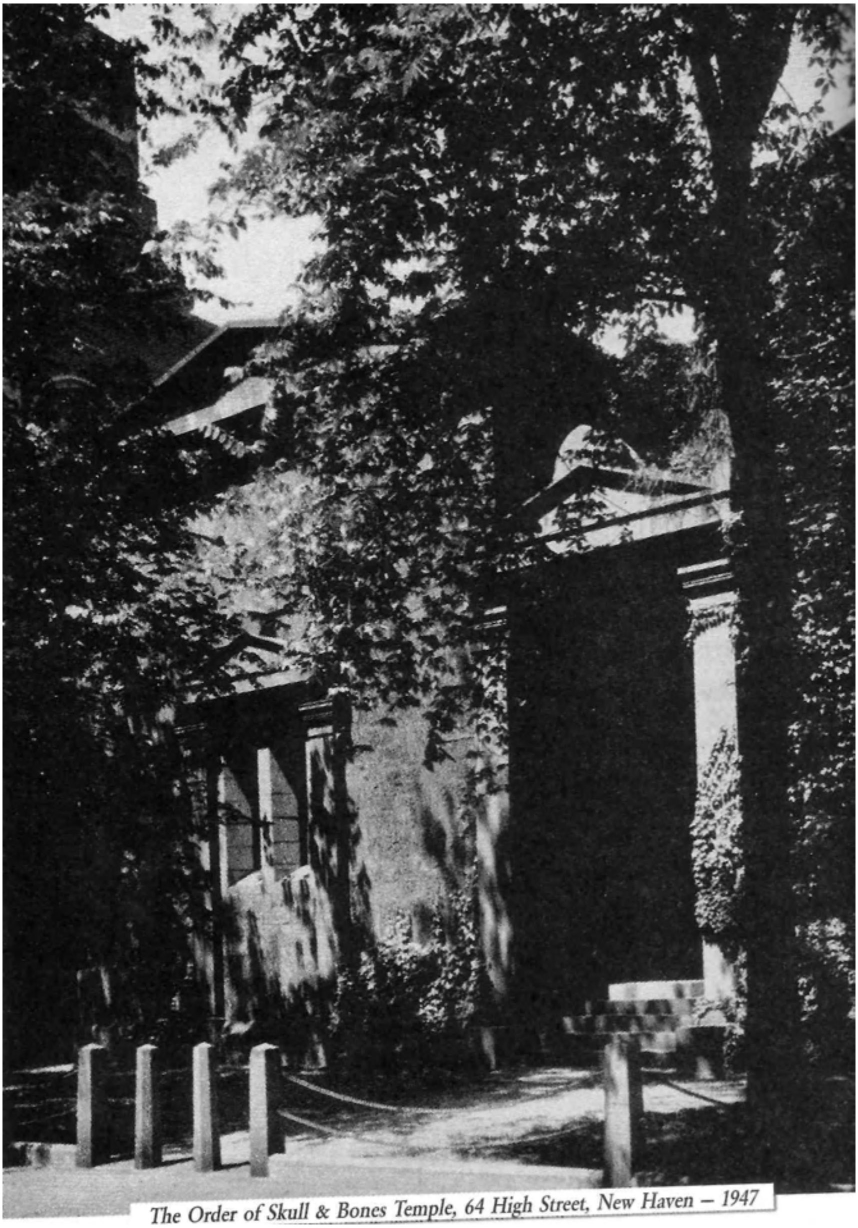
founding.

See also EIR Special Report: "American Leviathan: Administrative Fascism under the Bush Regime" (Wiesbaden, Germany: Executive Intelligence Review Nachrichtenagentur, April 1990), p. 192.

19. For example, see Trumbull Higgins, The Perfect Failure: Kennedy, Eisenhower, and the CIA at the Bay of Pigs (New York: W.W. Norton and Co., 1987), pp. 55-56, 89-90.

Unverified information on the squads is provided in rhe affidavit of Daniel P. Sheehan, attorney for the Christie Institute, reproduced in EIR Special Report:, "Project Democracy: The 'Parallel Government' behind the Iran-Contra Affair" (Washington, D.C.: Executive Intelligence Review, 1987), pp. 249-50.

Some of the hired assassins have published their memoirs. See, for example, Felix Rodriguez and John Weisman, Secret Warrior (New York: Simon and Schuster, 1989); and E. Howard Hunt, Undercover: Memoirs of an American Secret Agent (New York: G.P. Putnam's Sons, 1974).



The Order of Skull & Bones Temple, 64 High Street, New Haven – 1947

Wise statesmen... established these great self-evident truths, that when in the distant future some man, some faction, some interest, should set up the doctrine that none but rich men, or none but white men, were entitled to life, liberty and the pursuit of happiness, their posterity should look up again at the Declaration of Independence and take courage to renew the battle which their fathers began ..[1]

— Abraham Lincoln

SKULL AND BONES: THE RACIST NIGHTMARE AT YALE

WEBSTER GRIFFIN TARPLEY AND ANTON CHAITKIN

CHAPTER SEVEN OF GEORGE BUSH — THE UNAUTHORIZED BIOGRAPHY - 1992. USED WITH PERMISSION.

THE U.S. NAVY DELIVERED GEORGE BUSH BACK HOME for good on Christmas Eve, 1944; the war in the Pacific raged on over the next half year, with Allied forces taking Southeast Asia, the Netherlands East Indies Indonesia), and islands such as Iwo Jima and Okinawa.

HONEYMOON

BARBARA PIERCE QUIT SMITH COLLEGE in her sophomore year to marry George. Prescott and Mother Bush gave a splendid prenuptial dinner at the Greenwich Field Club. The wedding took place January 6, 1945, in the Rye, New York Presbyterian Church, as the U.S. Third Fleet bombarded the main Philippine island of Luzon in preparation for invasion. Afterwards there was a glamorous reception for 300 at Appawamis Country Club. The newlyweds honeymooned at The Cloisters, a five-star hotel on Sea Island, Georgia, with swimming, tennis and golf.

George's next assignment was to train pilots at Norfolk, Virginia Naval Air Station. "George's duty ... was light. As for other young marrieds, whose husbands were between warzone tours, this was kind of an extended (and paid) honeymoon."[2]

Japan surrendered in August. That fall, George and Barbara Bush moved to New Haven where Bush entered Yale University. He and Barbara moved into an apartment at 37 Hillhouse Avenue, across the street from Yale President Charles Seymour.

College life was good to George, what he saw of it. A college career usually occupies four years. But we know that George Bush is a rapidly moving man. Thus he was pleased with the special arrangement made for veterans, by which Yale allowed him to get his degree after attending classes for only two and a half years.

Bush and his friends remember it all fondly, as representatives of the Fashionable Set: "[M] embers of [Bush's] class have since sighed with nostalgia for those days of the late 1940s ... Trolley cars still rumbled along the New Haven streets. On autumn afternoons

they would be crowded with students going out to football games at the Yale Bowl, scattering pennies along the way and shouting 'scramble' to the street kids diving for them" [emphasis added].[3]

In 1947, Barbara gave birth to George W. Bush, the President's namesake.

By the time of his 1948 graduation, he had been elected to Phi Beta Kappa, an honor traditionally associated with academic achievement. A great deal is known about George Bush's career at Yale, except the part about books and studies. Unfortunately for those who would wish to consider his intellectual accomplishment, everything about that has been sealed shut and is top secret. The Yale administration says they have turned over to the FBI custody of all of Bush's academic records, allegedly because the FBI needs such access to check the resumes of important office holders.

From all available testimony, his mental life before college was anything but outstanding. His campaign literature claims that, as a veteran, Bush was "serious" at Yale. But we cannot check exactly how he achieved election to Phi Beta Kappa, in his abbreviated college experience. Without top secret clearance, we cannot consult his test results, read his essays, or learn much about his performance in class. We know that his father was a trustee of the university, in charge of "developmental" fundraising. And his family friends were in control of the U.S. secret services.

A great deal is known, however, about George Bush's status at Yale.

His fellow student John H. Chafee, later a U.S. Senator from Rhode Island and Secretary of the Navy, declared: "We didn't see much of him because he was married, but I guess my first impression was that he was — and I don't mean this in a derogatory fashion — in the inner set, the movers and shakers, the establishment. I don't mean he put on airs or anything, but ... just everybody knew him."

Chafee, like Bush, and Dan Quayle, was in the important national fraternity, Delta Kappa Epsilon (DKE or the "Dekes"). But Chafee says, "I never remember seeing him there. He wasn't one to hang around with the fellows."[4]

THE TOMB

GEORGE BUSH, IN FACT, PASSED his most important days and nights at Yale in the strange companionship of the senior-year Skull and Bones Society.[5]

Out of those few who were chosen for Bones membership, George was the last one to be notified of his selection — this honor is traditionally reserved for the highest of the high and mighty.

His father, Prescott Bush, several other relatives and partners, and Roland and Averell Harriman, who sponsored the Bush family, were also members of this secret society.

The undoubted political and financial power associated with Skull and Bones has given rise to many popular questions about the nature and origin of the group. Its members have fed the mystery with false leads and silly speculations.

The order was incorporated in 1856 under the name "Russell Trust Association." By special act of the state legislature in 1943, its trustees are exempted from the normal requirement of filing corporate reports with the Connecticut Secretary of State.

As of 1978, all business of the Russell Trust was handled by its lone trustee, Brown Brothers Harriman partner John B. Madden, Jr. Madden started with Brown Brothers Harriman in 1946, under senior partner Prescott Bush, George Bush's father.

Each year, Skull and Bones members select ("tap") 15 third-year Yale students to replace them in the senior group the following year. Graduating members are given a sizeable cash bonus to help them get started in life. Older graduate members, the so-

called "Patriarchs," give special backing in business, politics, espionage and legal careers to graduate Bonesmen who exhibit talent or usefulness.

The home of Skull and Bones on the Yale campus is a stone building resembling a mausoleum, and known as "the Tomb." Initiations take place on Deer Island in the St. Lawrence River (an island owned by the Russell Trust Association), with regular reunions on Deer Island and at Yale. Initiation rites reportedly include strenuous and traumatic activities of the new member, while immersed naked in mud, and in a coffin. More important is the "sexual autobiography": The initiate tells the Order all the sex secrets of his young life. Weakened mental defenses against manipulation, and the blackmail potential of such information, have obvious permanent uses in enforcing loyalty among members.

The loyalty is intense. One of Bush's former teachers, whose own father was a Skull and Bones member, told our interviewer that his father used to stab his little Skull and Bones pin into his skin to keep it in place when he took a bath.

Members continue throughout their lives to unburden themselves on their psycho-sexual thoughts to their Bones Brothers, even if they are no longer sitting in a coffin. This has been the case with President George Bush, for whom these ties are reported to have a deep personal meaning. Beyond the psychological manipulation associated with freemasonic mummery, there are very solid political reasons for Bush's strong identification with this cult.

Observers of Skull and Bones, apologists and critics alike, have accepted various deceptive notions about the order. There are two outstanding, among these falsehoods:

1) that it is essentially an American group, an assembly of wealthy, elite "patriots"; it is in fact, an agency for British Empire penetration and subversion of the American republic; and

2) that it is somehow the unique center of conspiratorial control over the United States. This misconception is certainly understandable, given the rather astonishing number of powerful, historically important and grotesquely anti-human individuals, who have come out of Skull and Bones. But there are in fact congruent organizations at other Ivy League colleges, which reflect, as does Skull and Bones, the over-arching oligarchical power of several heavily intermarried financier families.

The mistaken, speculative notions may be corrected by examining the history of Skull and Bones, viewed within the reality of the American Eastern Establishment.

Skull and Bones — the Russell Trust Association — was first established among the class graduating from Yale in 1833. Its founder was William Huntington Russell of Middletown, Connecticut. The Russell family was the master of incalculable wealth derived from the largest U.S. criminal organization of the nineteenth century: Russell and Company, the great opium syndicate.

There was at that time a deep suspicion of, and national revulsion against, freemasonry and secret organizations in the United States, fostered in particular by the anti-masonic writings of former U.S. President John Quincy Adams. Adams stressed that those who take oaths to politically powerful international secret societies cannot be depended on for loyalty to a democratic republic.

But the Russells were protected as part of the multiply-intermarried grouping of families then ruling Connecticut (see accompanying chart). The blood-proud members of the Russell, Pierpont, Edwards, Burr, Griswold, Day, Alsop and Hubbard families were prominent in the pro-British party within the state. Many of their sons would be among the members chosen for the Skull and Bones Society over the years.

The background to Skull and Bones is a story of Opium and Empire, and a bitter struggle for political control over the new U.S. republic.

Samuel Russell, second cousin to Bones founder William H., established Russell and Company in 1823. Its business was to acquire opium from Turkey and smuggle it into China, where it was strictly prohibited, under the armed protection of the British Empire.

The prior, predominant American gang in this field had been the syndicate created by Thomas Handasyd Perkins of Newburyport, Massachusetts, an aggregation of the self-styled "blue bloods" or Brahmins of Boston's north shore. Forced out of the lucrative African slave trade by U.S. law and Caribbean slave revolts, leaders of the Cabot, Lowell, Higginson, Forbes, Cushing and Sturgis families had married Perkins siblings and children. The Perkins opium syndicate made the fortune and established the power of these families. By the 1830s, the Russells had bought out the Perkins syndicate and made Connecticut the primary center of the U.S. opium racket. Massachusetts families (Coolidge, Sturgis, Forbes and Delano) joined Connecticut (Alsop) and New York (Low) smuggler-millionaires under the Russell auspices.

John Quincy Adams and other patriots had fought these men for a quarter century by the time the Russell Trust Association was set up with its open pirate emblem — Skull and Bones.

With British ties of family, shipping and merchant banking, the old New England Tories had continued their hostility to American independence after the Revolutionary War of 1775-83. These pretended conservative patriots proclaimed Thomas Jefferson's 1801 presidential inauguration "radical usurpation."

The Massachusetts Tories ("Essex Junto") joined with Vice President Aaron Burr, Jr. (a member of the Connecticut Edwards and Pierpont families) and Burr's cousin and law partner Theodore Dwight, in political moves designed to break up the United State and return it to British allegiance.

The U.S. nationalist leader, former Treasury Secretary Alexander Hamilton, exposed the plan in 1804. Burr shot him to death in a duel, then led a famous abortive conspiracy to form a new empire in the Southwest, with territory to be torn from the U.S.A. and Spanish Mexico. For the "blue bloods," the romantic figure of Aaron Burr was ever afterwards the symbol of British feudal revenge against the American republic.

The Connecticut Tory families hosted the infamous Hartford Convention in 1815. toward the end of the second war between the U.S. and Britain (the War of 1812). Their secessionist propaganda was rendered impotent by America's defensive military victory. This faction then retired from the open political arena, pursuing instead entirely private and covert alliances with the British Empire. The incestuously intermarried Massachusetts and Connecticut families associated themselves with the British East India Company in the criminal opium traffic into China. These families made increased profits as partners and surrogates for the British during the bloody 1839-42 Opium War, the race war of British forces against Chinese defenders.

Samuel and William Huntington Russell were quiet, wary builders of their faction's power. An intimate colleague of opium gangster Samuel Russell wrote this about him:

> While he lived, no friend of his would venture to mention his name in print. While in China, he lived for about twenty-five years almost as a hermit, hardly known outside of his factory [the Canton warehouse compound] except by the chosen few who enjoyed his intimacy, and by his good friend, Hoqua [Chinese security director for the British

East India Company], but studying commerce in its broadest sense, as well as its minutest details. Returning home with well-earned wealth he lived hospitably in the midst of his family, and a small circle of intimates. Scorning words and pretensions from the bottom of his heart, he was the truest and staunchest of friends; hating notoriety, he could always be absolutely counted on for every good work which did not involve publicity.

The Russells' Skull and Bones Society was the most important of their domestic projects "which did not involve publicity."

A police-blotter type review of Russell's organization will show why the secret order, though powerful, was not the unique organ of "conspiracy" for the U.S. Eastern Establishment. The following gentlemen were among Russells' partners:

• Augustine Heard (1785-1868): ship captain and pioneer U.S. opium smuggler.

• John Cleve Green (1800-75): married to Sarah Griswold; gave a fortune in opium profits to Princeton University, financing three Princeton buildings and four professorships: trustee of the Princeton Theological Seminary for 25 years.

• Abiel Abbott Low (1811-93): his opium fortune financed the construction of the Columbia University New York City campus; father of Columbia's president Seth Low.

• John Murray Forbes (1813-98): his opium millions financed the career of author Ralph Waldo Emerson, who married Forbes's daughter, and bankrolled the establishment of the Bell Telephone Company, whose first president was Forbes's son.

• Joseph Coolidge: his Augustine Heard agency got $10 million yearly as surrogates for the Scottish dope-runners Jardine Matheson during the fighting in China; his son organized the United Fruit Company; his grandson, Archibald Cary Coolidge, was the founding executive officer of the Anglo-Americans' Council on Foreign Relations.

• Warren Delano, Jr.: chief of Russell and Co. in Canton; grandfather of U.S. President Franklin Delano Roosevelt.

*• Russell Sturgis: his grandson by the same name was chairman of the Baring Bank in England, financiers of the Far East opium trade.

Such persons as John C. Green and A.A. Low, whose names adorn various buildings at Princeton and Columbia Universities, made little attempt to hide the criminal origin of their influential money. Similarly with the Cabots, the Higginsons and the Welds for Harvard. The secret groups at other colleges are analogous and closely related to Yale's Skull and Bones.

Princeton has its "eating clubs," especially Ivy Club and Cottage Club, whose oligarchical tradition runs from Jonathan Edwards and Aaron Burr through the Dulles brothers. At Harvard there is the ultra-blue-blooded Porcelian (known also as the Porc or Pig club); Theodore Roosevelt bragged to the German Kaiser of his membership there; Franklin Roosevelt was a member of the slightly "lower" Fly Club.

A few of the early initiates in Skull and Bones went on to careers in obvious defiance of the order's oligarchical character; two such were the scientists Benjamin Silliman, Jr. (Skull and Bones 1837), and William Chauvenet (Skull and Bones 1840). This reflects the continued importance of republican factions at Yale, Harvard and other colleges during the middle three decades of the nineteenth century. Silliman and Chauvenet became enemies of everything Skull and Bones stood for, while the Yale secret group rapidly conformed to the Russells' expectations.

*Certain of the prominent Boston opium families, such as Cabot and Weld, did not affiliate directly with Russell, Connecticut and Yale, but were identified instead with Harvard.

Yale was the northern college favored by southern slave-owning would-be aristocrats. Among Yale's southern students were John C. Calhoun, later the famous South Carolina defender of slavery against nationalism, and Judah P. Benjamin, later Secretary of State for the slaveowners' Confederacy.

Young South Carolinian Joseph Heatly Dulles, whose family bought their slaves with the money from contract-security work for the British conquerors in India, was in a previous secret Yale group, the "Society of Brothers in Unity." At Yale Dulles worked with the Northern secessionists and attached himself to Daniel Lord; their two families clove together in the fashion of a gang. The Lords became powerful Anglo-American Wall Street lawyers, and J.H. Dulles's grandson was the father of Allen Dulles and John Foster Dulles.

In 1832-33 Skull and Bones was launched under the Russell pirate flag.

Among the early initiates of the order were Henry Rootes Jackson (S&B 1839), a leader of the 1861 Georgia Secession Convention and post-Civil War president of the Georgia Historical Society (thus the false accounts of the "good old slavery days" and the "bad northern invaders"); John Perkins, Jr. (S&B 1840), chairman of the 1861 Louisiana Secession Convention, who fled abroad for 13 years after the Civil War; and William Taylor Sullivan Barry (S&B 1841), a national leader of the secessionist wing of the Democratic Party during the 1850s, and chairman of the 1861 Mississippi Secession Convention.

Alphonso Taft was a Bonesman alongside William H. Russell in the Class of 1833. As U.S. Attorney General in 1876-77, Alphonso Taft helped organize the backroom settlement of the deadlocked 1876 presidential election. The bargain gave Rutherford B. Hayes the presidency (1877-81) and withdrew the U.S. troops from the South, where they had been enforcing blacks' rights.

Alphonso's son, William Howard Taft (S&B 1878), was U.S. President from 1909 to 1913. President Taft's son, Robert Alphonso Taft (S&B 1910), was a leading U.S. Senator after World War II; his family's Anglo-Saxon racial/ancestral preoccupation was the disease which crippled Robert Taft's leadership of American nationalist "conservatives."

Other pre-Civil War Bonesmen were:

• William M. Evarts (S&B 1837): Wall Street attorney for British and southern slaveowner projects, collaborator of Taft in the 1876 bargain, U.S. Secretary of State 1877-81;

• Morris R. Waite (S&B 1837): Chief Justice of the U.S. Supreme Court 1874-88. whose rulings destroyed many rights of African-Americans gained in the Civil War; he helped his cohorts Taft and Evarts arrange the 1876 presidential settlement scheme to pull the rights-enforcing U.S. troops out of the South;

• Daniel Coit Gilman (S&B 1852): co-incorporator of the Russell Trust; founding president of Johns Hopkins University as a great center for the racialist eugenics movement;

• Andrew D. White (S&B 1853): founding president of Cornell University; psychic researcher; and diplomatic cohort of the Venetian, Russian and British oligarchies;

• Chauncey M. Depew (S&B 1856): general counsel for the Vanderbilt railroads, he helped the Harriman family to enter into high society.

By about the mid-1880s, the Skull and Bones membership roster began to change from its earlier, often "scholarly," coloration; the change reflected the degradation of American political and economic life by imperialist, neo-pagan and racialist ideology.

Irving Fisher (S&B 1888) became the racialist high priest of the economics faculty (Yale professor 1896-1946), and a famous merchant of British Empire propaganda for free trade and reduction of the non-white population. Fisher was founding president of the American Eugenics Society under the financial largesse of Averell Harriman's mother.

Gifford Pinchot (S&B 1889) invented the aristocrats' "conservation" movement. He was President Theodore Roosevelt's chief forester, substituting federal land-control in place of Abraham Lincoln's free-land-to-families farm creation program. Pinchot's British Empire activitism included the Psychical Research Society and his vice-presidency of the first International Eugenics Congress in 1912.

Helping Pinchot initiate this century's racialist environmentalism were his cohorts George W. Woodruff (S&B 1889), Teddy Roosevelt's Assistant Attorney General and Acting Interior Secretary; and Henry Solon Graves (S&B 1892), chief U.S. forester 1910-20. Frederick E. Weyerhaeuser (S&B 1896), owner of vast tracts of American forest, was a follower of Pinchot's movement, while the Weyerhauser family were active collaborators of British-South African super-racist Cecil Rhodes. This family's friendship with President George Bush is a vital factor in the present environmentalist movement.

With Henry L. Stimson (S&B 1888) we come to the Eastern Liberal Establishment which has ruled America during the twentieth century. Stimson was President Taft's Secretary of War (1911-13), and President Herbert Hoover's Secretary of State (1929-33). As Secretary of War (1940-45), this time under President Harry Truman, Stimson pressed Truman to drop the atomic bomb on the Japanese. This decision involved much more than merely "pragmatic" military considerations. These Anglophiles, up through George Bush, have opposed the American republic's tradition of alliance with national aspirations in Asia; and they worried that the invention of nuclear energy would too powerfully unsettle the world's toleration for poverty and misery. Both the U.S. and the Atom had better be dreaded, they thought.

The present century owes much of its record of horrors to the influential Anglophile American families which came to dominate and employ the Skull and Bones Society as a political recruiting agency, particularly the Harrimans, Whitneys, Vanderbilts, Rockefellers and their lawyers, the Lords and Tafts and Bundys.

The politically aggressive Guaranty Trust Company, run almost entirely by Skull and Bones initiates, was a financial vehicle of these families in the early 1900s. Guaranty Trust's support for the Bolshevik and Nazi revolutions overlapped the more intense endeavors in these fields by the Harrimans, George Walker and Prescott Bush a few blocks away, and in Berlin.

Skull and Bones was dominated from 1913 onward by the circles of Averell Harriman. They displaced remaining traditionalists such as Douglas MacArthur from power in the United States.

For George Bush, the Skull and Bones Society is more than simply the British, as opposed to the American, strategic tradition. It is merged in the family and personal network within which his whole life has been, in a sense, handed to him prepackaged.

BRITAIN'S YALE FLYING UNIT

DURING PRESCOTT BUSH'S STUDENT DAYS, the Harriman set at Yale decided that World War I was sufficiently amusing that they ought to get into it as recreation. They formed a special Yale Unit of the Naval Reserve Flying Corps, at the instigation of F. Trubee Davison. Since the United States was not at war, and the Yale students were going to serve Britain, the Yale Unit was privately and lavishly financed by F. Trubee's father, Henry Davison, the senior managing partner at J.P. Morgan and Co. At that time, the

Morgan bank was the official financial agency for the British government in the United States. The Yale Unit's leader was amateur pilot Robert A. Lovett. They were based first on Long Island, New York, then in Palm Beach, Florida.

The Yale Unit has been described by Lovett's family and friends in a collective biography of the Harriman set:

> Training for the Yale Flying Unit was not exactly boot camp. Davison's father ... helped finance them royally, and newspapers of the day dubbed them "the millionaires' unit." They cut rakish figures, and knew it; though some dismissed them as dilettantes, the hearts of young Long Island belles fluttered at the sight ....
>
> [In] Palm Beach ... they ostentatiously pursued a relaxed style. "They were rolled about in wheel chairs by African slaves amid tropical gardens and coconut palms," wrote the unit's historian... "For light exercise, they learned to glance at their new wristwatches with an air of easy nonchalance"... [Lovett] was made chief of the unit's private club, the Wags, whose members started their sentences, "Being a Wag and therefore a superman"...
>
> Despite the snide comments of those who dismissed them as frivolous rich boys, Lovett's unit proved to be daring and imaginative warriors when they were dispatched for active duty in 1917 with Britain's Royal Naval Air Service.[6]

Lovett was transferred to the U.S. Navy after the U.S. joined Britain in World War I.

The Yale Flying Unit was the glory of Skull and Bones. Roland Harriman, Prescott Bush and their 1917 Bonesmates selected for 1918 membership in the secret order these Yale Flying Unit leaders: Robert Lovett, F. Trubee Davison, Artemus Lamb Gates, and John Martin Vorys. Unit flyers David Sinton Ingalls and F. Trubee's brother, Harry P. Davison (who became Morgan vice chairman), were tapped for the 1920 Skull and Bones.

Lovett did not actually have a senior year at Yale: "He was tapped for Skull and Bones not on the Old Campus but at a naval station in West Palm Beach; his initiation, instead of being conducted in the "tomb' on High Street, occurred at the headquarters of the Navy's Northern Bombing Group between Dunkirk and Calais."[7]

Some years later, Averell Harriman gathered Lovett, Prescott Bush and other pets into the Utopian oligarchs' community a few miles to the north of Palm Beach, called Jupiter Island (see Chapter 4 [George Bush: The Unauthorized Biography]).

British Empire loyalists flew right from the Yale Unit into U.S. strategy-making positions:

• F. Trubee Davison was Assistant U.S. Secretary of War for Air from 1926 to 1933. David S. Ingalls (on the board of Jupiter Island's Pan American Airways) was meanwhile Assistant Secretary of the Navy for Aviation (1929-32). Following the American Museum of Natural History's Hitlerite 1932 eugenics congress, Davison resigned his government Air post to become the Museum's president. Then, under the Harriman-Lovett national security regime of the early 1950s, F. Trubee Davison became Director of Personnel for the new Central Intelligence Agency.

• Robert Lovett was Assistant Secretary of War for Air from 1941-45.

• Lovett's 1918 Bonesmate Artemus Gates (chosen by Prescott and his fellows) became Assistant Secretary of the Navy for Air in 1941. Gates retained this post throughout the Second World War until 1945. Having a man like Gates up there, who owed his position to Averell, Bob, Prescott and their set, was quite reassuring to young naval aviator George Bush; especially so, when Bush would have to worry about the record being correct concerning his controversial fatal crash.

OTHER IMPORTANT BONESMEN

• Richard M. Bissell, Jr. was a very important man to the denizens of Jupiter Island. He graduated from Yale in 1932, the year after the Harrimanites bought the island. Though not in Skull and Bones, Bissell was the younger brother of William Truesdale Bisell, a Bonesman from the class of 1925. Their father, Connecticut insurance executive Richard M. Bissell, Sr., had put the U.S. insurance industry's inside knowledge of all fire-insured industrial plants at the disposal of government planners during World War I.

The senior Bissell, a powerful Yale alumnus, was also the director of the Neuro-Psychiatric Institute of the Hartford Retreat for the Insane; there, in 1904, Yale graduate Clifford Beers underwent mind-destroying treatment which led this mental patient to found the Mental Hygiene Society, a major Yale-based Skull and Bones project. This would evolve into the CIA's cultural engineering effort of the 1950s, the drugs and brainwashing adventure known as "MK-Ultra."

Richard M. Bissell, Jr. studied at the London School of Economics in 1932 and 1933, and taught at Yale from 1935 to 1941. He then joined Harriman's entourage in the U.S. government. Bissell was an economist for the Combined Shipping Adjustment Board in 1942-43, while Averell Harriman was the U.S. leader of that board in London.

In 1947 and 1948, Bissell was executive secretary of the "Harriman Commission," otherwise known as the President's Commission on Foreign Aid. When Harriman was the administrator of the Marshall Plan, Bissell was assistant administrator.

Harriman was director of Mutual Security (1951-53), while Bissell was consultant to the director of Mutual Security 1952.

Bissell then joined F. Trubee Davison at the Central Intelligence Agency. When Allen Dulles became CIA Director, Bissell was one of his three aides.

Why could this be of interest to our Floridians? We saw in Chapter 4 [George Bush - The Unauthorized Biography], that the great anti-Castro covert initiative of 1959-61 was supervised by an awesome array of Harriman agents. We need now add to that assessment only the fact that the detailed management of the invasion of Cuba, and of the assassination planning, and the training of the squads for these jobs, was given into the hands of Richard M. Bissell, Jr.

This 1961 invasion failed. Fidel Castro survived the widely-discussed assassination plots against him. But the initiative succeeded in what was probably its core purpose: to organize a force of multi-use professional assassins.

The Florida-trained killers stayed in business under the leadership of Ted Shackley. They were all around the assassination of President Kennedy in 1963. They kept going with the Operation Phoenix mass murder of Vietnamese civilians, with Middle East drug and terrorist programs, and with George Bush's Contra wars in Central America.

• Harvey Hollister Bundy (S&B 1909) was Henry L. Stimson's Assistant Secretary of State (1931-33); then he was Stimson's Special Assistant Secretary of War, alongside Assistant Secretary Robert Lovett of Skull and Bones and Brown Brothers Harriman.

Harvey's son William P. Bundy (S&B 1939) was a CIA officer from 1951 to 1961; as a 1960s defense official, he pushed the Harriman-Dulles scheme for a Vietnam war. Harvey's other son, McGeorge Bundy (S&B 1940), co-authored Stimson's memoirs in 1948. As President John Kennedy's Director of National Security, McGeorge Bundy organized the whitewash of the Kennedy assassination, and immediately switched the U.S. policy away from the Kennedy pullout and back toward war in Vietnam.

• There was also Henry Luce, a Bonesman of 1920 with David S. Ingalls and Harry Pomeroy. Luce published Time magazine, where his ironically-named "American Century"

blustering was straight British Empire doctrine: Bury the republics, hail the Anglo-Saxon conquerors.

• William Sloane Coffin, tapped for 1949 Skull and Bones by George Bush and his Bone companions, was from a long line of Skull and Bones Coffins. William Sloane Coffin was famous in the Vietnam War protest days as a leader of the left protest against the war. Was the fact that he was an agent of the Central Intelligence Agency embarrassing to William Sloane?

This was no contradiction. His uncle, the Reverend Henry Sloane Coffin (S&B 1897), had also been a "peace" agitator, and an oligarchical agent. Uncle Henry was for 20 years president of the Union Theological Seminary, whose board chairman was Prescott Bush's partner Thatcher Brown. In 1937, Henry Coffin and John Foster Dulles led the U.S. delegation to England to found the World Council of Churches, as a "peace movement" guided by the pro-Hitler faction in England.

The Coffins have been mainstays of the liberal death lobby, for euthanasia and eugenics. The Coffins outlasted Hitler, arriving into the CIA in the 1950s.

• Amory Howe Bradford (S&B 1934) married Carol Warburg Rothschild in 1941. Carol's mother, Carola, was the acknowledged head of the Warburg family in America after World War II. This family had assisted the Harrimans' rise into the world in the nineteenth and early twentieth centuries; in concert with the Sulzbergers at the New York Times, they had used their American Jewish Committee and B'nai B'rith to protect the Harriman-Bush deals with Hitler. This made it nice for Averell Harriman, just like family, when Amory Howe Bradford worked on the Planning Group of Harriman's NATO secretariat in London, 1951-52. Bradford was meanwhile assistant to the publisher of the New York Times, and went on to become general manager of the Times.

Other modern Bonesmen have been closely tied to George Bush's career.

• George Herbert Walker, Jr. (S&B 1927) was the President's uncle and financial angel. In the 1970s he sold G.H. Walker & Co. to White, Weld & Co. and became a director of White, Weld; company heir William Weld, the current Massachusetts governor, is an active Bush Republican.

• Publisher William F. Buckley (S&B 1950) had a family oil business in Mexico. There Buckley was a close ally to CIA covert operations manager E. Howard Hunt, whose lethal antics were performed under the eyes of Miami Station and Jupiter Island.

• David Lyle Boren (S&B 1963) was assistant to the director of the Office of Civil and Defense Mobilization, and a propaganda analyst for the U.S. Information Agency, before graduating from Yale. Thus while he was imbibing the British view at Oxford University (1963-65), Boren was already an Anglo-American intelligence operative, listed in the "speakers bureau" of the American embassy in London. David Boren was elected to the U.S. Senate in 1979 and became chairman of the Senate Intelligence Committee.

Though a Democrat (who spoke knowingly of the "parallel government" operating in Iran-Contra), Boren's Intelligence Committee rulings have been (not unexpectedly) more and more favorable to his "Patriarch" in the White House.

BUSH'S OWN BONES

AMONG THE TRADITIONAL ARTIFACTS collected and maintained within the High Street Tomb are human remains of various derivations. The following concerns one such set of Skull and Bones.

Geronimo, an Apache faction leader and warrior, led a party of warriors on a raid in 1876, after Apaches were moved to the San Carlos Reservation in Arizona territory. He

led other raids against U.S. and Mexican forces well into the 1880s; he was captured and escaped many times.

Geronimo was finally interned at Fort Sill, Oklahoma. He became a farmer and joined a Christian congregation. He died at the age of 79 years in 1909, and was buried at Fort Sill. Three-quarters of a century later, his tribesmen raised the question of getting their famous warrior reinterred back in Arizona.

Ned Anderson was Tribal Chairman of the San Carlos Apache Tribe from 1978 to 1986. This is the story he tells[8]:

Around the fall of 1983, the leader of an Apache group in another section of Arizona said he was interested in having the remains of Geronimo returned to his tribe's custody. Taking up this idea, Anderson said that the remains properly belonged to his group as much as to the other Apaches. After much discussion, several Apache groups met at a kind of summit meeting held at Fort Sill, Oklahoma. The army authorities were not favorable to the meeting, and it only occurred through the intervention of the office of the Governor of Oklahoma.

As a result of this meeting, Ned Anderson was written up in the newspapers as an articulate Apache activist. Soon afterwards, in late 1983 or early 1984, a Skull and Bones member contacted Anderson and leaked evidence that Geronimo's remains had long ago been pilfered — by Prescott Bush, George's father. The informant said that in May of 1918, Prescott Bush and five other officers at Fort Sill desecrated the grave of Geronimo. They took turns watching while they robbed the grave, taking items including a skull, some other bones, a horse bit and straps. These prizes were taken back to the Tomb, the home of the Skull and Bones Society at Yale in New Haven, Connecticut. They were put into a display case, which members and visitors could easily view upon entry to the building. The informant provided Anderson with photographs of the stolen remains, and a copy of a Skull and Bones log book in which the 1918 grave robbery had been recorded. The informant said that Skull and Bones members used the pilfered remains in performing some of their Thursday and Sunday night rituals, with Geronimo's skull sitting out on a table in front of them.

Outraged, Anderson traveled to New Haven. He did some investigation on the Yale campus and held numerous discussions, to learn what the Apaches would be up against when they took action, and what type of action would be most fruitful.

Through an attorney, Ned Anderson asked the FBI to move into the case. The attorney conveyed to him the Bureau's response: If he would turn over every scrap of evidence to the FBI, and completely remove himself from the case, they would get involved. He rejected this bargain, since it did not seem likely to lead toward recovery of Geronimo's remains.

Due to his persistence, he was able to arrange a September 1986 Manhattan meeting with Jonathan Bush, George Bush's brother. Jonathan Bush vaguely assured Anderson that he would get what he had come after, and set a followup meeting for the next day. But Bush stalled — Anderson believes this was to gain time to hide and secure the stolen remains against any possible rescue action.

The Skull and Bones attorney representing the Bush family and managing the case was Endicott Peabody Davison. His father was the F. Trubee Davison mentioned above, who had been president of New York's American Museum of Natural History, and personnel director for the Central Intelligence Agency. The general attitude of this Museum crowd has long been that "Natives" should be stuffed and mounted for display to the Fashionable Set.

Finally, after about 11 days, another meeting occurred. A display case was produced, which did in fact match the one in the photograph the informant had given to Ned Anderson. But the skull he was shown was that of a ten-year-old child, and Anderson refused to receive it or to sign a legal document promising to shut up about the matter- Anderson took his complaint to Arizona Congressmen Morris Udahl and John Mc-Cain III, but with no results. George Bush refused Congressman McCain's request that he meet with Anderson.

Anderson wrote to Udahl, enclosing a photograph of the wall case and skull at the "Tomb," showing a black and white photograph of the living Geronimo, which members of the Order had boastfully posted next to their display of his skull. Anderson quoted from a Skull and Bones Society internal history, entitled Continuation of the History of Our Order for the Century Celebration, 17 June 1933, by The Little Devil of D'121.

> From the war days [WW. I] also sprang the mad expedition from the School of Fire at Fort Sill, Oklahoma, that brought to the T[omb] its most spectacular "crook," the skull of Geronimo the terrible, the Indian Chief who had taken forty-nine white scalps. An expedition in late May, 1918, by members of four Clubs [i.e. four graduating-class years of the Society], Xit D.114, Barebones, Caliban and Dingbat, D.115, S'Mike D.116, and Hellbender D.117, planned with great caution since in the words of one of them: "Six army captains robbing a grave wouldn't look good in the papers." The stirring climax was recorded by Hellbender in the Black Book of D.117: "... The ring of pick on stone and thud of earth on earth alone disturbs the peace of the prairie. An axe pried open the iron door of the tomb, and Patriarch] Bush entered and started to dig. We dug in turn, each on relief taking a turn on the road as guards ... Finally Patriarch] Ellery James turned up a bridle, soon a saddle horn and rotten leathers followed, then wood and then, at the exact bottom of the small round hole, Patriarch] James dug deep and pried out the trophy itself... We quickly closed the grave, shut the door and sped home to Patriarch] Mallon's room, where we cleaned the Bones. Patriarch] Mallon sat on the floor liberally applying carbolic acid. The Skull was fairly clean, having only some flesh inside and a little hair. I showered and hit the hay ... a happy man ... ."[9]

The other grave robber whose name is given, Ellery James, we encountered in Chapter 1 [George Bush: The Unauthorized Biography] — he was to be an usher at Prescott's wedding three years later. And the fellow who applied acid to the stolen skull, burning off the flesh and hair, was Neil Mallon. Years later, Prescott Bush and his partners chose Mallon as chairman of Dresser Industries; Mallon hired Prescott's son, George Bush, for George's first job; and George Bush named his son, Neil Mallon Bush, after the flesh-picker.

In 1988, the Washington Post ran an article, originating from the Establishment-line Arizona Republic, entitled "Skull for Scandal: Did Bush's Father Rob Geronimo's Grave?" The article included a small quote from the 1933 Skull and Bones History of Out Order. "An axe pried open the iron door of the tomb, and ... Bush entered and started to dig ..." and so forth, but neglected to include other names beside Bush.

According to the Washington Post, the document which Bush attorney Endicott Davison tried to get the Apache leader to sign, stipulated that Ned Anderson agreed it would be "inappropriate for you, me [Jonathan Bush] or anyone in association with us to make or permit any publication in connection with this transaction." Anderson called the document "very insulting to Indians." Davison claimed later that the Order's own history book is a hoax, but during the negotiations with Anderson, Bush's attorney demanded Anderson give up his copy of the book.[10]

Bush crony Fitzhugh Green gives the view of the President's backers on this affair, and conveys the arrogant racial attitude typical of Skull and Bones:

> Prescott Bush had a colorful side. In 1988 the press revealed the complaint of an Apache leader about Bush. This was Ned Anderson of San Carlos, Oklahoma [sic], who charged that as a young army officer Bush stole the skull of Indian Chief [sic] Geronimo and had it hung on the wall of Yale's Skull and Bones Club. After exposure of 'true facts' by Anderson, and consideration by some representatives in Congress, the issue faded from public sight. Whether or not this alleged skullduggery actually occurred, the mere idea casts the senior Bush in an adventurous light"[11] [emphasis added].

George Bush's crowning as a Bonesman was intensely, personally important to him. These men were tapped for the Class of 1948:

Thomas William Ludlow Ashley
Lucius Horatio Biglow, Jr.
George Herbert Walker Bush
John Erwin Caulkins
William Judkins Clark
William James Connelly, Jr.
George Cook III
David Charles Grimes
Richard Elwood Jenkins
Richard Gerstle Mack
Thomas Wilder Moseley
George Harold Pfau, Jr.
Samuel Sloane Walker, Jr.
Howard Sayre Weaver
ValleauWilkie, Jr.

Survivors of this 1948 Bones group were interviewed for a 1988 Washington Post campaign profile of George Bush. The members described their continuing intimacy with and financial support for Bush up through his 1980s vice-presidency. Their original sexual togetherness at Yale is stressed:

The relationships that were formed in the "Tomb" ... where the Society's meetings took place each Thursday and Sunday night during the academic year, have had a strong place in Bush's life, according to all 11 of his fellow Bonesmen who are still alive.

Several described in detail the ritual in the organization that builds the bonds. Before giving his life history, each member had to spend a Sunday night reviewing his sex life in a talk known in the Tomb as CB, or "connubial bliss"...

"The first time you review your sex life ... We went all the way around among the 15," said Lucius H. Biglow Jr., a retired Seattle attorney. "That way you get everybody committed to a certain extent ... It was a gradual way of building confidence."

The sexual histories helped break down the normal defenses of the members, according to several of the members from his class. William J. Connelly, Jr. ... said, "In Skull and Bones we all stand together, 15 brothers under the skin. [It is] the greatest allegiance in the world."[12]

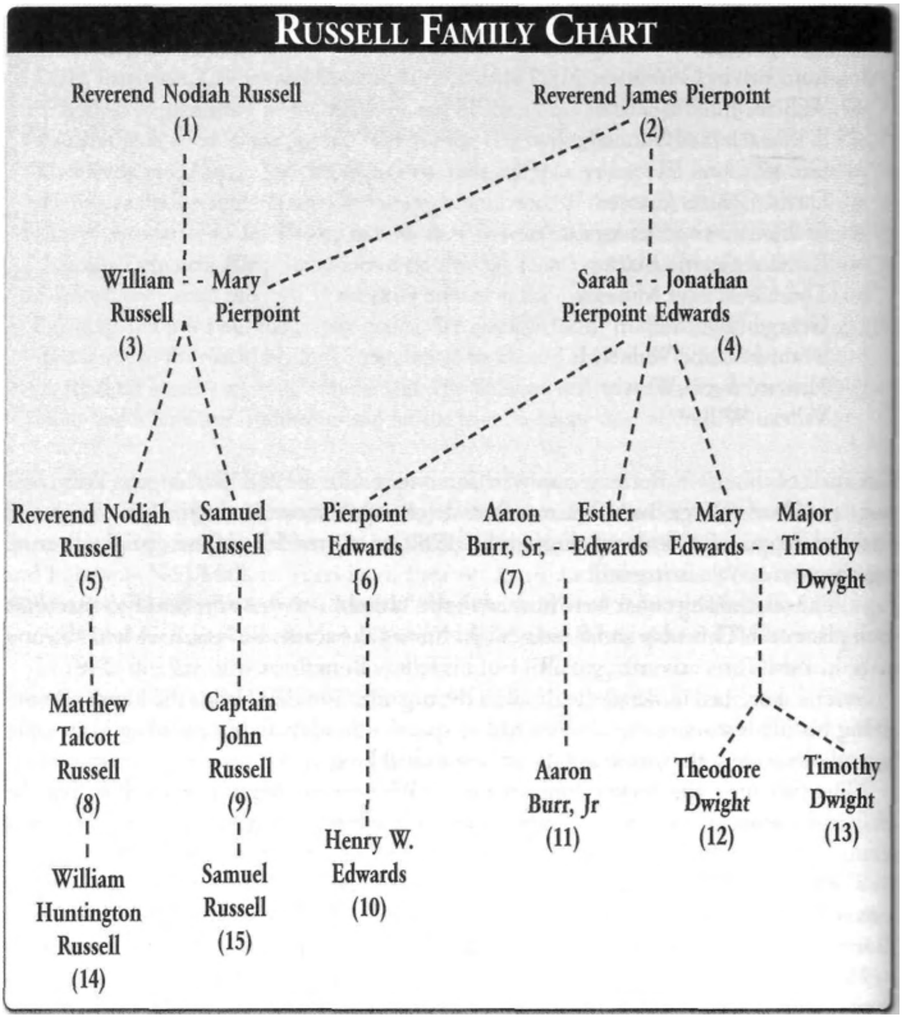
Here is our future U.S. President with the other wealthy, amoral young men, excited about their future unlimited power over the ignorant common people, sharing their

sex secrets in a mausoleum surrounded by human remains. The excited young men are entirely directed by the "Patriarchs," the cynical alumni financiers who are the legal owners of the Order.

THE YALE TORIES WHO MADE SKULL AND BONES

THIS CHART DEPICTS FAMILY RELATIONSHIPS which were vital to the persons appearing on the chart. At less exalted levels of society, one is supposed to be praised or blamed only according to one's own actions. But in these Yale circles, "family' — genealogy — is an overwhelming consideration when evaluating individuals. Thus what we present here is more than simply a system of associations. It is a tradition which has operated powerfully on the emotions and judgment of the leaders of Yale University; they have merged their own identities into this tradition.

Lines are directed downwards from parents to their children. A double hyphen (- -) signifies the marriage of the persons on either side.



GUIDE TO THE YALE FAMILY CHART

1) Rev. Nodiah Russell: One of 10 or 12 men who founded Yale University in 1701. Yale Trustee 1701-13. Pastor, First Congregational Church, Middletown, CT, ca. 1691-1716.
2) Rev. James Pierpont: Most celebrated of the Yale founders. Yale Trustee, 1701-14.
3) William Russell: Yale Trustee 1745-61. Pastor, First Congregational Church, Middletown, CT, 1716-61.
4) Jonathan Edwards: Graduated Yale 1720. Ultra-Calvinist theologian, president of Princeton University (called then "College of New Jersey").
5) Rev. Nodiah Russell: Graduated Yale 1750.
6) Pierpont Edwards (1750-1826): Made Master of Connecticut Masons by the British Army occupying New York in 1783; he administered the estate of the traitor Benedict Arnold.
7) Aaron Burr, Sr.: Graduated Yale 1735. President of Princeton University ("College of New Jersey").
8) Matthew Talcott Russell: Graduated Yale 1769. Deacon of First Congregational Church, Middletown, CT for 30 years. Lawyer for the Middletown Russell family. Died ca. 1817.
9) Captain John Russell. Died 1801 or 1802.
10) Henry W. Edwards: Governor of Connecticut 1833, 1835-38. Protector of Samuel Russell's opium-financed enterprises, patron of William Huntington Russell's new secret society Skull and Bones.
11) Aaron Burr, Jr.: U.S. Vice President 1801-08. Killed Alexander Hamilton in a duel in 1804. Secession conspirator. Acquitted of treason in 1807, but wanted for murder, he fled to England. Returned to U.S.A. in 1812. Wall Street lawyer, 1812-36. Hero of imperial Anglo-Americans.
12) Theodore Dwight (1764-1846): Law partner of his cousin Aaron Burr, Jr. Secretary of the secessionist Hartford Convention, 1815. He united the Connecticut pro-British party with Massachusetts "Essex Junto."
13) Timothy Dwight: Secessionist. President of Yale, 1795-1817.
14) William Huntington Russell (1809-85): Graduated Yale 1833. Founder of Skull and Bones Society (or Russell Trust Association), which came to dominate Yale. Founded prep school for boys, 1836. His secret organization spread in the 1870s to Phillips Academy, the Andover, Massachusetts prep school.
15) Samuel Russell: Born in 1789 in the main ancestral house of the Russell family of Middletown. This house had been owned by the co-founder of Yale, Nodiah Russell (1), and by William Russell (3) and his wife Mary, sister-in-law to Jonathan Edwards.
He became head of the Middletown Russells. He established Russell and Co. in 1823, which by the 1830s superseded Perkins syndicate as largest American opium smuggling organization. His partners included leading Boston families.
He founded the Russell Manufacturing Company, Middletown, in 1837; he was president of Middlesex County Bank. During the formative years of Skull and Bones, the fabulously wealthy Samuel Russell was undisputed king of Middletown.

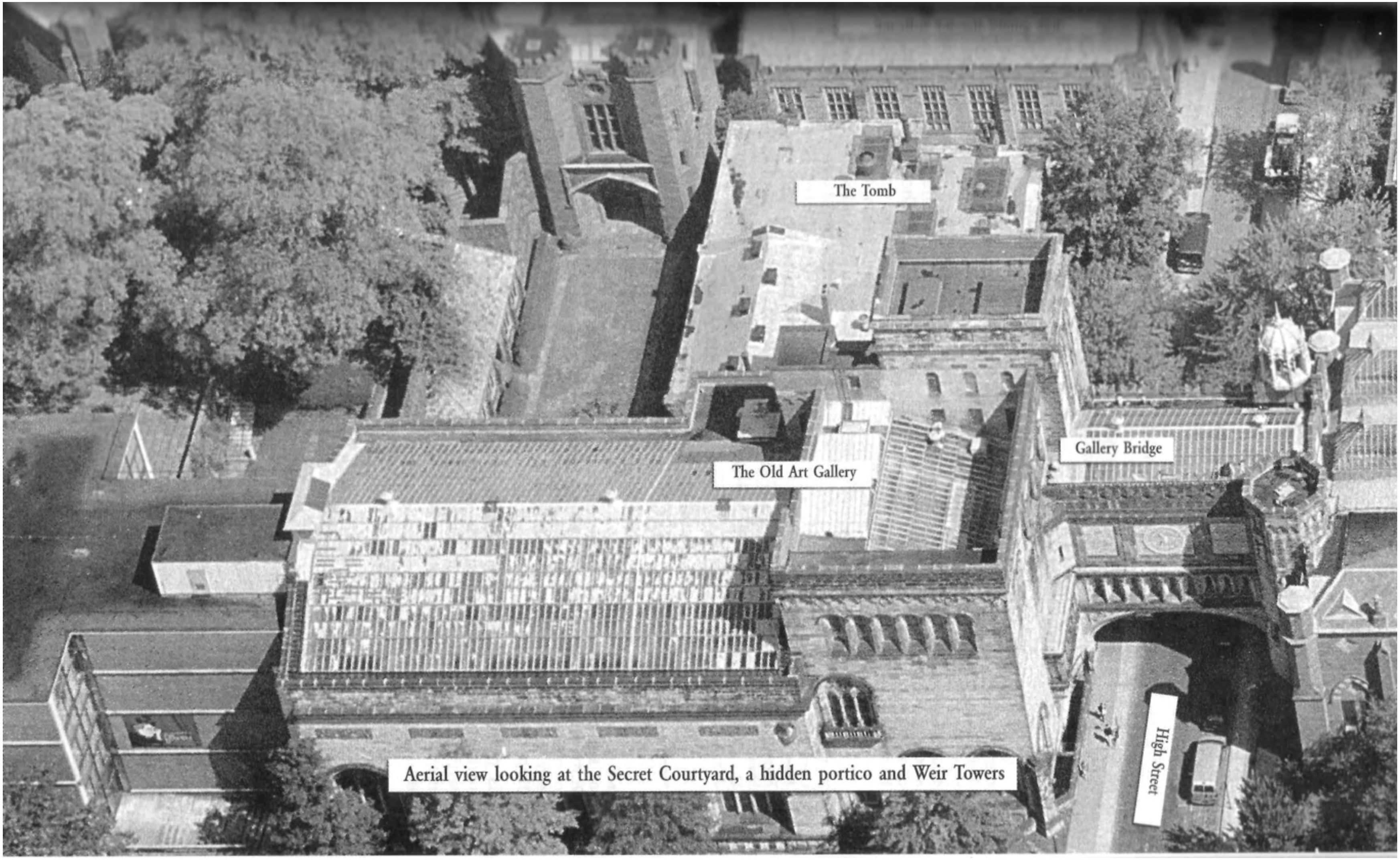
NOTE TO READER:

For the sake of clarity, we have omitted from this chart the ancestral line from Rev. James Pierpont (2) to his great grandson Rev. John Pierpont. Rev. John Pierpont wrote poetry for the pro-British secessionists; he denounced President Thomas Jefferson for saying that Pierpont's New England relatives were "under

the influence of the whore of England." Rev. John was an employee of Aaron Burr's family during Burr's western conspiracy. Rev. John's daughter Juliet married Connecticut-born British banker Junius Morgan and gave birth to U.S. financial kingpin John Pierpont Morgan, named for his grandfather Rev. John.

NOTES:

1. Speech at Lewistown, Illinois, August 17, 1858; quoted in James Mellon (editor), The Face of Lincoln (New York: Viking Press, 1979), p. 35.
2. Fitzhugh Green, George Bush: An Intimate Portrait (New York: Hippocrene Books, 1989), p. 41.
3. Nicholas King, George Bush: A Biography (New York: Dodd, Mead & Company, 1980), p. 38.
4. Green, op. cit., p. 47.
5. Ibid., p. 48.
6. Among the sources used for this section are:
   Skull and Bones membership list, 1833-1950, printed 1949 by the Russell Trust Association, New Haven, Connecticut, available through the Yale University Library, New Haven.
   Biographies of the Russells and related families, in the Yale University Library, New Haven, and in the Russell Library, Middletown, Connecticut.
   Ron Chernow, The House of Morgan: An American Banking Dynasty and the Rise of Modern Finance (New York: Atlantic Monthly Press, 1990).
   Anthony C. Sutton, How the Order Creates War and Revolution, (Phoenix: Research Publications, Inc., 1984).
   Anthony C. Sutton, America's Secret Establishment: An Introduction to the Order of Skull and Bones, (Billings, Mt.: Liberty House Press, 1986).
   Anton Chaitkin, Treason in America: From Aaron Burr to Averell Harriman, second edition (New York: New Benjamin Franklin House, 1985).
   Anton Chaitkin, "Station Identification: Morgan, Hitler, NBC," New Solidarity, Oct. 8, 1984.
   Interviews with Bones members and their families.
7. Walter Isaacson and Evan Thomas, The Wise Men: Six Friends and the World They Made — Acheson, Bohlen, Harriman, Kennan, Lovett, McCloy (New York: Simon and Schuster, 1986), pp. 90-91.
8. Ibid., p. 93.
9. Interview with Ned Anderson, Nov. 6, 1991.
10. Quoted in Ned Anderson to Anton Chaitkin, Dec. 2, 1991, in possession of the authors.
11. Article by Paul Brinkley-Rogers of the Arizona Republic, in the Washington Post, Oct. 1, 1988.
12. Green, op. cit., p. 50.
13. Bob Woodward and Walter Pincus, "Bush Opened Up To Secret Yale Society," Washington Post, Aug. 7, 1988.



Aerial view looking at the Secret Courtyard, a hidden portico and Weir Towers

FEDERAL REGISTER, Saturday, November 7, 1942

[Vesting Order Number 248]

ALL OF THE CAPITAL STOCK OF UNION BANKING CORPORATION AND CERTAIN INDEBTEDNESS OWING BY IT

Under the authority of the Trading with the enemy Act, as amended, and Executive Order No. 9095, as amended,[1] and pursuant to law, the undersigned, after investigation, finding:

(a) That the property described as follows:

All of the capital stock of Union Banking Corporation, a New York corporation, New York, New York, which is a business enterprise within the United States, consisting of 4,000 shares of $100 par value common capital stock, the names of the registered owners of which, and the number of shares owned by them respectively, are as follows:

Names	Number of shares
E. Roland Harriman	3,991
Cornelius Lievense	4
Harold D. Pennington	1
Ray Morris	1
Prescott S. Bush	1
H. J. Kouwenhoven	1
Johann G. Groeninger	1
Total	4,000

1 7 F.R, 5205.

all of which shares are held for the benefit of Bank voor Handel en Scheepvaart, N. V., Rotterdam, The Netherlands, which bank is owned or controlled by members of the Thyssen family, nationals of Germany and/or Hungary,

is property of nationals, and represents ownership of said business enterprise which is a national, of a designated enemy country or countries (Germany and/or Hungary);

(b) That the property described as follows:

All right, title, interest and claim of any name or nature whatsoever of the aforesaid Bank voor Handel en Scheepvaart, and August Thyssen-Bank, Berlin, Germany, and each of them, in and to all indebtedness, contingent or otherwise and whether or not matured, owing to them, or each of them, by said Union Banking Corporation, including but not limited to all security rights in and to any and all collateral for any or all of such indebtedness and the right to sue for and collect such indebtedness.

is an interest in the aforesaid business enterprise held by nationals of an enemy country or countries, and also is property within the United States owned or controlled by nationals of a designated enemy country or countries (Germany and/or Hungary);

and determining that to the extent that any or all of such nationals are persons not within a designated enemy country, the national interest of the United States requires that such persons be treated as nationals of the aforesaid designated enemy country or countries (Germany and/or Hungary), and having made all determinations and taken all action after appropriate consultation and certification, required by said executive order or Act or otherwise, and deeming it necessary in the national interest hereby vests such property in the Alien Property Custodian, to be held, used, administered, liquidated, sold or otherwise dealt with in the interest of and for the benefit of the United States.

Such property and any or all of the proceeds thereof shall be held ina a special account pending further determination of the Alien Property Custodian This shall not be deemed to limit the powers of the Alien Property Custodian to return such property or the proceeds thereof, or to indicate that compensation will not be paid in lieu thereof, if and when it should be determined that such return should be made or such compensation should be paid.

Any person, except a national of a designated enemy country, asserting any claim arising as a result of this of this order may file with the Alien Property Custodian a notice of his claim, together with a request for a hearing thereon, on Form APC-1, within one year from the date hereof, or within such further time as may be allowed by the Alien Property Custodian. Nothing herein contained shall be deemed to constitute an admission of the existence, validity or right to allowance of any such claim.

The terms "national", "designated enemy country" and "business enterprise within the United States" as used herein shall have the meanings prescribed in section 10 of said executive order.

Executed at Washington, D. C, on October 20, 1942.

[SEAL] LEO T. CROWLEY,
Alien Property Custodian

[F. R. Doc. 42-11568; Filed, November 6, 1941; 11:31 a. m.]

THE ORDER OF SKULL & BONES AND ILLEGAL FINANCE:

A STUDY OF THE ANALYTICAL FRAMEWORK OF CONSPIRACY THEORY

EDIAH MCCLURE

THIS WORK PRESENTS AND EXAMINES the analytical framework of conspiracy theorists in relation to the Order of Skull and Bones in an attempt to illuminate the clash between scholars of conspiracy theory and social science. This work specifically examines in detail the illegal financing activities of members of the Order of Skull and Bones to designated enemy regimes during two specific periods of war in the first half of the twentieth century.

1 — INTRODUCTION

THE ACADEMIC QUARREL with the traditional mode of conspiracy theory is, in short, that conspiracy theory takes for granted certain conditions of generality and fixity which are not always, or always completely, satisfied; that rigid adherence to long- range assumptions narrowly limits the range of what can be properly defined; and entails that conspiracy theory, being unique, indeterminate, ind subject to change, is indefinable. Conspiracy theory maintains a lack of simplicity in its theoretical explanation of historical events often incorporating complex explanations when other, more simplistic explanatory models may exist. Furthermore, conspiracy theory is an unfalsifiable explanation of events.

As a result, conspiracy theory has come to represent a political other to 'proper' democratic politics through the use of potentially illegitimate assumptions that seem to question that the Unites States is a benign, pluralistic democracy, and that seem to reject the popular notion that history moves through the triumph of progress and leadership, as well as through the vagaries of coincidence and mistake.

In regards to conspiratorial assumptions of illegal financing and the Order of Skull and Bones, specialists in the field of political science, who are confronted by ragged evidence, are likely to insist that a similar lack of uniformity and/or causation characterized financial decisions in the first half of the century, and that no conspiratorial collusion existed. To generalize about legality and motives of early international financing is undoubtedly hazardous, and one should be on guard against projecting bias and contemporary theories too far back into the past. Yet one must also be on guard against ignoring important evidence and its implications on society at that period of time.

The actual number of firms involved and level of international financing to both Germany and the Soviet Union during this time period is inevitably open to dispute. Even apart from the problem of trying to estimate the number of firms and amount of finance that went uncataloged by Senate investigations, contemporary evidence must be handled with caution, for it often yields false clues to the number of firms involved and the motives of the financiers. Furthermore, drawing correlations between firms that were involved in illegal financing requires listing managers, presidents, vice-presidents and directors who might have been involved in the decision making process. Such information is difficult to come by, and almost impossible to determine who was directly making individual decisions. As a result, certain assumptions have to be made and adhered to without the benefit of supporting evidence. This is one of many reasons that social scientists discredit conspiracy theory and the issues of illegal finance during times of war are largely ignored.

Nevertheless, although it has to be considered in conjunction with many other issues, the correlations between The Order of Skull and Bones and illegal finance certainly does deserve a closer study. One must be careful not to skew these historical events with speculation and assumption. But it is equally important not to go too far in the other direction and underestimate and/or ignore these correlations. In order to avoid this problem, a falsifiable test will be created in order to minimize problems associated with traditional conspiracy theory and to provide a framework through which the conspiracy theory evidence can be reexamined.

This work will begin with a historical look into the background of conspiracy theory and its prevalence in American culture. Section 2 will outline the framework of conspiracy theory in an attempt to illustrate the analytical approach used by conspiracy theorists in interpreting contemporary events. An abbreviated history of the Order of Skull and Bones and how this organization is interpreted through the framework of conspiracy theory will also be presented in this section. Section 3 will outline the benefits and problems of a conspiracy theory approach to history, focusing on terminology, the formulation of arguments and the assumptions necessary for a conspiracy theory. Section 4 will develop a cross-sectional, falsifiable test in order to determine if a relationship between membership in the Order of Skull and Bones and participation in illegal financing exists. The results of the cross-sectional test will be applied to a larger set of

evidence used by conspiracy theorists in order to minimize the degree of bias associated with conspiratorial interpretations in section 5. This work will then conclude with an examination of the results of the cross-sectional test in light of the conspiracy theorists' evidence.

2 - A HISTORY OF CONSPIRACY THEORY

WITH THE RECENT ELECTION OF PRESIDENT, and Skull and Bones member, George W. Bush, as well as increased political support for presidential hopeful Senator John Kerry, also a Skull and Bones member, the subject of the Order of Skull and Bones has become very popular with certain media outlets, as well as very marketable. Hollywood recently produced a movie based loosely on the Order of Skull and Bones, an investigative documentary was produced for television and three books covering the subject of Skull and Bones are scheduled to be released between 2002 and 2003.

Such a rapid growth in the recent attention directed at Skull and Bones begs the question of why; why has this organization received so much attention of late, and why is much of the attention focused on allegations of conspiracy? Skull and Bones has been in existence since 1832; however, until the election of our former President and Skull and Bones member George H. W. Bush, only about half a dozen articles were written about this organization. So why are we seeing such recent explosive popularity and interest regarding this subject?

I propose two possibilities that tend to feed into each other compounding the underlying focus of recent attention. The first is the secrecy of this organization. Skull and Bones, whose actual name is "The Order 322" or "The Order of Skull and Bones," is the most prestigious and influential of nine secret, senior societies at Yale University. Their meetings are held secretly, their initiations are held secretly, and until recently their membership was kept secret. The secrecy of this society is so prevailing that a member of The Order is allegedly required to leave the room when the subject of The Order is being discussed. As a result of this adamant secrecy, outsiders are left no option but to speculate about the purpose and intent of Skull and Bones.

Second, the secret society of Skull and Bones is very small. Membership is limited to the initiation of only 15 seniors each year. This fact was known at Yale since The Order's founding; however, it was kept from public attention until 1984 when an anonymous member of Skull and Bones provided an author with inside information, thus allowing the author to obtain the previously secret membership list. This membership list provided the groundwork from which all speculation about the organization's goals and intentions derive. The small size of Skull and Bones is not at all indicative of the power and influence that they have had on American society in the past 150 years.

As one investigative reporter so aptly claimed, " For two centuries, the initiation rite of Skull and Bones has shaped the character of the men who have shaped the American character,"[1] including three Presidents. This secret

society is dominated by old-line wealth and power. In Skull and Bones we find family names such as Bush, Russell, Taft, Whitney, Lord, Phelps, Wadsworth, Allen, Bundy and Adams. Other Skull and Bones families that attained influence during the nineteenth century include Harriman, Rockefeller, Payne and Davison. A brief list of some of the members of Skull and Bones during the past century better illustrates the level of wealth, power and influence this small group wields.

George W. Bush ('68): President
George H.W. Bush ('48): CIA, Vice Pres. (1980-88), Pres. (88-92), Zapata Oil
Prescott Bush ('17): Union Banking Corporation, Brown Brothers, Harriman
William H. Taft (1878): President, Chief justice of Supreme Court
Alphonso Taft (1833): Secretary of war, Attorney General
Henry Stimson (1888): served 7 Presidents
Robert Lovett ('18): Advisor Kennedy administration
Harvey Bundy ('09): Advisor at war Department
McGeorge Bundy ('40): National Security Advisor, Kennedy
William Bundy ('39): Senior post CIA
Potter Stewart ('37): Supreme Court Justice
Winston Lord ('59): CIA, President of the Council on Foreign Relations.
Harold Stanley ('08): Founder of Morgan Stanley
Henry Davison ('20): Founder of Guaranty Trust
Averell Harriman ('13): Brown Brothers Harriman, Presidential advisor to 6 Pres.,
Thomas Daniels ('14): Founder of Archer-Daniels-Midland
Russell Wheeler Davenport ('23): Creator of Fortune 500 list
Alfred Cowles ('13): Founder of Cowles communications
Henry Luce ('20): Founder of Time-Life
Artemus Gates ('18): President of NY Trust Company, Union Pacific, Time, Boeing
Dean Witter, Jr. ('44)
Pierre Jay (1892): First Chairman of the New York Federal Reserve
Knight Woolley (T7): director of Federal Reserve Bank

As this short list indicates, these members were very influential leaders in American society. Because of the existence of a membership list, researchers are able to trace the activities of the members of Skull and Bones in an attempt to determine the goal of that secret society. However, instead of providing answers, such research only succeeded in generating new questions, assumptions and speculations. Such speculation resulted in numerous conspiracy theories ranging from organized crime and drug trafficking to the direct manipulation of education and brain washing of America; to the Nazi eugenics movement and ultimately the active creation and manipulation of war through illegal finance.

It is the latter subject that this thesis will explore. The claim of active creation and manipulation of war through illegal finance was chosen because there exists

very strong and verifiable evidence documenting the illegal financing of enemy regimes by members of Skull and Bones prior to and during times of war.

This evidence and the subsequent claims are significant because of the positions of influence that members of Skull and Bones occupy in our government. If the members of this secret society who hold political positions in the government are involved in illegal activities, how will their actions affect the United States as a whole, as well as the creation of government policies that those members are able to influence? Second, how does public knowledge of illegal activities by political officials affect the democratic process? The focus of this thesis then is an attempt to answer the question: Does a causal relationship exist between membership in Skull and Bones and participation in illegal finance?

But first, it would be of value to provide a brief history of the emergence and growth of conspiracy theory in general. How and where did conspiracy theory start? How has conspiracy theory grown, and among whom is it most prevalent? An exploration of the emergence of conspiracy theory will then be followed by a brief history of the "Order of Skull and Bones."

THEORETICAL UNDERSTANDING OF CONSPIRACY THEORY

CONSPIRACY THEORY IN THE UNITED STATES has received a great deal of popular attention in the past several decades. In the wake of the cold war, with events such as the Vietnam War and the Watergate scandal still etched in the minds of millions of Americans, a strong sentiment of distrust aimed at the government arose. Groups, such as the John Birch Society, were formed for the purpose of combating the 'government conspiracy,' while numerous citizens harbor varying degrees of distrust toward politics and/or feelings of insignificance in the American political system.

As Professor Mark T. Reinhardt states, "On the one hand, conspiracy theory is often characterized as illegitimate, pathological, and a threat to political stability; on the other hand, it seems an entertaining narrative form, a populist expression of a democratic culture, that circulates deep skepticism about the truth of the current political order through contemporary culture."[2] Author Mark Fenster, in his book Conspiracy Theories: Secrecy and Power in American Culture, makes a powerful argument for regarding conspiracism (the belief in conspiracy theory) as in integral product of the political system, reflecting inadequacies the establishment itself is blind to and expressing strong desires for the realization of frustrated ideals. Fenster notes that conspiracy theory serves a useful purpose as a balm to the politically alienated segments of society, and he optimistically interprets the popular pursuit of uncovering the hidden mechanics of power as evidence of a latent populism waiting to be harnessed.[3]

Nevertheless, conspiracy thinking is not confined to the marginal and politically alienated segments of society as Fenster might imply. Rather conspiracy thinking is becoming a popular way of viewing the world around us. Political figures such as Joseph McCarthy and Barry Goldwater both made names for

themselves through the claims and pursuance of conspiracy within the government. Numerous movies and television shows incorporate the themes of government conspiracy, abuse of power and political cover-up while New York Times best selling authors such as Dean Koontz consistently focus attention on secret government agencies and plots.

In 1996, the Gallup Organization and the Post-Modernity Project of the University of Virginia conducted a survey concerning American political beliefs entitled, The State of Disunion: 1996 Survey of American Political Culture. This study involved face-to-face interviews with a national sampling of over 2,000 adults. Among the many findings reported in the survey were the following:

> Three out of four Americans (77 percent) agree with the statement that "the government is pretty much run by a few big interests looking out for themselves. " (Twenty-nine percent completely agree.) Similarly, 63 percent of all Americans say that America's governing elite is "only concerned about its own agenda." This same percentage agrees that "our country is run by a close network of special interests, public officials, and the media." (Twenty-five percent completely agree.)[4]

The survey also revealed, "one quarter of the population repeatedly express the conviction that the government is run by a conspiracy, and one in ten Americans strongly subscribes to this view."[5]

Conspiracy theory provides a framework, which for many, helps explain much of what would otherwise seem illogical or implausible in our contemporary society. Conspiracy theory does not question the foundations of our societal structure but rather conspiracy theory provides the ability for people to maintain their ideological convictions while scapegoating blame onto the ruling elite. Conspiracy theory centers on the surpluses of political and economic power, understanding them as integral to the maintenance of power, while attempting to discern who has the surpluses of power, how they obtained those surpluses and what they are doing with them.

POPULAR UNDERSTANDING OF CONSPIRACY THEORY

CONSPIRACY THEORIES were arguably a large influence on American thinking before the Revolutionary War. It was popularized just after World War I and the Bolshevik Revolution, asserting Communism as the manifested form of the global conspiracy, and has steadily gained influence and attention since then through its insistence on the rejection of both socialism and global governing organizations such as the United Nations. Conspiracy theory is not limited to certain segments of society nor is it exclusive to American culture.

The predominance of conspiracy thinking is found in numerous writings, speeches and records including U.S. congressional records and investigations,

and many powerful and influential people have promoted it. For example, the California Senate Investigating Committee on Education states in their 1953 report on education that,

> So called modern Communism is apparently the same hypocritical and deadly world conspiracy to destroy civilization that was founded by the secret order of the Illuminati in Bavaria May 1, 1776.[6]

Conspiracy thinking is not exclusive to American Culture. In a speech before the British Parliament in 1920, Winston Churchill stated,

> From the days of Sparticus-Weishaupt to those of Karl Marx,... this world-wide conspiracy for the overthrow of civilization ... has been steadily growing. It has been the mainspring of every subversive movement during the Nineteenth century, and now at last this band of extraordinary personalities from the underworld of the great cities of Europe and America has gripped the Russian people..?

Both of these passages refer to a worldwide conspiracy originating with the "secret order of the Illuminati of Bavaria." The Illuminati of Bavaria, for a vast majority of conspiracy theorists is the corner stone to understanding the worldwide conspiracy that allegedly exists today. Conspiracy theorist John F. McManus states,

> "Let us openly assert, that there is operating in the world today, and especially within our own nation, a conspiracy that is either a direct descendant of the Illuminati of 1776 or something closely patterned after it. "8

So who or what is the Illuminati of Bavaria and why is so much attention focused on this group?

HISTORICAL UNDERSTANDING OF CONSPIRACY THEORY

ADAM WEISHAUPT formed the "Order of the Illuminati" in Bavaria on May 1, 1776. The philosophy of Weishaupt's Illuminism "propose[d] as the end of Illuminism the abolition of property, social authority, and of nationality,"[9] and was based primarily on revolution and secrecy as a means to bring about social change. Weishaupt's goal was the complete and revolutionary restructuring of society, and to this end Weishaupt "felt the need of a powerful secret organization to support him in the conflict with his adversaries and in the execution of his rationalistic schemes along ecclesiastical and political lines."[10]

By 1778, only two years after its creation, Weishaupt was able to secure more then 1000 members for the Illuminati in Bavaria alone, and there were lodges in 12 other countries including France and the United States.[11] In 1784, a messenger was struck by lightning while carrying letters from Weishaupt to other members of the Illuminati. The police authorities confiscated these letters, which resulted

in the raid of the homes of several leading members of the Illuminati. Weishaupt's Order of the Illuminati was declared as subversive to the German government and the leaders of the Illuminati were banished from Germany.

After the French Revolution numerous books outlining alleged connections between the French Jacobins and Weishaupt's Illuminati were produced. These books focused on the many shared members between the Illuminati and the Jacobins, showing that the leaders of the French Revolution were also high ranking members of the Illuminati, according the Illuminati's records which were confiscated by the Bavarian government.

Concern over the influence of the Illuminati during the French Revolution spread all over the world, including America. In a letter to Rev. G.W. Snyder dated October 24, 1798, Former President George Washington States,

> Reverend sir: It was not my intention to doubt that the doctrine of the Illuminati had not spread in the United States. On the contrary, no one is more satisfied of this fact then I am.[12]

Many organizations that were allegedly involved with the conspiratorial Illuminati, because of their many shared members, became suspect. These various groups included Eclectic Freemasonry, the German Union and the League of the Just. The connection between the League of the Just and the Illuminati is of significance to conspiracy theorists because it was the League of the Just who "commissioned [Karl] Marx and [Frederick] Engels to draw up a definitive statement of its aims and program."[13] According to J. Edgar Hoover, the League of the Just was a secret society that later became publicly known as the Communist League.

Conspiracy theorists emphasize the alleged link between the Illuminati of Bavaria and Communism. A comparison of the Communist Manifesto and of the writing of Adam Weishaupt, as confiscated by the Bavarian government and later published by John Robison in 1798, show that the two philosophies are essentially identical in both goals and in methodology. Other superficial evidence presented by conspiracy theorists include the Communist National holiday celebrated on May 1, the same day that the Illuminati was officially formed; the stated goal of Communism as expressed by former Communist leaders such as Lenin, Stalin, Khrushchev and Gorbachev as being World Communism or Novus Ordo Seclorum (New World Order), is both the same goal and same terminology expressed by Adam Weishaupt; both the Illuminati and Communism were regarded by numerous political figures throughout the world as a well organized international conspiracy in pursuit of a ruinous end.

Following a three year investigation of the 1886 riot in Chicago that resulted in the death of 7 police officers and the injury of 63 more, Police Captain Michael Schaack stated,

> In London there are all the factors for the most dangerous mob the world can produce. In France, the commune is stronger than ever it was and the Red terror may appear with every turn of the whirligig of politics. In Spain and Italy, the Socialists are busy while in Germany and Russia a crisis is at hand. Let none mistake either the purpose or the duration of these fanatics, nor their growing strength. This is a methodical, not a haphazard conspiracy. The ferment in Russia is controlled by the same heads and the same hands as the activity in Chicago. There is a cold-blooded, calculating purpose behind this revolt manipulating every part of it the world over to a common and ruinous end.

A majority of conspiracy theorists base their method of analysis of contemporary events on the assumption that Communism is still alive and active and that it is a manifestation of Weishaupt's secret order of the Illuminati because members of the Illuminati created the Communist League and commissioned Marx and Engels to write the Communist Manifesto. As a result of the publication of the Illuminati's records detailing their subversive agenda, conspiracy theorists assume a long-range plan of world domination by any group that might be aligned with the original Illuminati. This basis for analysis is critical to understanding the conspiracy theorists' claims against the Order of Skull and Bones, because, as will be discussed shortly, the Order of Skull and Bones is considered to be a single lodge of the original Illuminati.

But why would wealthy capitalists support or finance communist or fascist regimes? There are three possible answers to this question. The first, and most obvious, is profit. It is possible that businesses seek profits regardless of ideology. In this case, expanding business to a larger market that includes communist or fascist regimes would increase revenues and profits for the firm. Second, capitalistic industrialists might favor a degree of social control and development by the government. Industrialists Henry Ford and Frederick Winslow Taylor, along with their revolutionary ideas on the efficiency of the individual in the work place such as specialization, departmentalization, mass production and employee satisfaction, also favored a stronger welfare state to provide the necessary atmosphere for maximum production. The third possibility, as expressed by conspiracy theorist Antony Sutton, claims that the eventual power structure between a communist state, a fascist state and a monopoly is essentially the same: control of production and elimination of industrial competition. Both communism and fascism control the means of production and the degree of competition while a monopoly attempts to do the same. Sutton maintains that these American capitalists might aid these regimes in an attempt to gain favor with the regime and gain industrial dominance.

SKULL AND BONES

WILLIAM HUNTINGTON RUSSELL AND ALPHONSO TAFT established the Order of Skull and Bones, officially called the "Order 322," at Yale University in 1833. It was later incorporated as the Russell Trust in 1856. It is one of nine secret societies

at Yale, and one of three senior societies that are exclusive to Yale University. Fifteen juniors are "tapped" each year by the seniors to be initiated into next year's group. Each initiate is allegedly given $ 15,000 and a grandfather clock, although no one has yet been able to discover the significance of the clock.

The original founder of Skull and Bones, William Russell, studied in Germany from 1831-1832. While in Germany, it is believed that Russell joined a secret society at the German University and was then given permission to start a section of that same secret society at Yale. According to information acquired from a break-in to the "tomb" (the Skull and Bones temple and meeting hall located on Yale's campus) in 1876, "Bones is a section of a corps in a German University ... General Russell, its founder, was in Germany before his Senior Year and formed a warm friendship with a leading member of a German society. He brought back with him to college, authority to found a section here."[15]

This same break-in team, who mockingly referred to themselves as "the Order of File and Claw," claimed that within the Skull and Bones Tomb was a room numbered 322, an elaborately decorated ceremonial room furnished in red velvet with a pentagram on the wall. In the parlor next to room 322 the break-in group found:

> On the west wall, hung among other pictures, an old engraving representing an open burial vault, in which, on a stone slab, rest four human skulls, grouped about a fools cap and bells, an open book, several mathematical instruments, a beggar's scrip, and a royal crown. On the arched wall above the vault are the explanatory words, in Roman letters, "We War Der Thor, Wer Weiser, Wer Bettler Oder, Kaiser? And below the vault is engraved, in German characters, the sentence: 'Ob Arm, Ob Beich, im Tode gleich.[16]

The picture is accompanied by a card on which is written, 'From the German section, Presented by D.C. Gilman of D. 50'. D.C. Gilman refers to Daniel Coit Gilman, initiated into the Order of Skull and Bones 1850. The two German phrases translate into "Who was the fool, who the wise man, beggar or king? Whether poor or rich, in death we are the same. This quote, and the initiation rituals that each new member must experience are extremely similar to the initiation ceremony of the Illuminati. An expose on the initiation rites of Skull and Bones by reporter Ron Rosenbaum, The Last Secrets of Skull and Bones, highlights the various initiation activities along with a comparison of the same Illuminati ceremonies as recorded by former Illuminati member John Robison. Many conspiracy theorists conclude that the Order of Skull and Bones is either a section of the original Illuminati or an extension thereof.

Conspiracy theorists, in light of potential Illuminati affiliation, emphasize three aspects of society in which members of Skull and Bones were profoundly influential: namely government, education and illegal finance. It is this latter subject that will be explored to some degree in this work.

Given the historical framework of the Illuminati/Communist long-range goal of world domination used by conspiracy theorists, and the possible connection between the Order of Skull and Bones and the Order of the Illuminati, it is easy to understand the concerns of conspiracy theorisrs in regard to illegal financing of enemy regimes by members of Skull and Bones. As conspiracy theorist Antony Sutton states,

> Revolution is always recorded as a spontaneous event by the politically or economically deprived against an autocratic state. Never in Western textbooks will you find the evidence that revolutions need finance and the source of the finance in many cases traces back to Wall Street.[17]

More importantly, concludes Sutton, is that members of Skull and Bones provide a large part of Wall Street's financing to revolutionary movements.

3 — AN EVALUATION OF THE ANALYTICAL FRAMEWORK OF CONSPIRACY THEORY

CONSPIRACY THEORY MAINTAINS that, in a given state, power "is exercised from behind the scenes by a small secretive group of private citizens who want to change the government system or put the country under the control of a world government."[1] These conspiratorial groups are always made up of a group of powerful and/or influential businessmen or politicians who are intent on running the world. In essence, these small, secretive groups form a shadow government that is not elected but controls political decision-making not only for their own benefit but also at the detriment of the rest of society.

"In the past, the conspirators were usually said to be secret Communist sympathizers who were intent on bringing the United States under a common world government in conjunction with the Soviet Union, but the collapse of the Soviet Union in 1991 changed the focus to the United Nations as the likely controlling force in the 'New World Order."[2] However, with deterioration of Soviet economies, the maintenance of Communist party leaders in positions of power and publicly popular soviet appeals for a return to Communism, many conspiracy theorists are reverting back to claims of the "Communist Threat."

Smaller groups of conspiratorial thinkers, on the other hand, focus on a secret group of individuals whom, it is claimed, are located in the government itself. This secretive group is held responsible for the creation of government organizations such as the CIA, think tanks like the Council on Foreign Relations and the Trilateral Commission as well as the creation of war through both illegal finance in the corporate world and government policy-making in the political realm. One secret organization that receives a great deal of attention by conspiracists is the Order of Skull and Bones.

The allegations made against Skull and Bones by Antony Sutton and other conspiracy theorists undoubtedly fall into the realm of power politics. It would

be highly enlightening to examine the claims made against Skull and Bones using other methods of analysis; however, because other methods of analysis have not yet been used to examine Skull and Bones activities, and because all Skull and Bones activities are generally presented through use of the conspiracy theory framework, we will focus our attention on a critical analysis of conspiracy theory.*

TENETS OF CONSPIRACY THEORY

THERE ARE BOTH POSITIVE AND NEGATIVE aspects to using a conspiracy theory framework. As with many theories on power politics, the focus is on a specific framework, with a tendency to disregard or downplay the importance of other factors. An understanding of the strengths and weaknesses of conspiracy theory will aid in the overall assessment of the conspiracy theory's evaluation of the claims against Skull and Bones.

The advantages of conspiracy theory are threefold: 1) conspiracy theory aids in the discovery of important facts and assessing personal guilt; 2) it allows society to admit horrors and express indignation without rejecting the basic norms of society; 3) it acts as a scapegoat for societal frustrations. These three advantages occur simultaneously within conspiracy theory and are inseparable. A conspiracy theory could not occur without assessing personal guilt for a societal atrocity. The blame for that atrocity is then placed solely on the individual and, by extension, any network or group he may be affiliated with, thereby disregarding any fundamental flaws in the fabric of society that may contribute to the problem.

Conspiracy theories can act as a forum through which members of society are able to admit horrors and express indignation about the outcomes and problems of society. However the discoveries of conspiracy theory are often dismissed because they are presented in a conspiracy theory framework that does not acknowledge errors in the basic norms of society, but rather shifts blame to clandestine networks working behind the scenes. The result of illegal financing then is not the result of a capitalist system which allows for profit maximization at the expense of others, but rather illegal financing occurs because a select, secretive group chose for it to happen in order to advance their global agenda. In this way, the blame is shifted from the political structure of society to a small group who are then held responsible for all the ills of society.

A conspiracy theory is a version of historical events that redirects an audience's anger toward a scapegoat group. The theory seeks to lay blame for a legitimate issue on a perceived common enemy. As with any societal issue, there are legitimate concerns that need to be addressed. Conspiracy theories, however, fail to address legitimate concerns because realistic solutions are lost in the process of laying blame for the common problem on a select group. By only laying blame for the problem, the issue becomes, in effect, a renewable source of fuel for the audience.

Author Mark Fenster makes a powerful argument for regarding conspiracism as an integral product of the political system, reflecting the inadequacies of the establishment and expressing strong desires for the realization of frustrated ideals.

Fenster notes that conspiracy theory should be perceived "as an active, indeed endless, process that continually seeks, but never fully arrives at, a final interpretation. It displaces the citizen's desire for political significance onto a signifying regime in which interpretation replaces political engagement.[3] Mark T. Reinhardt interprets Fenster's claims when stating, "conspiracy theory serves a useful purpose as a balm to the politically alienated segments of society, and he optimistically interprets the popular pursuit of uncovering the hidden mechanics of power as evidence of a latent populism waiting to be harnessed."[4]

The political significance of conspiracy theory is its ability to represent disenfranchised segments of society through expressions of distrust toward the government and the establishment of blame for society's ills. The interpretation of conspiracy theory must begin with the observation that conspiracy theory is an attempt to apprehend the past and the present by placing potentially disparate events within a unifying interpretive frame. However, the process through which conspiracy theory results is very problematic. The problems of conspiracy theory can be arranged into 4 categories: 1) terminology, 2) information, 3) formulation of the argument and 4) formulation of conclusions. Each of these categories will be addressed separately so that the significance of each can be fully understood.

PROBLEMS OF CONSPIRACY THEORY - TERMINOLOGY

THE FIRST AND MOST BASIC PROBLEM of conspiracy theory lies in the terminology and ambiguous meanings associated with the term "conspiracy theory." A definite distinction exists between a conspiracy and a conspiracy theory. The former describes an actual instance of covert collusion, while the latter describes something that exists only in the imagination of an observer.

A conspiracy involves two or more conspirators jointly and secretly aiming to achieve a prohibited goal. Conspiracies do occur. The European powers did conspire to divide up the Middle East during World War I (the Sykes-Picot agreement); the Israelis did bomb American targets in Egypt in 1954 to put the blame on Gamal Abdel Nasser (the Lavon Affair); and the U.S. government did send arms to Iran in the mid-1980s (the Iran/contra scandal).

Conspiracies subdivide into petty conspiracies, which work within the existing order, and grand conspiracies, which aspire to world domination. The former are limited affairs that involve a handful of individuals plotting to make money or to seize power. They aim at transferring money from one pocket to another or replacing one set of rulers with another. With some exceptions, petty conspiracies receive little attention in the media and are generally not referred to as a conspiracy. Rather, grand conspiracies are what conspiracy theorists refer to when they use the term conspiracy. Larger and more vague, grand conspiracies go beyond plots for personal gain or for power or money; they seek to destroy religion, subvert society, change the political order, and undermine truth itself. Grand conspiracies involve not duplicitous politicians or evil merchants but covert international movements. They capture the imagination and inflame political passion; they

are big enough to cause all the world's ills. It is important to distinguish between a petty conspiracy and a grand conspiracy during our evaluation of Skull and Bones activities.

A conspiracy theory, on the other hand, is the unproven version of a conspiracy. Anyone might speculate about the odd conspiracy theory, but the conspiracy theorist makes this a habitual practice. He discerns malignant forces at work wherever something displeases him; plots serve as his first method for explaining the world around him. He suspects a plot or cover-up even when other, less malign explanations better fit the facts. This preoccupation with conspiracy theories is variously called conspiracism or the conspiracy mentality. Just as conspiracies divide into two sorts, the petty and the grand, so do conspiracy theories. Petty theories deal with limited aims; grand conspiracy theories involve fears of world domination.

Grand conspiracy theories may also have local manifestations, but they invariably fit into a larger scheme that maintains the ultimate goal of world hegemony. Such theories have a finite history as previously illustrated. They began during the Enlightenment in northwestern Europe, became a major factor with the French Revolution, and peaked in importance in the three decades after 1918. Grand conspiracy theories have a well-established structure and form. The story begins with a small group attempting to benefit itself by clandestinely making plans to take over the government or expand its influence abroad. Its means can be many - propaganda, destroying a political system, controlling multinational corporations - but the immediate goal is usually economic.

INFORMATION

GOOD RESEARCH is based on the ability to uncover accurate information. Hypotheses are formulated with information and historical events are analyzed using information recovered through research. However, there are three important problems with research information that play a major role in conspiracy theories. First, conspiracy theories, by their very definition, are not provable. Incomplete and/or insufficient evidence is the primary component of conspiracies, effectively moving the conspirator's claims into the world of the uncertain and unknown. Conspiracy theories focus on relationships and events that are rarely covered in the media and are generally given very little attention. As a result, it is difficult to find records and information that would support a conspiracy theorist's hypotheses. The question of legitimacy also comes into play disputing both the validity of records and/or information as well as disputing the context in which the records occurred verses the context in which it is used by conspiracy theorists.

Incomplete information is often used by conspiracy theorists to paint a limited picture of events in society from which certain assumptions must be drawn and which prescribes specific conclusions. Because causation is never known to conspiracy theorists, they focus on inconclusive correlations drawn from incomplete information. Certain assumptions must then be applied, generally of a secretive, collective, long-range nature, which then require conspiratorial conclusions. The

use of conspiratorial assumptions in order to produce conspiratorial conclusions will become more evident as we analyze Skull and Bones involvement in both the Bolshevik Revolution and the rise of Hitler.

Second, the excessive amount of information used by conspiracy theorists in and of itself becomes problematic. Conspiracy theorists commonly rely on large amounts of information to prove their point. The assumption that since there is so much information available on the subject it must be true is based on a common fallacy of logic; resulting in the conclusion that the sheer enormity of printed text unquestionably makes the accusation fact, despite generally large amounts of irrelevant information and correlations that are unnecessarily included.

Third, the majority of conspiracy theory information and research is either unfalsifiable or unverifiable, or both. The strength and weakness of conspiracy lies at the fact that a conspiracy theory is unfalsifiable. The conspiracy theory generates a large amount of information that draws correlations and which, under certain interpretation, may point toward a specific conspiratorial explanation. However, the theory as a whole cannot be proven as a legitimate conspiracy, nor can it be proven as false, again drawing strength on correlations. Furthermore, conspiracy theories are based on "privileged information" provided by an insider who claims to shed light on a given conspiracy. By the very nature of the claims of an insider, there is no verifiability. Generally, an insider is alone when he attempts to illuminate a conspiracy, and supporting testimony is rare. Such is the case with author Antony Sutton. He was the first non-member of Skull and Bones to allegedly obtain a membership list of Skull and Bones. According to Sutton, an insider disenchanted with the goals of Skull and Bones gave him a membership list. Much of the completed research on Skull and Bones is based on the membership list that Sutton was given. However, later research discovered that the membership list of Skull and Bones was annually printed in the annual reports of RTA (Russell Trust Association) under whom Skull and Bones is formally incorporated.* If the connection between Skull and Bones and RTA was not discovered, then Sutton's list of Skull and Bones members might never have been verified. As it stands, many of Sutton's claims, based on insider information, remain unverified.

As a result, information used in conspiracy theory is almost always incomplete and inconclusive, unnecessarily excessive and unfalsifiable or unverifiable.

FORMULATION OF THE ARGUMENT

AS OPPOSED TO A SYSTEMATIC APPROACH to analysis, the approach and formulation of arguments for conspiracy theories are all too often circular, ad hoc, and biased. A circular argument is one of the most common fallacies for conspiracy theorists. This fallacy occurs when one tries to prove point A by using point B, which in turn is proved by the first point. An example of such an argument would be the claim that Skull and Bones is involved in a grand conspiracy. As evidence for this, theorists focus on the illegal financing activities of members.

Editor's note: I do not know what annual reports these are. Annual state corporation filings list only the directors and officers.

Conspiracy theorists argue that illegal financing of enemy regimes is a way to advance a global, conspiratorial agenda. Conspiracy theorists then claim that Skull and Bones involvement in illegal financing proves that Skull and Bones is involved in a Grand conspiracy. Did this circular endorsement prove anything about the nature of Skull and Bones?

An ad hoc explanation of events occurs when the fundamental criteria for a conspiracy changes from one event to the next, after the fact. Conspiracy theorists examine situation 1 and determine that factors A, B and C are the fundamental factors required for a conspiracy. An examination of situation 2 yields factors A, D and E, and not A, B and C as in situation 1. Conspiracy theorists then alter the fundamental criteria that are required for a conspiracy theory to exist in order to include situation 2. This alteration of fundamental criteria occurs after the occurrence and examination of each new situation.

Many social scientists would argue that the trademark of conspiracy theory is its lack of objectivity. It is difficult, if not impossible to find conspiracy theory literature that is not biased. Such literature is filled with the demonization of the alleged conspiracy group, and it too often appears that the alleged conspirators become the scapegoats of societal problems. Focus is spent on reiterating negative affiliations of individuals and negative representations of those affiliate groups. A great deal of emphasis is based on those groups that either use secrecy or which wield a great deal of power. Furthermore, all conspiracy research is presented in the conspiratorial framework, often focusing on one or two elements that fit the prescribed framework while dismissing or all together ignoring information or events that do not fit the framework.

FORMULATION OF CONCLUSIONS

THERE ARE TWO COMMON ERRORS that occur in the formulation of conclusions of conspiracy theories. The first is a faulty conclusion that is drawn from faulty information. The second is a faulty conclusion that is based on good evidence. These errors are not exclusive to conspiracy, but rather they are problems of any scholarly discipline.

A faulty conclusion drawn from faulty information is common with conspiracy theory for many reasons. Legitimate information on a true conspiracy will be nearly impossible to obtain. There is a lack of complex data; as a result, conspiracy researchers are forced to draw conclusions from very limited information. They are given to misinterpretation of information, which results in the furtherance of faulty conclusions as conspiracy researchers rely heavily on secondary sources to obtain their information. Many conspiracy researchers focus on work already completed by others and generally fail to check their primary sources in order to prevent misinterpretation and/or the misquoting of primary sources. This problem is furthered by the Internet, where large amounts of information is passed along, but very rarely provides primary documentation of claims, which lends itself toward misunderstanding and misquoting from other secondary sources.

A simple key word search of Skull and Bones on the Internet will yield 100's of websites with information pertaining to Skull and Bones. A careful study of these web pages show that they all reiterate the same basic information, but as the information is passed from one secondary source to the next, it loses its informational accuracy. Names are misused and dates are confused. Each new site attempts to add its own information and conclusions to be passed to the next person for further evaluation and change. In the end we are left with 100's of web sites each dedicated to Skull and Bones, each with its own conclusions and assumptions based on information that may have lost its original accuracy.

Faulty conclusions based on good evidence can result from a fundamental element of any scholarly work: the assumptions of each argument. Incorrect assumptions can misdirect and bias any research, resulting in a logical fallacy. For example, the claim that Skull and Bones is involved in the illegal financing of enemy regimes is based on the assumption that illegal financing is a focus of Skull and Bones, and that its members, as a whole, are engaged in this practice. Evidence indicates between 25 to 30 members of Skull and Bones were involved with firms who provided illegal financing, over a 30-year period. Noting that during any given year there are about 700 members of Skull and Bones living, 25-30 members does not seem to be an accurate representation of Skull and Bones as a whole. Further research indicates that the majority of members, during this time period, pursued fields in education or business, and were not involved in illegal activities. The above assumption that Skull and Bones is involved in illegal financing because a very small percentage of members are involved in such activities leads to a logical fallacy.

Another basic assumption of conspiracy theorists derives from the terminology and definition of a conspiracy. As we stated earlier, the definition of a conspiracy is when two or more conspirators jointly and secretly aim to achieve a prohibited goal. However, the definition used by conspiracy theorists is slightly different. As stated by John F. McManus, a conspiracy is "an endeavor engaged in secretly by two or more persons for the accomplishment of an evil goal."[5] From the very outset conspiracy theorists have attached specific values of good and evil to certain behaviors. No longer is a conspiracy an attempt to achieve a prohibited goal, or an act against the law, but a conspiracy becomes ambiguous as it begins to include anything and anyone who might aid in the accomplishment of an "evil" goal, as defined by the conspiracy theorists. The ambiguity of the conspiracy theorists' definition becomes far-reaching and too inclusive as it begins to include any liberal or non-conservative program or behavior.

Often the assumptions of conspiracy theory are not explicitly stated but implicitly assigned through the use of complex questions. A complex question is formed when your proposition affirms more than one thing, but your question allows for an answer to only one. An example of this line of questioning would be "how was Skull and Bones involved in illegal financing?" In order to answer the question, we must assume and acknowledge that Skull and Bones was involved in illegal financing without having proved that Skull and Bones was

actually involved. In this manner, conspiracy theorists focus not on whether or not a group is involved in a conspiracy, but rather the focus is on how they are involved in a conspiracy, already assuming that a conspiracy is occurring without proper examination and proof.

CONCLUSION

This section discussed the many potential flaws that surface when dealing with conspiracy theory: namely the lack of uniformity in definition, the inadequacy of information and the formulation of both argument and conclusion. In order to fully understand the connection between Skull and Bones and illegal financing, I will attempt to reduce these problems by eliminating both the assumptions of conspiracy and the conspiratorial framework in an effort to create a falsifiable test. This test will be used to then assess any possible correlations that may exist between Skull and Bones and illegal financing.

4 — METHOD OF ANALYSIS

EXPERIMENTAL TEST VS. NON-EXPERIMENTAL TEST

IN ORDER TO ACCURATELY STUDY and assess correlations between membership in Skull and Bones and participation in illegal financing, a reliable scientific test design must be created. Although scientific methods are not always necessary to answer research questions, they can be very effective in minimizing the biases that affect subjective opinion. Many scientific designs rely on experimentation. Experimental designs allow researchers the ability to control one or more variables thereby eliminating potentially confounding factors. Such designs are powerful because they can be effective in determining causal relationships between variables.

However, because we are unable to control the variables that we are studying (membership in Skull and Bones and participation in illegal financing), we are forced to rely on a non-experimental test design. Non-experimental test designs do not allow for control or manipulation of variables, but rather strict observations are used, from which conclusions can be drawn. Non-experimental test designs do not yield results that are as strong as those of experimental test designs, and they generally do not establish a causal relationship between the variables. However, non-experimental tests are generally effective at determining correlations among variables, and continuation of the test design over a period of time dramatically strengthens its conclusions.

There are two problems associated with non-experimental test designs. First the quality of information that is observed and used for the test could be incomplete, inaccurate or biased, which could result in unreliable and/or inconclusive conclusions. Furthermore, the information that is used in the test could be selectively chosen and biased, again resulting in unreliable and/or inconclusive conclusions. Second, a lack of direct manipulation or control in the non-experimental design can cause problems in the interpretation of results because the investigator might not be able to properly handle extraneous factors. As a result, variables

may become compounded and factors that are not of concern in the study may complicate or taint the conclusions.

WHY A NON-EXPERIMENTAL TEST DESIGN WAS CHOSEN

FOR THE PURPOSE OF TESTING the relationship between membership in Skull and Bones and participation in illegal financing, a non-experimental cross-sectional test design will be used. This test design is simplistic in that it "requires nothing more than the collection of two or more measures on a set of subjects or social entities at one point in time and requires no treatments or manipulations."[1] The cross-sectional design can be effective in determining whether or not two or more variables are related. Because we will be unable to determine causation through a non-experimental test, the establishment of correlations will be the goal of our test.

A cross-sectional test design is useful in this study because it provides a scientific framework through which the specified events can be studied. A scientific hypothesis maintains validity when the hypothesis can be tested and can, potentially, be falsified. On the other hand, as previously noted, conspiracy theory relies on ad hoc explanations, explanations that do not provide a testable hypothesis because their basic assumptions change with each new event in order to maintain specific conclusions. The conspiracy theory does not provide a process for systematic evaluation of more then one situation. As a result, its conclusions are not generally considered scientifically valid. The cross-sectional test will provide both testable hypotheses and a framework for systematic evaluation of the hypotheses through the studied events.

A cross-sectional test design has both limitations and advantages. It does not allow us to control specific variables; as a result we are forced to examine historical events. Not only are we limited in how we conduct the study, but we are also limited in the information available for testing. Information pertaining to this subject is scarce and often biased in its traditional presentation by conspiracy theorists. Second, the conclusions of a cross-sectional test do not show causation and depending on the rigidity of the hypothesis that is used, could lend itself to misinterpretation. Third, a cross-sectional test over one period in time produces weak conclusions. Continuation of the same test is required with a large test sample over a long period of time in order to add strength to any conclusion produced.

However, the advantages of a cross-sectional test far outweigh the limitations. Given a random sample, the testing of several hypotheses will not show causation but can indicate correlations between the variables. The test is also able to show a much broader picture of the behavior of segments of society or society as a whole, thereby reducing the occurrence of sample bias. The test also provides a means of systematically testing various hypotheses in order to sustain or disprove a given hypothesis.

THE TEST FRAMEWORK

THE PURPOSE of the cross-sectional test is to determine a relationship between membership in Skull and Bones and participation in illegal financing. The data

for this test will be drawn from historical records as well as research and claims made by several conspiracy theorists. The test will have two variables each specifically measured. These variables will be tested against five separate hypotheses in order to 1) maintain an unbiased examination of events and evidence as well as 2) examine the results of a hypothesis that will be acceptable to both social scientists and conspiracy theorists. This test will examine illegal financing to the Bolshevik Revolution and the rise of Hitler by United States based financial firms.

VARIABLES

TWO VARIABLES will be used on our cross-sectional test design: 1) membership in Skull and Bones and 2) participation in illegal financing by a firm.

MEASUREMENTS

MEMBERSHIP IN SKULL AND BONES will be determined through the membership records of Skull and Bones. Membership in Skull and Bones is only important to this study if the individual was a member of Skull and Bones during the time period being examined (1917-1945).

A firm will be defined as a financial institution whose primary activity is providing financing to industrial corporations or other entities. This definition intentionally excludes industrial and production companies. A company such as Ford or GE, who participated in illegal financing will not be included in this study because the primary activities of both Ford and GE are production and not financing. On the other hand, a company such as Guaranty Trust Company, whose primary objective is to provide financing to production companies, would fit the requirements.

Participation in illegal financing will be determined when a firm participates in providing funds to a state or group against the established laws of the country where the financing took place.

A firm is determined to be associated with Skull and Bones in one or more of the following ways: if it was directly created by members of Skull and Bones; if its president, chief executive officer, or chairman of the board is a member of Skull and Bones; or if 25 percent or more of its managing directors are members of Skull and Bones. Conversely, a firm is determined to not be associated with Skull and Bones if fewer then 25 percent of its managing directors are members of Skull and Bones, if it was not created by a member of Skull and Bones or if neither its president, CEO or Chairman are not members of Skull and Bones. I am requiring 25 percent of a firm's directorship to be members of Skull and Bones before that firm is classified as being associated with Skull and Bones in order to eliminate the effects of confounding variables.

The variables to be studied are binary. In other words, a firm either participates in illegal financing or it does not; Skull and Bones is either present, according to the above definition, or it is not. I am not allowing for variations of illegal financing, nor am I examining intentions behind illegal financing at this time.

Likewise, there occur variations of Skull and Bones affiliations with various firms. However, a firm will only be classified as affiliated with Skull and Bones if it fits the specific requirements above. The elimination of variance in variables will aid in the interpretive process.

The use of a binary state of variables is intended to avoid pitfalls such as the following example: a corporate financier is a director of company A and company B. He is not a member of Skull and Bones, but company A is heavily dominated by Skull and Bones members. Both companies A and B are involved in illegal financing. The link between company A and company B through the mentioned financier would lead some to conclude that company B is also under the influence of Skull and Bones through the common financier. However, such a link does not indicate Skull and Bones influence over company B, and inclusion of company B as a Skull and Bones dominated firm could skew the results of the data.

POSSIBILITY OF ERROR

AS WITH ALL FORMS OF MEASUREMENT, there is always some degree of error. Establishing membership in Skull and Bones through reference to a private membership list is subject to error because, despite strong research supporting the validity of the membership list, Skull and Bones is secretive about its membership and no member of Skull and Bones has either confirmed or denied the accuracy of the membership list. In the case of participation in illegal financing, we cannot know which directors initiated and/or were involved in illegal financing. We are forced to assume that all managing directors, by the very nature of their position, were aware of the illegal financing, and with at least 25 percent of the directorship consisting of members we can conclude that members of Skull and Bones had some degree of influence and/or leverage in the decisions made.

EVENTS TO BE EXAMINED

FOR ANALYSIS I CHOSE TO EXAMINE the financing activities of firms during the Bolshevik Revolution (1917-1926) and the rise of Hitler (1923-1942). I chose these two historical events because during both time periods the United States government had established very specific laws forbidding financial support to the belligerent regimes by United States residents. Second, these two events occurred in a relatively close time frame and the structure and laws pertaining to international finance were relatively similar. Third, these two events are the primary focus of conspiracy theorists when claiming that Skull and Bones is involved in a conspiracy

The further examination of an additional historical period of conflict such as the Vietnam War or the Gulf War would add strength to the conclusions that will result from our test, however very little research has been completed by conspiracy theorists or scholars in regards to potentially illegal financial transactions of US firms after World War II. Furthermore, the occurrence of changes in international law after World War II resulted in a change in both the definitions

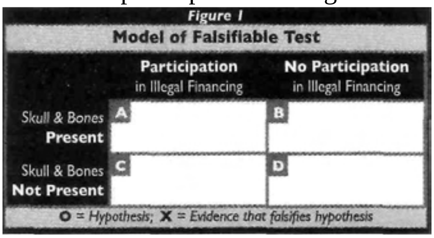
of international finance and the methods through which international finance occurred. As a result, it would be very difficult to find another situation of finance that maintained similar circumstances, laws and public opinion.

HYPOTHESES

AS PREVIOUSLY STATED, the core of the validity of scientific test designs is a hypothesis that can be tested and potentially disproved. For our cross-sectional test we will propose four separate hypotheses that were derived from the conspiracy theorists' allegations in order to determine the existence of relationships as well as provide a testing method that may be accepted by both social scientists and conspiracy theorists. Four hypotheses will be presented, starting with a very strict hypothesis and then loosening the restrictions with each consecutive hypothesis.

The term "strict hypothesis" refers to a hypothesis that has strong and clear assumptions resulting in a strong prediction of results. A hypothesis that is "loose" is one that is weak and unclear and results in weak predictions. A hypothesis that is very restrictive or strict will be more favorable to a social scientist's analytical framework and will be rejected by conspiracy theorists because of its strict assumptions, while a hypothesis that is too loose could result in the failure to explain the events in question. The hypothesis that will be most beneficial will most likely be one that falls somewhere between the very strict hypothesis and the very loose hypothesis; being strict enough to point toward important correlations without potentially ignoring other possibly significant connections.

As previously stated, the cross-sectional test has two variables: membership in Skull and Bones, and participation in illegal financing. As shown by Figure 1, the presence of members of Skull and Bones is demonstrated by boxes A and B, while the absence of members of Skull and Bones is demonstrated by boxes C and D. Participation in illegal financing is represented by boxes A and C and the absence of participation in illegal financing is represented by boxes B and D.



Each of the four falsifiable hypotheses will be presented in detail separately Each hypothesis will include requirement for falsification, the predictions of the hypothesis and the significance of each possible outcome of the hypothesis. After all four hypotheses are presented, the falsifiable test for event 1 (Bolshevik Revolution) and event 2 (rise of Hitler) will be presented, followed by the results of the test in relation to each hypothesis.

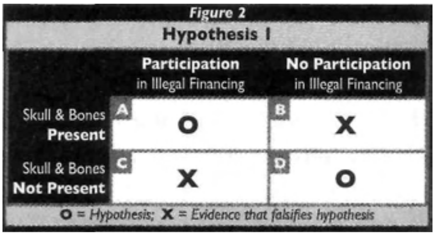
THE FIRST HYPOTHESIS, the most restrictive, is the hypothesis that Skull and Bones related firms will provide illegal finance to enemy regimes while non-Skull and Bones related firms will not provide illegal financing. In this hypothesis, we will predict that all of the test data will fall into either box A or box D, will all

Skull and Bones related firms participating in illegal finance and all non-Skull and Bones related firms not participating in illegal finance.

The occurrence of data in boxes B and/or C will disprove this hypothesis. Data in box B indicates that some Skull and Bones related firms did not participate in illegal financing, while data in box C indicates that some non-Skull and Bones related firms did participate in illegal financing.

If we were to find our data in box B, regardless of where other data falls, our hypothesis that Skull and Bones is directly related with illegal financing would be falsified, because it would indicated that members of Skull and Bones were in a position to provide illegal financing but did not.

If our data were to fall exclusively in boxes C and D then again the hypothesis would be disproved, however because we are examining the relationship between membership in Skull and Bones and participation in illegal financing, we can conclude that at least some of the data will fall into box A.



If the data were to fall into boxes A and C, the results would also disprove the hypothesis. Although, a collection of the data falling into boxes A and C does not necessary disprove that a relationship might exist between members of Skull and Bones and involvement in illegal financing, it does demonstrate that other firms in similar positions are engaging in illegal financing; and may indicate that there are other factors responsible for the illegal activity which does not include membership in Skull and Bones.

Hypothesis 1 will be rejected by conspiracy theorists because conspiracy theorists will consider the assumptions of the hypothesis to be inaccurate. The hypothesis limits participation in illegal finance exclusively to Skull and Bones related firms while also making participation in illegal financing mandatory of Skull and Bones members. However, a falsification of this hypothesis is useful to this study and the establishment of relationships in that a falsification of hypothesis 1 would indicate that illegal finance is not an exclusive behavior of Skull and Bones. A falsification of hypothesis 1 also indicates that other factors may exist that may influence a firm's decision regarding participation in illegal financing.

THE SECOND HYPOTHESIS states that the presence of Skull and Bones may or may not result in the participation in illegal financing but non-Skull and Bones related firms will not participate in illegal financing. In hypothesis 2 we predict that the presence of Skull and Bones may or may not result in participation in illegal financing. Therefore, if hypothesis 2 is correct, our data will fall in boxes A, B, and D, with Skull and Bones related firms either participating or not participating in illegal financing while non-Skull and Bones related firms would not be participating in illegal financing.

Figure 3

Hypothesis 2

	Participation in Illegal Financing	No Participation in Illegal Financing
Skull & Bones **Present**	A O	B O
Skull & Bones **Not Present**	C X	D O

O = Hypothesis; X = Evidence that falsifies hypothesis

This hypothesis indicates that if a relationship exists between Skull and Bones and participation in illegal financing, then it would be a weak relationship and participation in illegal financing would not be a primary behavior of Skull and Bones. In other words, Skull and Bones may not be the primary motivation for participation in illegal financing. Hypothesis 2 will be falsified if any of the data falls into box 3, indicating that non-Skull and Bones related firms are also participating in illegal financing. Again, a falsification of hypothesis 2 indicates that illegal financing is not an exclusive behavior of Skull and Bones and indicates that there are other factors influencing the decision to participate in illegal financing.

THE THIRD HYPOTHESIS is that the presence of Skull and Bones will always result in illegal financing while the non-presence of Skull and Bones may or may not result in illegal financing. In hypothesis 3 we predict that all of our data will fall into boxes A, C and D, with Skull and Bones related firms participating in illegal financing and non-Skull and Bones related firms participating in both illegal financing and non-illegal financing.

Figure 4

Hypothesis 3

	Participation in Illegal Financing	No Participation in Illegal Financing
Skull & Bones **Present**	A O	B X
Skull & Bones **Not Present**	C O	D O

O = Hypothesis; X = Evidence that falsifies hypothesis

This hypothesis would indicate that a relationship did exist between Skull and Bones and participation in illegal financing but it would also indicate that other factors exist which are driving participation in illegal financing. Therefore, a relationship between Skull and Bones and participation in illegal financing would exist, but would be weak. This hypothesis would be falsified if any Skull and Bones related firms did not participate in illegal financing, indicating that no relationship between Skull and Bones and participation in illegal financing exists.

THE FOURTH HYPOTHESIS is that all firms will participate in illegal financing. In this hypothesis we predict that all of our data will fall into boxes A and C.

Figure 5

Hypothesis 4

	Participation in Illegal Financing	No Participation in Illegal Financing
Skull & Bones **Present**	A O	B X
Skull & Bones **Not Present**	C O	D X

O = Hypothesis; X = Evidence that falsifies hypothesis

All firms will participate in illegal financing and there will be no firms that will not participate in illegal financing. This hypothesis would indicate that Skull and Bones is not a contributing factor to participation in illegal financing, but that there are other motivating factors that are enticing other segments of society to participate in illegal financing. If data falls

into boxes B or C, then this hypothesis is falsified. A falsification of hypothesis 4 indicates participation in illegal financing is not a behavior of all financial firms and there must exist some separating factor that influences some firms to participate in illegal financing while not influencing other firms.

THE TEST

TWO MODELS ARE BEING EXAMINED. Model 1 demonstrates financial activities of several firms during the Bolshevik revolution, while Model 2 demonstrates financial activities of several firms during the rise of Hitler. Each model will be examined separately followed by a comparison of the conclusions of each model.

An error in our methodological framework is that much of the evidence used for observation was drawn from government records and from conspiracy work already completed, which also draws from government records. Consequently, the available evidence provides a very narrow sample, which presents two fundamental problems. First, the sample itself is too small and lends itself toward a large deviation in results. In the observation of the Bolshevik Revolution, seven firms are a small portion of the American financial community. With a sample of only seven firms, only a few of the firms would be required to both participate in illegal financing and to be involved with Skull and Bones in order for a relationship to appear to exist between the two. As it stands in our test, 28 percent of the firms involved in the Bolshevik revolution were also involved in Skull and Bones. A larger sample could very well decrease that percentage and show a different relationship.

Furthermore, the sample is not representative of the society as a whole. For example, the inclusion of illegal financial assistance to Germany by American industrialists would show more then 300 American firms involved in trade with Germany that aided in the development of the German war machine. Thus, illegal financing of Germany was not an exclusive behavior committed by a very small few. However, it is difficult to determine what percentage of industrialists were involved in illegal financing verses those industrialists who were not without counting all industrial companies at the time, which would negate the purpose of using a sample.

The second problem is that of sample bias. The original research question of this work is based on the knowledge that some Skull and Bones dominated firms were providing illegal financing to enemy regimes. Further research indicates that there were other companies that were also involved in illegal financing but were not involved with Skull and Bones. However, the inclusion of these firms in our sample negates random sampling and steers our conclusions in a particular direction. Furthermore, a lack of sufficient research in regards to those firms who did not participate in illegal financing, and more importantly, those firms who did not participate in illegal financing and who were associated with Skull and Bones definitely lends itself toward a biased conclusion.

RELATIONSHIP BETWEEN A FIRM'S PARTICIPATION IN ILLEGAL FINANCING AND MEMBERSHIP IN SKULL & BONES

RESULTS - MODEL 1. In the cross-sectional analysis of a firm's participation in illegal financing and membership in Skull and Bones during the Bolshevik Revolution we find that just over 28 percent of our sample data (or two of the seven firms studied) fell into box A, showing that roughly 28 percent of our sample were firms that participated in illegal financing and were affiliated with Skull and Bones. We also find that roughly 56 percent of our sample (four of the seven firms studied) participated in illegal financing but were not affiliated with Skull and Bones. We also find that roughly 14 percent of our sample (one of the seven firms studied) did not participated in illegal financing and was not affdiated with Skull and Bones. An interesting point is that there was no data for box B, representing Skull and Bones affiliated firms that did not participate in illegal financing. This result is due in part to a lack of investigation into the careers of all Skull and Bones members during this time period. Rather then investigate the careers of each member during this time period, I examined the board of directors of various firms to determine if there was influence by Skull and Bones, according to the previously stated definition of what Skull and Bones influence requires. It is possible that Skull and Bones members entered various financial firms and did not participate in illegal financing, but our evidence does not indicate whether this is or is not the case.

Figure 6 — Bolshevik Revolution

Falsifiable Test #1

	Participation in Illegal Financing	No Participation in Illegal Financing
Skull & Bones **Present**	A 1) W.A. Harriman & Co. 2) Guaranty Trust Company	B ?
Skull & Bones **Not Present**	C 1) National City Bank 2) Chase National Bank[1] 3) Kuhn, Loeb & Company 4) Mechanics & Metals National Bank	D 1) J.P. Morgan & Co.[2]

1: Chase National Bank had Percy Rockefeller, a member of Skull and Bones, on the board of directors, but membership in Skull and Bones did not make up 20 percent of the directorship.
2: the J.P. Morgan firm was involved heavily with illegal financing during World War I and gained control of Guaranty Trust Company in 1912. However, there is no existing evidence to indicate that the firm of J.P. Morgan was involved in illegal financing during the Bolshevik revolution, nor is there evidence to indicate an influence of J.P. Morgan an the affairs of Guaranty Trust Company during the Bolshevik revolution.

Given the results of the data, model 1 disproves hypothesis 1, hypothesis 2 and hypothesis 4. Non-Skull and Bones related firms did participate in illegal financing while some non-Skull and Bones related firms did not participate in illegal financing. These results indicate that participation in illegal financing is not an exclusive behavior of Skull and Bones. It also indicates that there exist other factors, which motivate participation in illegal financing. However the data does not necessarily reject hypothesis 3; that the presence of Skull and Bones will always result in illegal financing while the non-presence of Skull and Bones may or may not result in illegal financing. The sample evidence indicates that there does exist a relationship between Skull and Bones and participation in illegal financing. However, it appears that membership in Skull and Bones

is not a driving motivation; rather there exist other motivating factors that encourage firms to participate in illegal financing. The data also shows that whatever external factor is motivating firms to participate in illegal financing, it is not affecting all firms equally. No evidence exists to determine if there were Skull and Bones related firms that did not participate in illegal financing, as a result our conclusions are weakened.

The objective in using a cross-sectional test was two-fold: First, although it is not effective in determining causation, the cross-sectional test is able to point toward significant correlations. Second, those correlations can then be used to provide a framework, or new perspective, through which the evidence can be re-examined and bias can be reduced. On the other hand, the cross-sectional test was unable to provide us with a direct answer as to what relationship exists between membership in Skull and Bones and illegal financing. As a result, we will need to turn to the evidence and arguments of conspiracy theorists for further insight. The results of the cross-sectional test will aid this evaluation of evidence by forcing us to focus on specific correlations and minimize any bias or assumptions that have traditionally accompanied such evidence.

RESULTS - MODEL 2. In the cross-sectional analysis of a firm's participation in illegal financing and membership in Skull and Bones during the rise of Hitler, we find that 50 percent of our sample (five of the ten firms studied) were firms that participated in illegal financing and were affiliated with Skull and Bones. We find that 40 percent of our sample (four of the ten firms studied) participated in illegal financing but were not affiliated with Skull and Bones. We also find that 10 percent of our sample (one of the ten firms studied) did not participated in illegal financing and was not affiliated with Skull and Bones. Again there was no data for box B, representing Skull and Bones affiliated firms that did not participate in illegal financing.

Given the results of the data, model 2 also disproves hypothesis 1, hypothesis 2 and hypothesis 4. Once again, non-Skull and Bones related firms did participate in illegal financing. Some non-Skull and Bones related firms did participate in illegal financing while other

Figure 7 — Rise of Hitler

Falsifiable Test #2

	Participation in Illegal Financing	**No Participation** in Illegal Financing
Skull & Bones **Present**	A 1) W.A. Harriman & Co. (Brown Brother, Harriman) 2) Union Banking Corp. 3) Harriman Fifteen Company 4) G.H. Walker & Co. 5) Guaranty Trust Company	B ?
Skull & Bones **Not Present**	C 1) Chase National Bank[3] 2) Morgan and Company[4] 3) Dillon Read Company 4) Kuhn, Loeb & Company	D 1) National City Bank

3-4: There may be some dispute as to whether or not Chase National Bank and Morgan and Company should be included in this box. Both companies did indeed provide illegal financial assistance to the German army. However, the Paris offices of both these companies agreed to provide financial assistance to the German army only after Paris was invaded by Germany An argument can be made that these two companies acted purely out of economic necessity in order to prevent asset confiscation by the invading forces, whereas the companies in box A deliberately provided illegal financial assistance to the German army long before war began. Disregarding the issue of intent, these companies match the definition for participation in illegal financing

non-Skull and Bones related firms did not participate in illegal financing. This model also indicates that participation in illegal financing is not an exclusive behavior of Skull and Bones, and indicates that other motivating factors may exist. The data of model 2 also does not necessarily reject hypothesis 3; that the presence of Skull and Bones will always result in illegal financing while the non-presence of Skull and Bones may or may not result in illegal financing. The sample evidence indicates that there does exist a relationship between Skull and Bones and participation in illegal financing; however, membership in Skull and Bones is not a driving motivation. There appear to exist other motivating factors that are encouraging non-Skull and Bones related firms to participate in illegal financing. The data also shows that whatever external factors are motivating firms to participate in illegal financing, they are not affecting all firms equally.

The conclusions of models 1 and 2 appear almost identical. Both models disproved hypotheses 1, 2 and 4 while accepting hypothesis 3. Both models appear to confirm that a relationship does exist between being a member of Skull and Bones and participating in illegal financing; however, that relationship is weak. Both models indicate that Skull and Bones is not a motivating factor for participating in illegal financing but rather other factors exist which motivate firms to participate in illegal financing. In light of the results of this test, namely: 1) a relationship does exists between being a member of Skull and Bones and participation in illegal financing, 2) the relationship is weak and Skull and Bones is not a motivating factor, and 3) other factors exist in society that are driving participation in illegal finance; an examination of the evidence of illegal financing by Skull and Bones members, as presented by conspiracy theorists, is necessary.

The results of our cross sectional test will provide us with a new perspective and framework through which we can reevaluate the evidence proposed by conspiracy theorists. The goal of the cross-sectional test was threefold: first, it was intended to help eliminate interpretive bias; second, to show possible relationships between the variables, and three to provide a larger view of the behavior of society. The results of the cross-sectional test will aid in the re-evaluation of the evidence as it will bring into perspective the behavior of the financial community during this time period as well as aid in recognizing and eliminating biased representation of information.

5 — BOLSHEVIK REVOLUTION AND THE RISE OF HITLER AN EVALUATION OF EVIDENCE

THE CROSS-SECTIONAL TEST completed in section four highlighted some very important correlations regarding Skull and Bones and illegal financing. Nevertheless, it did not provide strong answers to our question regarding the nature of the relationship between Skull and Bones and illegal financing. A further evaluation of the evidence presented by conspiracy theorists is now

needed in conjunction with the results of the cross-sectional test in order to gain additional insight.

Because conspiracy theorists focus on the existence of a grand conspiracy aimed at taking over the world, events such as the Bolshevik revolution and the rise of Hitler will be examined in order to see how members of Skull and Bones are allegedly advancing the grand conspiracy. The conspiracy theorists argument, as formulated by Skull and Bones researcher Antony Sutton, emphasizes the illegal financial activities of Skull and Bones members through three Skull and Bones dominated firms between the years 1917 to 1943. These firms include W. A. Harriman and Co. (later became Brown Brothers, Harriman),

Guaranty Trust Company, and the Union Banking Corporation. Additional emphasis is then placed on the corporate subsidiaries and affiliated corporations of these three firms.

Sutton states that both the W. A. Harriman and Co. and Guaranty Trust

Company were the "operational vehicles" through which Skull and Bones was able to concentrate its illegal financing efforts, focusing on both the large percentage of Skull and Bones members who make up the board of directors of each of these companies as well as the many directors shared between these

two companies. By extension of the W.A. Harriman & Co., the Union Banking

Corporation is also included for the same reasons mentioned above as well as its unique financial agenda for which it was created.

Furthermore, according to Sutton, the goal of Skull and Bones, through its illegal financial efforts, is to advance a financial domination of the world through support of fascism and communism. As explained in section two, conspiracy theorists believe that Skull and Bones supports both fascist and communist regimes because both style of regime maintains a government controlled economy, which would benefit Skull and Bones firms through the elimination of competition. Yet, the financing of these regimes would only be a means to an end. Sutton argues that financial support of the extreme left (communism) and the extreme right (fascism) would cause a popular rejection of both extremes in favor of a different form of government that could both prevent and control extremist regimes. Eventually a New World Order would be adopted with the members of Skull and Bones in control.

Sutton argues that this plan will be accomplished through the use of the Hegelian Dialectic process, or managed conflict. This process involves the creation of a conflict, and the control of both sides of the conflict in order to steer the conflicts resolution toward a desired goal. In the case of Skull and Bones, according to Sutton, through the financing of both Communism (thesis) and Germany's National Socialism (Antithesis), a conflict would arise which, if controlled correctly, would result in an increased policy and public approval for the implementation of a world government. The assumption being that a world government would control the world's finances and would in turn be controlled by members of Skull and Bones.

An illustration of the Managed Conflict process involving Skull and Bones and the illegal financing of the Bolshevik Revolution and the rise of Hitler, as proposed by Sutton, breaks down into five basic parts, as illustrated in Figure 8.

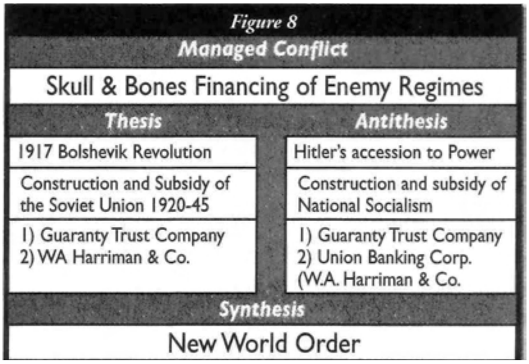


Figure 8

The top box indicates what the subject of the diagram is focusing on: Skull and Bones involvement in the illegal financing of enemy regimes. The diagram then splits into two columns to show the Controlled thesis on the left and the antithesis on the right. The first set of boxes indicates the two sides of the conflict that are being managed along with a general period of time. The subsequent row of boxes indicates how the thesis and antithesis are being created and managed followed by the third set of boxes showing the method by which Skull and Bones is attempting to accomplish the creation and management of the thesis and antithesis. The final box then shows the controlled goal as a result of the management of conflict.

As was discussed in section 3, the conspiracy framework of analysis is far too limiting and problematic. Sutton maintains that the illegal financing of enemy regimes by members of Skull and Bones "can only be explained in the terms of the Hegelian dialectic"[1], process. This framework assumes that Skull and Bones is involved in a conspiracy of a grand nature without proving that to be the case. Second, because it assumes a conspiracy is at work, it eliminates other possibilities that might explain the situation. Using the results of the cross-sectional test performed in section 4 as a framework, a new analysis of the claims against Skull and Bones must be conducted.

The evidence that will be examined in the following pages is in no way an exhaustive study of illegal financing activities during the Bolshevik Revolution or the rise of Hitler. Instead, we will focus our attention on the evidence that is presented by conspiracy theorists against Skull and Bones in an attempt to better explain the events in question as well as to draw further insights as to the correct nature of the relationship between Skull and Bones and illegal financing by using the results of the cross-sectional test.

To begin this analysis of evidence, we will start with an examination of the Guaranty Trust Company and Brown Brothers, Harriman (formerly W.A. Harriman & Co.) in order to explain why conspiracy theorists focus so heavily on the activities of these two companies, and why these companies were labeled as affiliated with Skull and Bones in the cross-sectional test. The activities of these companies and their subsidiaries will then be presented for evaluation starting with the illegal financing during the Bolshevik Revolution and then followed by the activities of these firms during the rise of Hitler, in order to show that the

aid of these companies was critical to the development and/or maintenance of Soviet communism and German fascism.

In addition to following these three companies, we will also follow the activities of specific members of Skull and Bones through their involvement with the above-mentioned firms. This work will examine the activities of Averell Harriman ('13), Prescott Bush ('17), Roland Harriman ('17), Ray Morris ('01) and George H. Walker, highlighting their illegal activities through these firms and their subsidiaries.

For simplicity, and in order to accurately present the correlations stressed by conspiracy theorists, members of Skull and Bones will be indicated by including the year of their initiation into the Order of Skull and Bones next to their name.

GUARANTY TRUST COMPANY

GUARANTY TRUST COMPANY WAS FOUNDED IN 1864 in New York. It grew rapidly by the absorbing other banks and trust companies including the Morton Trust Company, the Standard Trust Company, and the National Bank of Commerce. Guaranty Trust Company became a subsidiary of the J.P. Morgan firm in 1912 when the Harriman family sold 8,000 shares of 20,000 total outstanding shares to J.P. Morgan, and has been known as Morgan-Guaranty Company since 1954.

The original capital for Guaranty Trust came from the Whitney, Rockefeller, Harriman and Vanderbilt family, all of which are represented in The Order of Skull and Bones, and on the Board of Guaranty Trust throughout the time period being discussed. Directors of Guaranty Trust Company during this time frame, who were also members of Skull and Bones, include:

Membership in The Order Of Skull and Bones and Guaranty Trust Company:
* indicates directorship in both W.A. Harriman & Co. and Guaranty Trust Company.

Harold Stanley ('08)
W. Murray Crane ('04)
Harry P. Whitney (1894)
W. Averell Harriman ('13) *
Knight Woolley ('17)*
Frank P. Shepard ('17) (VP from 1920-1934)
Joseph R. Swan ('02)
Thomas Cochrane (1894)
Percy Rockefeller ('00)
George H. Chittenden ('39)
William Redmond Cross ('41)
Henry P. Davison, Jr. ('20)
Thomas Rodd ('35)
Clement D. Gile ('39)

This concentration of members of Skull and Bones, according to Sutton, represents a tight collusion that could be very influential in the decision-making process of the firm. This firm was classified as affiliated with Skull and Bones because this firm: 1) was created by Skull and Bones members, 2) the Vice-President of the Firm was a member of Skull and Bones during the time period discussed, and 3) more then 25 percent of the firms directors were members of Skull and Bones. Guaranty Trust Company was involved in illegal financing both before and after the Bolshevik Revolution; was the backer of Ludwig Martens and his soviet bureau; was the first Soviet representative in the United States; the first Soviet fiscal agent in the United States; and received the first shipments of Soviet gold to the United States.[2]

W.A. HARRIMAN & Co.

W.A. HARRIMAN & CO. WAS ESTABLISHED IN 1920 by Averell Harriman('13) with George Herbert Walker (father-in-law of Prescott Bush ('17)) as President and Roland Harriman ('17) as Vice-President. WA. Harriman & Co. merged with the British-American investment house, Brown Brothers, on January 1, 1931. George Herbert Walker retired to his own G. H. Walker & Co, leaving the Harriman brothers, Prescott Bush and Thatcher M. Brown of the Brown Brothers firm as the Senior-partners. From its inception, the W.A. Harriman & Co. (Brown Brothers, Harriman) housed members of The Order.

Like the Guaranty Trust Company, members of The Order of Skull and Bones also established the original W.A. HARRIMAN & CO. Furthermore, this firm was also dominated and substantially owned by members of the Order of Skull and Bones. It is in this context that some investigators attempt to unravel episodes of illegal financing to both the Bolshevik Revolution and Hitler's rise to power.

Membership in The Order of Skull and Bones and of Brown Brothers, Harriman (Formerly WA. Harriman & Co.):

* indicates directorship in both WA. Harriman & Co. and Guaranty Trust Company.
^ indicates directorship in both W.A. Harriman & Co. and the Union Banking Corporation.

W. Averell Harriman ('13) *
E. Roland Harriman ('17) ^ (VP from 1920-1926)
Ellery S. James ('17)
Ray Morris ('01)^
Prescott Sheldon Bush ('17)^ (VP 1926 -)
Knight Woolley ('17)*
Mortimer Seabury (09)
Robert A. Lovett ('18)
Eugene WM. Stetson, Jr. ('34)

Walter H. Brown ('45)
Stephen Y. Hord ('21)
John Beckwith Madden ('41)
Grange K. Costikyan ('29)
Partners not in The Order:
Matthew C. Brush
Thatcher M. Brown

Here too we find a large concentration of members of Skull and Bones within W.A. Harriman & Co. although the board of directors of W.A. Harriman & Co. has grown since the World War II, during the period of time in question only four partners existed, three of whom where members of Skull and Bones. This firm was also included in my classification as affiliated with Skull and Bones because 1) it was created by members of Skull and Bones, 2) both the President and Vice-President were members of Skull and Bones, and 3) more then 25 percent of the directors were members of Skull and Bones.

BOLSHEVIK REVOLUTION

CONSPIRACY THEORISTS GENERALLY FOCUS THEIR ATTENTION on the illegal financing activities of W.A. Harriman & Co. and Guaranty Trust Company which benefited the Soviet regime during and following the Bolshevik Revolution. Special emphasis is placed on those industrial companies that were controlled by these two firms, namely the International Barnsdall Corporation, the Georgian Manganese Company, which provided the technology and equipment needed for industrial production in the Soviet Union, and the USSR's first national bank, Ruskombank, which provided a means by which the Soviet regime could establish credit with the United States. Conspiracy theorists also draw attention to the anti-communist activities conducted by these companies domestically as evidence of the Hegelian managed conflict process.

INTERNATIONAL BARNSDALL CORPORATION

THE BOLSHEVIKS TOOK CONTROL OF THE CAUCASUS and the Baku oil fields in 1920-21. As a result of mismanagement and political chaos, the oil field drilling in the Baku almost ceased between 1921-1923. The Chairman of Azneft (The Soviet oil production trust), put forward a program for recovery of the oil fields, however the program required equipment and technology that was not available in Russia. In an article published in Pravda, September 21, 1922, Serbrovsky states,

> But just here American capital is going to support us. The American firm International Barnsdall Corporation has submitted a plan ... Lack of equipment prevents us from increasing the production of the oil industry of Baku by ourselves. The American firm ... will provide the equipment, start drilling in the oil fields and organize the technical production of oil with deep pumps.[3]

International Barnsdall Corporation, together with Lucey Manufacturing Company and other major foreign oil well equipment firms fulfilled Azneft 's plan. The first International Barnsdall Corporation concession was signed in October 1921 and was followed by two more in September 1922,[4] despite the fact that Federal Authorities prohibited trading in Russian credits in the United States[5]. Guaranty Trust Company, W.A. Harriman & Co. and Lee, Higginson Company owned the Barnsdall Corporation. The Barnsdall Corporation owned 75 percent of the International Barnsdall Corporation, with the other 25 percent owned by H. Mason Day. A member of Skull and Bones represented the Lee, Higginson Company on the Board of Directors of International Barnsdall Corporation. The Chairman was Matthew C. Brush, one of the very few directors of W.A. Harriman & Co. who was not a member ofThe Order of Skull and Bones. It is argued that Skull and Bones had a significant hold and influence on the affairs of the International Barnsdall Corporation through its strong representation in three of the four companies owning the International Barnsdall Corporation. Nevertheless, evidence tends to ignore the other major firms involved in this transaction. Conspiracy theorists argue that members of Skull and Bones, through the WA. Harriman & Co. and Guaranty Trust Company, were able to use the International Barnsdall Corporation in order to aid in the development of communism (the Hegelian thesis.) We shall see similar behavior with the Georgian Manganese Company.

GEORGIAN MANGANESE COMPANY

W. AVERELL HARRIMAN, WITH MATTHEW C. BRUSH as Chairman, formed the Georgian Manganese Company in 1923. On July 12th, 1925, a concession agreement was made between the W. A. Harriman & Co. of New York and the USSR to provide loans and foreign exchange for the purpose of exploitation of the Chiaturi manganese deposits and extensive introduction of modern mining and transportation methods.[6] Under this agreement $4 million was spent on mechanizing the mines and converting them from hand to mechanical operation, including the production of a railroad system, an aerial tramway for the transfer of manganese ore and loading elevators.

On August 10, 1920, the U.S. State Department adopted the policy of unrecognition to be the official U.S. policy toward the Soviet Union.[7] This policy prevented the extension of credit to the Soviet Union and permitted only preapproved trading. This policy was in effect until President Roosevelt took office in 1933. The activities of both the International Barnsdall Corporation and the Georgian Manganese Company in the years of 1921-22 and 1925 respectively, were not approved by the U.S. government and were in direct violation of the State Department's prohibition.

Both the International Barnsdall Corporation and the Georgian Manganese Company were both heavily involved in illegal activity in support of Soviet development while receiving a large percentage of their financing through WA. Harriman & Co. A member of Skull and Bones, Averell Harriman ('13) founded the Georgian

Manganese Company, while W.A. Harriman & Co. and Guaranty Trust Company owned more then two-thirds of the Barnsdall Corporation, which in turn owned 75 percent of the International Barnsdall Corporation. Despite having partial ownership, it is difficult to tell what role the members of Skull and Bones in the W.A. Harriman & Co. and Guaranty Trust Company firms played in the decision making process of either the International Barnsdall Corporation or the Georgian Manganese Company. I did not include these two companies in the cross-sectional test because the primary function of these companies is not to provide financing to other corporations or entities, but rather their primary function is industrial.

GUARANTY TRUST COMPANY AND RUSKOMBANK

IT IS ARGUED THAT MEMBERS OF SKULL AND BONES were not only providing technology and equipment to the Soviet Union, but they were involved in the creation of a bank that would allow Credit to the Soviet Union. In 1920 the Anglo-Russian Chamber of Commerce was created to promote trade with Russia. The Chairman of its Executive Committee was Skull and Bones member Samuel R. Bertron('85), a Vice President of Guaranty Trust Company. In a letter from the Anglo-Russian Chamber of Commerce to the State Department, dated July 1, 1921, requests, "What date trading in Russian credits was prohibited in the United States by Federal Authorities?"[8]

Despite knowledge of Guaranty Trust Company's Vice-President Samuel Bertron('85) that trading and banking with the Soviet Union was deemed illegal by the State Department, Guaranty Trust Company initiated trade with the Soviet Union against State Department regulations. Guaranty Trust Company, in association with several German, Swedish and British bankers, formed a joint banking agreement with the Soviets in the fall of 1922. Ruskombank (Foreign Commercial Bank or the Bank of Foreign Commerce) became the first Soviet commercial bank, and was headed by Olof Aschberg.[9] A Vice-President of Guaranty Trust Company was installed as the first VP of Ruskombank in charge of its foreign operations.[10] Guaranty Trust Company came to represent Ruskombank the in the US.

The objectives of Ruskombank "were to raise short-term loans in foreign countries, to introduce foreign capital into the Soviet Union, and generally to facilitate Russian overseas trade."[11] At the opening of the bank, Olof Aschberg commented, "The new bank will look after the purchasing of machinery and raw material from England and the United States and will give guarantees for the completion of contracts."[12]

Conspiracy theorists point toward the illegal financing that was provided by U.S. firms as evidence of a conspiracy, as well as the joint directorship of these firms by Skull and Bones members such as Averell Harriman as proof of collusion. There is a link between membership in Skull and Bones and directorship in both W.A. Harriman & Co. and Guaranty Trust Company. There also exists a link between these firms and their subsidiaries: the Georgian Manganese Company and the International Barnsdall Corporation. The most dominant link that appears

to exist is the presence of Averell Harriman in the directorship of W.A. Harriman & Co. and Guaranty Trust Company, as well as both subsidiaries.

A broader view of society shows that during this time period the Soviet government had enacted their New Economic Program (NEP). The NEP promised a reform of Communist policies and cooperation with capitalist business and resulted in a massive infusion of financial and technological aid from numerous countries. Although the U.S. State Department refused to acknowledge the new Soviet government and deemed trade with the USSR illegal, numerous American companies, both industrial and financial, provided aid to the USSR during the NEP.

As the results of the cross-sectional test indicated, a broader view of society does show similar illegal involvement by non-Skull and Bones related firms. Conspiracy theorists who emphasize Skull and Bones involvement in illegal financing rarely evaluate the illegal financing of other firms and their subsidiaries. A few of these non-Skull and Bones related firms that were involved in illegal financing include National City Bank who was involved in illegal financing before WWI as well as after the Bolshevik Revolution, the Chase National Bank who was involved in illegal financing during WWI, Kuhn, Loeb and Company who was involved in illegal financing before and during WWI as well as post Bolshevik Revolution, and the Mechanics and Metals National Bank who was also involved in illegal financing before and during WWI. Important production companies and industrialist who received financing from the above-mentioned firms, and who also aided in the industrial development of the Soviet Union include the Daniel Williard of Baltimore & Ohio Railroad, Westinghouse Air Brake Company, General Electric, Henry Ford and the Vacuum Oil Company.

RISE OF HITLER

IN ORDER FOR THE HEGELIAN MANAGED CONFLICT process to work, an antithesis is required. Hitler's fascist NAZI party became the antithesis, according to Sutton, and as a result became the benefactor of heavy financing and aid from members of Skull and Bones. Brown Brothers Harriman (formerly W.A. Harriman & Co.) headed by Averell Harriman ('13), the Sullivan and Cromwell Law Firm headed by John Foster Dulles, and the Union Banking Corporation (UBC) headed by Roland Harriman ('17) and Prescott Bush ('17), came to represent the entire business interests of the NAZI cartels in the U.S. before and during World War II.[13] On October 1942, the U.S. government charged Prescott Bush ('17) with running NAZI front groups in the United States. Under the Trading with the Enemy Act, all the shares of the Union Banking Corporation were seized, including those held by Prescott Bush ('17), W. Averell Harriman ('13) and Roland Harriman ('17) as being, in effect, held for enemy nationals. The Union Banking Corporation was an affiliate of Brown Brothers, Harriman (formerly W.A. Harriman & Co.), where Prescott Bush, Averell Harriman and Roland Harriman were partners.

Once the government obtained access to The UBC's records, an intricate web of Nazi front corporations began to unravel. Within days two of Union Banking Company's subsidiaries (the Holland American Trading Corporation and the Seamless Steel Equipment Corporation) were also seized. The government later went after the Harriman Fifteen Holding Company (which was shared by Prescott Bush, his father-in-law George Herbert Walker and the Harriman brothers), the Hamburg-Amerika Line, and the Silesian-American Corporation. The U.S. government found that huge sections of the UBC Empire was operated on behalf of Nazi Germany and had greatly assisted the German war effort.

By determining that Prescott Bush ('17), Roland Harriman ('17), George Herbert Walker and other directors of Union Banking Corp. were legally front men for the Nazis, a host of business networks for the build-up of Germany emerged. In light of the results of the cross-sectional analysis we will re-analyze the Union Banking Corporation's role in financing Germany during the rise of Hitler, to determine whether or not illegal support for a violent regime was intentional as well as what role members of Skull & Bones played in these activities.

Again, the evidence presented here is not a comprehensive examination of the available evidence nor is it a comprehensive presentation of the argument against Skull and Bones, however it is more then sufficient to show the connections and relationships between firms in an attempt to show the intent of each firm.

UNION BANKING CORPORATION

CONSPIRACY THEORISTS CLAIM that Averell Harriman('13) began plans to take advantage of the economic crisis in Germany during the post-World War I period, starting in the early 1920s. Government investigators reported that "W. Averell Harriman was in Europe sometime prior to 1924 and at that time became acquainted with Fritz Thyssen, the German industrialist." During this time Harriman and Thyssen agreed to set up a bank for Thyssen in New York. "Certain of Harriman's associates would serve as directors..." while Thyssen's agent "HJ. Kouwenhoven ... came to the United States ... prior to 1924 for conferences with the Harriman Company in this connection."[14]

The Union Banking Corporation was formally established in 1924 as a unit of the Manhattan offices of W.A. Harriman & Co., interlocking with the Thyssen-owned bank voor Handel en Scheepvaart (BHS) in the Netherlands. Thus by personal agreement between Averell Harriman and Fritz Thyssen in 1922, W.A. Harriman and Co., through the Union Banking Corporation, would be transferring funds back and forth between New York and the Thyssen interests in Germany by way of BHS in the Netherlands. By fronting $400,000 during the upstart, W.A. Harriman and company became joint owner and manager of Thyssen's banking operations in the U.S., the UBC.[15] Government investigators concluded "the Union Banking Corporation has since its inception handled funds chiefly supplied to it through the Dutch bank by the Thyssen interests for American investment."[16]

An article in the Herald Tribune on July 31, 1941 declared that while the majority of Thyssen's interest within the United States had been frozen, the Union Banking Corp was currently holding $3 million for Thyssen.[17] This article launched an investigation by the U.S. government's Justice Department, and on October 20, 1942 the U.S. government, under the trading with the Enemy Act, seized the assets of the Union Banking Corporation including stock shares, all of which were owned by E. Roland Harriman, Prescott Bush, three Nazi executives and two associates of Bush.[18]

The list of Directors and their affiliations at the time of seizure are important in order to understand the aid that the UBC provided to the Nazi movement in Germany. These directors and their affiliations are:

E. Roland Harriman - 3991 shares

[Chairman and director of Union Banking Corp. (UBC); Partner in Brown Brothers Harriman; Member of Skull & Bones ('17).]

Cornells Lievense - 4 shares

[President and Director of UBC; New York resident banking functionary for the Nazi party.]

Harold D. Pennington - 1 share

[Treasurer and Director of UBC; an office manager employed by Bush at Brown Brothers, Harriman.]

Ray Morris - 1 share

[Director of UBC; Partner of Prescott Bush and both Averell and Roland Harriman; member of Skull & Bones ('01).]

Prescott S. Bush - 1 share

[Director of UBC, which was co-founded and sponsored by his father-in-law George Herbert Walker; senior managing partner for E. Roland Harriman and Averell Harriman; Partner Brown Brothers, Harriman; member of Skull & Bones ('17).]

H.J. Kouwenhoven - 1 share

[Director of UBC; organized UBC as the emissary of Fritz Thyssen in negotiations with George Herbert Walker and Averell Harriman; managing director of UBC's Netherlands affiliate under Nazi occupation; industrial executive in Nazi Germany; director and chief foreign financial executive of the German Steel Trust.]

Johann G. Groeninger - 1 share

Director of UBC and of its Netherlands affiliate (BHS); German industrial executive.]

At the time of the US Government's seizure, of the six Directors, three were members of Skull and Bones while three other Directors were members of Germany's Nazi party.

Investigators soon discovered that illegal financing of Germany by the UBC was just the tip of the iceberg. On October 28, 1942, the US government seized

two Nazi front organizations run by the UBC: the Holland-American Trading Corporation and the Seamless Steel Equipment Corporation.[19] Then on November 17, 1942, Nazi interest in the Silesian-American Corporation (long managed by Averell Harriman, Prescott Bush and father-in-law George Herbert Walker) was seized under the Trading with the Enemy Act.[20] These three front organizations, along with two UBC affiliates, the German Steel Trust and the Hamburg-Amerika Line, played a great part in the arming of Germany before and during World War II. The U.S. based UBC became the pivotal component of US aid to Germany prior to and during the war.

GERMAN STEEL TRUST

THE 1942 US GOVERNMENT INVESTIGATIVE REPORT states that the UBC was an interlocking concern with the Vereinigte Stahlwerke (United Steel Works Corporation or German Steel Trust.)[21] The UBC began making financial arrangements for the German Steel Trust and its co-owner, Friedrich Flick, before 1926.[22] Flick was the major co-owner of the German Steel Trust with Fritz Thyssen. At the wartime tribunal at Nuremberg, the US government said that Flick was "one of the leading financiers and industrialist who from 1932 contributed large sums to the Nazi party [and] to the SS."[23]

After the war, a Congressional investigation examined the Thyssen interests in relation with the UBC (The UBC was also the New York office for the German Steel Trust) and other Nazi entities, and determined that the Vereinigte Stahlwerke (German Steel Trust) had produced the following approximate proportions of total German national output as of 1938:

50.8% of Germany's pig iron
41.4% of Germany's universal plat
36.0% of Germany's heavy plate
38.5% of Germany's galvanized sheet
45.5% of Germany's pipes and tubes
22.1% of Germany's wire
35.0% of Germany's explosives[24]

The major co-owners of the Germany Steel Trust were Fritz Thyssen and Friedrich Flick. Both of these men were long-time supporters of the Nazi movement in Germany and were held on trial after the war for their financial and industrial support to Germany during the War.

Fritz Thyssen told Allied interrogators after the war that he provided financing to the Nazi party in several different ways. Arrangements were made with Hitler's deputy Rudolph Hess to received credit with the Dutch bank in Rotterdam, the Bank Handel und Schiff (i.e. Bank voor Handel en Scheepvaart (BHS), the UBC affiliate bank).[25] Thyssen also donated large sums of money for the maintenance of Hitler's private armies: the Schutzstaffel (S.S. or Black Shirts) and the

Sturmabteilung (S.A., Brown Shirts).[26] Flick also, since 1932, donated large sums to the Nazi party and was a member of the infamous "Circle of Friends" who contributed large sums to the maintenance of the S.S.[27] For the role he played in the buildup of Hitler's army, Flick was condemned to seven years in prison at the Nuremberg trials.

The 1929-31 economic collapse bankrupted the German Steel Trust and the German government took over the Trust's stock shares. Konrad Adenauer and interest associated with the anti-Nazi Catholic Center Party attempted to acquire the shares. However, the UBC, with the help of British financier Montagu Norman, made the financial arrangements that guaranteed Fritz Thyssen would regain control over the shares and the Trust.[28]

SILESIAN-AMERICA CORPORATION

THE SILESIAN-AMERICA CORPORATION WAS FOUNDED IN 1926 by Herbert Walker at the same time as the German Steel Trust, and was held as a unit of the Harriman Fifteen Corporation. The Harriman Fifteen Corporation consisted entirely of George Walker as president, and Prescott Bush ('17) and Averell Harriman ('13) as the sole directors of the corporation. At the time of the merger of WA. Harriman & Co. and Brown Brothers in 1931, The Harriman Fifteen Corporation held a substantial stake in the Silesian Holding Co., which resulted in Averell Harriman's Chairmanship of the Consolidated Silesian Steel Corporation, with the Harriman Fifteen Corporation owning one-third of a complex of steel-making, coal-mining and zinc-mining activities in Germany and Poland, while Friedrich Flick owned the majority of the other two-thirds.[29] A director of the Silesian-America Corporation was Ray Morris ('01), a partner of Prescott Bush ('17) and the Harrimans at both The UBC and Brown Brothers, Harriman.

An investigative report of the Silesian-American Corporation determined the "NATURE OF BUSINESS: The subject corporation is an American holding company for German and Polish subsidiaries, which own large and valuable coal and zinc mines in Silesia, Poland and Germany. Since September 1929 these properties have been in the possession of and have been operated by the German government and have undoubtedly been of considerable assistance to that country in its war effort."[30]

HAMBURG-AMERIKA LINE

IN 1920 HERBERT WALKER, AS PRESIDENT of the W A. Harriman and Co., arranged the necessary credits to take control of the Hamburg-Amerika Line. Walker then organized the American Ship and Commerce Corp. as a unit of the WA. Harriman and Co., with contractual power over Hamburg-Amerika's affairs.[31] The Bush-Harriman shares in American Ship and Commerce Corp. were held by the Harriman Fifteen Corp., which was run by Prescott Bush ('17) and Herbert Walker.[32]

Directors of the Hamburg-Amerika Line included Baron Rudolph von Schroeder and Albert Voegler: Voegler was the chief executive of the German Steel

Trust associated with the UBC and a director of the BHS Bank in Rotterdam which was also the Dutch bank affiliated with the UBC. Voegler donated heavily to the Nazi party between 1930-1933 and helped to organize the Nazi leap into national power.[33]

The Hamburg-Amerika Line was not only involved in the buildup of Hitler's army, but was an active agent in the promotion and arming of Hitlers Nazi party. Before Hitler's accession to power, his private army of an estimated 300,000 men raised concern with Germany's established government, which moved to defend national freedom by ordering the Nazi party's private armies to be disbanded.

The U.S. Embassy reported that the Hamburg-Amerika Line was purchasing and distributing propaganda attacks against the German government for attempting to disband Hitler's forces.[34]

Furthermore, the Hamburg-Amerika Line and its affiliates were being used to ship American weapons to Germany. A key figure in these activities was Samuel Pryor. Pryor was a founding director of both the UBC and the American Ship and Commerce Corp. with Herbert Walker and Averell Harriman. Pryor was also the executive committee chairman of Remington Arms.[35] A US Senate investigation on arms trafficking began after Remington contracted to supply the German firm I.G. Farben with explosives. The Senators found that,

> German political associations, like the Nazi and others, are nearly all armed with American ... guns ... Arms of all kinds coming from America are transshipped in the Scheldt to river barges before the vessels arrive in Antwerp. They then can be carried through Holland without police inspection or interference. The Hitlerists (sic) and Communists are presumed to get arms in this manner. The principal arms coming from America are Thompson submachine guns and revolvers. The number is great.[36]

On September 5, 1933, under official Nazi supervision, the Hamburg Amerika Line (Hapag) and the North German Lloyd Company merged. On November 4, 1933, Prescott Bush, through the American Ship and Commerce Corp, personally chose Christian J. Beck to be the manager of freight and operations in North America for the new joint Nazi shipping lines (Hapag-Lloyd).[37]

According to testimony of officials of the companies before Congress in 1934, a supervisor from the Nazi Labor Front rode with every ship of the Hapag-Lloyd line; employees of the New York offices were directly organized into the Nazi Labor Front organization; Hamburg-Amerika provided free passage to individuals going abroad for Nazi propaganda purposes; and the line subsidized pro-Nazi newspapers in the USA, as it had done in Germany against the constitutional government.[38]

Two months before the seizure of the UBC, the US government ordered the seizure of all property of the Hamburg-Amerika Line and the North German Lloyd Company under the Trading with the Enemy Act. The investigators noted

in the pre-seizure report that Christian J. Beck was still acting as an attorney representing the Nazi firm.[39]

As is argued by Sutton and other conspiracy theorists, the Guaranty Trust Company and the W.A. Harriman & Co. were both involved in illegal financial activities, which resulted in the economic and industrial build-up of the Soviet Union and Hitler's army. However, the conspiracy theorists conclude that because a large percentage of these firms are made up of Skull and Bones members, Skull and Bones must then be involved in a conspiracy. An examination of other companies who received financing from these firms might show that the majority of companies aided by either the Guaranty Trust Company and the W.A. Harriman & Co. were not involved in the build-up of Hitler's Nazi party. However, this information is not available.

Second, it is difficult to determine how much of the decision making was done by members of Skull and Bones verses non-member partners and directors. As was indicated in the presented evidence, many of the managers and presidents of subsidiary companies were not members of Skull and Bones, and it was these latter companies that were providing the material build-up of Germany and the Soviet Union.

Furthermore, it might be erroneous to argue that because members of Skull and Bones were involved in illegal financing that it is a behavior of the Skull and Bones group. Conspiracy theorists, despite showing individual guilt, have largely failed to provide proof that causation exists between being a member of Skull and Bones and participating in illegal financing.

Throughout all the evidence, we not only find W.A. Harriman & Co. and Guaranty Trust Company with all its subsidiaries, but more importantly we find five individuals at the head of all these affairs. The presence of Skull and Bones members Averell Harriman ('13), Prescott Bush ('17), Roland Harriman ('17), Ray Morris ('01) and non-member George H. Walker. Many of these members were involved in the creation of the majority of the above-mentioned firms.

This evidence demonstrates the personal blame for illegal financing on the five above-mentioned individuals, at the very least. It also demonstrates important family correlations such as Averell and brother Roland Harriman or Prescott Bush and father-in-law George H. Walker. Furthermore, although George H. Walker was not a member of Skull and Bones, his progeny were initiated, along with the progeny of the other four financiers. The evidence also indicates that illegal financing is not an exclusive behavior of members of Skull and Bones, but rather many firms were engaged in such practices.

6 — CONCLUSION

THE FALSIFIABLE TEST conducted in section four yielded three important results. First, a relationship between being a member of Skull and Bones and participation in illegal financing did appear to exist. Despite the behavior of non-Skull and Bones related firms, our evidence indicated that all members

of Skull and Bones who were in a position that allowed them to provide illegal financing did so. Second, the existence of many non-Skull and Bones related firms who were also providing illegal financing indicates that the relationship between being a member of Skull and Bones and participation in illegal financing may be spurious, and membership in Skull and Bones does not appear to be a motivating factor in the participation of illegal financing. Third, the participation of non-Skull and Bones related firms in illegal financing indicates that other factors exist in society that are acting as the motivating force behind illegal finance.

RESULTS OF THE EXAMINATION OF EVIDENCE

AN EXAMINATION OF THE EVIDENCE USED BY CONSPIRACY THEORISTS against Skull and Bones during both the Bolshevik Revolution and the rise of Hitler was enlightening for three reasons: it assessed personal blame, it presented a broader view of society, and it highlighted important family connections that were not discernible in the falsifiable test.

The presentation of evidence in both cases showed clearly a number of companies that acted illegally during this time period. In some instances the evidence was as able to indicate individual guilt and intent, although evidence for the latter is generally incomplete and circumstantial. The assessment of personal guilt is important in criminal investigations. However, the assumption that a grand conspiracy is taking place or that Skull and Bones is involved in such a conspiracy remains unproven.

Using the evidence illustrated in section five, we were able to present the charges made against Skull and Bones members while at the same time glimpse a broader view of society during that time period. Although conspiracy theorists tend to focus only on those firms controlled or associated with Skull and Bones members, a closer examination of society shows that several hundred firms and industrial companies illegally aided in the build-up of the Soviet Union during and after the Bolshevik Revolution as well as Hitler's accession to power. No evidence exists showing correlations between being a member of Skull and Bones and these other companies who were also providing illegal financing. The evidence also indicates that many of Americas largest corporations, such as General Electric, Ford, Standard Oil and the Vacuum Oil Company participated in illegal financing during this time period.

Participation in illegal financing by such a large group of the corporate elite indicates that other factors in society might exist that motivates firms to participate in illegal activity. The most obvious factor is the profit maximization of financial gains. These corporations were able to take advantage of post war Germany and Russia in an attempt to increase profits through the sale of products these countries desperately needed. As indicated in section five, several companies formed a lobbying group in an attempt to persuade congress to recognize the USSR and aid in the new government's development. Certainly any financial

aid to the USSR by the US government would have ended up in the pockets of the American businesses that were providing the USSR with technology and equipment. Other companies such as Standard Oil and W.A. Harriman & Co. were granted ownership, by the foreign country, over portions of the industry they were financially aiding.

Another factor that might motivate firms to participate in illegal activity could be the desire for power. However, power seems to be directly connected to financial gains. Increased profits would allow a company to gain a larger share of the industry and thus create even larger profits. The company could gain stronger influence in government through increased lobbying and the creation of foundations and think tanks. The company could also gain stronger influence among the public through propaganda and advertising, publications by the company's foundations and think tanks, and through goal-specific grants and donations. By extension, an individual would gain these same powers through the company. Or more accurately, the company would act as the vehicle through which the individual is able to gain and exercise power.

Status is another factor that might motivate a firm to participate in illegal finance, although again, status is also directly related with financial gains as well as power.

Conspiracy theorists assert that these factors are legitimate factors for explaining why so many companies were involved in illegal financing. However, conspiracy theorists go one step further to argue that there exists a few individuals who are encouraging and even organizing the activities of others in order to accomplish their conspiratorial goals. Examples would include the financing of dozens of industrial companies who were intent on illegally conducting business with the USSR or Germany by W.A. Harriman & Co. and Guaranty Trust Company. Or conspiracy theorists point toward the exclusive representation of American firms in their dealings with pre-World War II Germany by the Sullivan and Cromwell Law Firm headed by John Foster Dulles.

These claims would suggest that the majority of business is intent on profit maximization, and businesses would engage in illegal activity if there was a possibility of not suffering consequences. But conspiracy theorists also suggest that there exist a few individuals who are trying to carry out a hidden agenda. These clandestine individuals position themselves in situations where they are able to steer the actions of others. In such a way, these clandestine few could position themselves in the financial world and then aggressively aid those companies that are willing to act in a way that benefits the financier's agenda. In the same way, these conspiratorial financiers would be able to prevent companies from acting in a way that harms the agenda of the financiers through the denial of business finance.

However, proving that a select few individuals are steering the actions of others is nearly impossible as it involves proving intent. Second, such agenda-based manipulation of the corporate world could still be explained through profit

maximization, which would not necessarily require secrecy or a conspiracy of a grand nature.

The third benefit of the examination of evidence is that it highlights important family correlations that were not discernible in the falsifiable test. Evidence shows two strong family links that were heavily involved in illegal finance in both case studies. The Harriman family, which includes W.A. Harriman('13) and brother Roland Harriman ('17), were responsible for the creation of the W.A. Harriman & Co. and the Union Banking Corporation. These firms, of which both the Harrimans were directors, were the focal points of illegal financing to the Bolshevik Revolution and the rise of Hitler. W.A. Harriman was also a director of Guaranty Trust Company.

The second family correlation is that of Prescott Bush ('17), which includes his father-in-law George Herbert Walker. George Herbert Walker was one of the original directors of W.A. Harriman & Co.; he helped set up the Union Banking Corporation and later established G.H. Walker & Co. and the Harriman Fifteen Company. His son-in-law, Prescott Bush ('17) was a director of both the Union Banking Corporation and W.A. Harriman & Co. Although George Herbert Walker was not a member of Skull and Bones, both his son and grandson were initiated into the Order of Skull and Bones. Prescott was the first in his family to be initiated, but his son, George H.W. Bush, and grandson, George W Bush, were initiated as well as numerous relatives. There are no other prominent family connections between the members of Skull and Bones that participated in illegal financing.

POSSIBLE EXPLANATIONS

THE EVIDENCE OF ILLEGAL FINANCING could lead to numerous conclusions and explanations. The methodological framework used in section four was intended to reduce those possibilities. However, even with both the falsifiable test and a reevaluation of the evidence we are left with several possible conclusions.

As previously explained, power, prestige and wealth could be the ultimate motivating factor for illegal financing, whether by members of Skull and Bones or by non-Skull and Bones related firms; however, this does not exclude occasional non-profit, agenda-based motivators. The results of the falsifiable test indicate that a weak relationship exists between being a member of skull and Bones and participation in illegal financing, however a relationship still appears to exist. A much stronger correlation exists between being involved in a powerful firm and participation in illegal financing. As a result, we could conclude that Skull and Bones membership appears to have nothing to do with illegal financing as a whole.

However, our evidence indicates that a relationship does exist between being a member of Skull and Bones and participation in illegal financing. It is difficult to determine what that relationship is, or if our test is accurate. Because of the small size of the test sample the results could be skewed, incorrectly indicating

that a relationship may exist when in reality it might not. Nevertheless, for the purpose of evaluation we are going to assume that the test sample is an accurate representation of each case study. With that assumption, our results indicate that a relationship between the two variables exists, but now we need to explore the possible forms the relationship between Skull and Bones and illegal finance might take.

Conspiracy theorists claim that the relationship is direct and conspiratorial, stating that the appearance of several members of Skull and Bones indicates group collusion. Often in the arguments presented by conspiracy theorists, no distinction is made between the organization of Skull and Bones and its members. Rather, each is generically referred to as Skull and Bones. In this way, an implicit assumption and accusation is made against the Skull and Bones organization whenever one of its members is accused of a crime. Firms are not referred to as being dominated by members of Skull and Bones but rather the firm is referred to as being Skull and Bones dominated. Illegal financing is not referred to as illegal financing by members of Skull and Bones, but rather it is illegal financing by Skull and Bones. The potentially erroneous assumption is that a direct relationship exists between the behavior of Skull and Bones members and the Skull and Bones organization itself, despite the fact that no evidence exists to prove that illegal financing is the agenda of the Skull and Bones organization.

Another simple cross-sectional test might help to bring into perspective the conspiracy theorists assumptions about the proposed Skull and Bones agenda. If illegal financing was the agenda of Skull and Bones, then a significant percent of the group's members should be involved in this activity. Never the less, not enough significant evidence exists which would allow us to calculate the percentage of Skull and Bones members that were involved in illegal financing during this time period.

EXPLANATION OF RELATIONSHIP

SO WHAT THEN IS THE NATURE OF THE RELATIONSHIP between Skull and Bones and illegal financing? The research indicates four possible explanations for the relationship that appears to exist: 1) positive networking, 2) agenda based networking, 3) status and 4) collective guilt of Skull and Bones.

It could simply be a coincidence that there are so many members of Skull and Bones working together at firms where illegal financing is taking place; however, that seems highly unlikely. A better explanation would be to examine the networking capabilities among alumni members of Skull and Bones. Networking with alumni, and especially among fraternity pledge classes is quite common in most American universities. There is no evidence to suggest that networking was any less useful between the years of 1917 and 1943. It is reasonable to conclude that members of Skull and Bones who were interested in international finance were able to network with alumni Skull and Bones members to gain access to

particular jobs, especially when members such as Averell Harriman and Prescott Bush were so well connected in the financial world.

Given the high concentration of members of Skull and Bones found in certain firms such as W.A. Harriman & Co., or Guaranty Trust Company, it is reasonable to conclude that some form of networking was taking place. At this point however, the question shifts from whether or not members of Skull and Bones networked with each other, to what role networking played in illegal financing, On the one hand, positive networking could have occurred in which case members of Skull and Bones networked with each other to gain particular positions of employment. Nothing conspiratorial would exist in this relationship, and the existence of numerous members of Skull and Bones located within a single firm where illegal finance occurs is simply coincidental. On the other hand, could agenda-based networking have occurred? More specifically, if deviant members of Skull and Bones wanted to engage in illegal financing, did they network within the membership of Skull and Bones to find other members who would also be willing to engage in illegal financing? This variation seems plausible, and given that members of the Order of Skull and Bones are already bound by oaths of secrecy, it does not seem to be a far stretch to accept a claim that deviant members are able to network within the Order of Skull and Bones for deviant purposes. Regardless, there is no information as to whether or not the many Skull and Bones members who were employed by the firms that participated in illegal finance were actively participating in the decision making process to provide illegal finance. We must assume that by the very nature of their positions as directors of the company, that they were aware of such activity, but that is an assumption that remains unproven. It could be that these members of Skull and Bones networked to gain jobs with various firms but were not involved in illegal activity. If this is true, then the number of Skull and Bones members who were actively participating in illegal finance would be much smaller then originally indicated.

A third possible explanation is that the Order of Skull and Bones merely represents status. Skull and Bones is the most prestigious of the nine secret societies at Yale University. It is made up of very wealthy prestigious family names. As previously stated, Prescott Bush was the first in his family to be initiated into the Order, but both his son and grandson were initiated; the same is true of Averell Harriman. George H. Walker was not a member, but was associated in all his business ventures with prominent members. Both his son and grandson were initiated into the Order of Skull and Bones. It is plausible to conclude that there exists no relationship between being a member of Skull and Bones and participation in illegal financing, but rather the bonds that were established between individuals such as the Harrimans, Prescott Bush and George H. Walker resulted in the initiation of the progeny of these men into the prestigious Order of Skull and Bones.

However, a very slight twist on this third conclusion might state that the Skull and Bones organization is not, in and of itself, goal oriented, but rather Skull and Bones becomes the reflection of the agenda of its members during any

given time period. If members of prominent families within Skull and Bones collectively work to accomplish a given goal, how does that effect the Skull and Bones organization as a whole as well as the potential agenda of the organization? Furthermore, if the progeny of individuals who were involved in illegal financing are initiated into Skull and Bones as a status symbol, does that not represent an implicit acceptance (or even reward) for illegal financing?

The fourth possible relationship is that Skull and Bones is collectively guilty of illegal financing. Our falsifiable test indicated that the relationship between membership in Skull and Bones and illegal financing may be spurious, but it does not negate possible guilt of the Skull and Bones organization. Conspiracy theorists have long argued that a conspiracy only requires a few collaborative individuals in key positions to successfully accomplish a goal. Recent events involving Enron and Arthur Anderson certainly showed how only a few well-placed individuals were able to commit illegal financial activities and hide such activities from other officers in the firm. It is possible that a secret agenda of Skull and Bones is illegal financing, and only certain members are chosen to accomplish that specific agenda while other members or kept out of the loop, or more ominously, other members are pursuing other Skull and Bones promoted activities.

The cross-sectional test was unable to indicate if causation between membership in Skull and Bones and participation in illegal finance exists. The research and evidence was useful in assessing the personal guilt of members of Skull and Bones, yet it too failed to prove causation. As a result, it is still unclear as to whether or not membership in Skull and Bones is the reason that the guilty members participated in illegal financing.

PROBLEMS WITH TEST RESULTS

THE PURPOSE OF USING A SCIENTIFIC TEST DESIGN is to eliminate error and problems associated with bias; however, those problems can still occur. The primary problem associated with the test conducted in section four is that of sample size and bias. As previously stated, the sample for our test was very small, which leads to a larger margin of error. A sample of 10 companies, with four of those companies affiliated with Skull and Bones, indicates that 40 percent of the sample was associated with Skull and Bones. If the sample were to be increased to 20 firms, holding the number of Skull and Bones related firms constant, then the percentage of firms that would be associated with Skull and Bones would be reduced by 50 percent, indicating that only 20 percent of the firms were affiliated with Skull and Bones.

The purpose of a sample is to try to show an accurate representation of society as a whole. That task is difficult to do with so small a sample. Second, increasing our sample size by 100 percent while holding constant the number of firms that are affiliated with Skull and Bones shows a dramatic decrease in comparison with the rest of the sample.

Biased sampling further complicates this problem. This study was initiated by the knowledge that some firms that were affiliated with Skull and Bones were also participating in illegal finance. By intentionally including those firms in our sample we begin to bias our results, especially considering that the sample is so small. Second, a majority of the research for this work focused on those firms that did participate in illegal finance, generally lacking sufficient research of those firms that were not participating in illegal finance. As a result there is further biasing of the test sample. An unbiased test sample would most likely show that a great deal of firms did not participate in illegal financing.

In addition, no evidence was presented that fit the requirements of box B in our testing sample: Membership in Skull and Bones and non-participation in illegal financing. Again, further research into those firms that did not participate in illegal financing might show Skull and Bones members in the directorship of those firms, indicating that members of Skull and Bones members were in a position to participate in illegal finance but did not. However, no research was completed in that area and as a result the conclusions from the cross-sectional test are further weakened.

SOCIAL SCIENCE VS. CONSPIRACY THEORY: PROBLEMS WITH THE ACCEPTABILITY OF A CROSS SECTIONAL TEST

THE HYPOTHESES OF THIS PARTICULAR CROSS-SECTIONAL TEST find themselves caught in much the same dilemma as any other conspiracy verses social science work; it is not accepted or supported by both social scientists and conspiracy theorists alike. This particular work will fall into the favor of social scientists while conspiracy theorists might argue that by comparing large sections of society we are dismissing the potentially critical links that need to be explored between Skull and Bones and any conspiracy that may stem from it. While social scientists can argue that illegal financing may have been a behavior practiced by several firms of influential power without the benefit of Skull and Bones membership, conspiracy theorists would counter that the activities of other firms does not downplay the importance of the activities of firms dominated by Skull and Bones.

The difference in the interpretations of these events stem from the very different methodologies used in the analytical frameworks of conspiracy theorists and social scientists. These differences include the testing of assumptions, differing definitions and induction.

Social scientists rely on controlled assumptions in order to test their hypotheses. As stated previously in this section, scientists run tests by controlling certain variables while manipulating others to determine relationships. These relationships are then tested in order to find a universality that holds true. As one theory is proven false, a new theory is designed from the new evidence and is then tested, and this process is repeated until the theory utterly fails or until it cannot be proven false. On the other hand, conspiracy theorists tend to create theories of a grand conspiracy using the evidence of one or two situations. Then as new

situations arise, new characteristics of the conspiracy theory emerge to adapt to the new situation. As a result, a tightly constructed universal framework for the classification of a conspiracy is not possible because each situation requires different defining characteristics in order to classify it as a conspiracy.

In many ways, social scientists examine the micro events of particular situations in order to develop a theory that will apply to the macro level. The events of the Bolshevik revolution are examined to develop the defining characteristics of a conspiracy and are then used and tested on other similar historical events. On the other hand, conspiracy theorists focus on the macro level in order to interpret the micro events that take place. Because conspiracy theorists focus on the existence of a grand conspiracy aimed at taking over the world on the macro level, events such as the Bolshevik revolution and the rise of Hitler are then examined in order to see how the grand conspiracy is being advanced through these events. The framework of conspiracy theory and a long-range goal of world socialism and domination are used to interpret historical events, rather then using an accumulation of historical events to determine whether or not a conspiracy is taking place.

There also exists the confusion of terminology with conspiracy and conspiracy theory. As previously stated, two forms of a conspiracy can exist. A grand conspiracy aspires to world domination while a petty conspiracy works within the existing order. A petty conspiracy is limited to affairs that involve a handful of individuals plotting to make money or to seize power. A petty conspiracy aims at transferring money from one pocket to another or replacing one set of rulers with another. With a few possible exceptions, grand conspiracies are extremely difficult to prove, while petty conspiracies are very rarely referred to as a conspiracy. When conspiracy theorists say that a conspiracy exists, they are referring to a grand conspiracy, and therein lies the problem. As the evidence in section five indicates, very likely a conspiracy was indeed taking place. Numerous companies were involved in the illegal financing of enemy regimes against specific instructions issued by the U.S. State Department. This conspiracy was of a petty nature as the seemingly obvious goal of this conspiracy was financial gain. If conspiracy theorists would emphasize that their evidence points toward a petty conspiracy, it might be more acceptable to social scientists. Never the less, conspiracy theorists use the evidence of a petty conspiracy to point toward the possible existence of a grand conspiracy, which also requires the affiliation of a secret and subversive organization such as the Order of Skull and Bones.

In testing, a social scientist will often examine the evidence of many different events in order to draw correlations and create hypotheses. These hypotheses are tested against other events to determine if they will hold up or be rejected. On the other hand, conspiracy theorists tend to create a theory, and then only use the favorable evidence of other events to prove it. As we saw in the presentation of evidence, focus is on the Skull and Bones related firms in order to prove that Skull and Bones is involved in a grand conspiracy. No attention is given to those companies who are involved in illegal activity and are not affiliated with Skull

and Bones, nor is there an investigation into the activity's of Skull and Bones related firms that might not have participated in illegal finance.

The selective presentation of only favorable evidence also leads to problems of induction. Because only Skull and Bones members who are involved in illegal activity are presented, the reader is left to the conclusion that all Skull and Bones members are involved in illegal activity. If a book were written celebrating the great amount of influence Skull and Bones members had on the American educational system, only listing those members who contributed significantly to education as well as the great percentage of members who become professors, the reader would plausibly induce from the evidence that Skull and Bones membership is focused on higher education and teaching. Again, biased representation of evidence leads both the conspiracy theorists and the reader to fallible conclusions.

Never the less, the evidence presented by conspiracy theorists is valuable as it helps to assess individual guilt. Furthermore, the scientific cross-sectional test did not produce strong conclusions, and therefore did not necessarily negate the conspiracy theory. Rather, it helped to see through the shortcomings of the conspiracy theory evidence as well as provide insight into important correlations that can be further evaluated in conjunction with the evidence. The results of the cross-sectional test provided a framework that, when combined with the evidence and commentary, helps to better explain a larger view of the situation. In order to gain additional explanations and insights into the relationship of illegal finance and membership in Skull and Bones, it would be useful to use the results of the cross-sectional test in conjunction with other theories of power politics.

REQUIREMENTS FOR A CONSPIRACY THEORY

THIS STUDY DID NOT PROVE OR DISPROVE the existence of a conspiracy in relation to Skull and Bones and illegal financing, but it did provide interesting insights into possible explanations. In order to prove that a conspiracy exists, very specific requirements must be met. First, the conspiracy must be jointly planned and acted upon. There must be direct collusion between the members of the conspiracy. There is the possibility that not all members of the conspiracy will be actively involved, but a large percentage of the members of the conspiracy should be actively involved. Second, the conspiracy must be secret. By the very definition of a conspiracy, secrecy is required for individuals to achieve a prohibited goal. If the goals of the group are public knowledge and the group is still trying to accomplish them, then it cannot be classified as a conspiracy. Third, the goals of the conspiracy must be prohibited by law. Conspiracy theorists make a distinction here by stating that the goals of the conspiracy must be evil, but evil is too ambiguous a term for proper evaluation.

If a group of students jointly and secretly decided to earn a grade of "A" on their final exams, then this would not fit the requirements of a conspiracy. If these same students jointly and secretly plotted to steal the answer key to the exams, then it would fit the requirements of conspiracy. Likewise, if all of the members

of an extremist group such as the Ku Klux Klan began rallies and demonstrations in an attempt to segregate the community, this would not be classified as a conspiracy. Although there is group collusion and they are attempting to achieve a prohibited goal, there is no secrecy in their actions. On the other hand, the assassination of civil rights leaders during the 1960s and 70s would fit the requirements or a conspiracy provided that more then one person was involved in the planning of the assassination.

In regards to the Order of Skull and Bones and participation in illegal financing, the group as a whole meets the requirement of secrecy, but there is no evidence that the Order of Skull and Bones is secretly planning specific and illegal actions. Conspiracy theorists would need to prove that the Order of Skull and Bones is in some way promoting illegal financing. Second, group collusion in regards to participation in illegal financing is uncertain. Collusion between certain members exists, but it is unknown as to whether or not that collusion is representative of the Skull and Bones organization. Third, conspiracy theorists would need to prove that the stated goals of the Order of Skull and Bones are conspiratorial or are attempting to achieve a prohibited goal. No such stated goal of Skull and Bones has been proven to exists (although if a conspiracy does exist then no such goal will be found.)

Conspiracy theorists attempt to prove these three requirements by first demonstrating a possible link between the Order of the Illuminati and the Order or Skull and Bones. Existing records do indicate that the Order of the Illuminati was involved in a conspiracy of a grand nature. Conspiracy theorists use these claims against the Illuminati along side strong similarities between both the Illuminati and Skull and Bones in an attempt to show that these two organizations are really one and the same. Conspiracy theorist conclude that if the Order of Skull and Bones was originally a section of the Order of the Illuminati then the revealed goals of the Order of the Illuminati must be the same for Order of Skull and Bones.

Conspiracy theorists do not focus on group cohesion in micro activities such as illegal finance, but rather on a cumulative cohesion to the ultimate goals of the conspiracy. In which case, it is argued that only a few members need to be involved in illegal finance while other members can be involved in government, in education, in media, etc. This way, the goals of the conspiracy can be furthered through many different means all working together. This point is also consistent with the plans of the Order of the Illuminati.

Finally, the general and extreme policy of secrecy by members of Skull and Bones is referred to as a fulfillment of the final requirement of secrecy. If they exist, the goals of Skull and Bones are not known by anyone outside of the Order. It is assumed by conspiracy theorists that goals do exist and that they are conspiratorial in nature. The secrecy of the group only adds fuel to the fire of suspicion.

In reality, a conspiracy theory version of history assumes a top-down, macro framework of a long-range global conspiracy, which is then used to interpret all historical events. Such a framework is required in order to arrive at the conclu-

sion of a grand conspiracy. As already stated, conspiracy theorists showed the individual guilt of members of Skull and Bones, but assessing the collective guilt of Skull and Bones is a difficult task. The burden of proof lies with the conspiracy theorists. This work has provided valuable insights into the nature of the relationship between membership in Skull and Bones and participation in illegal finance, yet that relationship remains unclear.

APPENDIX

CONFISCATION OF UNION BANKING CORPORATION

Federal Register, Saturday, November 7, 1942

[VESTING ORDER NUMBER 248]

ALL OF THE CAPITAL STOCK OF UNION BANKING CORPORATION AND CERTAIN INDEBTEDNESS OWING BY IT.

Under the authority of the Trading with the Enemy Act, as amended, and Executive Order No. 9095, as amended, and pursuant to law, the undersigned, after investigation, finding:

(a) That the property described as follows:

All of the capital stock of Union Banking Corporation, a New York corporation, New York, New York, which is a business enterprise within the United States, consisting of 4,000 shares of $100 par value common capital stock, the names of the registered owners of which, and the number of shares owned by them respectively, are as follows:

Names	Number of Shares
E. Roland Harriman	3,991
Cornelius Lievense	4
Harold D. Pennington	1
Ray Morris	1
Prescott S. Bush	1
H. J. Kouwenhoven	1
Johann G. Groeninger	1
Total	4000

all of which shares are held for the benefit of Bank voor Handel en Scheepvaart, N.V., Rotterdam, The Netherlands, which bank is owned or controlled by members of the Thyssen family, nationals of Germany and/or Hungary, is property of nationals, and represents ownership of said business enterprise which is a national, of a designated enemy country or countries (Germany and/or Hungary);

(b) That the property described as follows:

All right, title, interest and claim of any name or nature whatsoever of the aforesaid Bank voor Handel en Scheepvaart, and August Thyssen-Bank, Berlin, Germany, and each of them, in and to all indebtedness, contingent or otherwise and whether or not matured owing to them, or each of them by said Union Banking Corporation, including but not limited to all security rights in and to any and all collateral for any or all of such indebtedness and the right to sue for and collect such indebtedness.

is an interest in the aforesaid business enterprise held by nationals of an enemy country or countries, and also is property within the United States owned or controlled by nationals of a designated enemy country or countries (Germany and/or Hungary);

and determining that to the extent that any or all of such nationals are persons not within a designated enemy country, the national interest of the United States requires that such persons be treated as nationals of the aforesaid designated enemy country or countries (Germany and/or Hungary), and having made all determinations and taken all action, after appropriate consultation and certification, required by said executive order or Act or otherwise, and deeming it necessary in the national interest, hereby vests such property in the Alien Property Custodian, to be held, used, administered, liquidated, sold or otherwise dealt with in the interested of and for the benefit of the United States.

Such property and any or all of the proceeds thereof shall be held in a special account pending further determination of the Alien Property Custodian. This shall not be deemed to limit the powers of the Alien Property Custodian to return such property or the proceeds thereof, or to indicate that compensation will not be paid in lieu thereof, if and when it should be determined that such a return should be made or such compensation should be paid.

Any person, except a national of a designated enemy country, asserting any claim arising as a result of this order may file with the Alien Property Custodian a notice of his claim, together with a request for a hearing thereon, on Form APC-1, within one year from the date hereof, or within such further time as may be allowed by the Alien Property Custodian. Nothing herein contained shall be deemed to constitute an admission of the existence, validity or right to allowance of any such claim.

The terms "national," "designated enemy country" and "Business enterprise with the United States" as used herein shall have the meanings prescribed in section 10 of said executive order.

Executed at Washington, D. C. on October 20, 1942.

Leo T. Crowley

Alien Property Custodian,

[F.R. Doc. 42-11568; Filed, November 6, 1942; 11:31 a.m.]

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29 Consolidated Silesian Steel Corporation [minutes of the] meeting of Board of Directors, Oct. 31, 1930 (Harriman papers, Library of Congress), shows Averell Harriman as Chairman of the Board. Prescott Bush to W.A. Harriman, Memorandum Dec. 19, 1930 on their Harriman Fifteen Corp. Annual Report of United Konigs and Laura Steel and Iron Works for the year 1930 (Harriman papers, Library of Congress) lists "Dr. Friedrich Flick ... Berlin " and " William Averell Harriman ... New York" on the Board of Directors.
"Harriman Fifteen Corporation Securities Position February 28, 1931," Harriman papers, Library of Congress. This report shows Harriman Fifteen Corporation holding 32,576 shares in Silesian Holding Co. V.T.C. worth $1,628,800, just over half the value of the Harriman Fifteen Corporation's total holdings.

The New York City Directory of Directors volumes for the 1930s (available at the Library of Congress) show Prescott Sheldon Bush and W Averell Harriman as the directors of Harriman Fifteen Corp.

"Appointments," marked "Noted may 18, 1931 W.A.H., " (among the papers from Prescott Bush's New York Office of Brown Brothers Harriman, Harriman papers, Library of Congress), lists a meeting between Averell Harriman and Friedrich Flick in Berlin at 4:00 P.M., Wednesday April 22, 1931. This was followed immediately by a meeting with Wilhelm Cuno, chief executive of the Hamburg-Amerika Line.

The "Report To the Stockholders of the Harriman Fifteen Corporation," Oct. 19, 1933 (in the Harriman papers, Library of Congress) names G.H. Walker as president of the corporation. It shows the Harriman Fifteen Corporation's address as 1 Wall Street the location of G.H. Walker and Co.

30 Sept. 25, 1942, Memorandum To the Executive Committee of the Office of Alien Property Custodian, stamped Confidential, from the Division of Investigation and Research, Homer Jones, Chief. Now declassified in United States National Archives, Suitland, Maryland annex. See Record Group 131, Alien Property Custodian, investigative reports, in file box relating to Vesting Order NO. 370.

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32 George Walker was a director of American Ship and Commerce from its organization through 1928. Consult New York City Directory of Directors.

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36 U.S. Senate "Nye Committee" hearings, Sept. 14, 1934, pp. 1197-98, extracts from letters of Col. William N. Taylor, dated June 27, 1932 and Jan. 9, 1933.

37 Webster G. Tarpley & Anton Chaitkin. George Bush: The Unauthorized Biography, p. 11.

38 Investigation of Nazi Propaganda Activities and Investigation of Certain Other Propaganda Activities: Public hearings before A Subcommittee of the Special Committee on Un-American Activities, United States House of Representatives, Seventy Third Congress, New York City, July 9-12, 1934 Hearings No. 73 NY-7 (Washington: U.S. Govt. Printing Office, 1934). See testimony of Capt. Frederick C. Mensing, John Schroeder, Paul von Lilienfeld-Toal, and summaries by Committee members.

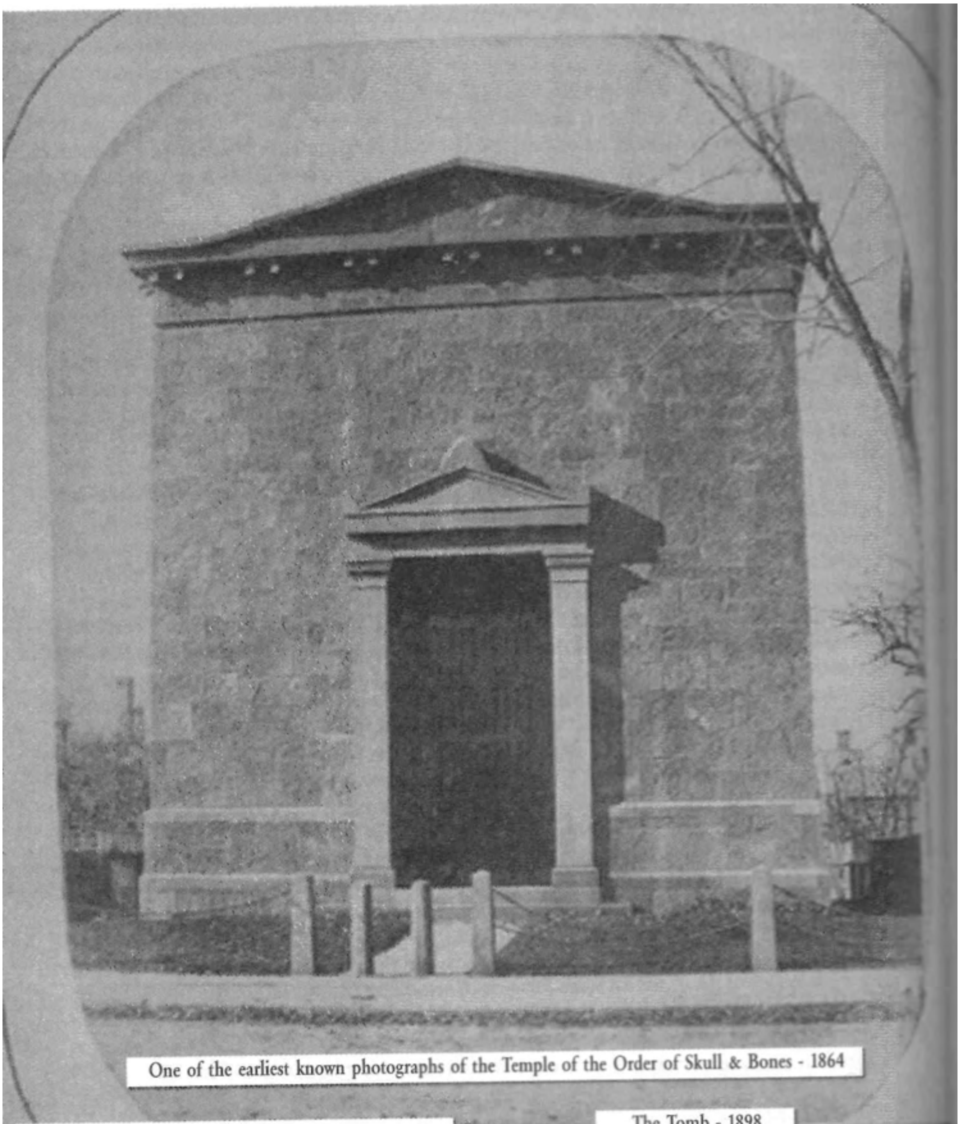
See New York Times, July 16, 1933, p. 12, for organizing of Nazi Labor Front at North German Lloyd, leading to Hamburg-Amerika after merger.

39 Office of Alien Property Custodian, Vesting Order No, 126. Signed by Leo T. Crowley, Alien Property Custodian, executed August 28th, 1942. F.R. Doc. 42-8774; Filed September 4, 1942, 10:55 A.M.; 7F.R. 7061 (No. 176, Sept. 5, 1942.) July 18, 1942, Memorandum To the Executive Committee of the Office of Alien Property Custodian, stamped CONFIDENTIAL, from the Division of Investigation and Research, Homer Jones, Chief. Now declassified in United States National Archives, Suitland, Maryland annex. See Record Group 131, Alien Property Custodian, investigative reports, in file box relating to Vesting Order No. 126.

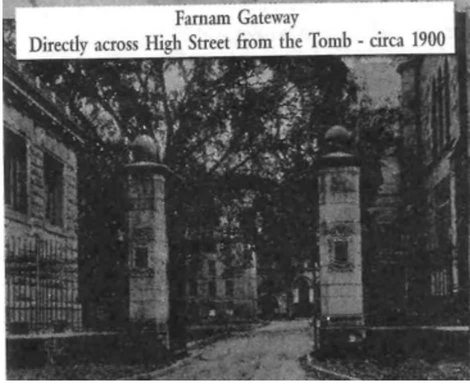
APPENDIX A

22 Office of Alien Property Custodian, Vesting Order No. 248. The order was signed by Leo t. Crowley, Alien Property Custodian, executed October 20, 1942; F.R. Doc. 42-11568; Filed, November 6, 1942. 11:31 AM; 7 Fed. Reg. 9097 (Nov. 7, 1942). See also the New York City Directory of Directors (available at the Library of Congress). The volumes for the 1930s and the 1940s list Prescott Bush as a director of Union Banking Corporation for the years 1934 through 1943.

Jedediah McClure was born in Indiana in 1978, and graduated with a B.A. in international political economics from DePauw University. He is currently the President of Freedom-Medical, Phoenix, Arizona.



One of the earliest known photographs of the Temple of the Order of Skull & Bones - 1864



Farnam Gateway
Directly across High Street from the Tomb - circa 1900



The Tomb - 1898

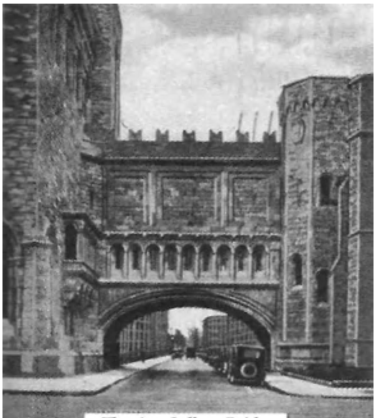
THE TOMB

KRIS MILLEGAN
AUGUST 2003



The *Tomb*, the Temple of the Order of Skull & Bones, 1910

THERE IT SITS AT 64 HIGH STREET, looming large and innocent, a squat funny looking building with slits for windows and big black doors that clang loudly when they shut. The building known as the Temple to members is most often referred to by its very appropriate nickname — the Tomb. You cannot walk completely around the building, and hidden behind the building and its high stonewalls is a secret courtyard.



The Art Gallery Bridge

One may actually view the Tomb from a Starbucks on Chapel Street by looking underneath, through the Art Gallery Bridge. Interestingly, there are no tables and chairs in that corner of the cafe, so you may not sit and stare, you may only peek while perusing coffee paraphernalia.

The intersection of High and Chapel Streets is one of the gateways to the Yale campus, a transition point between "Town & Gown." When the Temple was built in 1856, across the street from the Yale campus, it was

pretty much by itself. Then in 1864 through a bequest from Augustus Russell Street the Yale Art School and Gallery or Street Hall was built "specifically at Mr. Street's direction" on the northeast corner of Chapel & High with one entrance for New Haven citizens and one for the college.


Street Hall's entrance to the town of New Haven on Chapel Street

Later in the 1920's the Gallery of Fine Arts, now known as the Old Art Gallery was built on the northwest corner of High and Chapel Streets and an elaborate gallery bridge walkway was built over High Street connecting the two art buildings. With Weir Hall on one side and later with the modernistic Yale Art Gallery built in 1953, the Tomb was flanked on three sides by Yale art galleries and schools. In the 1920's there was thought of moving the museum and galleries next to the new Peabody museum on Whitney Avenue, but that was nixed by Street's original bequest restrictions.

There have always been strong relationships in New England between the art community and secret societies. The Age of Enlightenment, Calvinism, Spiritual Awakenings, The Revolutionary War, Millennialism and other influences had brewed an interesting social stew with the secret societies, primarily Freemasonry and Phi Beta Kappa playing very visible roles. The year Skull & Bones was formed, America's first college campus art gallery and the first Tomb-like building at Yale the Trumbull Gallery, was opened on October 25, 1832. John Trumbull, famous early American historical painter, had fallen on hard times and his nephew and Yale's first science faculty member, Professor Silliman, established the gallery and arranged for him to receive an annuity in exchange for the donation of his paintings to Yale. An early design for the gallery was likened to a traditional Greek Temple. Trumbull designed the building that was finally built. The gallery contained two large windowless rooms and had an eastern entrance flanked by Doric columns and Doric pilasters.


Trumbull Gallery in 1864

Professor Silliman was the founder and editor of the American Journal of Science and Arts. He was a founding member of the National Academy of Sciences and a member of Phi Beta Kappa, which in 1832, in reaction to the Ant-Masonic move-

ment ceased being a secret society and became an open and honorary organization. A reported reaction to the Phi Beta Kappa secrecy change was that Yale students William Huntington Russell and Alphonso Taft asked 13 of their classmates to form with them the Order of Scull & Bones. Phi Beta Kappa did continue also, with Russell, Taft and three other Bonesmen as members. The school of chemistry, which Professor Silliman founded at Yale in 1847, later developed into the Sheffield Scientific School (SSS) through which Bones was able take-over Yale. Professor Silliman retired in 1853 to be succeeded by his son, Professor Benjamin Silliman, Jr., a member of a very active group of Bonesmen, the class of 1837. Junior, among other things, discovered in 1855 the process known as cracking, the distillation of paraffin, gasoline and other products from oil. As Professor Silliman, Jr. noted in his report: Gentlemen, it appears to me that your Company may have in their possession a raw material from which, by a simple and not expensive process, they may manufacture very valuable products.


Professor Benjamin Silliman, Jr (S&B 1837)

His findings spurred the first oil rush and brought Americas first oil company, The Pennsylvania Rock Oil Company of New York into the hands of New Haven investors, and made fortunes for Townsend and Bissell families, who soon had sons in the Order of Skull & Bones. The thread of the petroleum business continues through the history of Yale, the Tomb and the members of the Order of Skull & Bones.

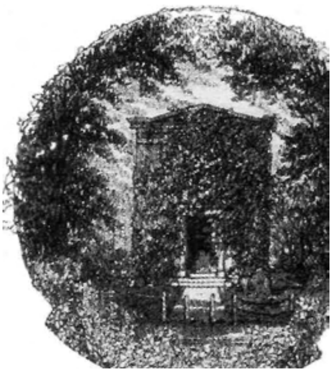

A drawing of the Tomb from 1860

The Tomb as first built was a nearly windowless two-story mausoleum/ Masonic hall style building. It was constructed from brownstone and is generally considered to be the work of local architect Henry Austin, although officially the architect is unknown. There have been no public events held within it, so information about the interior comes from reportage of various break-ins and some people with commercial access. The Order of File & Claw issued a pamphlet in 1876 on a break-in on September 29th of that year. That report is reproduced in full, starting on page 469.

The most recent reportage about a break-in or "sort of a quick canter through the premises" by some Yale co-eds in the summer of 1979, who were "invited in by a dissident member ..." was in an article by Stephen ML Aronson in Fame magazine, Volume 2, Number 2, August 1989:


Ladies in the Tomb in 1979 – *Fame* August 1989

> "There were tons of rooms, a whole chain of them. There were a couple of bedrooms, and there was this monumental dining room with different rolls of Skull and Bones songs suspended from the ceiling. And there was a President Taft memorabilia room filled with flyers, posters, buttons - the whole room was like a Miss Haversham's shrine. And a big living room with a beautiful rug. And then this big, huge, expensive-looking ivory carving in the hallway. The whole thing was on a very medieval scale. But it was all kind of a shambles. It looked like a boy's dorm room, like it hadn't been cleaned up in six months. There were a lot of old bones around - believe me, it could use a women's touch.
>
> "The most shocking thing — and I say this because I do think it's sort of important — I mean, President Bush does belong to Skull and Bones, everyone knows that — there is, like a little Nazi shrine inside. One room on the second floor has a bunch of swastikas, kind of an SS macho Nazi iconography. Somebody should ask President Bush about the swastikas in there. I mean, I don't think he'll say they're not there. I think he'll say, 'Oh, it wasn't a big deal, it was just a little room.' Which I don't think is true and which I wouldn't find terribly reassuring anyway. But I don't think he'd deny it altogether, because it's true. I mean, I think the Nazi stuff was no more serious than all the bones that were around, but I still find it a little disconcerting."

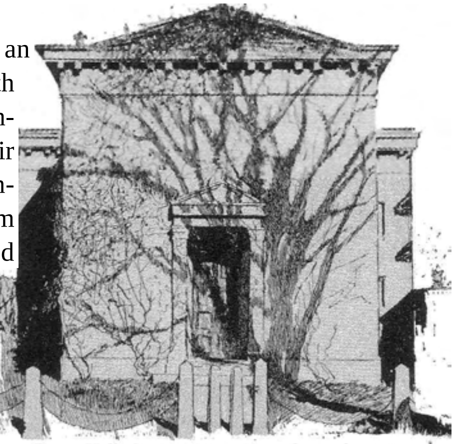

The Tomb - Scribner's Magazine, April 1876

Alexandra Robbins in her book, Secrets of the Tomb adds to the public's knowledge of the interior although she dismisses the idea that the Tomb may be reached by Yale's infamous steam tunnels — even when the subject is brought up by New Haven's finest. There are most definitely extensive tunnel and underground building complexes at Yale. Exploring the steam tunnels is still "among the offenses that are subject to disciplinary action." The Yale Bulletin

& Calendar September 1-8, 1997 Volume 26, Number 2 reports about a $90 million "comprehensive reconstruction" and "modernization" of the power plants and the "interconnecting network of underground pipes and tunnels provide steam for heating, chilled water for air conditioning, electricity and telecommunication systems throughout central campus." From the relative positions of the power plants and Yale buildings, it is very probable that there is underground access to the Bones clubhouse, as claimed by the New Haven police officers in Ms. Robbins' book.

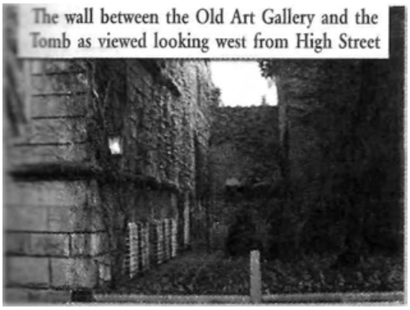
Just a little over a block away is the Cross Campus Library, a huge multi-storied underground complex in the central campus core. Next-door just beyond the Tomb's secret courtyard wall underneath Weir Court is a large underground auditorium.

According to Ms. Robbins there is an underground tunnel going underneath the secret courtyard garden then turning north going only as far as Weir Towers. With the Order's government intelligence background, I am sure that there could be constructed an entrance into Yale's hundred-plus year old underground system with a blind alley so that those without the need to know would think that there was only passage to the basement of Weir Towers.



Bones Hall, Century Magazine – September1888

The wall between the Old Art Gallery and the Tomb as viewed looking west from High Street



The Tomb was first enlarged in 1883 with the addition of a large dining hall attached at a tee on the rear of the building. The dining hall is two stories with large windows. The additional building doesn't directly abut the Old Art Gallery building, built later in 1926-27 on the south, but there is a high stonewall between the two buildings that blocks vision and movement.

When the dining room addition was added, George Douglas Miller, a member from 1870, owned the surrounding property and "[h]e raised a great mound of earth and surrounded the property for secrecy."

The Order writes very little about Mr. Miller. In their catalogues all that is said is that he was an industrialist. George Douglas Miller also gave to the Order one of his private islands, Deer Island, inherited from his father Samuel.



George Douglas Miller, 1847-1932
Benafactor of Bones?

For some time George lived on the property surrounding the Tomb. His son Samuel was born in 1881 and died in 1883 on the "premises." According to the Biographical Record of the Class of Seventy, Yale University, 1870-1904, Miller had "prepared" for Yale at Skull & Bones co-founder, William H. Russell's Collegiate Institute in New Haven. Miller had been in the employ of a New York publishing house, the secretary of the New England Car Spring Company and then he worked with the New York and Straitsville Coal and Iron Company, "a position which came to him through William Walter Phelps (S&B 1860), who had a controlling interest in the company. He was afterwards secretary of the New Haven Electric Light Company"

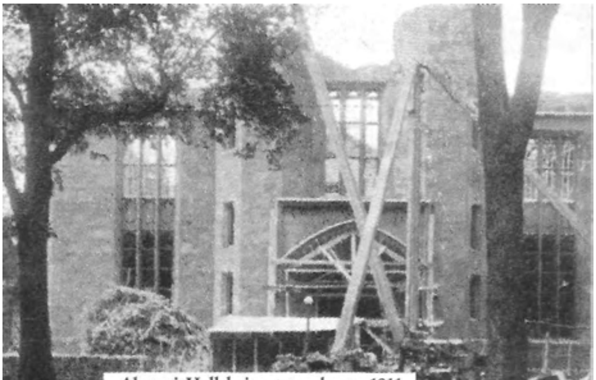


The Tomb, 1906

W W Phelps is a member of the Order who was involved extensively in the Order's influence on Yale.

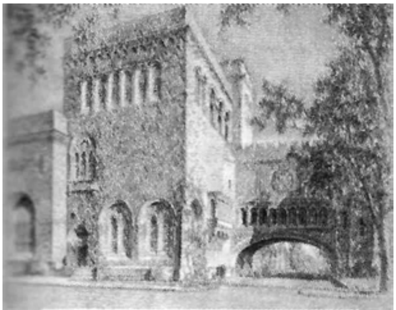
George didn't reminisce about his time in New Haven, his relatives I spoke with knew nothing about his time there and written records are sketchy and sometimes contradictory. As far as I can ascertain, is that George purchased the property all around the Tomb, almost the complete block in the 1870s and early 1880s. There were various buildings both commercial and residential. He then proceeded to raze many of the buildings and built a flat-topped berm around the sides of the Tomb and wanted to build a college such as the Magadelan College at Oxford University. Evarts Tracy (S&B 1890), a member of the NYC architect firm, Tracy & Swartwout began building this college in 1910.

The exterior of the Tomb that we see today was constructed in 1903. The building was reproduced, the original door was turned into a pair of slit windows and the doorway was put in the middle of the two. The north building is the most recent.



Alumni Hall being torn down, 1911

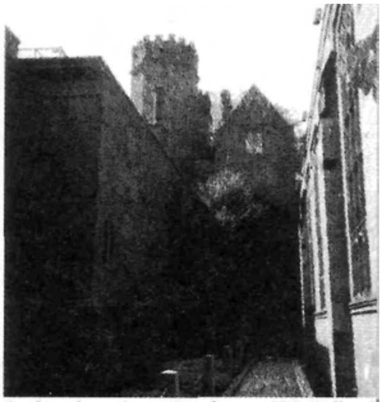
In 1911, Alumni Hall was demolished and it's two large Gothic stone towers were brought down the street and re-erected at the northwest corner of the new addition to the Tomb.



The Old Art Gallery and Gallery Bridge

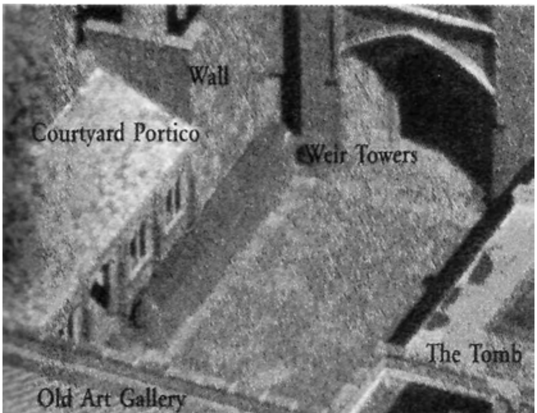
The old Trumbull Gallery was torn down in 1903, after having had windows put in 1868 and then serving as the central administration building until demolished.

John Trumbull and his wife were buried beneath their gallery in 1843. They were moved to Street Hall for a while to be finally laid to rest across High Street in the basement of the Old Art Gallery, right next to the Tomb. Notably above the bridge between the two art school buildings is a "dimensionally correct (30 feet by 60 feet)" windowless replica of a gallery at the Trumbull Gallery. The cloister quadrangle that Miller began was abandoned and in 1912 was purchased by Yale. The building was finally completed in 1924 and was named Weir Hall. It was the home to the School of Architecture for many years. The building was finished using funds from Yale graduate Edward S. Harkness, the son of Stephen Harkness, a Cleveland harness-maker, who was an early investor with John D. Rockefeller and wound up as the second largest shareholder in Standard Oil.



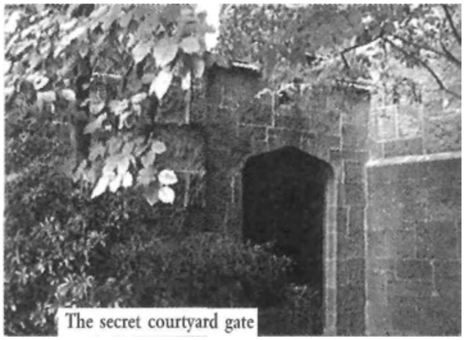
Looking down the small pathway to Weir Hall and Towers. The northeast corner of the Tomb Library is on the left and the dining hall of Jonathan Edwards College is on the right

Harkness donated funds again, some sources say in 1924 others say is 1926, but nonetheless, Harkness bought the rest of the Miller property to the south of the Tomb and Yale commissioned Tracy & Swartwout to design the Old Art Gallery. The original design filled up the whole block from High to York Streets and there were designed perpendicular arms connecting to Weir Hall that would have completely enclosed the Tomb. This design was not built with just about half being built. This was just enough to seal off the south side of the Tomb and secret courtyard.



The Secret Courtyard viewed from over the Old Art Gallery

There appears to be a vestibule at or a door into Weir Towers from the secret courtyard. Inside the courtyard there is a portico and according to reports there are some memorial benches and a statue of a knight.

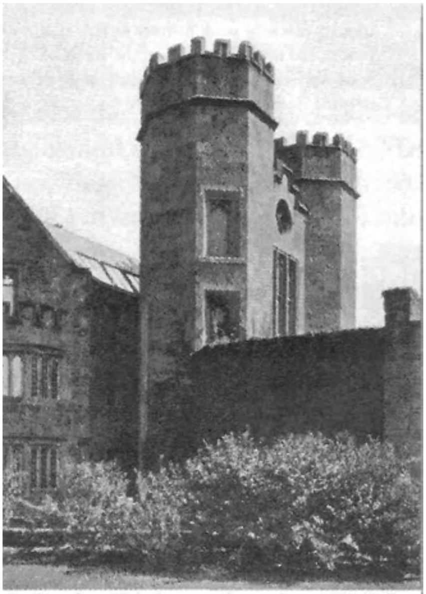

The secret courtyard gate

A gate entrance to the courtyard is on the northwest corner and a high wall encompasses the courtyard completely on the west side connecting again to the Old Art Gallery.

At certain times of the day you may pass through the locked doors of the antechamber of Weir Hall Towers and into Weir Court. Weir Court, abutting on the west side the Tomb's secret courtyard 20-foot tall ivy-covered wall, was built on part of the same plateau that Miller had built up. The space is a small and usually private park amid the bustle of the urban campus and probably very similar to the Bones' secret courtyard on the other side of the wall.


Southern view from Weir Court toward Kahn's Yale Art Gallery

Until 1947, the Department of Architecture was housed in Weir Hall with a view of the secret courtyard, a view they kept when they moved to the top floors of the Louis Kahn designed modernistic completion of the Art Gallery over to York Street. The Tomb was now completely sealed behind the protective facade of the art schools. In 1963 the architecture school moved across York Street but they "still return to Miller's courtyard every spring for the hopeful rituals of commencement."

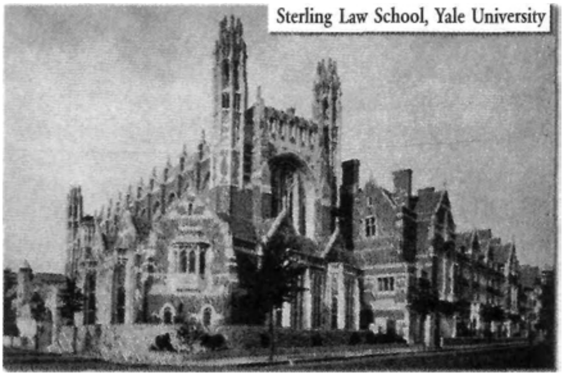

Looking from Weir Court to the northeast, Weir Hall on left, Weir Towers in middle – note, boarded-up windows. The secret courtyard wall goes from right to center

Underneath the Weir Court in 1974-76 there was built, as already mentioned, a large auditorium. This was done without disturbing the large old elm trees. The park-like setting above-ground was restored as it was before the underground structure was built and is natural looking. Personally after visiting the court several times, I didn't realize that there was an underground structure at the site until reading about it later. It was not evident in casual use and perusal of the area.

After the architecture school moved, Weir Hall became part of Jonathan Edwards College, most of the Weir Hall building becoming the college library. The Towers at this time appeared to have become more part of Bones than Yale, with

access curtailed to public and Yalies alike. What the policy is and who owns the Towers are not completely clear.

The Tomb property today is the only private property within the blocks from High to York Streets and Chapel and Grove Streets, the rest belonging to Yale University. From 1911 to 1928 Yale acquired 36 different parcels on the two blocks from Elm to Grove Streets through a series of interesting transactions using "trusts and trusted friends in order to acquire property for itself while vesting legal title in another's name." This was done to keep the University's name off the public records thus not allowing the property owners "to exact a holdout premium." Yale's "false front" acting as the Trustee holding the property was "almost exclusively the Union & New Haven Trust Company," A company with at least three Bones members in the firm, one serving as president for 20 years and Chairman of the Board for 10. Some of these transactions were just simple actions with the trust company holding the property for a few months.


Sterling Law School, Yale University

The University's purchase of the three lots, which gave Yale the entire frontage of High Street from Wall to Grove Streets — where today, stands the Sterling Law School — was a bit more complex. The University acquired the property in a convoluted four-year scheme with Edward Harkness again supplying oil money for the purchase. The parcel was placed in the name of Bonesman Samuel H Fisher (S&B 1889), a New Haven lawyer, a Yale general counsel, a Fellow of the Yale Corporation and Director of New York Trust among many others. Part of the property deal was the site of the Hopkins Grammar School, a prestigious school of long tradition, which many Bonesmen including founder William Huntington Russell attended.


Hopkin's Grammar School

The chairman of the Hopkins School, Bonesman Simeon E. Baldwin (1861), facilitated the deal. Baldwin was part of a very powerful Bones Machine in Connecticut and Yale at the time. He served as Governor of Yale 1911-15, after serving from 1907-10 as the Chief Justice of the Connecticut Supreme Court, having been on the court since 1893 — all the time holding a Yale Professorship of Law.

The Hopkins' property was "held" by Yale University Press, a separate "entity legally distinct from the university," that was very much under the influence of Bones and friends at Yale. Yale even engineered a little detour in Grove Street to undercut a Mr. Edward Bishop who had brokered for Yale some of the harder to secure residential and commercial properties, when he tried to exact a holdout premium. The land acquisition operation was handled by the office of the Treasurer of Yale, which was held by the Order of Skull & Bones for many years.

Treasurers of Ya le 1862-1978

Name	Bones Year	Treasurer Years	Notes
Henry Coit Kingsley	1834	1862-87	Daniel Coit Gilman's uncle
Timothy Dwight	1849	acting - 1887-89	President of Yale 1886-99
William Farnam	1866	1889-99	Yale Corp member, Trustee of SSS 1894-23
Morris Tyler		1900-03	Graduated Yale, 1870, w/George Douglas Miller, Phi Beta Kappa
Thomas Lee McClung	1892	1904-09	Treasurer of US, 1909-12, Bones cellmate of Pierre Jay, first president of NY Federal Reserve Bank
Arthur T. Hadley	1876	acting - 1909-10	President of Yale 1899-1921
George Parmly Day		191042	9 members of Day family in Skull &Bones
Lawrence G. Tithe	1916	1942-54	Director and Partner at Brown Brothers Harriman, Dir of many of New Haven's banks and utilities
Charles Stafford Gage	1925	1954- 66	For many years w/Bones-family firm Mathiesson Chemical, Director, Union & New Haven Trust Company among others
John E. Ecklund	1938	1966-78	Partner in the Bones-dominated New Haven law firm of Dana & Wiggin

As seen a member of the Order was Treasurer of Yale from 1862 to 1978 except two gentlemen who served for 36 years of that 116 year stretch. The one serving longest, 32 years, hailed from a Bones family.

THE ORDER TAKES CONTROL, FIRST YALE, THEN ...

The manipulation for control had been going on at Yale for many years, Frorr America's Secret Establishment by Antony Sutton:

> Daniel Coit Gilman is the key activist in the revolution of education by The Order. The Gilman family came to the United States from Norfolk, England in 1638. On his mother's side, the Coit family came from Wales to Salem, Massachusetts before 1638.
>
> Gilman was bom in Norwich, Connecticut July 8,1831, from a family laced with members of The Order and links to Yale College (as it was known at that time). Uncle Henry Coit Kingsley (The Order '34) was Treasurer of Yale from 1862 to 1886. James I. Kingsley was Gilman's uncle and a Professor at Yale. William M. Kingsley, a cousin, was editor of the influential journal New Englander.

On the Coit side of the family, Joshua Coit was a member of The Order in 1853 as well as William Coit in 1887.

Gilman's brother-in-law, the Reverend Joseph Parrish Thompson ('38) was in The Order.

Gilman returned from Europe in late 1855 and spent the next 14 years in New Haven, Connecticut - almost entirely in and around Yale, consolidating the power of The Order.

His first task in 1856 was to incorporate Skull & Bones as a legal entity under the name of The Russell Trust. Gilman became Treasurer and William H. Russell, the cofounder, was President. It is notable that there is no mention of The Order, Skull & Bones, The Russell Trust, or any secret society activity in Gilman's biography, nor in open records. The Order, so far as its members are concerned, is designed to be secret, and apart from one or two inconsequential slips, meaningless unless one has the whole picture. The Order has been remarkably adept at keeping its secret. In other words, The Order fulfills our first requirement for a conspiracy - i.e., IT IS SECRET.

The information on The Order that we are using surfaced by accident. In a way similar to the surfacing of the Illuminati papers in 1783 when a messenger carrying Illuminati papers was killed and the Bavarian police found the documents. All that exists publicly for The Order is the charter of the Russell Trust, and that tells you nothing

On the public record then, Gilman became assistant Librarian at Yale in the fall of 1856 and "in October he was chosen to fill a vacancy on the New Haven Board of Education." In 1858 he was appointed Librarian at Yale. Then he moved to bigger tasks.

The Sheffield Scientific School

The Sheffield Scientific School, the science departments at Yale, exemplifies the way in which The Order came to control Yale and then the United States.

In the early 1850s, Yale science was insignificant, just two or three very small departments. In 1861 these were concentrated into the Sheffield Scientific School with private funds from Joseph E. Sheffield. Gilman went to work to raise more funds for expansion.

Gilman's brother had married the daughter of Chemistry Professor Benjamin Silliman (The Order, 1837). This brought Gilman into contact with Professor Dana, also a member of the Silliman family, and this group decided that Gilman should write a report on reorganization of Sheffield. This was done and entitled Proposed Plan for the Complete Reorganization of the School of Science Connected with Yale College.

While this plan was worked out, friends and members of The Order made moves in Washington, D.C., and the Connecticut State Legislature to get state funding for the Sheffield Scientific School. The Morrill Land Bill was introduced into Congress in 1857, passed in 1859, but vetoed by President Buchanan. It was later signed by President Lincoln. This bill, now known as the Land Grant College Act, donated public lands for State colleges of agriculture and sciences... and of course Gilman's report on just such a college was ready. The legal procedure was for the Federal government to issue land scrip in proportion to a state's representation, but state legislatures first had to pass legislation accepting the scrip. Not only was Daniel Gilman first on the scene to get Federal land scrip, he was first among all the states and grabbed all of Connecticut's share for Sheffield Scientific School! Gilman had, of course, tailored his report to fit the amount forthcoming for Connecticut. No other institution in Connecticut received even a whisper until 1893, when Storrs Agricultural College received a land grant.

Of course it helped that a member of The Order, Augustus Brandegee ('49), was speaker of the Connecticut State Legislature in 1861 when the state bill was moving through, accepting Connecticut's share for Sheffield. Other members of The Order, like Stephen W Kellogg ('46) and William Russell ('33), were either in the State Legislature or had influence from past service.

The Order repeated the same grab for public funds in New York State. All of New York's share of the Land Grant College Act went to Cornell University. Andrew Dickson White,

a member of our trio, was the key activist in New York and later became first President of Cornell. Daniel Gilman was rewarded by Yale and became Professor of Physical Geography at Sheffield in 1863.

In brief, The Order was able to corner the total state shares for Connecticut and New York, cutting out other scholastic institutions. This is the first example of scores we shall present in this series - how The Order uses public funds for its own objectives.

And this, of course, is the great advantage of Hegel for an elite. The State is absolute. But the State is also a fiction. So if The Order can manipulate the State, it in effect becomes the absolute. A neat game. And like the Hegelian dialectic process we cited in the first volume, The Order has worked it like a charm.

Back to Sheffield Scientific School. The Order now had funds for Sheffield and proceeded to consolidate its control. In February 1871 the School was incorporated and the following became trustees:

Charles J. Sheffield
Prof. G.J. Brush (Gilman's close friend)
Daniel Coit Gilman (The Order, '52)
W.T. Trowbridge
John S. Beach (The Order, '39)
William W. Phelps (The Order, '60)

Out of six trustees, three were in The Order. In addition, George St. John Sheffield, son of the benefactor, was initiated in 1863, and the first Dean of Sheffield was J.A. Porter, also the first member of Scroll & Key (the supposedly competitive senior society at Yale).

How The Order Came To Control Yale University

From Sheffield Scientific School The Order broadened its horizons.

The Order's control over all Yale was evident by the 1870s, even under the administration of Noah Porter (1871-1881), who was not a member. In the decades after the 1870s, The Order tightened its grip The Iconoclast (October 13, 1873) summarizes the facts we have presented on control of Yale by The Order, without being fully aware of the details:

They have obtained control of Yale. Its business is performed by them. Money paid to the college must pass into their hands, and be subject to their will. No doubt they are worthy men in themselves, but the many whom they looked down upon while in college, cannot so far forget as to give money freely into their hands. Men in Wall Street complain that the college comes straight to them for help, instead of asking each graduate for his share. The reason is found in a remark made by one of Yale's and America's Erst men: "Few will give but Bones men, and they care far more for their society than they do for the college." The Woolsey Fund has but a struggling existence, for kindred reasons.

Here, then, appears the true reason for Yale's poverty. She is controlled by a few men who shut themselves off from others, and assume to be their superiors ...

The anonymous writer of Iconoclast blames The Order for the poverty of Yale. But worse was to come. Then-President Noah Porter the last of the clerical Presidents of Yale (1871-1886), and the last without either membership or family connections to The Order. After 1886 the Yale Presidency became almost a fiefdom for The Order.

From 1886 to 1899, member Timothy Dwight ('49) was President, followed by another member of The Order, Arthur Twining Hadley (1899 to 1921). Then came James R. Angell (1921-37), not a member of The Order, who came to Yale from the University of Chicago where he worked with Dewey, built the School of Education, and was past President of the American Psychological Association.

From 1937 to 1950 Charles Seymour, a member of The Order, was President followed by Alfred Whitney Griswold from 1950 to 1963 Griswold was not a member, but both the Griswold and Whitney families have members in The Order. For example, Dwight Torrey Griswold ('08) and William Edward Schenk Griswold ('99) were in The Order. In 1963 Kingman Brewster took over as President. The Brewster family has had several members in The Order, in law and the ministry rather than education.

We can best conclude this memorandum with a quotation from the anonymous Yale observer:

> Whatever want the college suffers, whatever is lacking in her educational course, whatever disgrace lies in her poor buildings, whatever embarrassments have beset her needy students, so far as money could have availed, the weight of blame lies upon the ill-starred society. The pecuniary question is one of the future as well as of the present and past. Year by year the deadly evil is growing. The society was never as obnoxious to the college as it is today, and it is just this ill-feeling that shuts the pockets of nonmembers. Never before has it shown such arrogance and self fancied superiority. It grasps the College Press and endeavors to rule in all. It does not deign to show its credentials, but clutches at power with the silence of conscious guilt. (pages 65-69)

WHERE DID THE MONEY COME FROM? WHERE DID IT GO?

Where did George Douglas Miller's money come from and how did it happen that he owned the land around the Tomb? My surmise is that Mr. Miller was acting as a beard for the Skull & Bones Trust. The main front man for the Order's activities in New Haven since the mid 1850s, Mr. Gilman, had moved on in the early 1870s to serve as the first President of the University of California in 1872.


Daniel Coit Gilman

The Boodle Boys, as Skull & Bones members were being called at the time, needed a new front man and prevailed upon the obliging Mr. Miller. George spent his first year after graduation, 1871, working in the college library system — similar to Mr. Gilman's return to Yale. He then went off into the world but he didn't really get all that far and soon came back to New Haven. Once back in town, George soon began to buy up the property around the Tomb and served as a secretary for a local utility.

He held many of his positions from his association with Bonesman W.W. Phelps, who was the son-in-law and estate trustee of John Sheffield the benefactor of Sheffield Scientific School (SSS). Phelps was a congressman, US Minister to Austria and Germany and a very successful business man. He was on the Board of Directors of the National City Bank, The Second National Bank of NY, the United States Trust Company, nine railroad firms and others. Mr. Phelps was an incorporator and trustee for many years of Sheffield Scientific School, which was phased out in the 1950s and became officially part of Yale but with the Trust still exercising control over the land.

Back in 1911 when Miller's money ran out, the Order had assumed the Presidency of Yale for over 20 years and in the Treasurer's office for over 40 years. They kept this influence into the 1970s through personnel in powerful positions and the distribution of oil monies. And — the great Gothic Yale University was built.

Why spend theirs, when it could all so easily be done with other people's money?

And Bones wouldn't get the rap for being too haughty and powerful.

The secret society holdings are now little private islands surround by the burgeoning Yale University.

Why George Miller left New Haven is unrecorded, he spent his life after New Haven as an international traveler and dabbled some in real estate in Albany, New York. He didn't pass on a large estate. The only thing that a grandchild remembers are trips to Deer Island and something called Miller's Folly— some strange building that their grandfather had owned.

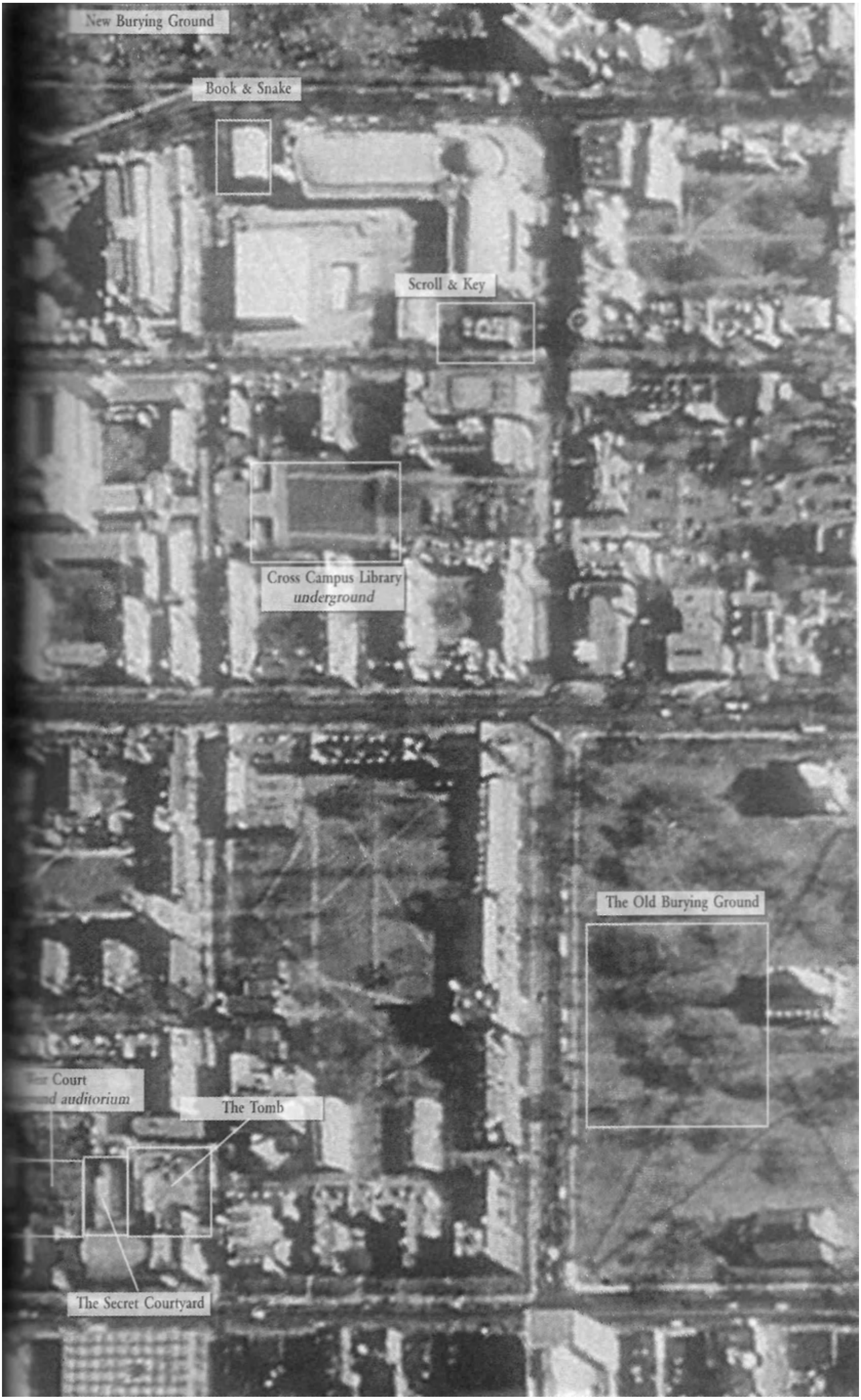
Miller's Folly was a famous spite building in Albany, New York, where George, described as "an eccentric man of means," lived in a fashionable part of town.

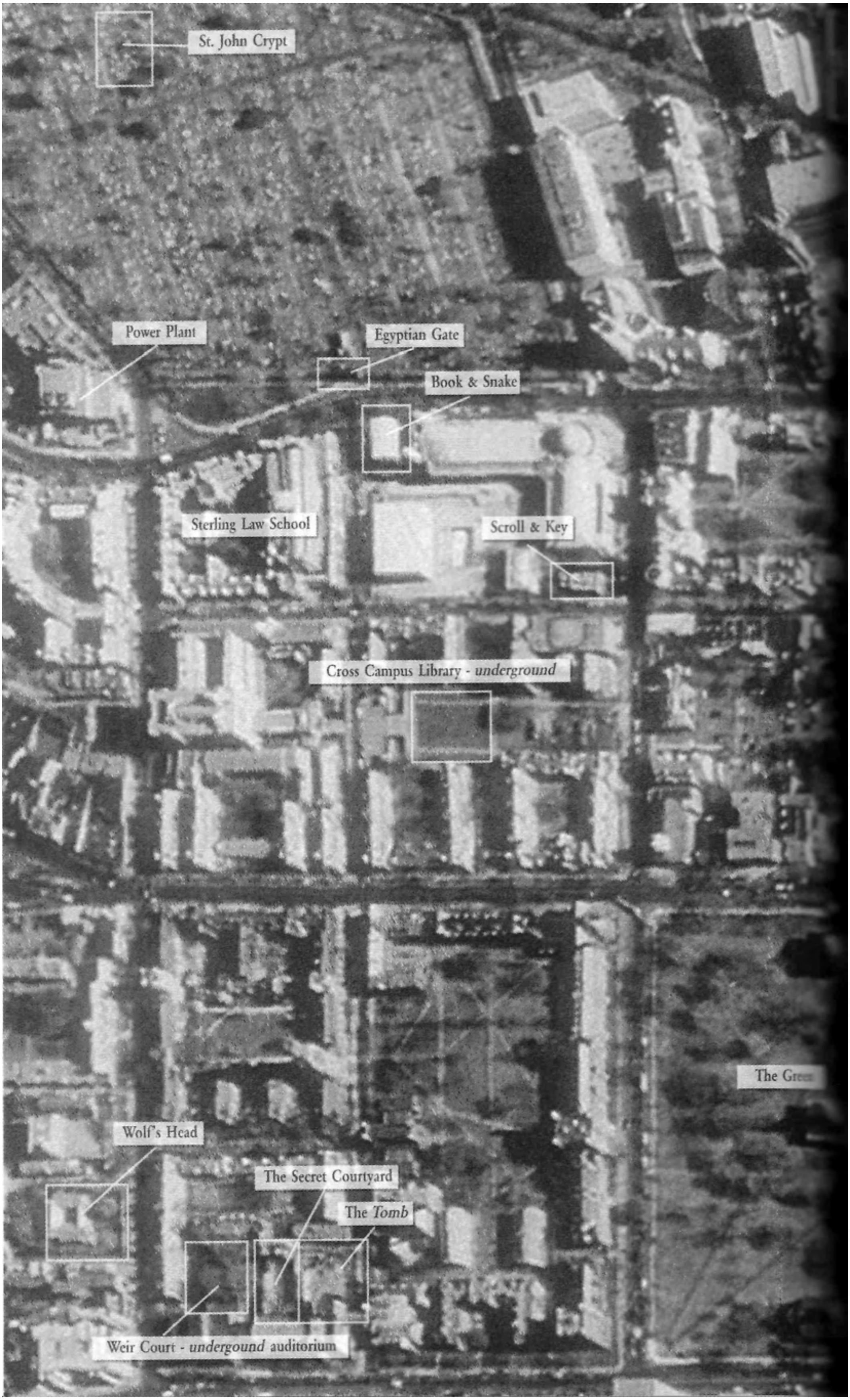
The Hampton Hotel a fashionable destination place in Downtown Alb, at State and Broadway and "was noted in the 1920's for its roof gardens, which offered a romantic view of the city and the river.

"George built a building on a very small piece of property that wasn't large enough to be occupied but tall enough to block the hotel's vistas. George expected the hotel owners to pay him money to reclaim their scenery. Instead, the Hampton built higher, so did George!

"The Hampton closed its roof and turned it into guest rooms. George's building, never finished, with no stairs to its upper stories, became a home for pigeons, unused for a generation, a monument to perversity ... ."

Sources other than noted in text:
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New Burying Ground
Book & Snake
Scroll & Key
Cross Campus Library
underground
The Old Burying Ground
Court
auditorium
The Tomb
The Secret Courtyard



St. John Crypt
Power Plant
Egyptian Gate
Book & Snake
Sterling Law School
Scroll & Key
Cross Campus Library - *underground*
The Green
Wolf's Head
The Secret Courtyard
The *Tomb*
Weir Court - *undergound* auditorium

GOD AND MAN AND MAGIC AT YALE

KRIS MILLEGAN
AUGUST 2003

WALKING AROUND YALE, I found myself in amazement at the architecture and was thinking, "When did the Goths invade?" If a person hasn't been to the Yale campus one truly has no idea at the many awe-inspiring buildings — many resembling Gothic cathedrals. A cathedral is a sanctified church containing the cathedra, the bishop's seat of power from which is ruled the diocese.

The Saint Denis Basilica near Paris is considered by many to be the first example of Gothic architecture. It was begun in 1136 and finished near the end of the thirteenth century. It was built on the site where, according to legend, Saint Denis, the patron saint of France and legendary first bishop of Paris, stopped preaching, lay down his head and died. Quite literally, or so the tale goes (according to Golden Legends, compiled in the 13th century and destined to be a bestseller in the 15th century, second only to the Bible) that, around the year 250 AD, St. Denis went to convert the Gauls and was beheaded by the Romans for his ministrations. The decapitated St. Denis began to preach a sermon and, carrying his head in his hands, he then walked to the cathedral site and expired.

It eventually became known as the "royal necropolis of France" because of all the bluebloods buried there. From the Merovigans to Carolingians to Carpetians to Valois to Bourbons, they are all there, all mixed together it seems. This is because, during the revolutionary fervor of the late 1700s in France, the tombs were opened and the remains were all dumped into two mass graves. When the Bourbons were briefly restored they weren't able to tell who's who and, so, buried them all together in a big vault with brass plaques on the outside telling us who all is inside. It's sort of like a big bone pile. Funny, there are lots of bones in this story.

These massive stone buildings, cathedrals, especially ones such as Chartres, are known for their mathematical and alchemical aspects. The rise of the cathedrals — some of the most significant buildings of the medieval period — are linked by many historians and researchers with the rise of the Knights Templar and, later, the Freemasons. The builder of St. Denis, Abbot Suger, used the Templars for a capital transfer transaction with King Louis VII of France in 1148, while he was on the Second Crusade.



Chartres Cathederal



Gutenberg

In the 1430s Johannes Gutenberg took four years building his press and then, in another fifteen years (1455). printed his famous Bibles. This helped to usher in the Renaissance and the downfall of the Papacy and its fiefdoms. On Halloween in 1517, a well-read Martin Luther nailed his ninety-five theses to the church door, marking the beginning of the Protestant Reformation. Later, in the early 1530s, when snubbed for a divorce, Henry VIII started his own church, the Church of England. By the 1550s people were going to jail in London for practicing their faith differently from proscribed ecclesiastical tradition.

FAITH OF OUR FATHERS



Pilgrims giving thanks in the New World

As time and Gutenberg's press spread the Word, the Reformation increased the ferment for social, religious and political change. Around the 1560s in England there emerged a group who were, because of their endeavors to purify the Church of England in theological and liturgical matters, derisively called Puritans. They called themselves Saints and people of God. Other of the faithful wished to separate completely from the mother-church and start a new church. They were called Pilgrims and settled in New England in Massachusetts, landing at Plymouth Rock on December 21, 1620.

Not quite twenty years later a very devout group of Puritans settled in Connecticut on land purchased from the Quinnipiac Indians in 1638. The land was not theirs by legal right and they had no deed. The new colony, named New Haven, based part of its claim on the discovery by John Cabot, who had landed somewhere on the North American shore on the feast-day of St. John the Baptist, June 24, 1497. The New Haven Colony was the wealthiest group to settle in the new world so far. The leaders and their congregation wished to build a new Zion on biblical principles and prepare for Christ's return and final judgment.



Saint John the Baptist

The story of New Haven begins in the parish of Saint Stephen's, Coleman Street, London. Saul/Paul stoned St. Stephen to death outside Damascus. St. Stephen was one of the original seven deacons and the first Christian


St. Stephenns, Coleman Street, London

martyr. Saint Stephen's feast day is December 26th.

Saint Stephen's was "one of London's most influential" pulpits at the time. In October of 1624, 27 year-old, John Davenport was elected vicar. After fending off accusations of being a Puritan, he was allowed his position and became quite celebrated.


Saint Stephen

Later in 1633, when Charles I appointed William Laud to the office of Archbishop of Canterbury with complete authority to deal with dissenters within the Church of England, Davenport left England for exile in the Netherlands. While there, Davenport read the impassioned accounts from his friend John Cotton about New England and soon proceeded back to England to gather his flock to save them from the coming punishment from God soon to be visited upon England in retribution for its manifold and persistent wickedness. He was hoping to congregate the faithful and seek shelter in New England where the saints could prepare for Christ's return and the final judgment.


John Davenport

Puritans were true believers and proponents of the strict doctrines of John Calvin, a French-born, theologian whose influence can be still felt today. Calvinism beliefs codified at the Synod of Dordt in 1618/19 are based on total dependence on God and predestination. These are:

- that all humans are, inherently wicked and offend God;
- that there is an elect that God chose to be saved regardless of their actions and how deserving;
- that Jesus died just for those special elect, not for everyone;
- that once God has chosen an elect they are saved by irresistible grace no matter what;
- that these elect or Saints cannot fall from grace once saved.



The most pious, the Hyper-Calvinists (which the New Haven Colony were) hold to the tenet of the doctrine of reprobation, the belief that God purposefully foreordains damnation. In other words, there are those who are predestined to Hell. Some being the Elect doing "God's work" through "sanctified" devilish activities. Regular Hell's Angels ....

NEW HAVEN

Wisdom hath builded her house, she hath hewn out her seven pillars.

Davenport's main ally was his childhood playmate Theophilius Eaton, a commercial agent handling James I affairs in Denmark and the London agent for Christian IV of Denmark. Eaton was deputy-governor of the Eastland Company, an original subscriber to the Massachusetts Bay Company and a fervent Puritan

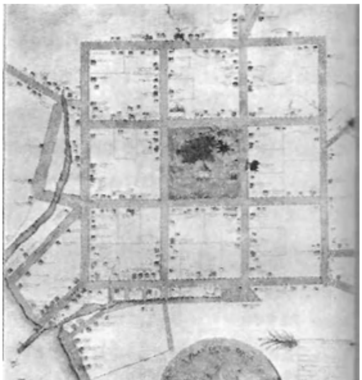
This group didn't starve their first winter, and Eaton was Governor of the colony until his death in 1658. Mr. Eaton had married Anne Lloyd, widow of Thomas Yale and grandmother of Elihu Yale, benefactor and namesake of Yale University. New Haven was a theocracy with only male church members — The Elect — allowed to vote and hold office. Although they were a small fraction of the total population, they ruled over the majority. No matter their actual piety, to the people of God, the rest of the populace was considered hopelessly damned. A person only became one of the Saints through pre-ordained mystical unavoidable grace that was made manifest through a somewhat mystical "born-again" experience. Mosaic Law was the rule of the colony with


Governor Elihu Yale and his cousin David. Elihu's father was one of the original settlers of New Haven.

Mr. Eaton as "Judge" and Rev. Davenport their preacher prophet. They were the two main players of the New Haven plantation's original "seven pillars." This all eventually fell apart when the contested title to the land and other forces led to absorption of the Colony by Connecticut in 1664.

The town of the New Haven Colony was laid out in 1638 into nine squares using magnetic north. The first street "was laid out half a mile in length and upon it as a base, a square was described." Plot allocations were completed by 1641 with the center square being public. The four streets State, Church, College and York run east/west, with George, Chapel, Elm and Grove as cross streets. New streets bisecting the originals in 1784 were named Orange, Wall, Crown, Temple and High.

In 1640 in the middle of the public square there was built a wooden meetinghouse. Over the years there have been many different congregations on the green: the "Prime Ancient Church," the "First Society," the White Haven Society," the "New Lights," the "Old Lights" and others. Over the years there has been much theological discord about just who was saved and who wasn't, and through the many revivals the congregations split, reformed and reunited several times.


A 1748 map of New Haven by General Wadsworth. Yale College is one building on the corner of College and Chapel.

Behind the center church is the "Old Burying Ground," directly opposite Yale College. By 1800, in this relatively small area, there were packed more than 5,000 skeletons and, as time

passed, the overcrowding became a problem. A new center church was built "on top over some of the graves" in the early 1810s when it "was not an uncommon sight to see animals digging up the bones."


Saint John the Evangilist

The "official" founding date of the Masonic Grand Lodge of England, June 24, 1717, is the feast day of their primary patron saint, St. John the Baptist. The oldest lodge in Connecticut is New Haven's Hiram Lodge. It was given its charter November 12, 1750 and held it's first meeting on Thursday, December 27,1750, the feast day of the other patron saint of Masonry, mystic and apocalyptic writer, St. John the Evangelist. The Masons still meet on Thursday nights, the same night another secret society also gathers together in a Temple on High Street surrounded by the Yale campus and New Haven, The Order of Skull & Bones.

When New Haven grew from a town to a city in 1784, the first new street was High Street, going only within the original town square area from George to Grove.

In the middle of town at the corner of High and Chapel Streets, turning-up High and going under the Art Gallery bridge, on the west side of the street, is the Tomb, built in 1856 and expanded several times. Behind it is the Secret Courtyard and towers of Weir Hall. Down High Street is the world famous Sterling Library. At the next corner down High St. is the Yale Law School, alma mater of Bill & Hillary Clinton, Gerald Ford, Joe Lieberman and Clarence Thomas, among others. Across the street, on the other corner, is a three story white-marble mausoleum-looking building. This is the "meeting-hall" of the secret society, Book & Snake. Reporter Bob Woodward and former Treasury Secretary
Mcklaus Brady are members.



THE NEW BURYING GROUND

Directly at the end of High Street is the oldest family-plot cemetery in the country, built in 1797 as a garden for the dead. This "New Burying Ground" was built "in the country" at the end of High Street at Grove Street by a syndicate of 32 prominent families. The old graves were relocated there from the old churchyard on The Green in 1821. Many famous persons are buried there, including Eli Whitney, Roger Sherman, Charles Goodyear and many of Yale's presidents. Surrounded by Yale University, it encompasses 16 acres in downtown modern New Haven, and has hundreds of obelisks and monuments.

The entrance is via a huge Egyptian Revival-style gate built by Henry Austin in 1845 out of the same type of brownstone as the "Tomb." It displays the inscription "The Dead Shall Be Raised" beneath the outstretched winged-sun disk.





Horus, was one the main Egyptian gods, son and heir to Ra. There was a Horus the elder and a Horus the younger. He was generally depicted as a falcon headed being, but Horus had at least seven different forms. Asked by his sister, Isis, to avenge the death of her brother/husband, Osiris, Horus asked the god Thoth, the master magician, for help. With Thoth's aid, Horus became "a great sun-disk, with resplendent wings outstretched on either side." After many battles, Horus defeats Set and Osiris is resurrected.

"Horus then commanded Thoth that the Winged-Sun-Disk, with Uraei [snakes], should be brought into every sanctuary wherein he dwelt, and into every sanctuary of all the gods of the lands of the South and the North, and in Amentet, in order that they might drive away evil from therein ..."

THE QUICK AND THE DEAD?



Ezra Stiles's son was a founder of Phi Beta Kappa at Yale.

Ezra Stiles, president of Yale College, was the first to suggest that freed slaves be sent back to Africa. Funds for such a colony began to be collected in 1776 and the American Colonization Society was founded in 1817. This was not some altruistic crusade but was "formed solely for the sending to Africa of free Negroes, who were considered extremely dangerous."



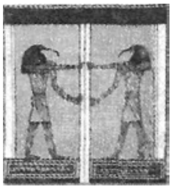
Jehudi Ashmun

Ezra Stiles is buried at the New Haven Burying Ground, so is Jehudi Ashmun, who some consider the "founder" of Liberia (1822). Some praise him, others say he was dictatorial and "convinced that African-Americans were not capable of running their own political affairs." He rescheduled an election after bis candidates lost and fixed the next one. This set the stage for years of factional strife. Jehudi left Africa ill with fever and died just a few days after landing, in Boston on August 25,1828. His funeral was held two day later in New Haven and he was interned in a sarcophagus that today lies just inside the massive Egyptian gate. Jehudi wasn't a Yalie, (his Whitney family connection may be what brought him to rest in New Haven) but the main road curving around the outside of the cemetery was renamed in the 1840s Ashmun Street, near the time when the Egyptian gate was built.



The Ashmun tomb just inside the gate. The New Burying Ground is commonly known now as the Grove Street Cemetery

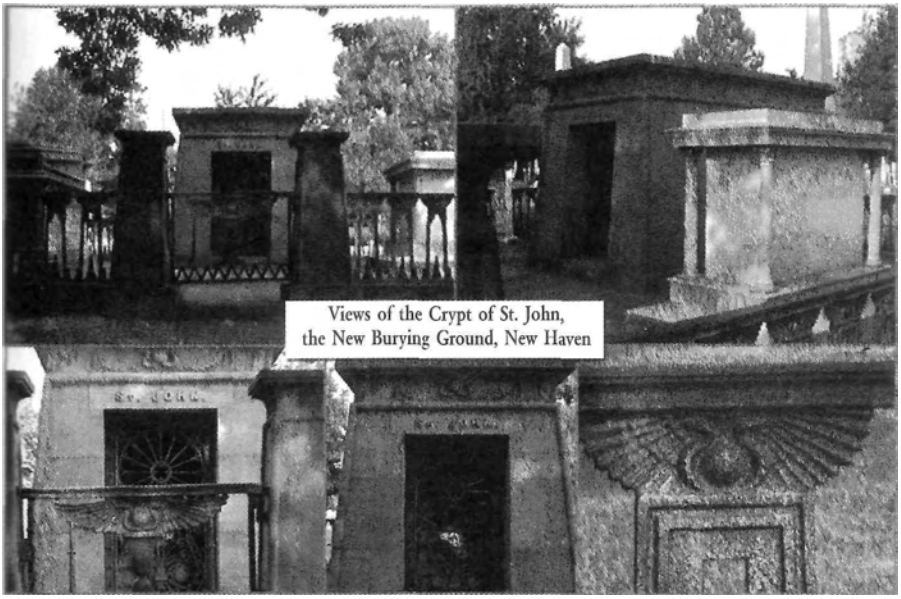
Ashmun is the Egyptian name for Hermopolis, the home of the sacred eight, the site of the world's creation out of chaos, the cosmic egg. Hermopolis, believed to be city



"where the sun first rose on earth," was also the center of the god of wisdom and learning, the ibis-headed moon-god Thoth. The Greeks called him Hermes Trismegistus, the god of time and "conductor of the dead," the inventor of alchemy and magic, and a traditional source for Western ritual magic

THE CRYPT OF SAINT JOHN

In the middle of the "garden for the dead" is a most interesting mausoleum dating from the 1870s: the crypt of St. John. It seems to be built of the same brownstone as both the Skull & Bone's "Tomb" and the massive Egyptian entrance gate. Note that the winged-sun disk with snakes is prominently displayed. On each side are flanking white marble sepulchers, and the plot is completely enclosed by an iron fence and stone pillars. The stone pillars are similar to those along the cemetery fence. This bone house is in Yale's section of the cemetery with many Bonesmen nearby.



Views of the Crypt of St. John, the New Burying Ground, New Haven

No other headstones or crypts in the cemetery use the winged-disk motif. Buried inside are Samuel St. John and wife and on either side in non-identical white sarcophagi are Sheffields.



Sheffield Scientific School circa 1905

Joseph Sheffield's many bequests to Yale earned for him the honor of having the science department, the Sheffield Scientific School (SSS), named after him. It was through the 'SSS' that Skull & Bones came to control Yale. Daniel Gilman, an incorporator of the Russell Trust Association, officially incorporated SSS in 1871, with two other Bonesmen including William W. Phelps financier, congressman, ambassador and

son-in-law of Mr. Sheffield. Soon Yale, as written in 1873, became "controlled by a few men who shut themselves off from others, and assume to be their superiors ..."

BOOK & SNAKE

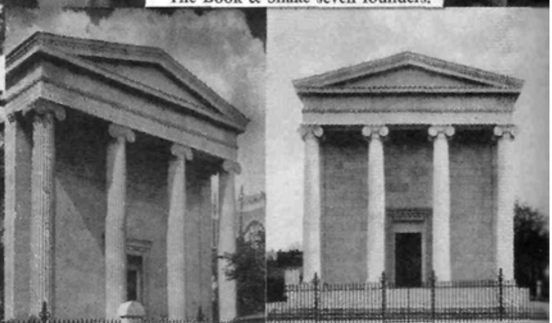
The secret society, Book & Snake, began at 'SSS' in 1865. The founding club's picture shows them gathered around a similar skull, one without a jawbone, as does Bones in its annual photos. Across from the cemetery's gate in 1901,



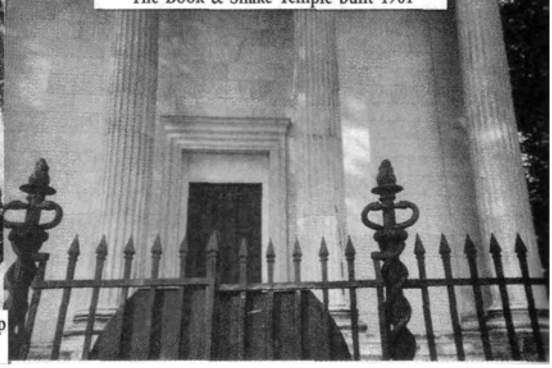
Looking north up High Street - 1947 at the top on the right is the back of Book & Snake



The Book & Snake seven founders.



The Book & Snake Temple built 1901



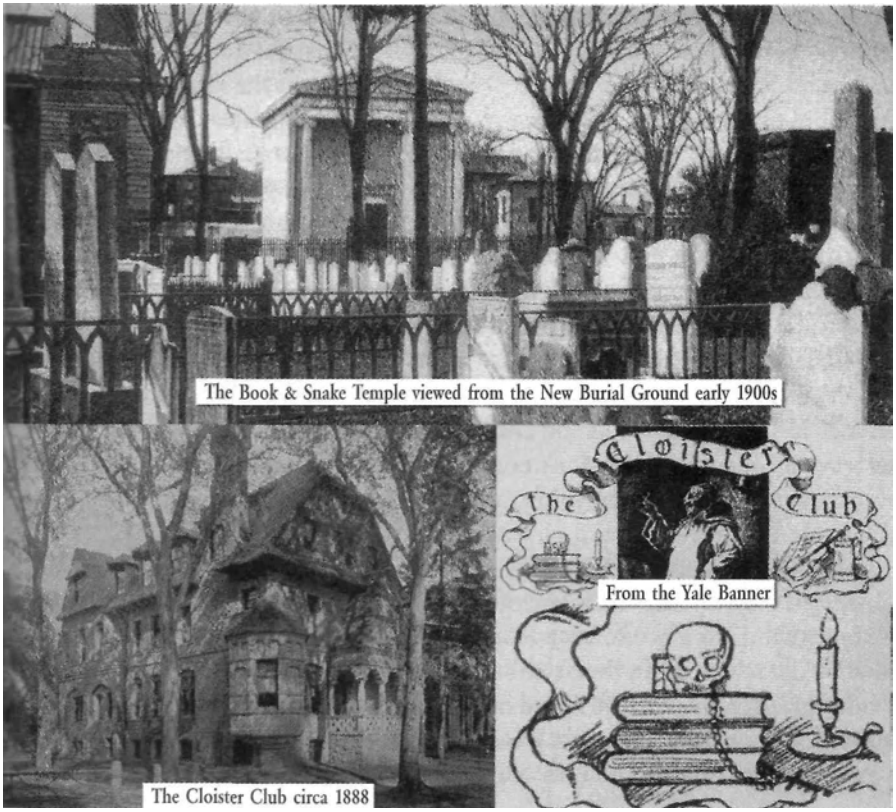
Book & Snake built their huge Greek Ionic white windowless mausoleum clubhouse surrounded by iron fencing using iron Thoth's staff as posts. When you put together the winged circle and the entwined snakes you have the caduceus or staff of Mercury.



The Cloister, S.S.S.

The Book & Snake Pin

A connection between Book & Snake and Skull & Bones appears to exist. There is the very simple reversal of the initials of the groups, S&B and B&S. For many years Book & Snake had a living-quarters house further down Grove Street known as the Cloister Club, which associated itself with the symbol of the jawless skull chained to a cross.



The Book & Snake Temple viewed from the New Burial Ground early 1900s

The Cloister Club circa 1888

From the Yale Banner

MAGIC IS AS MAGIC DOES

According to the US News & World Report, May 13,1991 When asked by a reporter "if he had news about the rebellion in Iraq?" George HW Bush answered only with the code-word seven. According to the magazine's source seven refers to the fact that, because Skull & Bones has fifteen members, a majority eight vote means yes and seven votes represents a no, lose or fail. "The source also reports that when the president was invited to a meeting in the Tomb, ... he declined because he could not enter its inner sanctum without his Secret Service officers, none of whom are members. Bush was then fined — and he subsequently paid — $3.22 for missing a meeting."

"322" is the Order's particular, peculiar number, and is on the door and inlaid on the floor of their sanctum sanctorum in the upstairs of the original hall. What "322" means has been debated for years. Some say that it relates to the year 1832 when the Yale society was founded and the second '2' meant it was a second chapter of a German secret society. Some say it represents the date of the death of Demosthenes, claiming it was upon his philosophy that Bones was founded, Others point to the occultic and numerological aspects of the number. Again there are several differing explanations. One being that 322 represents "the symbolic dimensions for an isosceles triangle with three as the base and the twos becoming equal sides. "In an isosceles triangle with the point of the apex representing a Logos, and the two equal sides flowing from it representing the masculine and feminine rays, the horizontal base-line stands for the physical foundation from which the manifested objective world starts into existence."

The most visible and recognized symbol of the group is the skull and crossbones. A symbol of death, that is found on bottles of poison, pirates flags and the Nazi totenkopf, "death's head" the insignia of the Nazi Schutzstaffel or, as commonly known, the SS. It has been used in Prussia for elite troops as far back as 1740.

Some historians date the origin of the skull and crossbones to the late Middle Ages, during that period doctors were using the symbol as a sign of quarantine. It was drawn on doors of patients with strange and/or deadly maladies. After the Inquisition began in the 13th century, and the persecution of heretics by ecclesiastical tribunals drove non-Catholic thought underground, the heretics began using skull and crossbones to ward off persecutors. There was a slight difference in the heretic's skull and crossbones. It had no lower jaw, which signified secrecy and silence. Many don't even notice the missing mandible. The symbol soon began showing up on ship's masts, at first used to keep people away. Later it was used by privateers and pirates.

An understanding of Masonry, the Knights Templars and the preservation of the old mystery schools is emerging, and evidence is accumulating about the Knights Templars devotions to St. John, Mary Magdalene and their use of the Skull and Crossbones in their symbology, both by the original Knights Templars, who were disbanded in 1307, and by the current Masonic commanderies. I have a Xeroxed page from a very old Masonic book that uses the same exact skull and bones woodcut that Bones uses as a symbol of Knights Templars.

From a private paper on Skull & Bones:

> the skull represented the Temple of wisdom, which was later Christianized for concealment and referred to as the upper room. It is the room at the top of the 33 vertebra of the spine which represented the path to the upper room; the equivalent of the journey through life or the road to enlightenment.
>
> ... The crossed bones represents the two pillars, which stand at the threshold to the pathway to the Temple of Wisdom. One bone represents Knowledge the other represents Understanding. This Temple of Wisdom is believed by the occultists to be the structure within which the human consciousness resides. When the neophyte becomes the dweller at the Threshold, he symbolically stands at the intersection of the crossed bones. If he chooses to pass through the threshold, he no longer resides only in the outer, material world; but he has become a dweller in a land of new consciousness to grow in self-awareness through Knowledge and Understanding. The neophyte symbolically dies or falls asleep to the outer world as the consciousness turns from outward concerns to inner concerns, knowing when he arrives at the Temple of Wisdom he will awaken or become resurrected to a new world order.

A new world order! Illuminatist Adam Weishaupt called for cosmopolitanism. Hitler and Goebbels proclaimed the Third Reich a New World Order. George HW Bush, an Order of Skull & Bones member, used the term several times during his US presidential term. On September 11, 1990 in an address to a Joint Session of the US Congress, exactly eleven years before Flight Eleven crashed into the twin towers, President George HW Bush said:

> We stand today at a unique and extraordinary moment. The crisis in the Persian Gulf, as grave as it is, also offers a rare opportunity to move toward an historic period of cooperation. Out of these troubled times, our fifth objective - a new world order - can emerge: a new era — freer from the threat of terror, stronger in the pursuit of justice, and more secure in the quest for peace. An era in which the nations of the world, East and West, North and South, can prosper and live in harmony. A hundred generations have searched for this elusive path to peace, while a thousand wars raged across the span of human endeavor. Today that new world is struggling to be born, a world quite different from the one we've known.

WHAT IS IT WITH THIS PREOCCUPATION WITH NEW WORLD ORDERS AND NEW ERAS?

Some of the most interesting research to come out about the Knights Templars and Freemasons are the researches by Christopher Knight & Robert Lomas in their books the Hiram's Key and The Second Messiah. The books of Michael Baigent, Richard Lee and Henry Lincoln were some of the first to explore these topics. Also there are the books by Lynn Picknett and Clive Prince, The Templar Revelation and The Stargate Conspiracy. And one last one I would like to mention

by name, The Warriors and the Bankers by Alan Butler and Stephen Dafoe. Many others are also relevant to understanding this history of secret societies, some specifically about the chapel at Rosslyn, Scotland and the chapel of Sauniere at Renne-le-Chateau, France. First century studies, the study of intelligence services and methods, financial studies and banking histories are helpful in understanding the reach and rolodexes of these small but powerful secret organizations.

The basic story is that in 70 AD, when Titus was sacking Jerusalem various familial groups responsible for differing duties, generally connected with Temple obligations, gathered their items of diligence such as sacred oils, treasures, and hid them in caves in the Temple Mount and other areas of the country. These families comprised of members of the various priesthoods and royal lines then dispersed, many towards Europe, producing the "bluebloods." According to Knight and Lomas, a familial secret society existed named Rex Deus that was revealed by a father to his chosen son, upon this son reaching the age of 21. This group emerged above-ground with the Crusades, supposedly in accordance with prophecies in Daniel and Isaiah.

From The Second Messiah:

> The picture that was emerging was of a group of European noble families, descended from Jewish Lines of David and Aaron, who escaped from Jerusalem shortly before, or possibly even after, the fall of the Temple. They had passed down the knowledge of the artifacts concealed beneath the Temple to a chosen son (not necessarily the eldest) of each family. Some of the families involved were the Counts of Champagne, Lords of Gisors, Lords of Payens, Counts of Fontaine, Counts of Anjou, de Bouillon, St Clairs of Roslin, Brienne, Joinville, Chaumont, St Clair de Gisor, St Clair de Neg and the Hapsburgs.

From this group developed the Knights Templar, who went to Jerusalem, were housed on the Temple Mount, later returning to Europe to become what many call the first international bankers, They were soldiers, sailors and large landholders and were a very strong political force. The Templars were arrested by Phillip the Fair, King of France on Friday, October 13, 1307 and driven underground or into exile.

The Templars, according to several sources, had knowledge and had explored the North American continent before Columbus. The Rosslyn Chapel in Scotland, built between 1440 and 1490, has stone reliefs of plants found only in the Americas. John Cabot, whom many of the major Bones players claim as a relation, sailed from Bristol, England (a port very beholden to the Templars) and Cabot named his American settlement, St, John.

The history of Freemasonry is long and tedious. Nevertheless, we know that Freemasonry emerged officially in 1717 in England and soon enjoyed royal protection. During the preceding and proceeding centuries much activity took place in various secret societies both fraternal and magickal orders. One very interesting ideology that developed out of these circles is synarchy.

An excerpt from Picknett and Prince's The Stargate Conspiracy:

... a specific politico-esoteric system, a movement known as Synarchy. This is 'government by secret societies,' or by a group of initiates who operate from behind the scenes. It is an analogue of 'theocracy,' or rule by a priesthood. ...

The founder of Synarchy, a Frenchman named Joseph Alexandre Saint-Yves d'Alveydre (1824-1909), explained that the term was the opposite of anarchy. Whereas anarchy is based on the principle that the state should have no control over individuals, Synarchy proposes that it should have complete control. He proposed that Synarchists achieve power by taking over the three key institutions of social control: political, religious and economic. With its own members in positions of power, the Synarchists would, in effect, secretly govern entire states. And why stop there? One of the aims of Synarchy, from its very inception, was — from the words of a Synarchist document — the creation of a 'federal European Union.' Is it any coincidence that we are now moving rapidly towards such a European state? Significantly, those words were written as far back as 1946. ...

As might be expected from a movement dedicated to governing by secret societies, Synarchy had close ties with some of the most powerful of such organizations, including the Martinist Order, of which Saint-Yves d'Alveydre was Grand Master. As the French writer Gerard Galtier states: "The synarchic ideal influenced all the Martinists and occultists of the beginning of the century."[25] Not unexpectedly, Synarchists were also members of French Masonic Lodges, ...

Synarchy is by definition a shadowy group lurking behind many uprisings and revolutions, and whose jealous gaze is automatically fixed on any stable regime or established government unless it already conforms to their ideals. ...

There is another aspect to Synarchy. The concept of nine legendary leaders plays a large part in its philosophy. ... the Knights Templar, founded by nine French knights shortly after the First Crusade. The Templars were believed by Saint-Yves d'Alveydre to have represented the supreme expression of Synarchy in the medieval world, because they had almost total political, religious and financial control during the two centuries of their existence yet remained at heart a secret, heretical order whose real agenda was known only to its membership.

In nineteenth-century France several secret societies all claimed to be the true descendants of the medieval Knights Templar. Saint-Yves drew upon their ideals and practices for his movement, especially those of certain types of occult Freemasonry known as the Strict Templar Observance and its successor, the Rectified Scottish Rite, thus bestowing on the primarily political movement a strong undercurrent of mysticism And magical rites. This proved to be a two-way traffic, for the Synarchist ideal was adopted by several occultists and their organizations, such as Papus Gerard Encausse, (1865-1916), an enormously influential figure who was the French Grand Master of both the Ordo Templi Orientis (OTO) and the Masonic Order of Memphis-Misraim, whose rituals, significantly, were based on the rites and ceremonies of the ancient Egyptian priesthood. Papus considered Saint-Yves to be his 'intellectual Master.' As Gerard Galtier wrote: "Without doubt, the Martinist directors such as Papus ... had the ambition to secretly influence the course of political events, notably by the diffusion of synarchic ideals."

Papus put the Synarchist ideals into practice by working to bring together the various secret societies of his day, merging orders where possible and creating 'confederations' where representatives of the organizations could meet. The bodies he created fragmented during the First World War, but others, notably Theodore Reuss and H. Spencer Lewis, created similar groups afterwards.

Undoubtedly, Saint-Yves was hugely influential on the development of Western occultism. Theo Paijmans, an authority on nineteenth-century European esotericism, pointed out to us that Saint-Yves introduced the seminal idea of Agartha, the mysterious underground realm from which highly evolved Adepts psychically direct the development of the human race. This was to become a common feature of Western occultism — as in the works of Madame H.P. Blavatsky — and was the basis for a belief in Hidden Masters, or Secret Chiefs, which we will discuss shortly. Saint-Yves claimed that he had travelled astrally to Agartha, and that he was in telepathic contact with its inhabitants. He also claimed that he had derived his Synarchist ideology from them.

... The twentieth-century legacy ... involves one of the most flamboyant and controversial figures of our times - the ritual magician Aleister Crowley.

Conjurations of the 'Beast'

In March 1904 the — even by then - notorious occultist Aleister Crowley (1875-1947) and his new wife Rose paid a visit to Cairo where they carried out a 'magickal' operation (a 'working') in their rented apartment. The result was unexpected. The untrained Rose, totally ignorant of magickal workings (and, if Crowley's somewhat disloyal description is anything to go by, of much else too), went into trance, repeating, 'They are waiting for you.' During the next few days, she revealed that 'they' were primarily the god Horus, who had chosen Crowley for a special task, telling him the ritual to facilitate contact. At first Crowley was irritated by Rose's words — after all, he was the great magus, not her — but then he gave her a series of questions to test the authenticity of the communicator. When he asked her which planet was traditionally associated with Horus, she answered, correctly, Mars.

A few days later, in the Cairo Museum, Rose — who had never visited it before - confidently led her husband through the halls to stand before one particular exhibit, a rather unremarkable Twenty-Sixth-Dynasty painted wooden stele showing an Egyptian priest standing before Horus in his form of Ra-Hoor-Khuit (a variation of Ra-Horakhti, who is closely associated with the Sphinx). This has been known ever since in the occult world as the Stele of Revealing. Crowley was impressed by the synchronicity of the exhibit's number - 666, the number of the Great Beast of Revelation, which also happened to be Crowley's own proud alter ego, thanks to an overliteral interpretation of the Bible by his religious-maniac mother. (When we saw the stele in April 1998, we were amused to note that, although it is now exhibit 9422, the original 1904 label, bearing the number 666 in a beautiful but faded copperplate hand, has been laid beside it in the display case. Could there be Crowleyite sympathizers; on the staff of the Cairo Museum?)

This led Crowley, somewhat reluctantly, to take his wife's words seriously. He duly carried out the magickal ritual — now known simply as the Cairo Working — which turned out to be a pivotal moment not only in his own bizarre career, but also in the whole history of modern occultism. As a result of this working, he came into contact with an entity called Aiwass (sometimes, for magickal reasons, spelt Aiwaz) who over the course of three days —8-10 April 1904 - 'dictated' to Crowley what has become his 'gospel,' The Book of Law. pp 264-269

The works of Aleister Crowley still carry a profound effect upon Western occultic traditions and practice. The Book of Law redeveloped a theme written in 1532, by Francois Rabelais in Gargantua and Pantragruel, wherein a story speaks of the "Abbey of Thelma," and the only rule is "do what thou wilt." Crowley reworked it into his famous codex "Do what thou wilt shall be the whole of the Law."

DO CALVINISM AND RITUAL MAGIC MIX?

Yale and Harvard, both schools were founded and run for many years by Calvinist clerics soon became hot beds of secret societies and magical ritual. From Washington Allston — Secret Societies and the Alchemy of Anglo-American Painting:

> Allston was a member of the Phi Beta Kappa Society, which not only organized the leading members of the New England intelligentsia, but closely associated them with the broader, middle class social base of Freemasonry. A secret fraternity of students and alumni, Phi Beta Kappa derived its rituals and symbols from the Masonic brotherhood. Like Masonry, the "master image" of Phi Beta Kappa was the animating sun, symbol of alchemical wisdom originated from Ancient Egypt.
>
> ... They [Masons] celebrated the arts for transmitting an ancient body of original truths, deriving not only from the Jews and the masons who built Solomon's Temple, but also from Pythagoras and the Greeks, and from the ancient Egyptian mythology of Isis, Osiris, and Hermes Trismegistus.
>
> The society [PBK] created a magical aura to honor wisdom through initiation ceremonies that led blindfolded candidates toward sudden illumination and arcane emblems expressing esoteric truths, [emphasis added]

The whole art community that surrounded the birth of Bones and later surrounded the Tomb were largely members of Phi Beta Kappa (PBK). Many being both Bones and PBK. Such as founders Russell and Taft, plus the ever-handy Daniel Coit Gilman.

Charles Tracy, an 1832 Yale graduate writes in his Yale College, Sketches from Memory:

> In those days free-masonry and anti-masonry fought their battles: and a grave question of consience [sic] arose about the promise of secrecy exacted on initiation to the Phi Beta Kappa Society. Harvard was for dissolving the secrecy, and it sent Edward Everett to the private meeting at Yale to advocate the cause. He used a tender tone stood half drooping as he spoke, and touchingly set forth that the students at Harvard had such conscientious scruples as to keep them from taking the vow of secrecy, and the society's life was endangered. There was stout opposition, but the motion prevailed, and the missionary returned to gladden the tender consiences[sic] of the Harvard boys. The secret was of course out. The whole world did not stare at the discovery; and a few years had passed the society took back its secrecy and revived its grip.

Most secret societies have structure akin to an onion or pyramid with a large base or outer layer that makes-up the majority of the members. These members, called porch brethren in Masonic circles are there for window-dressing and generally have very little idea of the true function of the organization. Then there are the administrators and then at the core a "secret society within a secret society" with many times certain key personnel overlapping into several secret societal organizations.

The Yale secret society Wolf's Head's logo is the head of a wolf over an upside down ankh. "In the Egyptian mysteries a candidate would assumed the mantle

of Osiris and wore a wolf skin. Wolf in French is louve and the word louvteau means "the son of a Mason." The ankh is an old Egyptian symbol generally associated with life and eternity. The mystical and ritual magickal significance of the Wolf's Head logo is there for all to see.

There are those who say this is just folderol, just "fads and fancy" of students. To others it adds to the evidence that the secret societies at Yale are much more than a supplemental educational program of Yale University or even just a crazy college "club." Demonstrative links to the mystery schools and ritualistic initiatory paraphernalia abound. Do some Bonesmen experience an initiatory death and rebirth through Yale's underground? Is the crypt of Saint John part of that ritual?

Do we find in New Haven a multi-generational cult that uses conspiratorial tactics and ritualistic magic in its drama for control?

A bigger picture emerges when you look in depth at the historical, architectural and genealogical threads, and at the physical geomantic forces at play in New Haven.

You could make a case that what exists at Yale is a multi-generational cult that believes in the power of death to bring about change, a group of Zeitgeist initiates believing that the ends justify the means, and using massive deaths to feed their necromancy.

Just a bit farther up the geographical draw from the cemetery is the Winchester Repeating Arms plant, where many of the rifles for deadly warfare have been manufactured, producing many piles of bones — many through conflicts with Bones members playing major political roles.

Ron Rosenbaum reported in the New York Observer, April 23,2001, this chant used in the Order's initiation rites:

The Hangman Equals Death!
The Devil Equals Death!
Death Equals Death.

In Alexandra Robbins' apologia for the Order, Secrets of the Tomb, Bonesmen claim that they just played a joke on Rosenbaum and the ritual was a show. Scroll & Key member Ms. Robbins, after saying that she thought "the ceremony described in Rosenbaum's article sounded much to vulgar for Skull and Bones, then quotes a Bonesman "laughing heartily" and saying, "We wanted to fuck with that prick."

As Governor of Texas, George W Bush "hung" all prisoners sentenced to death that he had an opportunity to kill, except one, Henry Lee Lucas — a confessed serial killer for a shadowy cult. Bonesman and US political power player Henry L Stimson takes credit for talking President Truman into dropping the bombs on Hiroshima and Nagasaki. These are just two of the Order's death-dealing activities.

The primary families of the Order are all inter-related and related to European royalty. In a private letter* from one Bonesman to another, a member does treat another of its members as royalty. When one takes into consideration that George W Bush has more royal relations that any other US President, along with royalty's heavy involvement in Masonry and other western ritual magical circles, one wonders about the mindset created from the influences of the Hyper-Calvinist beliefs of Hell predestination, and infallible salvation mixed with potent duality of Western Ritual Magic tradition. Is our republic being undermined by a fervent multi-generational death-magic cult that is trying to bring about an apocalyptic New World Order through synarchical means — with themselves playing the leading roles — no matter the cost to the rest of us? Do they know?

The Order of Skull & Bones is a secret society and they aren't saying.

To the tables down at Mory's
To the place where Louie dwells
To the dear old Temple bar we love so well
Sing the Whiffenpoofs assembled
With their glasses raised on high
And the magic of their singing casts its spell

Yes, the magic of their singing
If the songs we love so well
"Shall I Wasting" and "Mavourneen" and the rest
We will serenade our Louie while life and voice shall last
Then we'll pass and be forgotten with the rest

We are poor little lambs who have lost our way
Baa, baa, baa
We are little black sheep who have gone astray
Baa, baa, baa

Gentleman songsters off on a spree
Doomed from here to eternity
Lord have mercy on such as we
Baa, baa, baa

* See pages 430-431



Skull and Bones

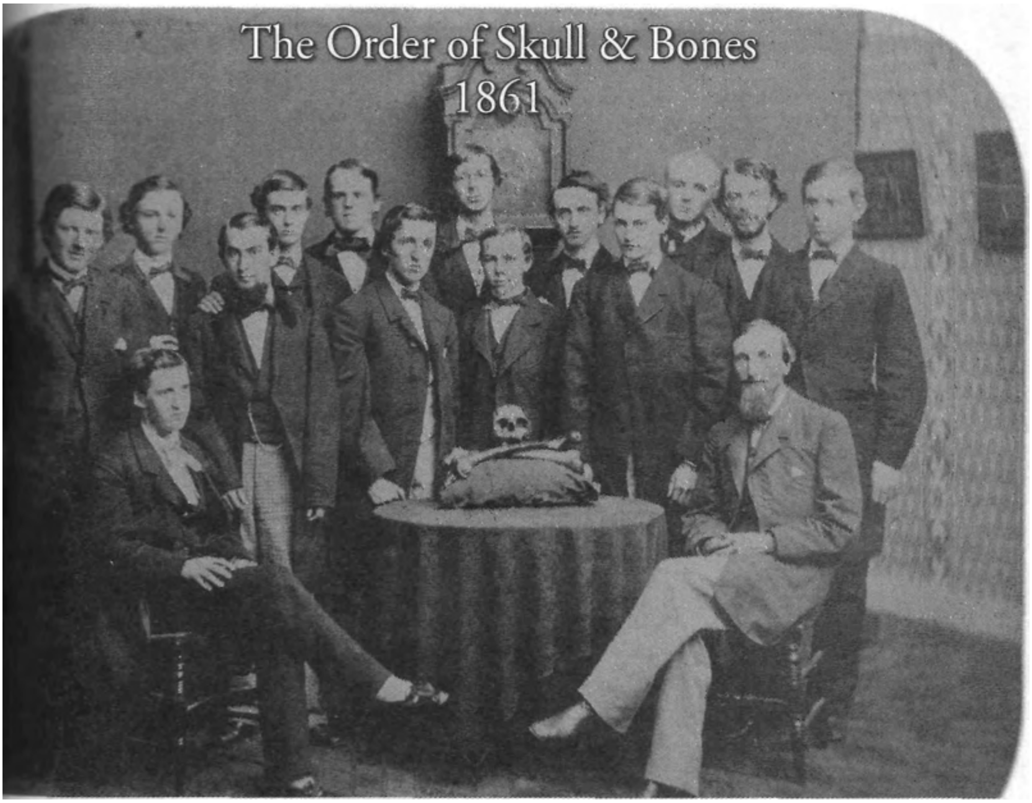
FOUNDED 1832

ARCHIBALD JOHN ALLEN
CHARLES BOOTH ALIING, JR.
EDWARD WILLIAMSON ANDREWS, JR.
*GILLAM DORR BLAKE
WILLIAM MICHAEL BOULIARATIS
DAVID BENNET BRONSON
WALTER HENDERSON BROWN
LOUIS CONNICK, JR.
JOHN CAREY
JOHN LESTER HUBBARD CHAFFEE
EDWIN LYON DALE, JR.
ENDICOTT PEABODY DAVISON
FRANCIS BOLTON ELWELL, JR.
JOHN GEORGE GILPIN FINLEY
JOHN WARREN FINNEY
WILLIAM SKINNER GOEDECKE
ARCHER HARMAN, JR.
GEORGE BURGWIN HOLMES
GORDON BUCKLAND HURLBLT
DONALD LOYAL LEAVENWORTH
RUSSELL VINCENT LYNCH
BENJAMIN THOMAS MCELROY
GUY ENNNIS MCGAUGHEY
THOMAS RIDGWAY MALLON
JAMES IVAN MOORE
WILLIAM SINGER MOORHEAD. JR.
FRANK O'BRIEN, JR.
PHILIP O'BRIEN, JR.
CHARLES EDGAR PALMER
RICHARD ROLLINS READ
HOWARD COPLAND ROBINSON. JR.
IRVING SEAMAN, JR.
JOSIAH AUGUSTUS SPAULDING
WILLIAM SAYER SUMNER
CARLL TUCKER, JR.
CHARLES PRATT TWICHELL
ELLIOT EVANS VOSE
GEORGE UPSON WARREN

* Deceased.

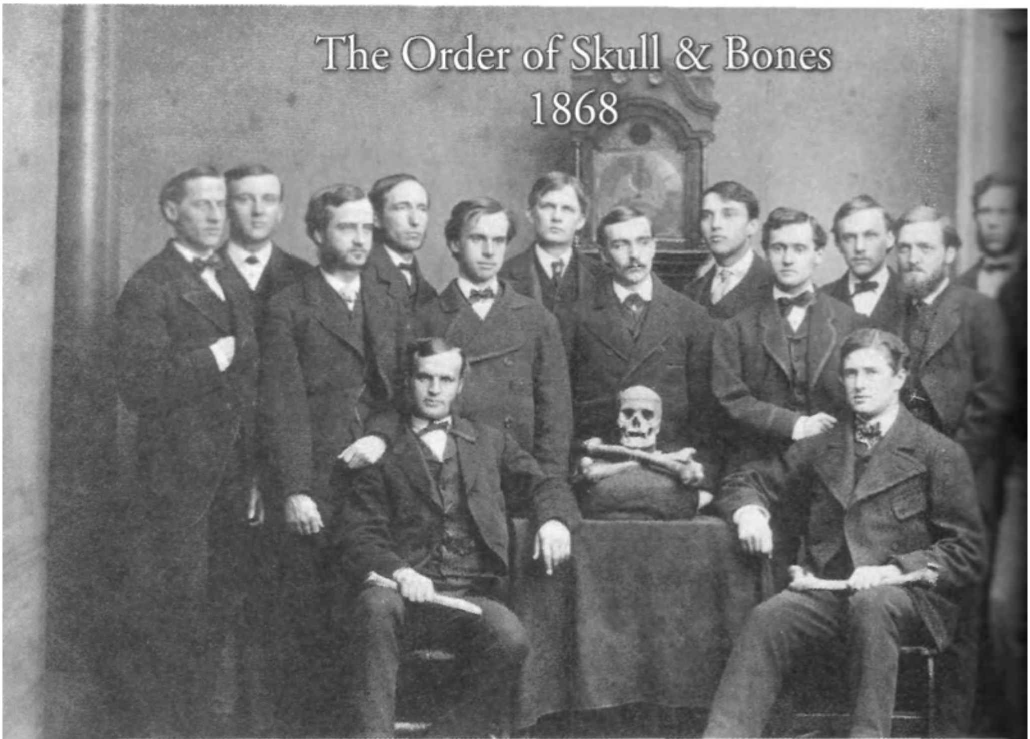
The 1947 Yale Banner listing for the Order. WW II interrupted the Order's initiations. These 38 members were then spread out through several year's cells.

PICTURES FROM THE CRYPT



Seated left - Sextus Shearer seated right - William Henry Fuller

L-R, Robert L Chamberlain, Simeon Eren Baldwin, Hubert S Brown, Frances E Kernochan, William E Park, Ralph O Williams, Franklin B Dexter, John Mitchell, Edward R Sill, Alexander P Root, Stanford Newell, Tracey Peck, Jr., Anthony Higgns



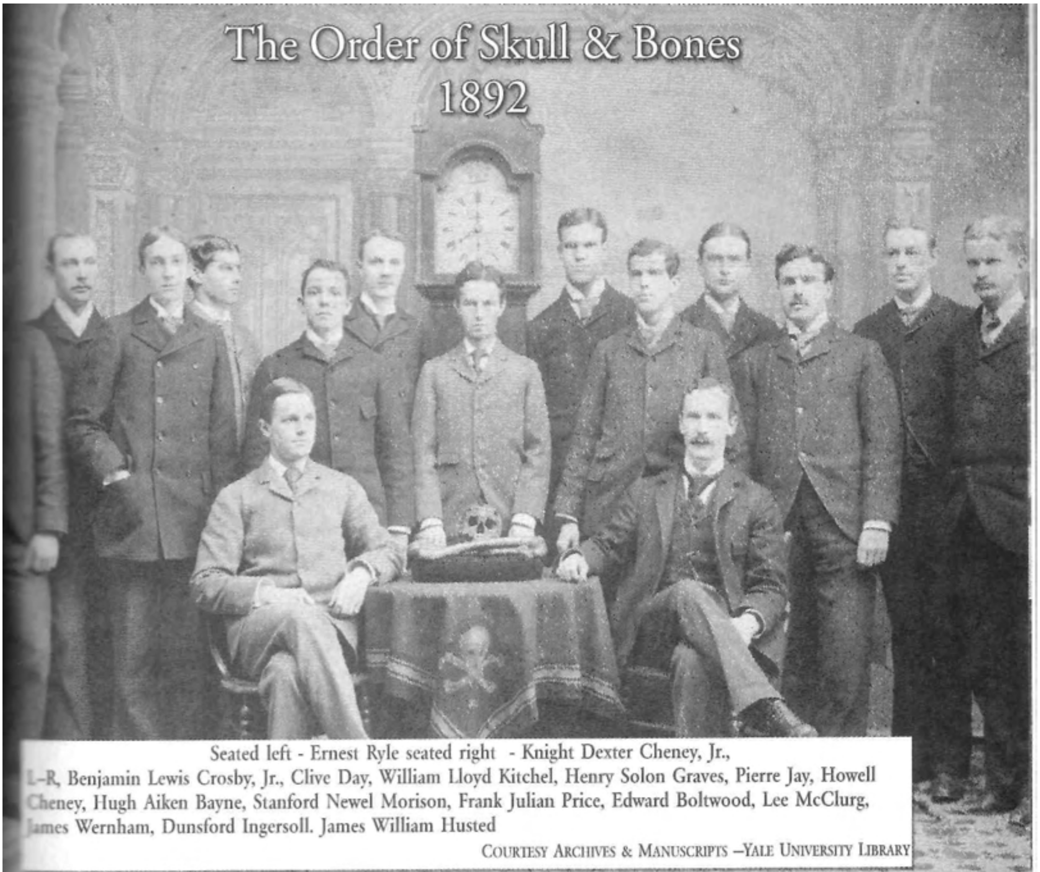
Seated left - Anson Phelps Tinker seated right - LeBaron Bradford Colt
L–R, Thomas Chalmers Sloane, Henry Park Wright, James Kingsley Thacher, Coburn Dewees Berry, Samuel Tweedy, James Coffin, Chauncey Bunce Brewster, William Allison McKinney, Charles Henry Farnam, Edward Jefferson Tyrus

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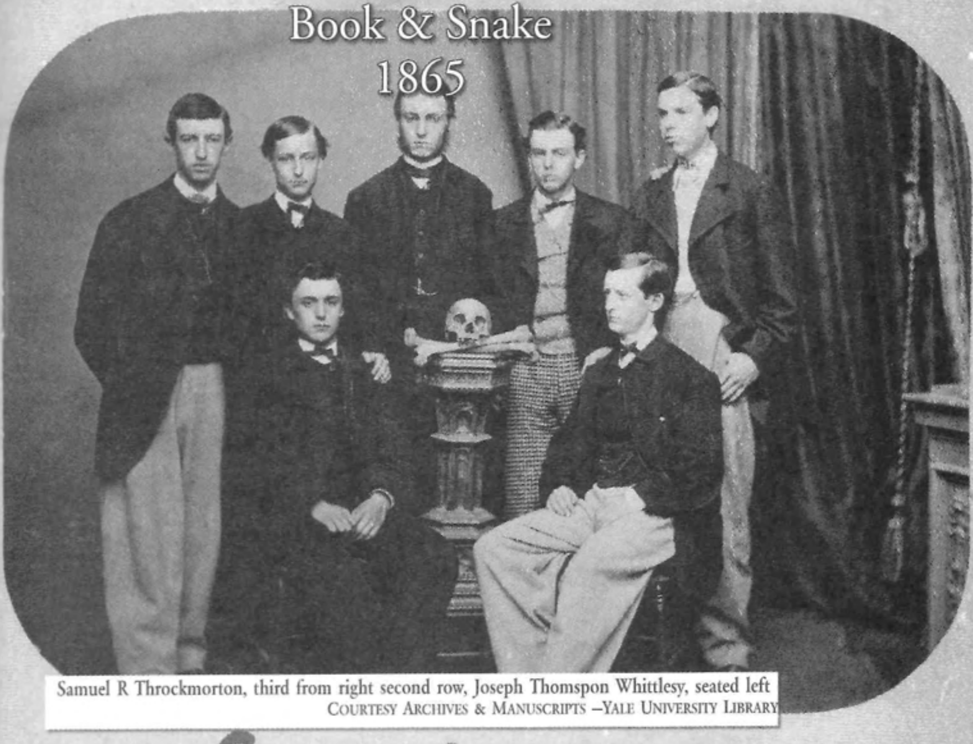
Seated left - John Norton Pomeroy seated right - William Kent
L–R, John Bennetto, Robert Nelson Corwin, William Hutchinson Cowles, Willard Robinson Douglas, William Larned Thacher, Clinton Larue Hare, Georger Griswold Haven, Alexander Brown Coxe, John Rogers, William Burrage Kendall, Jr., Walter Bradley Sheppard, Samuel Knight, Oliver Gould Jennings

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Seated left - Ernest Ryle seated right - Knight Dexter Cheney, Jr.,
L–R, Benjamin Lewis Crosby, Jr., Clive Day, William Lloyd Kitchel, Henry Solon Graves, Pierre Jay, Howell Cheney, Hugh Aiken Bayne, Stanford Newel Morison, Frank Julian Price, Edward Boltwood, Lee McClurg, James Wernham, Dunsford Ingersoll. James William Husted

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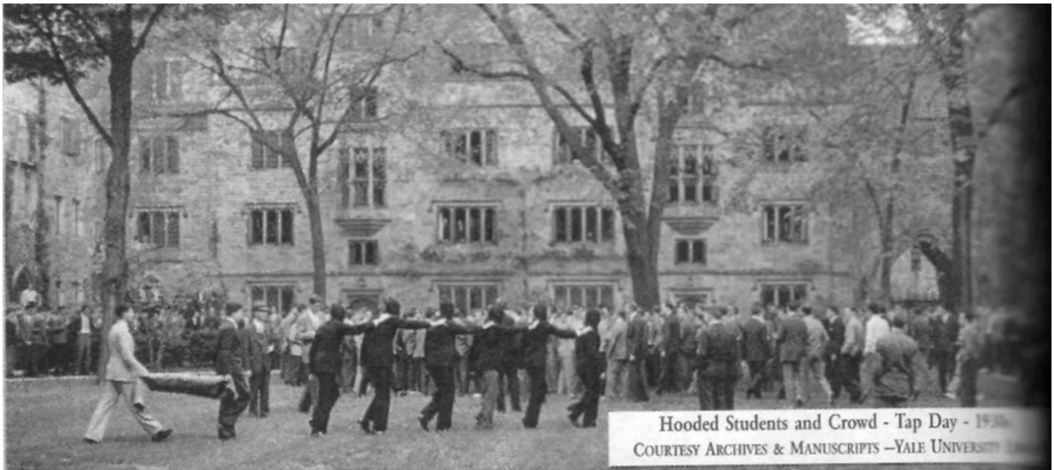


Samuel R Throckmorton, third from right second row, Joseph Thomspon Whittlesy, seated left

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Founder of "Book & Snake – Staff"
1865

-1862



Hooded Students and Crowd - Tap Day - 193
COURTESY ARCHIVES & MANUSCRIPTS –YALE UNIVERS



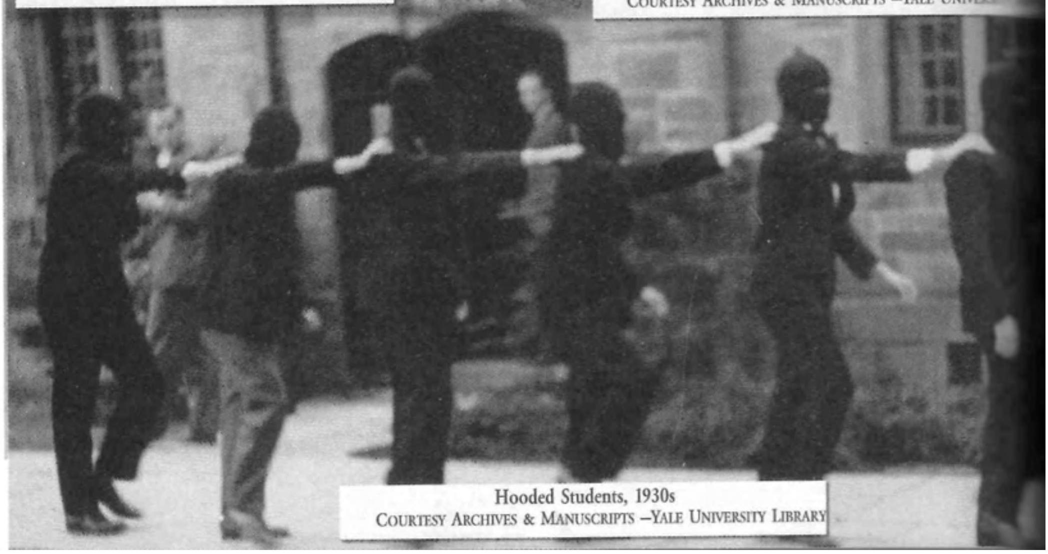
John Ecklund tapped for B
COURTESY ARCHIVES &
YALE UN



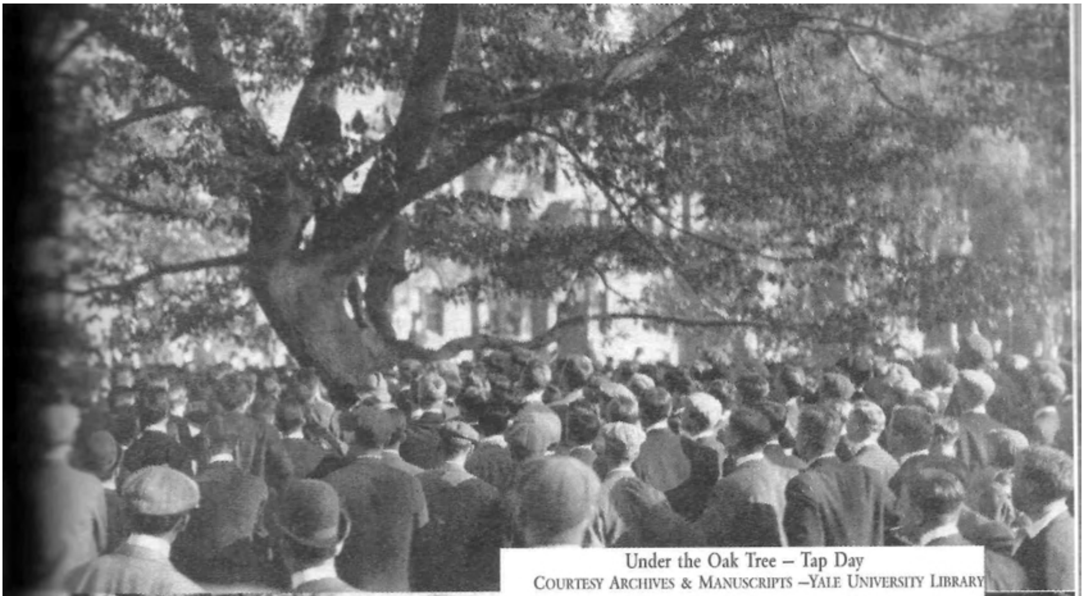
Skull & Bones, Do you accept? TapDay - 1960s
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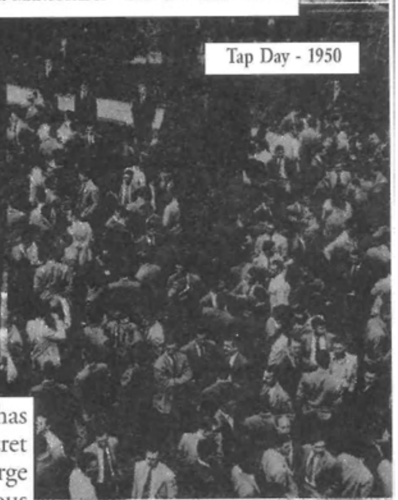
Tap Days - 1940s
COURTESY ARCHIVES & MANUSCRIPTS –YALE UNIVERS



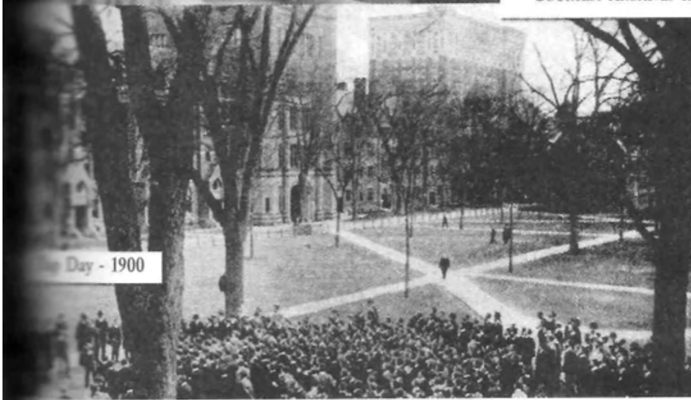
Hooded Students, 1930s
COURTESY ARCHIVES & MANUSCRIPTS –YALE UNIVERSITY LIBRARY



Under the Oak Tree – Tap Day
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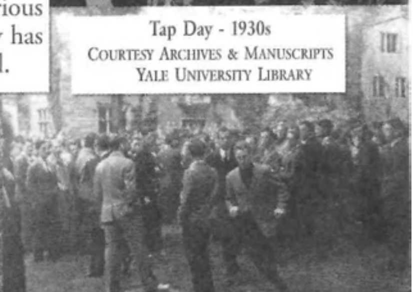


Tap Day - 1950

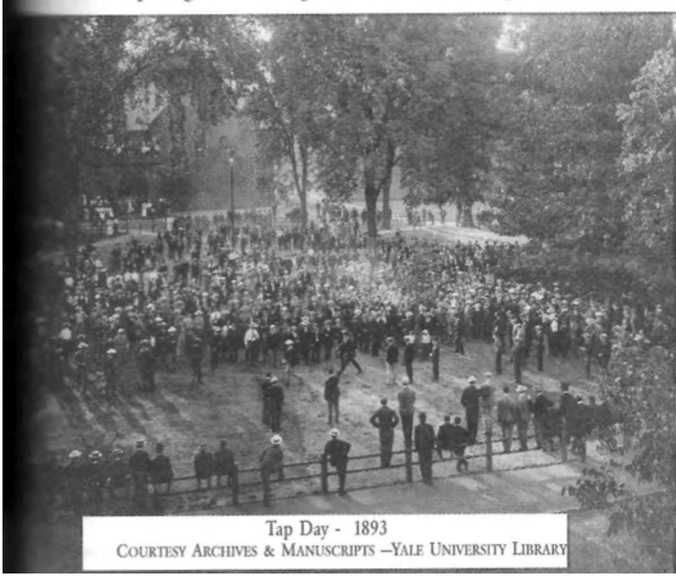


...y Day - 1900

...form of Tap Day has changed many times but the function has ...ned the same — the choosing of next year's members in the secret ...ies. For many years the junior class would assembly in a large ...p outdoors and then there would be a series of taps from the various ...es. Later the *tapping* moved indoors. Today at Yale, Tap Day has ...ed into Tap Night — a huge costumed extravagandic bacchanal.



Tap Day - 1930s
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Tap Day - 1893
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Tap Day - 1890



Wednesday Evening, June 17th, 192

VIII. ☞ S.B.
T.

Pars magna bonitatis est velle fieri bonum.

Seneca, Ep. 34, 3.

Charles Graydon Poore, S. E.

YALE COLLEGE,
June 4, 1925.

Notice sent to all members inviting them to meet the newly tapped initiates - 1925

Y. 2124. D. 124.

Daniel Allen, Cheshire, Conn.
James Davis Bronson, Jr., Stillwater, Minn.
Henry Cornick Coke, Dallas, Texas
Henry Stetson Crosby, Minneapolis, Minn.
Benjamin Crawford Cutler, Andover, Mass.
John Alfred Davenport, Philadelphia, Pa.
Alfred Ludlow Ferguson, Jr., Greenwich, Conn.
John McArthur Hoysradt, Bronxville, N. Y.
Howard Thayer Kingsbury, Jr., New York City
Oswald Bates Lord, Tarrytown, N. Y.
Anthony Lee Michel, Oak Park, Ill.
Charles Graydon Poore, Saint Paul, Minn.
Reginald Dean Root, Le Roy, N. Y.
Frank Ford Russell, Hempstead, Long Island, N. Y.
Charles Hastings Willard, Minneapolis, Minn.

This listing of new members was sent with the meeting announcement and may be pasted in the formal membership book – 1926

In-Memory
of

Henry Brodhead, D. 57
✣ January 26, 1925 ✣

Roger Sherman White, D. 57
✣ July 9, 1924 ✣

Joseph Leonard Daniels, D. 58
✣ October 22, 1924 ✣

George St. John Sheffield, D. 61
✣ December 14, 1924 ✣

LeBaron Bradford Colt, D. 66
✣ August 18, 1924 ✣

Thomas Hooker, D. 67
✣ October 28, 1924 ✣

Henry Warren Raymond, D. 67
✣ February 18, 1925 ✣

Charles Clerc Deming, D. 70
✣ July 23, 1924 ✣

Samuel Oscar Prentice, D. 71
✣ November 2, 1924 ✣

Almet Francis Jenks, D. 73
✣ September 18, 1924 ✣

Oliver David Thompson, D. 77
✣ June 10, 1925 ✣

Walter Chauncey Camp, D. 78
✣ March 14, 1925 ✣

Arthur Sherwood Osborne, D. 80
✣ November 4, 1924 ✣

Frank Bosworth Brandegee, D. 83
✣ October 14, 1924 ✣

Samuel Johnson Walker, D. 86
✣ August 19, 1924 ✣

Horace Sheldon Stokes, D. 87
✣ December 19, 1924 ✣

Edward Boltwood, D. 90
✣ September 6, 1924 ✣

James William Husted, D. 90
✣ January 2, 1925 ✣

Ralph Delahaye Paine, D. 92
✣ April 29, 1925 ✣

Alexander Ray Clark, D. 93
✣ March 19, 1925 ✣

Grenville Parker, D. 96
✣ July 18, 1924 ✣

Stuart Brown Camp, D. 98
✣ September 25, 1924 ✣

Albert De Silver, D. 108
✣ December 7, 1924 ✣

[July 1, 1924–June 30, 1925]

Death Notices were sent at the same time, again formatted so as to be added to members membership book. The membership books had blank pages to attach the notices

1925

ARDREY, Rushton Leigh—East St., Rye, N. Y. Business.
ASHBURN, Frank Davis—West Point, N. Y. Law.
BENCH, Edward Cajetan—Linden Ave., Englewood, N. J. Business.
BISSELL, William Truesdale—Farmington, Conn. Student.
BLAIR, James Grant—4607 Ross Ave., Dallas, Tex. Student.
GAGE, Charles Stafford—317 81st St., Brooklyn, N. Y. Business.
IVES, Gerard Merrick—145 East 35th St., New York City. Business.
JONES, Walter Clyde, Jr.—1637 Judson Ave., Evanston, 111. Law.
LOVEJOY, Winslow Meston—Armory St., New Haven, Conn. Law.
LUFKIN, Elgood Moulton—Kirby Lane, Rye, N. Y. Business.
LUMAN, Richard John-—Pinedale, Wyo. Business.
NORTON, William Bunnell—Mt. Hermon, Mass. Teaching.
SCOTT, Henry Clarkson—Allerton House, 39th St., New York City. Business.
STEVENS, Marvin Allen—1407 Yale Station, New Haven, Conn. Medicine.
STEVENSON, Donald Day—86 Mercer St., Princeton, N. J. Medicine.

[Insert—P. 100-B of 1923 Catalogue.]

This listing is also sent of the graduating members. This may be added to the Catalouge, which also includes some biographical information. These catalouges are now issued in two volumes - Living and Deceased members.

322

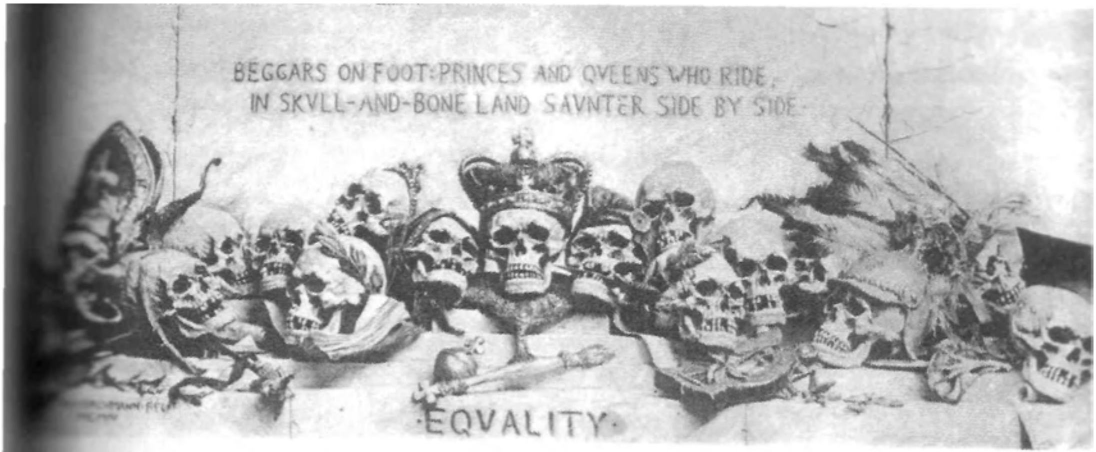
New Haven, Conn., Nov. 5, 1925

The annual meeting of the Russell Trust Association will be held at the usual place in this city, at eight o'clock, on Friday Evening, Nov. 13, 1925, to hear the Treas-urer's Report, to elect two directors to serve in the place of Messrs. H. De F. Baldwin and M. A. Seabury, whose terms expire at that time, and to transact such other business as may properly come before the meeting.
S. B. T. at 7.18 o'clock.

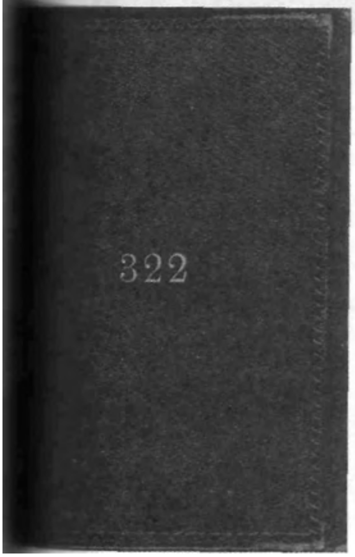
GUSTAV GRUENER, Secretary.

The building will be open to the graduates Saturday evening, November 14.

Announcement of annual meeting - 1925



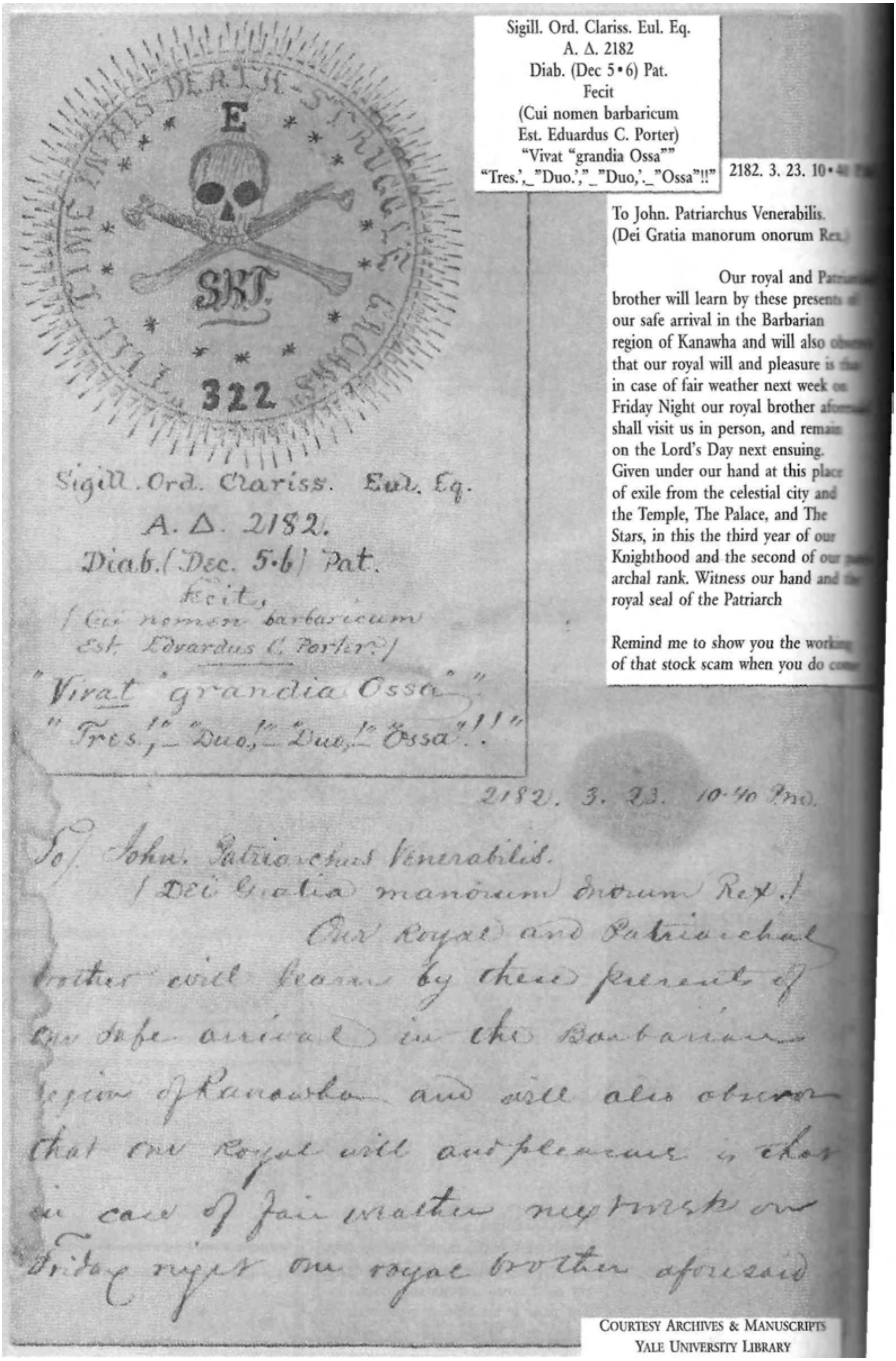






These pictures come from various membership books made available to us. The number 322 is on the back cover of the older formal membership book.
The page at the bottom right with the strange word has been called by some the Order's secret word.





Sigill. Ord. Clariss. Eul. Eq.
A. Δ. 2182
Diab. (Dec 5 • 6) Pat.
Fecit
(Cui nomen barbaricum
Est. Eduardus C. Porter)
"Vivat "grandia Ossa""
"Tres.',_"Duo.',"_"Duo,'._"Ossa"!!"

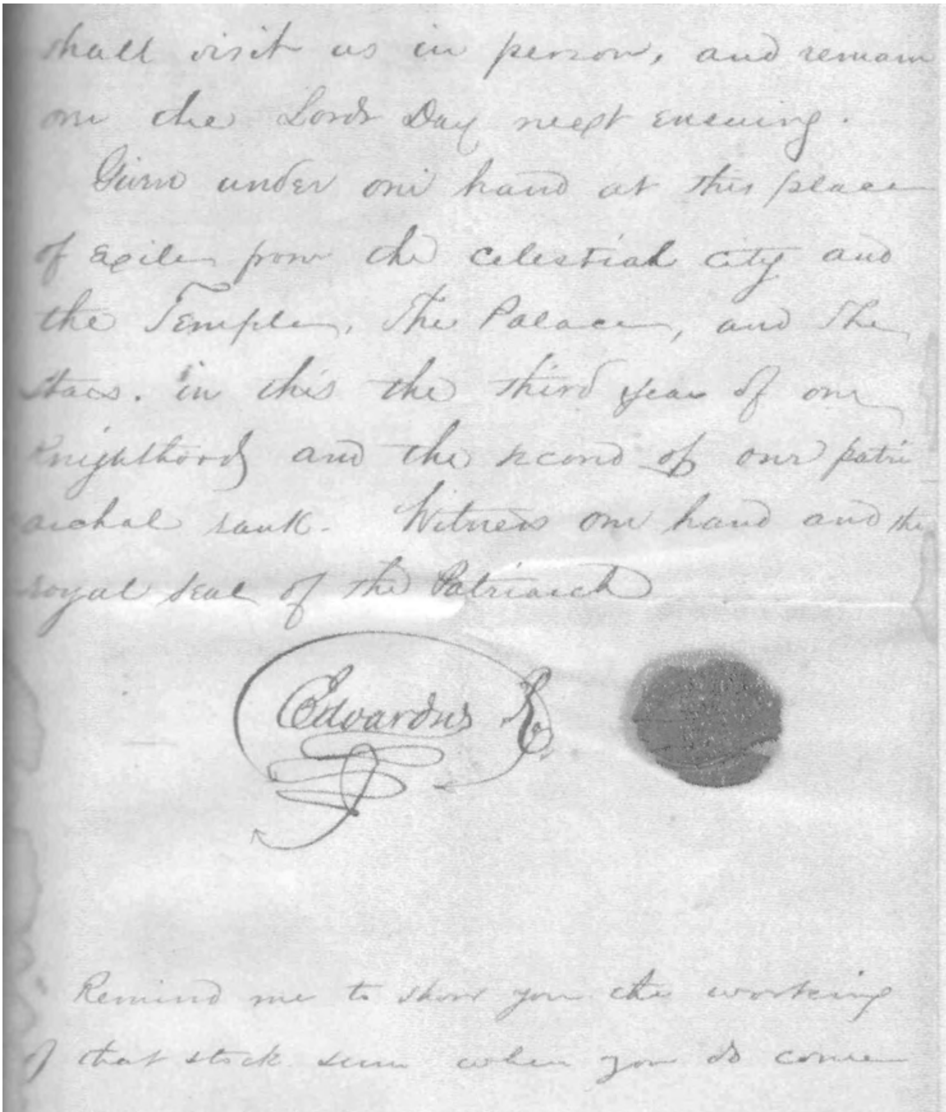
2182. 3. 23. 10•40 P.M.

To John. Patriarchus Venerabilis.
(Dei Gratia manorum onorum Rex.)

Our royal and Patri[...]
brother will learn by these presents of
our safe arrival in the Barbarian
region of Kanawha and will also observe
that our royal will and pleasure is that
in case of fair weather next week on
Friday Night our royal brother afores[...]
shall visit us in person, and remain
on the Lord's Day next ensuing.
Given under our hand at this place
of exile from the celestial city and
the Temple, The Palace, and The
Stars, in this the third year of our
Knighthood and the second of our pa[...]
archal rank. Witness our hand and the
royal seal of the Patriarch

Remind me to show you the working
of that stock scam when you do co[...]

COURTESY ARCHIVES & MANUSCRIPTS
YALE UNIVERSITY LIBRARY



shall visit us in person, and remain on the Lord's Day next ensuing.

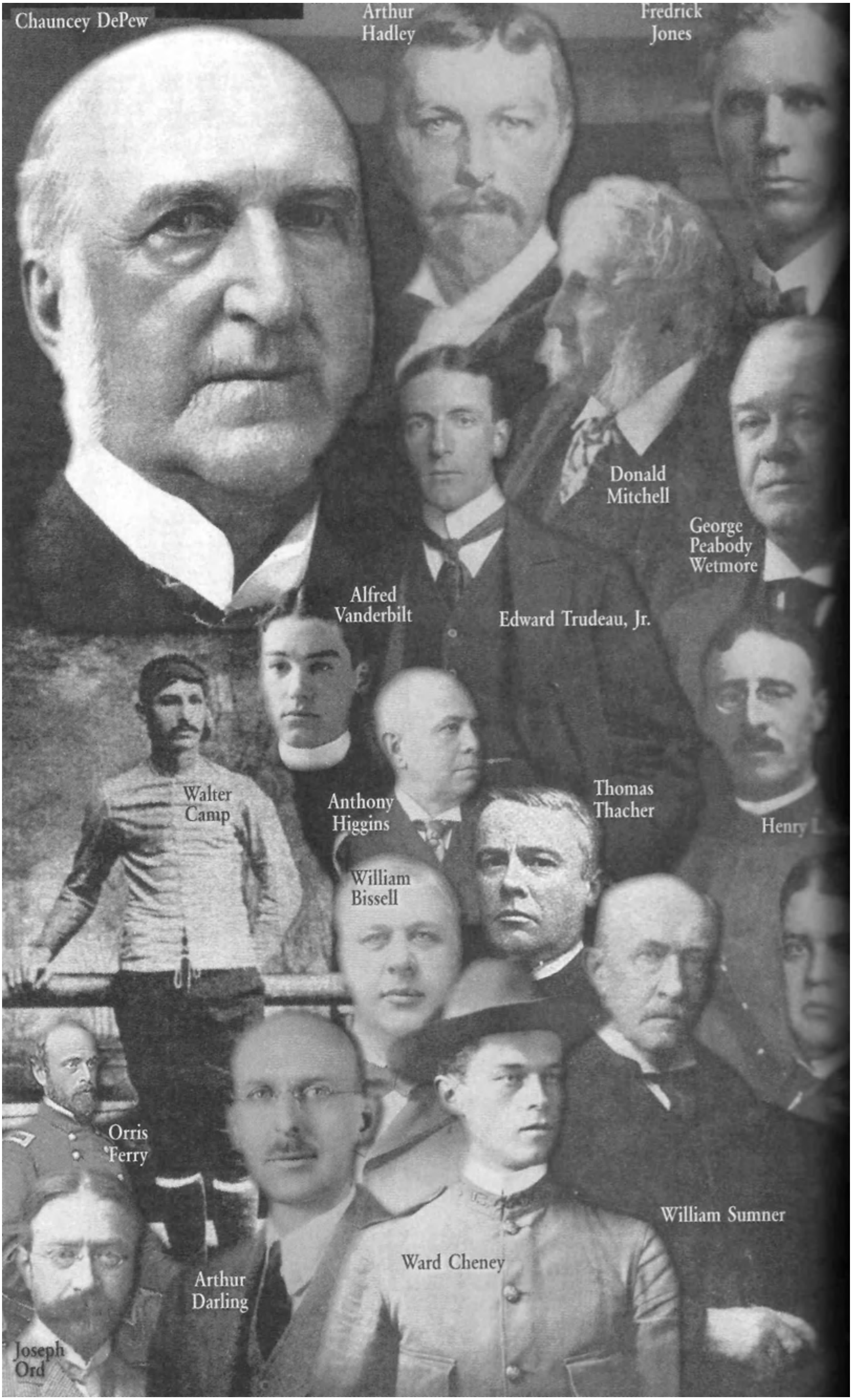
Given under our hand at this place of exile from the celestial city and the Temple, the Palace, and the stars. in this the third year of our knighthood and the second of our patriarchal rank. Witness our hand and the royal seal of the Patriarch

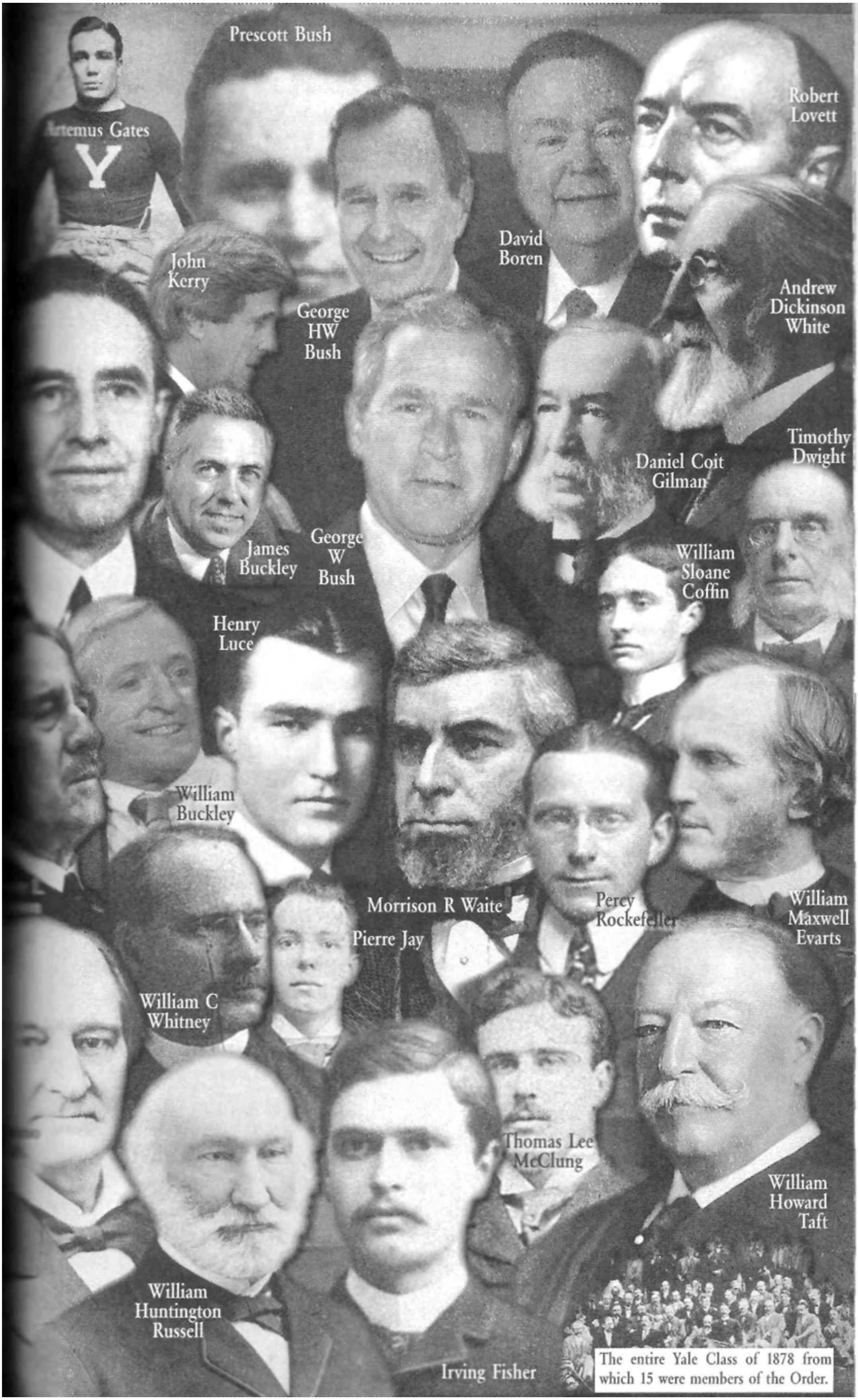
Edwardus R.

Remind me to show you the working of that stock seen when you do come

This letter was found in the archives of Yale University Library in a box that no one had asked to see for years. The letter was deteriorating and came as a surprise to the curators that it was in their collection.
Edward C. Porter was a member in 1858 and was an Episcopal Minister. As to what it all means, I do not know. It does give some very interesting insights into how some members feel and act about Bones. Kanawha is in West Virginia.

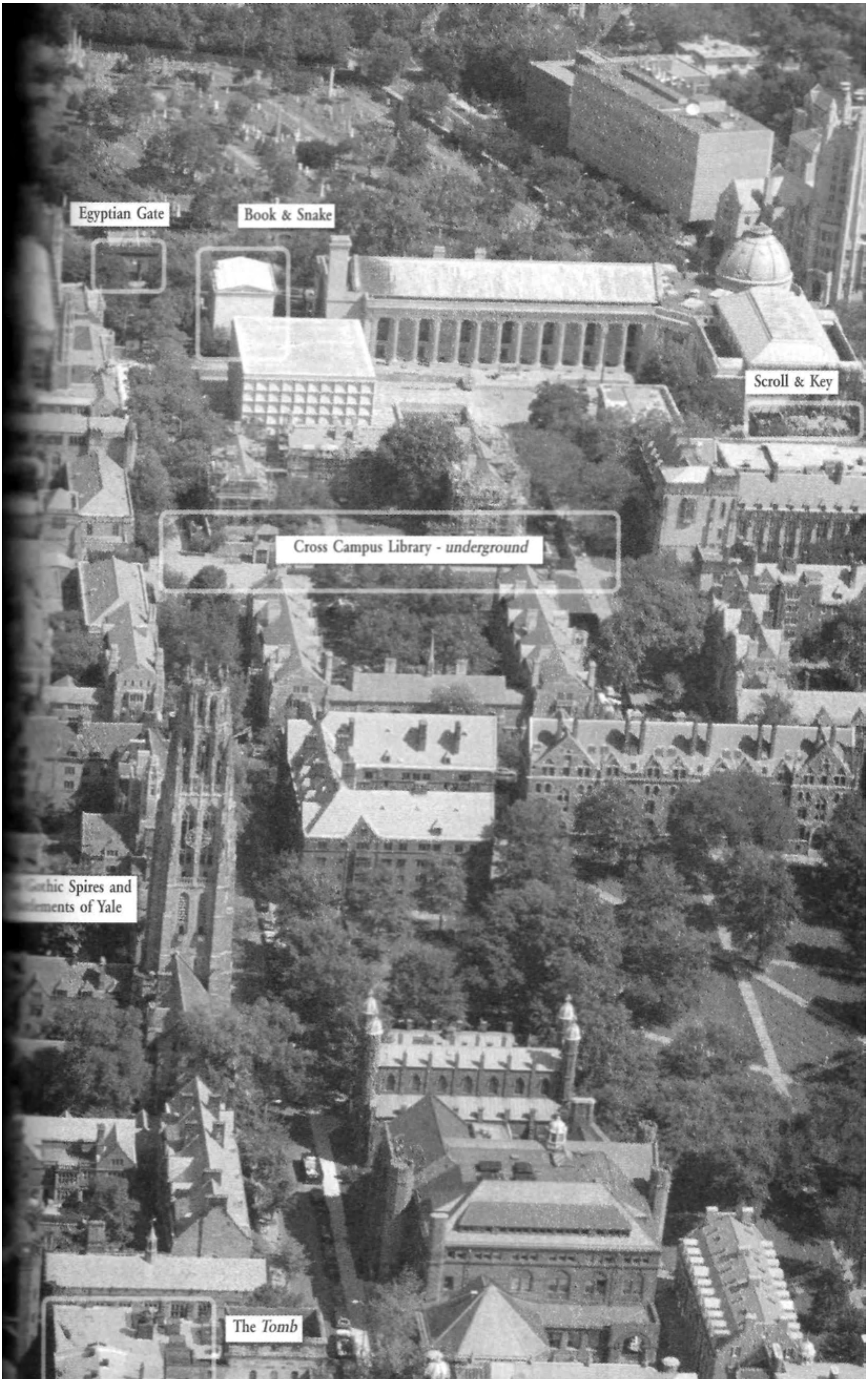
COURTESY ARCHIVES & MANUSCRIPTS
YALE UNIVERSITY LIBRARY


Chauncey DePew
Arthur Hadley
Fredrick Jones
Donald Mitchell
George Peabody Wetmore
Alfred Vanderbilt
Edward Trudeau, Jr.
Walter Camp
Anthony Higgins
Thomas Thacher
Henry L
William Bissell
Orris Ferry
William Sumner
Ward Cheney
Arthur Darling
Joseph Ord



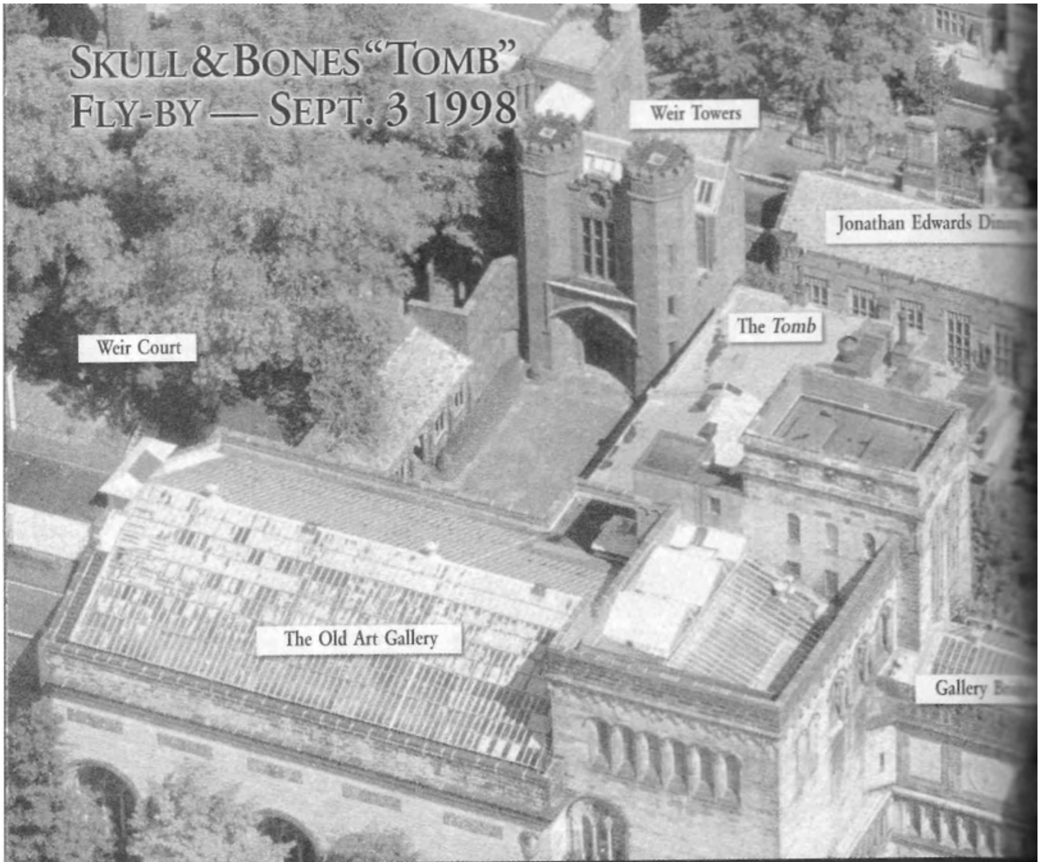
The entire Yale Class of 1878 from which 15 were members of the Order.

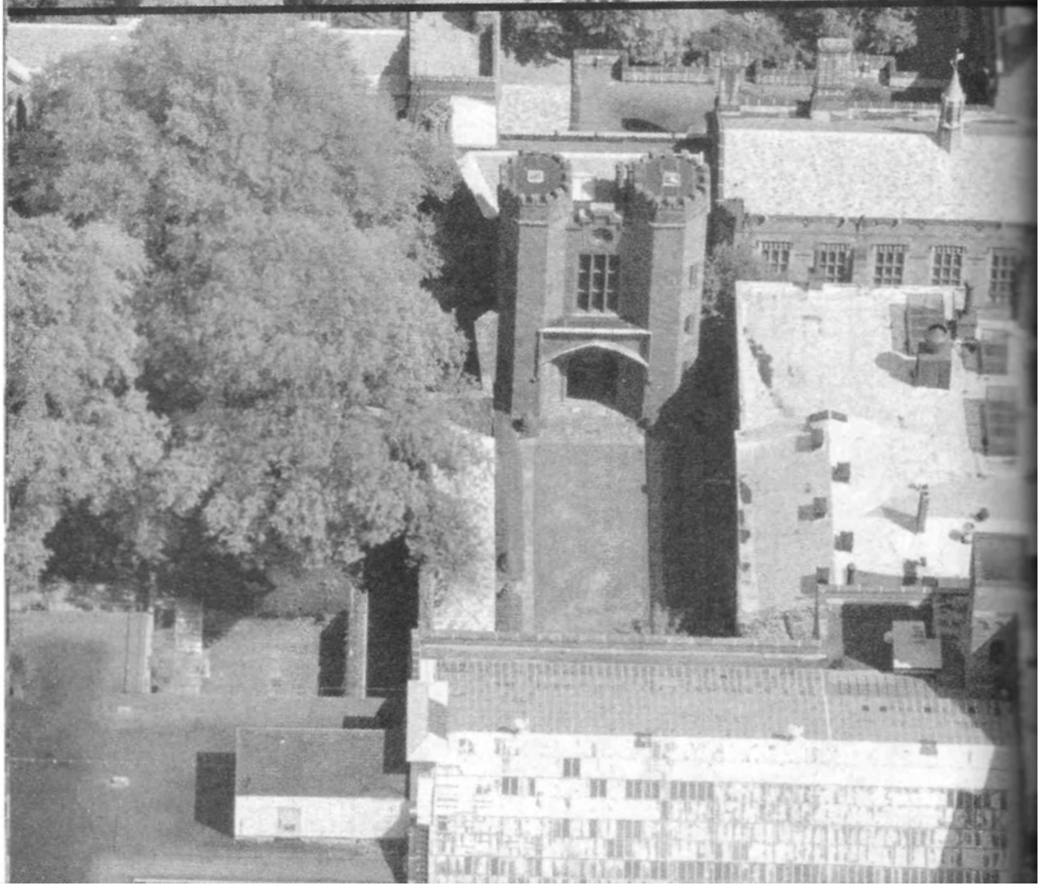

St. John Crypt
Power Plant
Wolf's Head
Weir Court - undergound



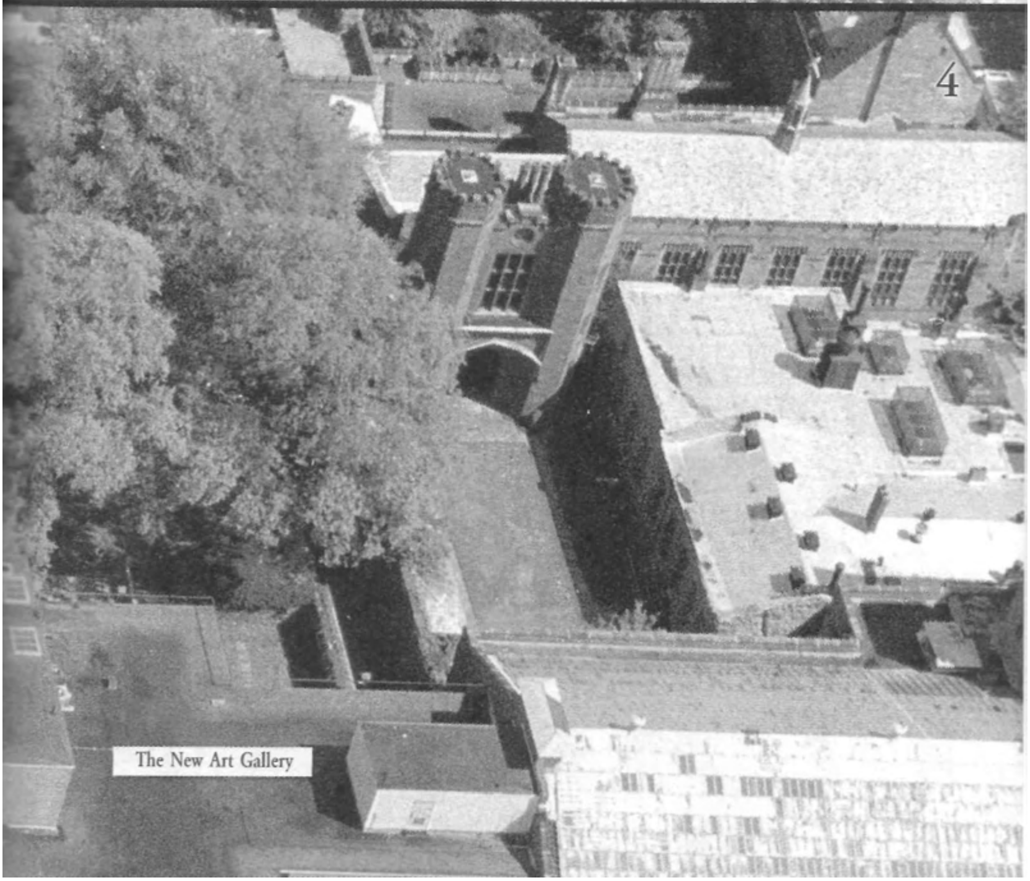
Egyptian Gate
Book & Snake
Scroll & Key
Cross Campus Library - *underground*
Spires and
of Yale
The *Tomb*

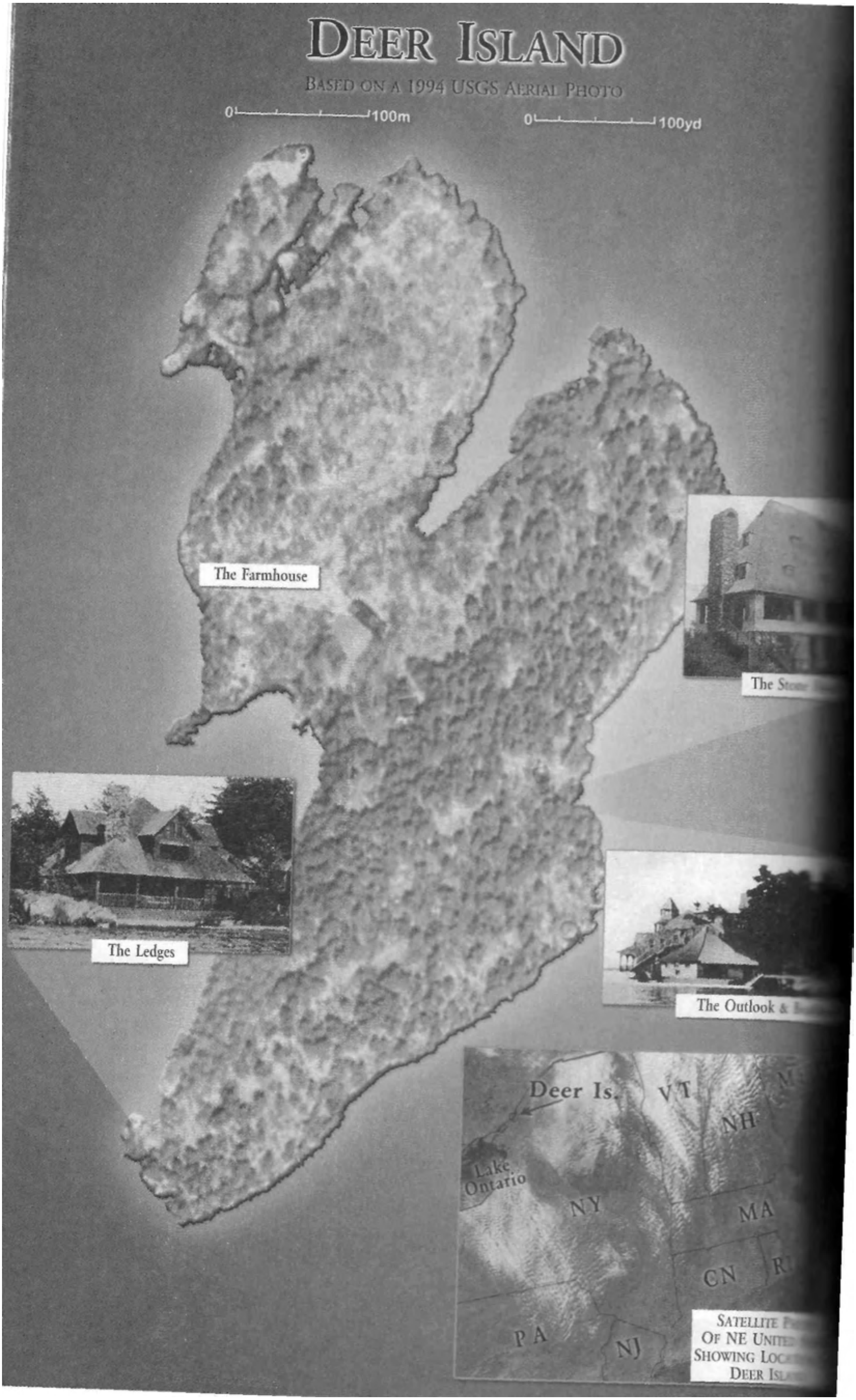
SKULL & BONES "TOMB" FLY-BY — SEPT. 3 1998






2


4
The New Art Gallery


DEER ISLAND
BASED ON A 1994 USGS AERIAL PHOTO
0 100m
0 100yd
The Farmhouse
The Ledges
The Outlook
Deer Is.
VT
NH
Lake Ontario
NY
MA
CN
PA
NJ
SATELLITE
OF NE
SHOWING
DEER

The Deer Island Club

1908

Friends of Deer Island:

This customary report and appeal to our scattered members was issued soon after our annual meeting, as the disabilities of age forced me to ask for help.

It is rather a "Bon Voyage" to old friends (for Deer Island has been my summer home for 71 1/2 years) than behest to our new management.

The inclosed circular was not mailed before, partly because the writer was minded to first gather in the stray sheep who failed to pay annual dues; but, chiefly, because he feared that earlier issue might seem to some to harm the University Endowment movement. So we waited until now to voice any solicitude for the future of our child the D. I. Club.

Deer Island, my friends, has meant so much to the best part of me! I do entreat you to safeguard it in every way

It's ralson d'etre is now unquestioned. Keep it out of Mrs. Grundy's clutches. You can't improve it much. But you must satisfy the butcher, the baker, the lordly plumber, and the omnivorous tax-collector.

-G. D. M.

May 1987

THE DEER ISLAND CLUB OFFICIAL BOOKLET REPRINTED HERE AND THE ABOVE COVER LETTER WERE ACQUIRED FROM THE CARY FAMILY OF VIRGINIA, DESCENDENTS OF GEORGE DOUGLAS MILLER.

The Deer Island Club



THE OUTLOOK AND BOATHOUSE

...1908...

DIRECTORS

GUSTAV GRUENER
WILLIAM BEEBE
G. D. MILLER
WILLIAM M. BARNUM
FRANK J. PRICE

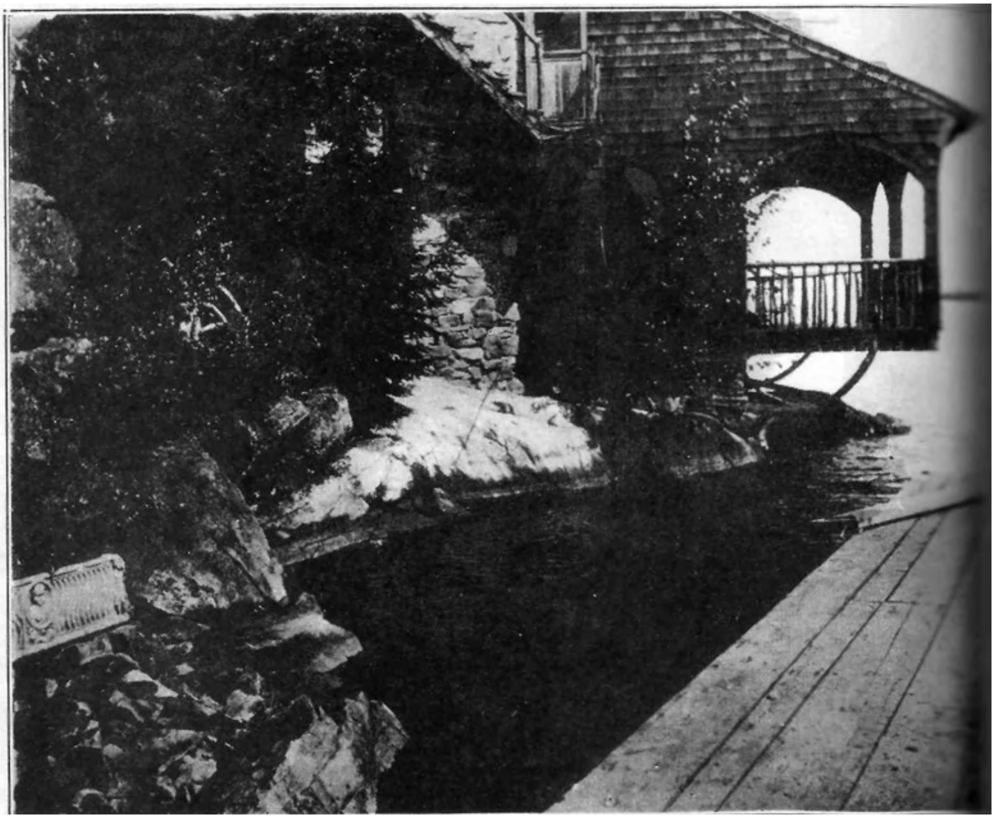
OFFICERS

President
GUSTAV GRUENER

Secretary
FRANK J. PRICE

Treasurer
WILLIAM BEEBE

THE OUTLOOK LANDING



The Deer Island Club Corporation

ARTICLES OF ASSOCIATION

Be it know that we, the subscribers, do hereby associate ourselves as a body politic and corporate, pursuant to the statute laws of the State of Connecticut regulating the formation and organization of corporations without capital stock, and the following are our articles of association :

ARTICLE I. The name of said corporation shall be "THE DEER ISLAND CLUB CORPORATION."

ARTICLE II. The purposes for which said corporation is formed are the following, to wit:—to promote the social intercourse of its members, and to provide for them facilities for recreation and social enjoyment; and to this end, to purchase, hold and convey any property, real or personal, which may be necessary or convenient therefor; to main-

tain a Club House for the use and benefit of its members; and to adopt suitable by-laws and generally to exercise all the usual powers of corporations not prohibited by said statutes.

ARTICLE III. The members of said corporation shall be the subscribers, and such persons as may from time to time be elected or constituted members under the by-laws adopted by said corporation. Dated at New Haven, Conn., this 18th day of February, A. D. 1907.

WILLIAM BEEBE
HENRY W. FARNAM
GUSTAV GRUENER
J. C. SCHWAB
HEATHCOTE M. WOOLSEY

New Haven, February 18, 1907.

STATE OF CONNECTICUT }
COUNTY OF NEW HAVEN } *ss.*

Then and there personally appeared William Beebe, Henry W. Farnam, Gustav Gruener, John C. Schwab and Heathcote M. Woolsey, signers of the

foregoing instrument, and acknowledged the same to be their free act and deed, before me.

[Notarial Seal] SAMUEL H. FISHER,

Notary Public

Corporation Fee, $10.00

Paid February 20, 1907.

L. MOSES

for Treasurer.

Approved Feb. 20, 1907.

THEODORE BODEWEIN,

Secretary.

Per A. R. Parsons.

The foregoing is a true copy of the original articles of association of THE DEER ISLAND CLUB ASSOCIATION and of the endorsements thereon.

Attest,

HEATHCOTE M. WOOLSEY

Temporary Clerk

ARTICLE I.

BY-LAWS

OF

The Deer Island Club Corporation

SECTION I. Annual Meeting. The corporatiom shall hold its first annual meeting on the evening of February 21, 1907, in New Haven, and thereafter shall hold its annual meeting in New Haven, in the month of February of each year, at such time and place as the Directors shall appoint. Due notice of the time and place of holding such meeting, and of the business to be transacted thereat shall be given by the secretary to the members of the corporation.

SEC. 2. Special meetings of the corporation shall be called by the president at the written request of ten members of the corporation, and one week's notice of such meeting and of the object of the call shall be given by the secretary.

SEC 3. Fifteen members shall constitute a quorum. Any member may constitute an agent to

vote in the meetings of this corporation by writing signed by him for that purpose.

ARTICLE II.

SECTION I. All the property and affairs of the corporation shall be under the control and management of a board of directors, consisting of five members elected at each annual meeting by ballot by the members of the corporation from their own number. The directors shall hold office for one year and until their successors are elected, and shall be eligible for re-election.

SEC. 2. The directors shall have power:—

(a) To appoint a president, secretary and treasurer and to define the duties of such officers.

(b) To appoint such committees and sub-committees as they may from time to time deem necessary, with power to perform the duties assigned to them.

(c) To make rules for the use of the corporation's premises by members, and for their conduct of the same.

(d) To call special meetings of the corporation.

(e) To solicit subscriptions for purposes which they deem in keeping with the general objects of the corporation.

(f) To fill any vacancies in the offices or committees of the corporation, or in their own number, provided, however, that any person thus chosen to be a member of the board of directors shall hold office only until the next annual meeting of the corporation and until his successor is elected.

(g) To buy, lease or otherwise control property for the corporation.

(h) To collect dues from the members.

(i) And generally to do whatever is usual or convenient for the maintenance and welfare of the corporation.

ARTICLE III.

SEC. I. Any person who shall be a member of the Russell Trust Association, a corporation organized under the laws of the State of Connecticut, and located in the Town of New Haven, County of New Haven, and State of Connecticut, shall be eligible to membership in this corporation.

SEC. 2. Any such person upon signifying his intention in writing to the secretary, and upon the payment of the annual dues, shall become a member of this corporation.

The Deer Island Club Corporation. 13

ARTICLE IV.

The annual dues of members shall be ten dollars a year, payable on the first day of January in each year.

ARTICLE V.

These by-laws may be amended at any meeting of the members of this corporation by a two-thirds vote of the members present.



OUTDOOR FIREPLACE-OUTLOOK

Copy of Circular Sent Out July 1, 1907.

Covering; directions of general interest for each season.

The following memorandum is prepared especially for the benefit of the subscribers to the DEER ISLAND CLUB, but the Directors wish it to be generally known that the privileges of the Island are extended to all men entitled thereto whether subscribers or not.

Those who expect to go there immediately after Commencement, especially if accompanied by their wives or other members of their families, should notify Mr. Miller of the time of their arrival and the number of their party.

The Bungalow at the head of the Island has been offered by Mr. Miller for this season for the entertainment of ladies. Its equipment is excellent throughout and its situation is the best on the Island.

The rate fixed for this season is $2.00 per day for members and all ladies, and $2.50 per day for all other visitors. The extra charge when amounting to $10.00 includes membership.

Visitors are requested to observe strictly the rule which is in force at all clubs against feeing servants. All servants at Deer Island receive good wages.

The night express leaving New York at 9 P.M. reaches Clayton without change at 7 A. M., Alex-

andria Bay, 9.30 A. M. The Empire State (8 A. M.) and the Second Empire (1 P. M.) from New York connect at Utica to reach Clayton at 4 P. M. and 9 P.M. respectively. Alexandria Bay 6.30 p. M. and 10. 20 P. M.

Fifteen-day excursion tickets from New York to Alexandria Bay and return are $12.75. Fare by mileage books is $14.70, and extra mileage will be redeemed at the island.

Passengers from the West change for Alexandria Bay at Syracuse, or they can come by boat direct to Alexandria Bay from Toronto or intermediate ports without change. The club launch will meet visitors at Alexandria Bay.

The trip to Alexandria Bay can be combined with excursions down the St. Lawrence to Quebec and the Saguenay, or to Montreal and New York, or up through the Lakes.

THE DEER ISLAND CLUB submits the following informal report of its third season.

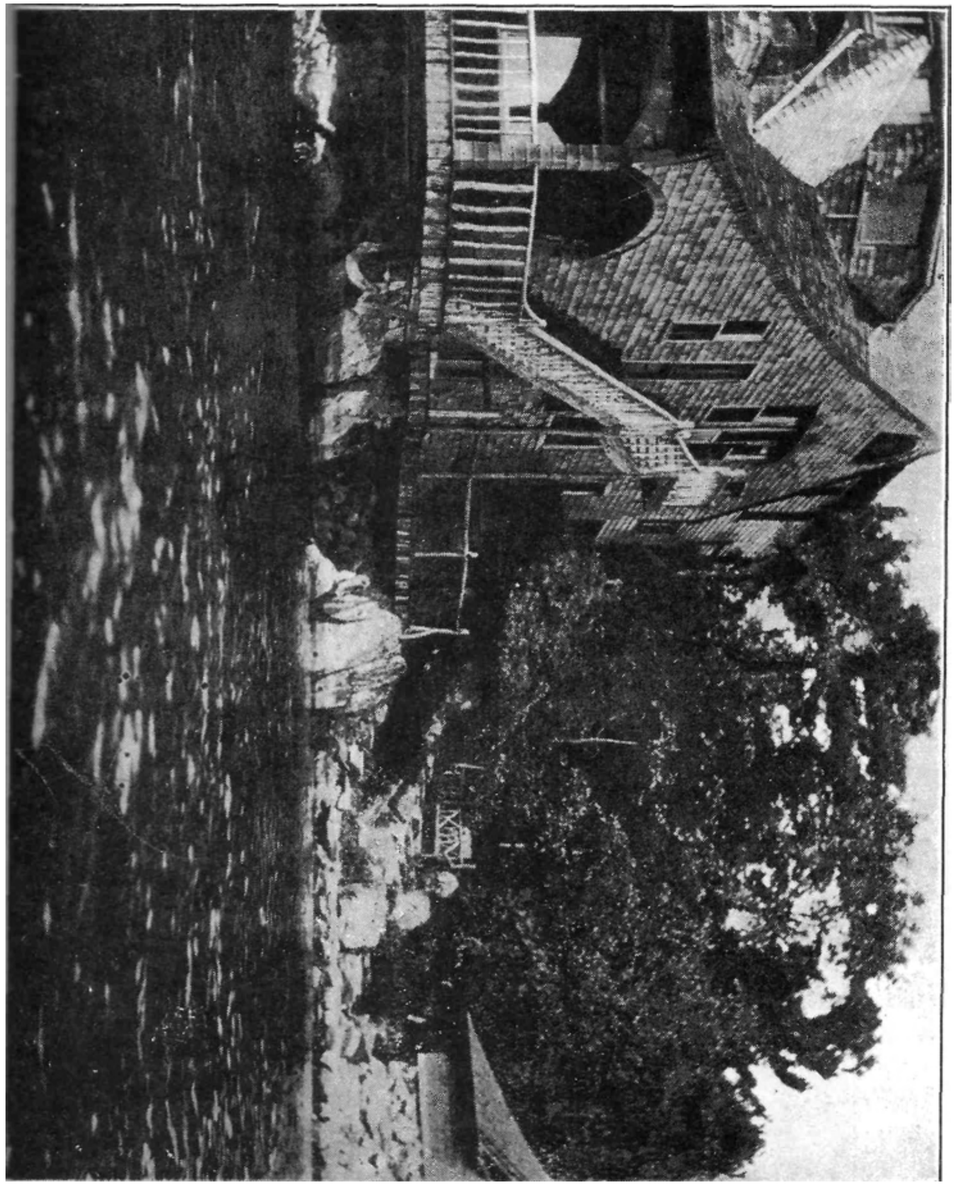
No less than sixty-eight entitled to its privileges have visited the island during the past summer, most of whom have remained for two weeks or longer, while several have brought their wives and children to the "Ledges." The expectations of the club are being realized, especially by those who come in groups and renew their old time friendships under the ideal conditions there presented.

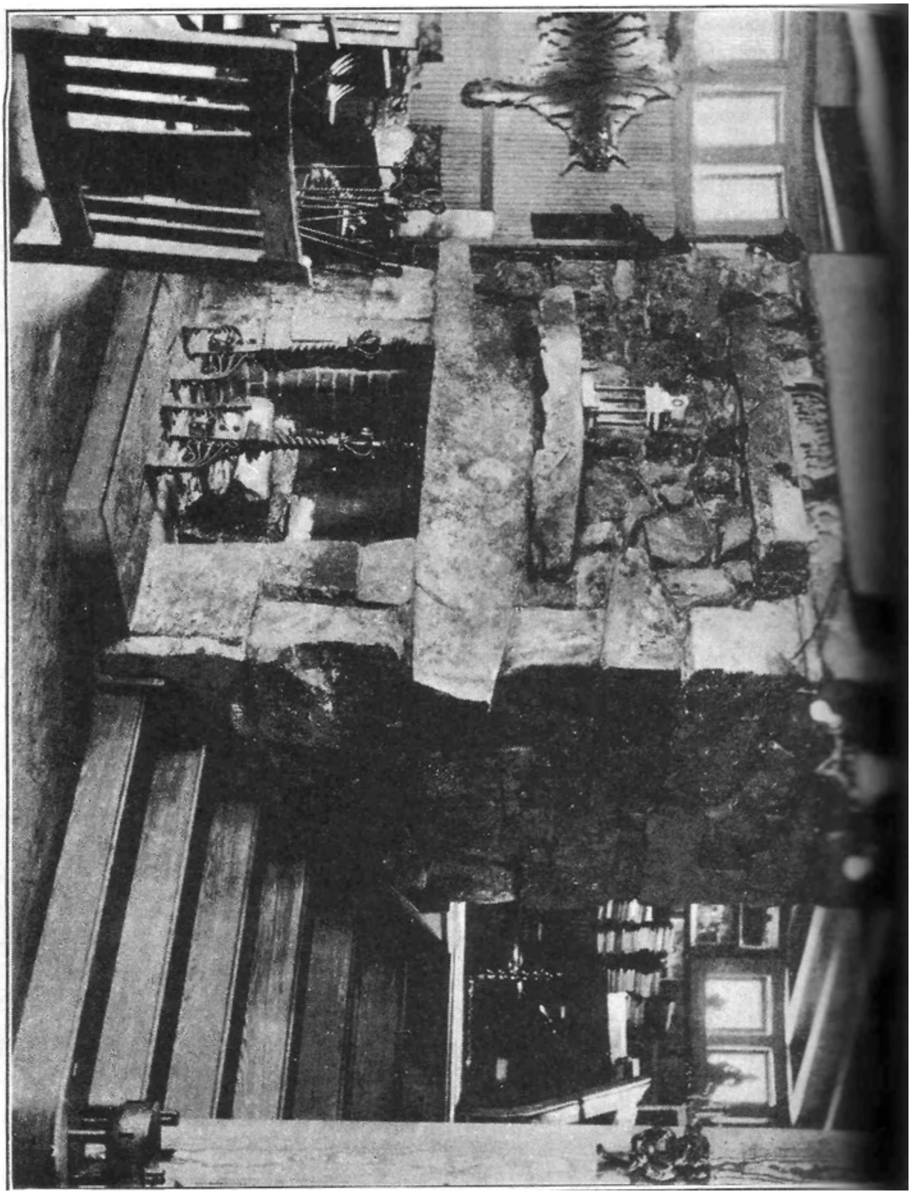
Attention is again called to the fact that all those eligible to membership, whether members of THE DEER ISLAND CLUB or not, are welcome on the island.

It is suggested that all who can include a trip to Deer Island in their next summer's tour should make plans therefor at an early date, in order that the various groups who intend to do so may assemble at a time arranged in advance. This will enable the management to make adequate provision for all visitors, and will make possible, in many instances, the meeting of friends there who might otherwise miss seeing one another.

INFORMATION

For the benefit of those who have not been to Deer Island the following details may be of interest.





FIREPLACE AND LIBRARY—OUTLOOK

Deer Island lies in the St. Lawrence River two miles north of Alexandria Bay. The river at that point is about three miles wide and the American ship channel sweeps the eastern side of the island. Being thus near the center of the river, the island commands a superb view for many miles both up and down the river and is exposed to the prevailing breezes which blow north and south along the course of the stream. The island is irregular in form, with a shore line two miles in length, following the bays and indentations. It is covered to the water's edge by a natural forest which has been preserved and is traversed in all directions by wooded paths, of which more than fifteen miles have been laid out.

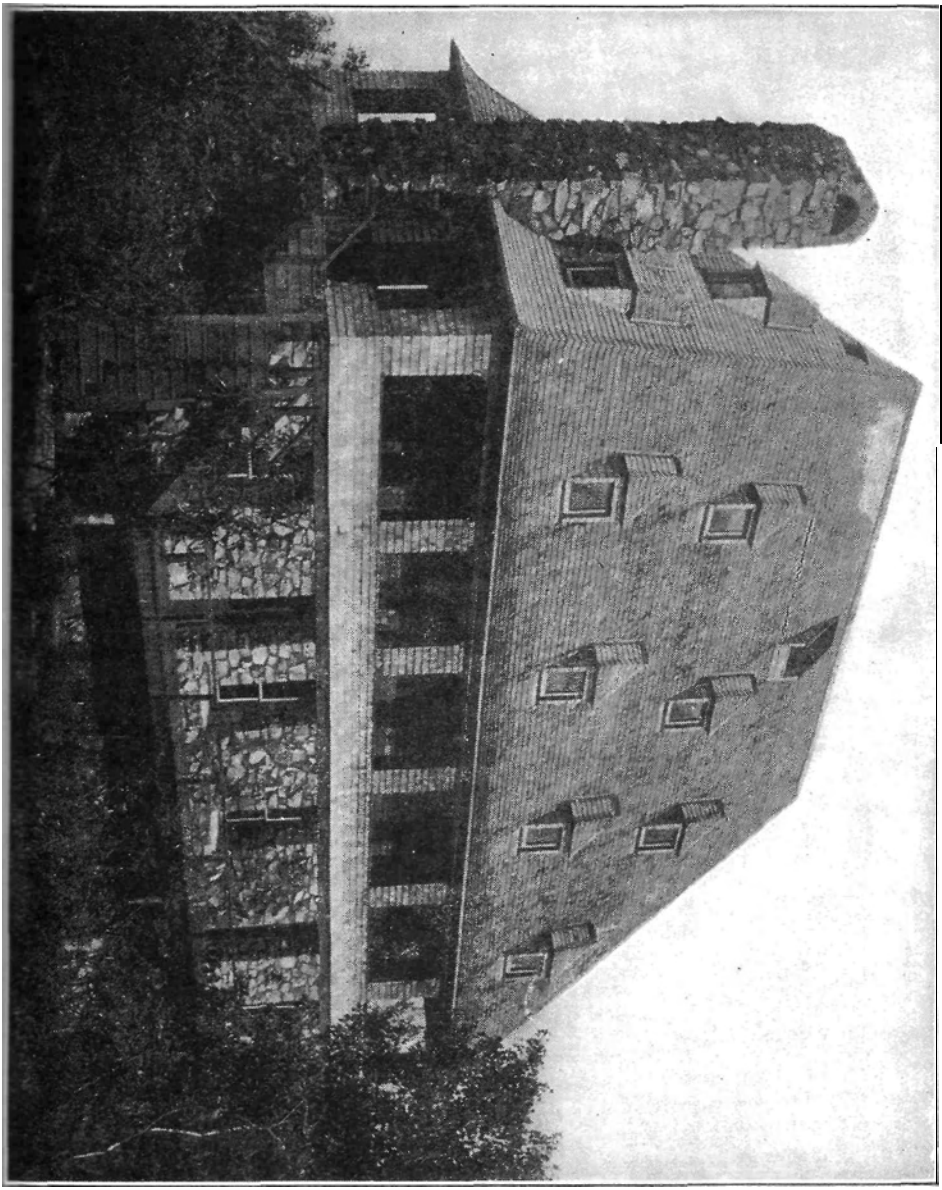
THE "OUTLOOK"

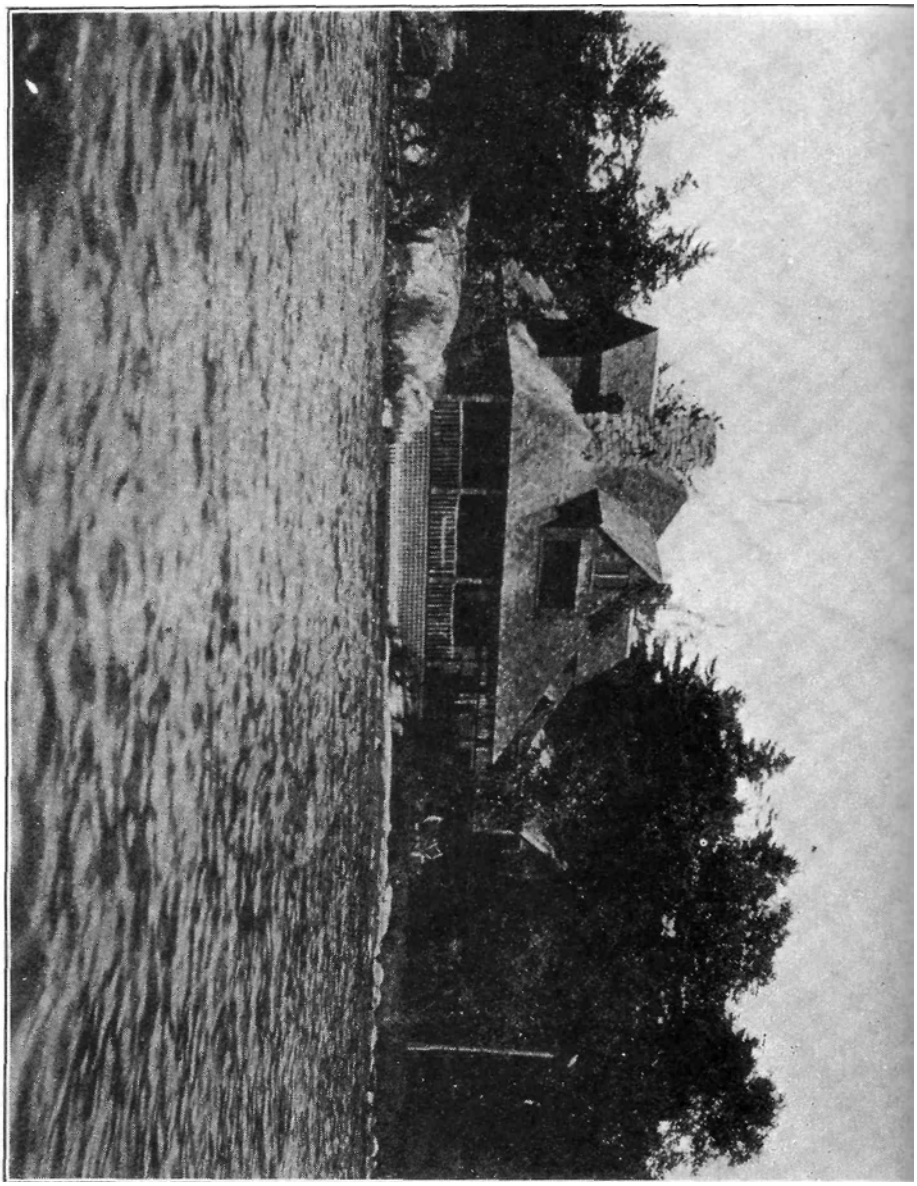
This is the main club house, located on the eastern side of the island, with a rocky bay on one side and the broad St. Lawrence in front. The house rises from a granite ledge on the river bank, and a wide gallery opening out of the lounging room projects over the clear green waters, which are there more than 100 feet deep. In the "Outlook" are fifteen bed rooms, each with hot and cold water; and five bath rooms. Each room is furnished in a unique way. All have a fine outlook on the river and seven of them open on balconies on the water

side of the house. In the northern part is the dining room, comfortably and picturesquely furnished, commanding light and air and beautiful river views through the broad windows at its either extremity. The lounging room opens out of this, and with its large windows and water gallery seems poised over the brink of the river. In the south wing is the main hall filled with a collection of curious and beautiful mementos and relics gathered from many lands, while beside the great fire place a short stairway leads to the library, a semi-circular room back of the chimney—a room that must be seen to be appreciated and understood.

THE "STONE HOUSE"

This is located 100 yards from the "Outlook," close to the shore and in a heavily wooded dell. It is a large building of native stone with a Flemish roof. In the lower part is a great hall (not yet finished.) Its walls are to be hung with a collection of ancient armor which is now in the keeping of the Albany Historical Society. At the rear of the hall is a gallery, and on the floor above it is a suite of six bed rooms with several baths, while on the floor above that is a similar suite of five bed rooms, surrounded by a gallery, which comes well above the tree tops and looks out on a magnificent view.





THE LEDGES

THE "LEDGES"

This is for the accommodation of men bringing their wives and families or friends. It is located on the southern extremity of the island, less than half a mile from the "Outlook," and comprises a group of semi-detached houses at the water's edge. Here are nine bed rooms with a large social room, surrounded on all four sides by a wide veranda, which is also the dining room, one of the four sides being always sheltered and available for that purpose.

Both the "Outlook" and the "Ledges" are provided with commodious boat houses. The club now owns several boats and canoes, and during the past season added a motor launch. During the coming season it is expected that other boats will be purchased and installed as may be needed.

At the "Outlook" a competent housekeeper is. in charge whenever guests are present At the "Ledges" Prof, and Mrs. Beebe have kindly acted as house committee, while in the event of their absence, suitable provision will be made for members and guests.

CLUB MEMBERS

E. Alexander .... '73
F. W. Allen .... '00
M. H. Arnot .... '56

W. I. Badger .... '82
H. A. Bayne .... '92
S. E. Baldwin........................ '61
O. T. Bannard .... '76
W. M. Barnum.................... '77
W. Beebe .... '73
S. B. Bertron........................ '85
E. M. Bentley...................... '80
W. McC. Blair .... '07
L. W. Bowers........................ '79
G. C. Brooke........................ '97
P. H. Brooke .... '99
J. W. Brooks .... '75
H. S. Brooks .... '85
L. F. Burpee.......................... '79
S. C. Bushnell....................... '71
F. S. Butterworth .... '95

E. Coffin............................... '66
W. Camp .... '80
W. H. Cowles .... '87

H. M. Denslow .... '73
M. Dexter .... '67
H. F. Dimock .... '63
T. P. Dixon .... '07
P. L. Dodge .... '07
T. E. Donnelly .... '89
W. E. Dwight..................... '93

F. MacVeagh .... '62
J. G. Magee .... '06
T. S. Maffitt.......................... '99
H. Mansfield .... '71
L. McClung .... '92
G. D. Miller .... '70
W. S. Moorehead................ '06

J. B. Neal.................... -------'96

J. P. Ord............................... '73
F. O'Brien .... '06

H. M. Painter .... '84
W. Parker .... '80
W. Parkin .... '74
J. R. Parrott.......................... '83
J. H. Perry............................ '70
W. A. Peters .... '80
A. R. E. Pinchot.................... '97
Gifford Pinchot .... '89
H. B. Piatt .... '82
L. A. Piatt .... '79
F. J. Price...................... -----'92
S. O. Prentice .... '73

D. Sage .... '97
H. M. Sage .... '90
W. D. Simmons .... '90
E. C. Smith........................... '75

S. J. Elder .... '73
W. P. Eno .... '82

C. H. Farnam .... '68
H. W. Farnam .... '74
S. Fish, Jr............................. '05
I. Fisher .... '88
G. T. Ford .... '65
E. B. Frost............................. '83

E. E. Garrison .... '97
E. F. Green............................ '80
G. Greuner .... '84

L. S. Haslam .... '90
G. G. Haven, Jr .... '87
E. N. Hidden .... '85
C. B. Hobbs .... '85

H. A. James........................... '74
N. James .... '90
W. B. James.................. ----- '79
P. H. Jennings...................... '04
D. A. Jones........................... '75

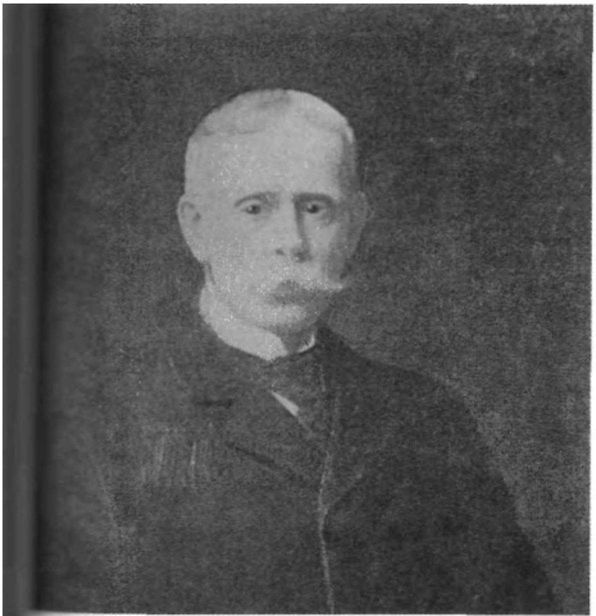
W. Kent .... '87
C. H. Kelsey .... '78
J. F. Kernochan...................... '63
A. B. Kerr .... '97
A. R. Kimball .... '77
H. L. S. Knox......................... '07

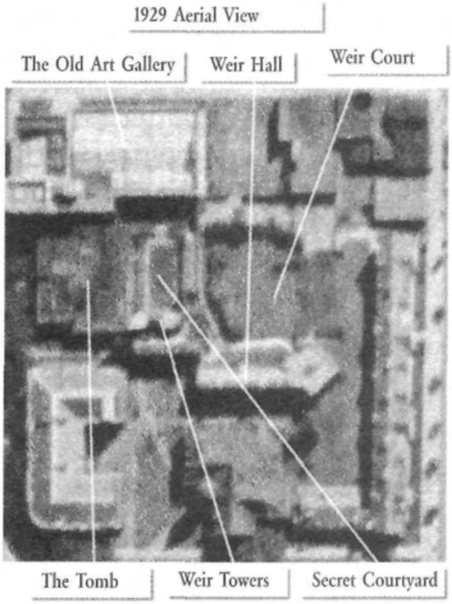
A. E. Lamb .... '67

E. R. Stearns........................ '70
A. P. Stokes .... '96
C. M. Stone .... '78

F. B. Tarbell .... '73
J. P. Taylor .... '62
J. S. Thatcher...................... '77
S. D. Thatcher .... '83
T. Thatcher .... '71
W. L. Thatcher .... '87
C. H. Thomas .... '73
S. Thorne....................... ----- '96
S. B. Thorne......................... '96
J. C. Thornton .... '08
J. B. Townsend...................... '91
J. M. Townsend. .... '74
J. M. Townsend, Jr .... '08
G. C. Tuttle .... '07

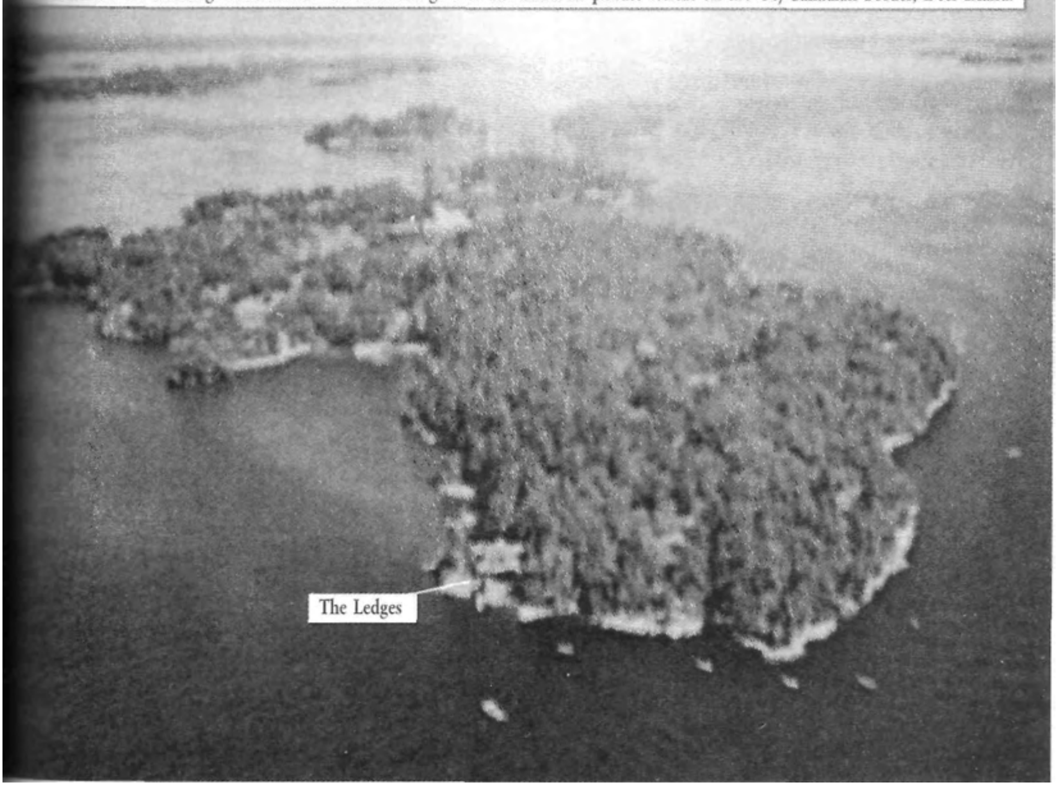
J. W. Wadsworth, Jr ----------- '98
F. C. Walcott .... '91
W. H. Welch....................... '70
F. E. Weyerhaeuser..... '96
F. S. Witherbee............. '74
W. C Witherbee.................... '80
A. D. White .... '53
J. L. Whitney................ . .. . '56
T. L. Woodruff .... ----- '79
T. S. Woolsey .... '72

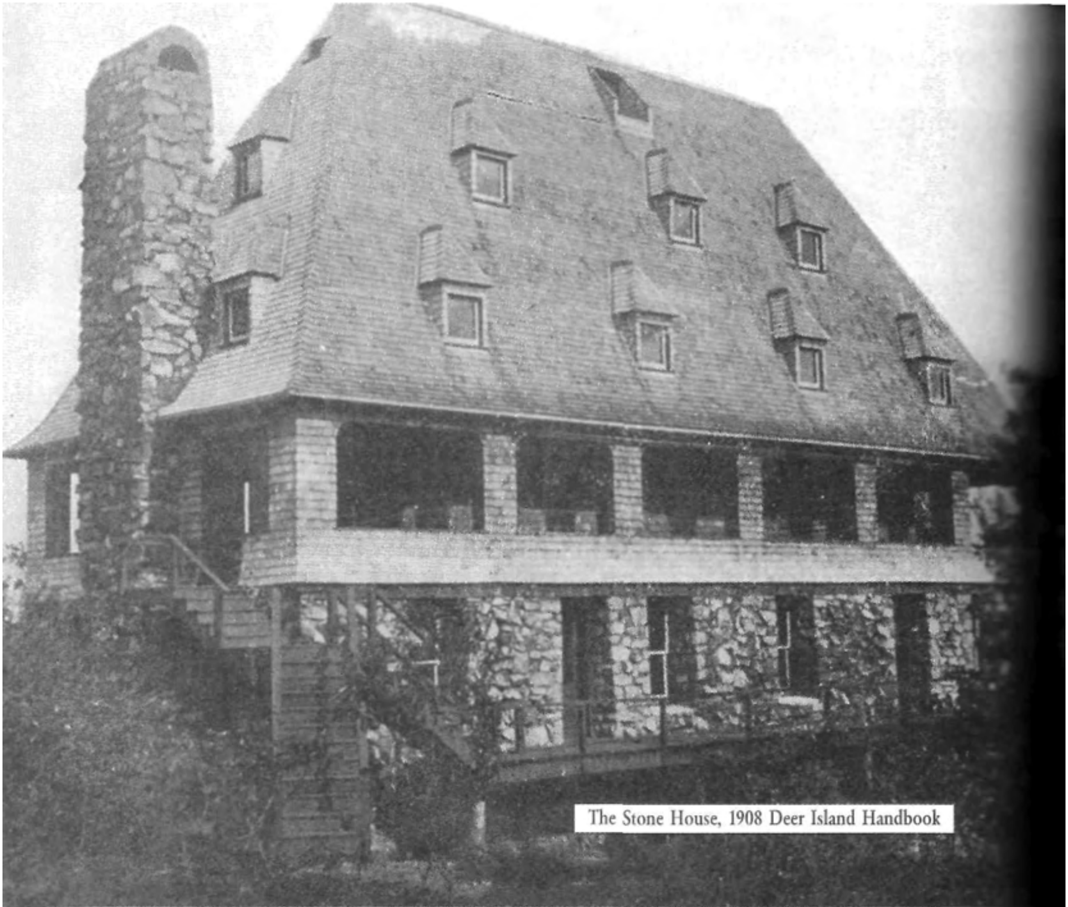




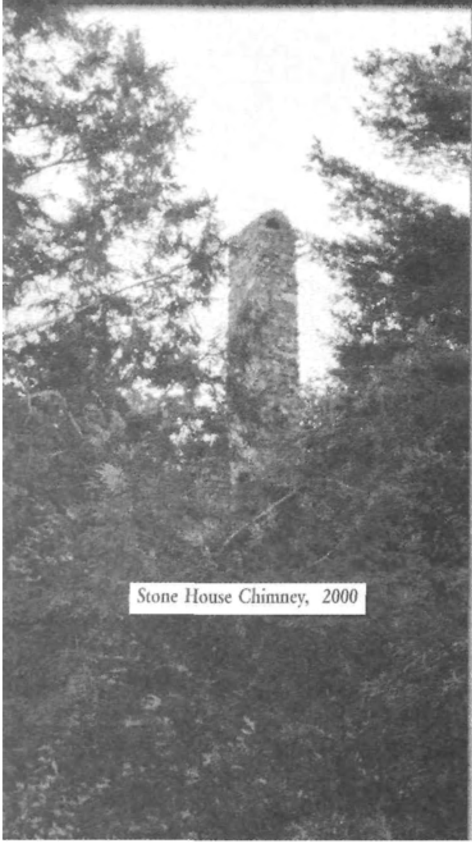
Douglas Miller 1847 - 1932

of Bones? George at one time owned the whole block surrounding the Order's Temple in New Haven. He was a member of 1870 and owned the property from the late 1870s until the 1920s. George moved the Gothic towers of Alumni Hall next to the started the building that became Weir Hall. He gave to the Order its private retreat on the US/Canadian border, Deer Island.





The Stone House, 1908 Deer Island Handbook



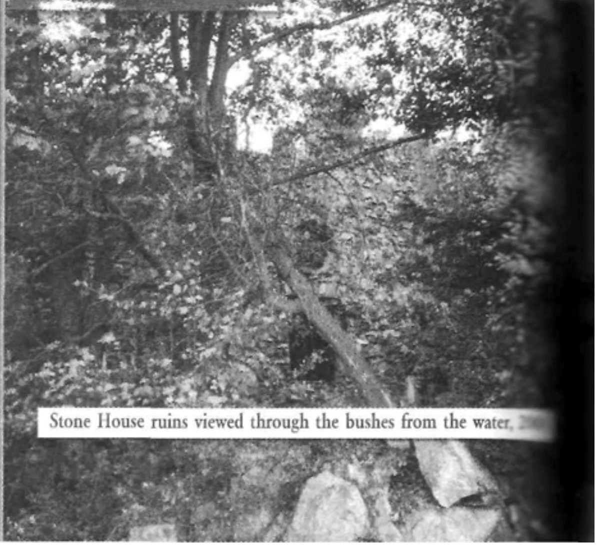
Stone House Chimney, *2000*



Stone House 1998

The Stone House is
a ruin.

Photos of the Deer
were taken in the year
and appear here cour
www.newruins.com



Stone House ruins viewed through the bushes from the water,



The Ledges from 1908 Deer Island Handbook

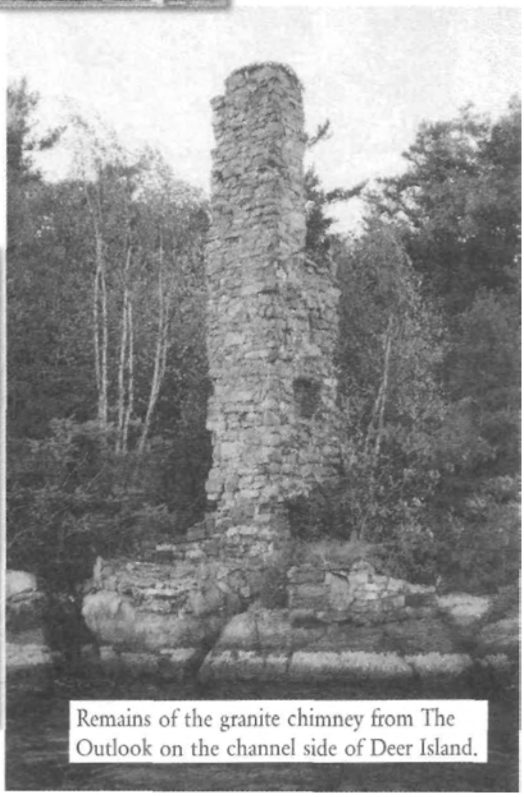




The Ledges in 2000

The stone chimmney and some rock foundations are all that is left of the Outlook. It is reported that this building burned down in 1949. The Outlook housed a collection of valuable antiques and books which were all lost in the fire.





Remains of the granite chimney from The Outlook on the channel side of Deer Island.

HARPER'S WEEKLY
A JOURNAL OF CIVILIZATION

Vol. XVIII.—No. 893.] NEW YORK, SATURDAY, FEBRUARY 7, 1874.

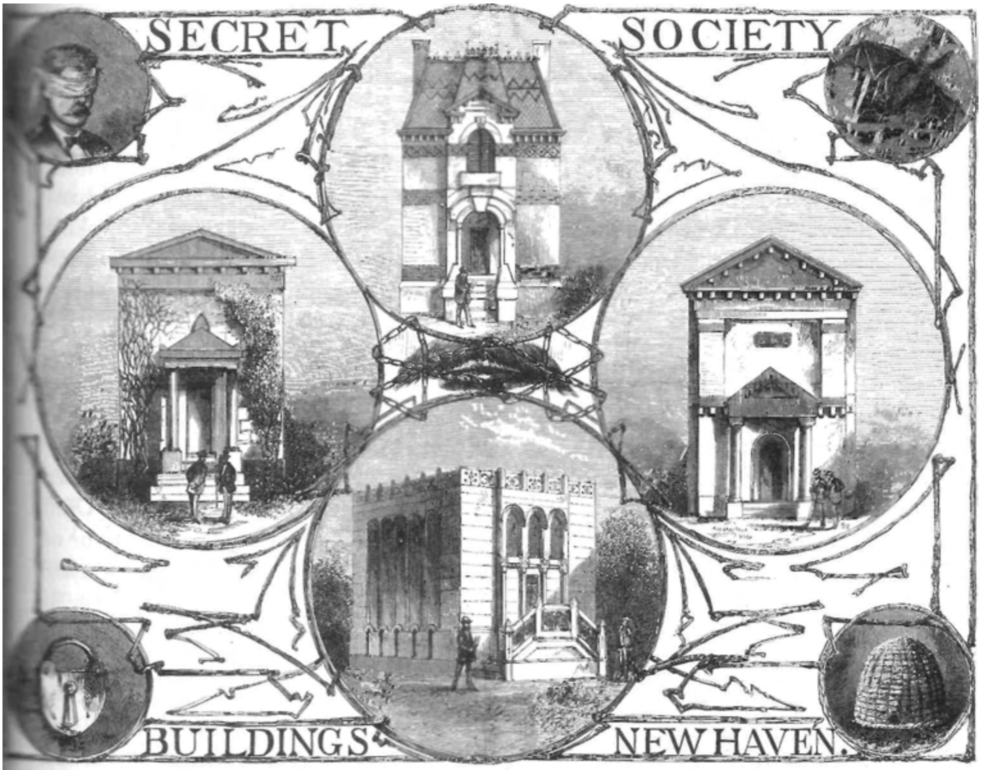
Entered according to Act of Congress, in the Year 1874, by Harper & Brothers, in the Office of the Librarian of Congress, at Washington.



THE EMANCIPATOR OF LABOR AND THE HONEST WORKING-PEOPLE.—[See next Page.]

SECRET SOCIETIES AT YALE.

FROM HARPER'S WEEKLEY, FEBRUARY 7, 1874



SECRET SOCIETIES AT YALE COLLEGE.—[FROM A DRAWING BY MISS ALICE DONLEVY.]

THE SECRET SOCIETY SYSTEM of Yale College is a peculiar characteristic of that institution, and is so prominent a feature there that it is quite as much talked about as the college curriculum itself. Whether this be an advantage or the reverse is a question which may of course be argued either way. The society system at Yale is different from that which prevails at any other institution of learning in this feature, that there are no societies — except in the scientific school — which run through the entire course, but the societies change with each succeeding year. After Freshman year

the members of the next year's society are elected by the class above, and is the number is necessarily limited, a society election is one of the coveted boners. Every college in the land has its secret societies — even Harvard cannot deprive them of in existence within its halls. But at all the other colleges and universities except Yale the Freshmen are elected soon after entering, and remain active members of the organization during the entire four years.

Beginning, then, with the societies of Freshmen year, we find three such societies now in existence at Yale. As with the organizations in the two succeeding classes, these societies are known and designated by letters of the Greek alphabet, the letters selected being the initial letters of the secret motto of the society. They are known as Delta Kappa (ΔΚ), founded in 1845; Kappa Sigma Epsilon, or "Sigma Fps" (ΚΣΕ), founded in 1840; and Gamma Nu (ΓΝ), a sort of half-and-half secret society, founded in 1855, A fourth society, Sigma Delta (ΣΔ), founded in 1849, expired in 1860. A Freshman on entering college has an opportunity to join either one of these three societies, and if he has friends in an upper class, is pretty sure to join whichever one they may recommend. The rivalry between the societies is solely one of numbers, and many interesting and humorous stories of the influences used to induce a would-be Freshman to join one or the other of the two first-named might be repeated ad libitum, Zealous Sophomores have paid hotel bills, driven in hired carriages all around the city carried carpet-bags, and furnished With an unlimited supply of cigars, wine, and suppers, Freshmen whom they wished to secure for their organization, only to fie mortified in the end by the discovery that the Freshmen was already pledged to the rival organization, or was a smooth-faced graduate of many years' standing. The society meetings in this year are held on Saturday nights, breaking up at midnight, and the exercises, are of a literary character, sometimes varied by a dramatic entertainment. Despite the popular belief to the contrary, not a drop of wine is allowed within any society hall in college, and this rule, we have been informed on good authority, is seldom if ever violated. "Sigma Eps" has one chapter or branch at Dartmouth College; Delta Kappa has one at Amherst as well as one at Dartmouth; Gamma Nu has no chapters, and is a weak society at the best. All told, the first named society has had about 1600 members, the second about 1900, and the third 400. An allusion to these societies would not be complete without a reference to their initiations, which are known of and cited throughout the country as illustrations of pandemonium broken loose. Until 1869 they were very rough in character, and often resulted in serious injury to some of their victims; but since then a professor has been present during the sports, to interfere in case they are carried too far. Tossing in a blanket, rolling in a wheel, stowing away in a coffin, sitting, suddenly in a tub of ice, or put under a guillotine, where the knife is arrested within a few inches of the victim's nose, and members yelling, blowing horns, burning phosphorus, and masked as skeletons and demons-these are what a candidate has to pass through before being invested with the dignity of membership.

The Sophomore societies are now mere stepping-stones to a Junior organization, and are almost entirely of a social character. They are at present two in number — Delta Beta Chi (ΔΒΧ), and Phi Theta Psi (ΦΘΨ) — and have each from thirty to thirty-five members. In a class of ordinary size this leaves about half the members out in the cold. The first Sophomore society I was established in 1838, and was known as Kappa Sigma Theta, and flourished until 1858. Alpha Sigma Phi was established in 1846; and was-broken up in 1864 by the faculty and from its ashes sprang the two organizations already mentioned. All the college societies have rooms of their own, guarded by ponderous iron doors, and furnished, so report says, elaborately and elegantly. They are in Sophomore year more like

jolly, free-and-easy clubs than any thing else, having of course their grips and pass-words, but beyond an occasional dramatic entertainment the literary feature of the Freshmen societies has disappeared.

In Junior year there are three -societies, two of which own handsome buildings of their own, illustrations of which accompany this article. Alpha Delta Phi, founded in 1832 at Hamilton College, is the weak member of the triad, its chapter at, Yale, which was established in 1836, ranking the lowest in the college estimation. It has twenty-two chapters in the different colleges throughout the Union, and numbered 3650 members all told when its last catalogue was issued. Among its prominent members may be cited D. G. MITCHELL ('Ilk Marvel"), W. L. KINGSLEY (editor of the New Englander), General DICK TAYLOR, President D. C. GILMAN (of the California University), G. W. SMALLET, Governor DENNISON (of Ohio), and Senator PUGH, HORACE MAYNARD, Dr. STORRS, J. R. LOWELL, Rev. E. E. HALE, MANTON MARBLE, and others, while the late Chief Justice CHASE, Rev. H. W. BEECHER, and CASSIUS M. CLAY are among its honorary members. This society has no hall of its own at Yale.

The society of Psi Upsilon is one of the best-known of college societies; it was founded at Union College in 1833, and established a chapter at Yale in 1838 ; has now fifteen chapters, and a roll of membership with about 3500 names. Among its members are Senator FERRY, DWIGHT Foster, ANDREW D. WHITE, CHAUNCEY M. Depew, E W. SEWARD, GALUSHA A. GROW, Amos F. AKERMAN and a host of other equally well-known names. It owns a beautiful hall on High Street, with a front of twenty-six feet and a depth of sixty-six feet. The material is red pressed brick, inlaid with ornamental work in black, and it has a Mansard-roof. Inside is a fine theatre or exhibition-hall and several other rooms. The cost of the property was about $15,000.

The other Junior society is that of Delta Kappa Epsilon, founded at Yale in 1.844. It has now no less than thirty-eight chapters and nearly 5000 members. Among them are CHARLTON F. LEWIS, Major-General SWAYNE, Professor NORTHROP, J. H. DRUMMOND, General F. A. WALKER, J. Q. ADAMS, Jun.; find among its honorary members General BURNSIDE, SCHUYLER COLFAX, BAYARD TAYLOR, and others. Its hall is on York Street, and was built in 1861 of red brick, and has a front of twenty-four feet six inches, with a depth of forty-five feet, and the property is valued now at about $10,000.

Last, though by no means least, come the Senior societies, two in number, whose mysteries are "deep, dark, unfathomable," and an election to either of which is one of the coveted college honors. Skull and Bones, and Scroll and Key are the euphonious names by which these two organizations are known to the college world. Of the two the first-named is also first in position and in honor. Not much is known about its origin, except that it is supposed to have been founded in 1933. It takes each year fifteen new members, who are claimed to be the most prominent in their respective class either as scholars, literary men, or social companions. Its hall is on High Street near Chapel and is a grim-looking, windowless, tomb-like structure, built of brown sandstone, and with a front of thirty-five and a depth of forty-four feet. It stands in a lot forty by seventy, and the value of the property is estimated at $30,000.

Scroll and Key was founded in 1841, and it also takes fifteen new members every year. Its hall is undoubtedly the handsomest college society structure in the United States, and it stands on the corner of College and Wall streets. It has a front of thirty-six feet, with a depth of fifty-five feet, in a lot forty-eight by ninety-two, and the light yellow Cleveland stone is the chief material of which it is composed. This is set off by thin

layers of dark blue marble, while four pillars of Aberdeen granite with marble cappings sustain the three projecting arches in front. The value of the entire property can not be less than $50,000.

Among the prominent members of the Skull and Bones Society are found the names of W. M.. EVARTS, Colonel H. C. DEMING, General W. H. RUSSELL, Professor THACHER, Professor SILLIMAN, Professor HOPPIN, Rev. Dr. THOMPSON, Senator FERRY, D. G. MITCHELL, H. B. HARRISON, ANDREW D. WHITE, C. M. DEPEW, E. R SILL, General CROXTON, and others. Among the notable members of Scroll and Key are General RUNYON, S. F. MORSE, General SWAYNE, Professor EATON, and W. R. BACON.

So far we have sketched the history of the societies of the academic department. Two more remain, Phi Beta Kappa, which is represented in every college, and has for its members the leading scholars in every class, and Chi Delta Theta, a revived society, which formerly comprised the leading literary men, and now is confined to the five editors of the Yale Literary Magazine. The Sheffield. Scientific School has also several secret societies, but the school itself is too young for them to have any history.

In leaving the subject of secret societies ofYale, much of course remains unsaid as not being pertinent to the limits of a newspaper article. College politics are kept alive in all their intricacies by the societies, which represent in that respect the parties of the outside world. Friendships are formed in them which last through life, and the old graduate finds an old familiar spot in his society hall when he returns to his alma mater and meets none but strange faces and new buildings about him. 'The secret societies form the college life, and their existence is apparently assured. They

"Mask their business from the common eye;"

but even if their doings were open to public inspection, but little would be revealed not already known or surmised. And as to their existence, they believe in

"Giving it an understanding, but no tongue."



FILE AND CLAW.

BADGE.

THE FALL OF SKULL AND BONES

COMPILED FROM THE MINUTES OF THE 7TH REGULAR MEETING OF THE

ORDER OF THE FILE AND CLAW

9,29,76

De oesibus—quid dicam? Ilium fuit!

— Published by the Order, 1876 —

BABYLON IS FALLEN.

ANY one who was noticing the Bones men of '77, on the morning of Sunday, October 1st, 1876, was probably struck by the crest-fallen air which characterized all of them. At any rate there were those who observed that during the church services their eyes suspiciously scanned the faces of one neutral after another, and invariably dropped if their glance was returned. The reason for this is a simple one. As long as Skull and Bones Society shall exist, the night of September 29th will be to its members the anniversary of the occasion when their Temple was invaded by neutrals, some of their rarest memorabilia confiscated, and their most sacred secrets unveiled to the vulgar eyes of the uninitiated.

We have thought that a description of how this was done might be of interest to the college world. The back-cellar windows of the Eulogian Temple were fortified as follows :

First, to one seeking entrance from the outside, was a row of one-inch iron bars; behind them a strong iron netting fastened to a wooden frame; behind this another row of iron bars, one and one quarter inches thick; and still behind this a heavy wooden shutter. Formidable as these defenses appear, the OEDEE OF THE FILE AND CLAW, having procured a supply of files, skeleton keys, etc., determined to attempt to effect an entrance. For reasons that need not be rehearsed here, the work proceeded slowly, and it was only after many hours of patient and cautious labor that one of the outside bars was cut in two. Next, by means of a powerful claw, the long nails that fastened the iron netting to the wooden frame were drawn out. Then the bar was re-fastened in its place by means of a little putty, and we retired to await a favorable night for finishing the job. Eight o'clock Friday evening, September 29th, was the hour selected.

First, one of our number proceeded to remove the iron bar and the netting, and then, for the sake of more room, he, with considerable difficulty, got out the strong wooded frame to which the latter had been fastened. Pushing head and shoulders into the opening thus made, there still remained a strong row of one and one quarter inch iron bars. Fortunately there was no need to file through these. It was found that they were fastened above in a thick joist, but below ran into a brick "damp-wall" that was built up inside, and two inches from, the stone foundation-wall of the building. By the aid of a claw and a hatchet, it was the work of but a few moments to dig away about twenty inches of this wall, and thus loosen an iron plate through which the lower ends of the bars ran. Upon pushing this plate inward, the bars all fell out with their own weight; the flimsy wooden shutter was then easily wrenched from its position, and at just half past ten o'clock an entrance into the cellar was obtained. Passing in through the window, we broke open the wooden door at the top of the cellar stairs, opened the two iron shutters which close the back windows of the main hall, and proceeded to examine the Temple at our leisure. For the benefit of future explorers, and as a directory for new-fledged Bones men for all time, we will now give a brief description of

THE INTERIOR OF SKULL AND BONES HALL.

Besides the cellar, the Temple is divided into two stories.
Fig. 1 is a rough plan of the cellar :

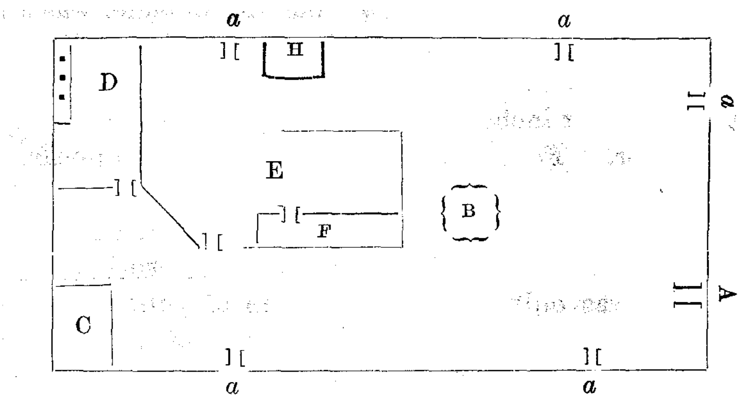


FIG. 1.

A—"Main Entrance."
B—Furnace.
C—Stairway to First Floor.
D—*Jo*.
E—Kitchen.
F—Pantry.
H—Sink.
a—Other Windows.

A light is always kept burning in the Jo (D), which is ornamented with a dilapidated human skull and a framed set of "Directions to Freshmen," signed THOMAS CLAP, and dated Yale College, 1752. Here is also a tombstone marked SPERRY, seemingly taken from the same grave as the skull. On the west wall of the kitchen (E), which contains the ordinary conveniences, hangs a picture of Napoleon Bonaparte. In the Pantry (F) are large quantities of dishes, each piece of crockery ornamented with a picture of a skull and crossbones, and each spoon and fork marked S. B. T.

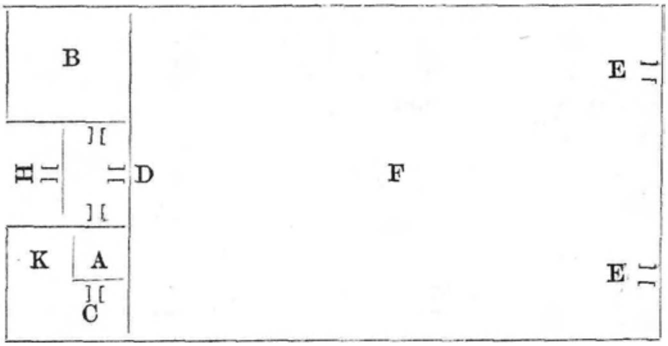


FIG. 2.

On ascending the stairs from the cellar, you find yourself, after bursting open the door C, Fig. 2, in an entry (A), from which a winding staircase (K) leads to the next floor. The door C, which is of wood, we found locked, but broke open without difficulty, H is the outside iron door, covered on the inside with a pair of light frame doors. B is a small toilet room. The door D, which is without a lock, opens into the main hall (F), called by the initiated "324." The floor is of colored tiles; the walls are rather gaudily frescoed, mainly in red and black, somewhat like those of D K hall. A few settees, resembling those in Linonia Hall, and a table, make up the furniture of the room. The wood work is painted white, and, like the walls, is in many places scratched and dirty. E E are two narrow windows, guarded by strong iron shutters. The latter are concealed from view by some light wooden blinds stained to look like walnut. The only objects of interest in the room were a glass case in the southeast corner containing a large number of gilded base-balls, each inscribed with the date, score, etc., of a university game, and a well-thumbed text-book, either a Physics or a Human Intellect,

on the fly-leaf of which was inscribed the autograph of Bones' irrepressible annoyer, Arjayjay of '76.

Thus far we had found little to compensate us for our trouble, but on ascending to the next floor, and passing, on our right, a little store-room and draw-bridge which extend over the front entrance from High street, our pains was rewarded.

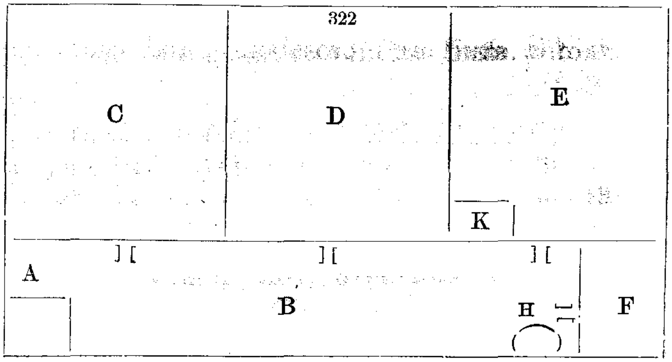


FIG. 3.

A—Staircase.
B—Hall.
C—Parlor 323.
D—Parlor 322.
E—Storeroom.
F—Storeroom.
H—Safe.
K—Closet.

Entering the room C, Fig. 3, immediately on the left is seen a book-case, which contains the Skull and Bones library, including a complete set of the Tale Lit., handsomely bound college catalogues and books published by Bones men. Here, too, was the Constitution of the Phi Beta Kappa and a catalogue of SCROLL AND KEY Society, containing a list of members down to 1868. It was bound in black, and had on the front cover the letters C. S. P. and on the back C. C. J. in Old English text. For the year LI only eleven names are given, and for XLII only twelve. It contains several typographical errors, as for instance, D. Cady Eaton's first name is printed Samuel. Opposite the names of the first two Keys men for LXII, some one has written, in a bold hand, the mystic symbol "Ass." And at the top of the page which gives the men of LII, is written, "Croud packed by Boies," and Boies is the name of a Keys man of that year. From the catalogue we learn that the President and Secretary of Scroll and Key are known "inside" as CHILO and EUMENES, and that, as in Bones, each member has a nickname given him. Some of these are handed down from class to class, and of these

Glaucus, Prisaticus and Arbaces appear to be the favorites.

Hanging on the wall towards High street was a handsomely-framed cushion of dark velvet, on which were fastened the pins of all the societies which have existed in college, including Spade and Grave, Bull and Stones, and the like. On the south side of the room is a fire-place, and above this a mantel and mirror. Upon the mantel were a Skull and Bones of silver,, the skull about two inches in diameter, and engraved "322 from the S. E. C. of 1858;" another of bronze, a little larger than the silver one, and various other insignia relating to Skull and Bones, On the west wall hung, among other pictures, an old engraving representing an open burial vault, in which, on a stone slab, rest four human skulls, grouped about a fool's-cap and bells, an open book, several mathematical instruments, a beggar's scrip, and a royal crown. On the arched wall above the vault are the explanatory words, in Roman letters, "WER WAR DER THOR, WER WEISER, WER BETTLER ODER KAISER ?" and below the vault is engraved, in German characters, the sentence :

"Ob arm, ob Reich, im Tode gleich."

The picture is accompanied by a card, on which is written, "From the German Chapter. Presented by Patriarch D. C Gilman of D. 50." The room is handsomely furnished; tobacco and pipes were abundant, and packs of well-worn cards served to indicate how the society manages to kill five or six hours every Thursday evening. The pipe-bowls, which are representations of skulls, and bear the stamp of M. Gambier, Paris, have the Eulogian name of the owner and his decade written upon them with red ink ; for instance, the one belonging to the present "Member from Bath" was marked "TRIM, D. 75."

Room D, the Bones name of which is "322," is the sanctum sanctorum of the Temple. Its distinguishing feature is a life-size fac simile of the Bones pin, handsomely inlaid in the black marble hearth. Just below the mantel, and also inlaid in marble, is the motto :

Rari Quippe Boni,

in old English text. This room is even more richly furnished than "323," but contains no book-case, and no pictures of special significance.

On the walls of the long hall B are hung a couple of score of photographs, about 12x20 inches, each representing fifteen Bones-

men grouped around a table, on which rest a human skull and crossbones. As the finish of these pictures is poor and of an antiquated style, it is probable that they are taken each year with the apparatus belonging to the society. H is an old-fashioned plain-lock safe, size about 20x26 inches, and 15 inches deep, set in the wall. It is probably used as a place of deposit for money and valuables, but on the night of the 29th contained only a bunch of keys and a small gold-mounted flask half filled with brandy.

K is a small closet in which are kept unbound sheets of the Bones Society catalogue and a set of handsome memorabil books, one for each year. Some of the old memorabil is quite curious, and the collections relating to recent years are very complete.

The Bones catalogue is essentially as described in Four Years at Yale.

The doors to E and F, which are used as general storerooms, are protected by plates of sheet-tin, but the locks were not "what we may call" proof against skeleton keys. The memora bilia in these rooms was noteworthy for amount rather than quality. However, in the midst of a good deal of rubbish we found four or five boating flags, and a number of old Greek, Latin and German works in MB. None of these were society records, but works of well-known authors; into the genuine antiquity of the MSS. we have not as yet been able to examine.

In conclusion, we will say that a thorough examination of every part of the Temple leads us to the conclusion that "the most powerful of college societies " is nothing more than a pleasant convivial club. The kitchen contains the materials for serving refreshments for the inner man; there are neither billiard tables nor any kind of musical instrument in the building; there is a total absence of all the "machinery" which we had been led to expect; the bell heard on initiation nights is not "the old college bell;" Skull and Bones has no secrets beyond a few that may be handed down annually by word of mouth, and no written constitution beyond a few directions similar to the suggestions appended to the Delta Kappa by-laws.

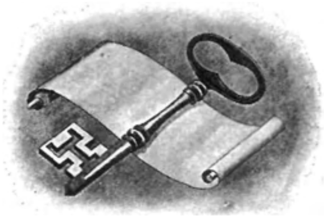
Before leaving the hall, it was asked whether we should inform other members of the college of what we had done, and throw open the hall to the public. We think no one will deny that we had it in our power at one stroke not only to take away forever all the prestige which her supposed secresy has given this so-

ciety, but to make her the laughing-stock of all college, and render her future existence extremely doubtful. But while we had no consideration for the mysterious popiecock of Skull and Bones Society, we nevertheless remembered that some of the Bones men of '77 are our warm personal friends, and therefore we preferred a less radical course. To Bones as a pleasant convivial club, we have no objections. Let her live on as long as men enjoy good suppers and quiet whist. But her mystery and her secresy are at an end, and we hope her absurd pretensions and her popiecock are dead also.

The burglary was not discovered until the following evening, at about eight o'clock. All day Saturday the great Skull and Bones lay at the mercy of any one who might notice the back window.

How thoroughly the society was frightened can be seen by the way they have sealed up the window through which we entered, as well as more recently all of the other five basement openings. We have no idea that Skull and Bones will deny that their hall has been entered, for we are not without proofs that our tale is true. We have above spoken of different manuscripts, trinkets and memorabilia as existing in the Temple. In several cases we should have written "existed," for the place that knew them shall know them no more forever. In short, while robbery was not our errand, on the principle that the second thief is the best owner we helped ourselves to a few pieces of memorabil, which can be put on exhibition, and a few documents which can be printed, should any authoritative denial be made to any essential point in this statement. Nor will Bones' usual policy of silence avail to throw discredit upon our story. Part of our memorabil has been seen by Senior neutrals, and the remainder will be put where it will do the most good, as soon as the protection of a sheepskin has been placed between us and the Faculty and the law.

YALE COLLEGE, 1877.



SCROLL AND KEY FOUNDED 1842

RAYMOND JACOB ALBRIGHT

DELAVAM MUNSON BALDWIN JR.

JOHN ROBERT HALSEY BLUM

PROSSER GIFFORD

ROGER LEE HADLICH

HENRY BRANDEBURY HAGER

LARRY LEE JENNEY

ROBERT CHARLES JOHNSON

Scroll & Key Membership Listing, Yale Banner, 1951

WILLIAM REDINGTON LYNCH

JOHN THOMAS MACKELFRESH

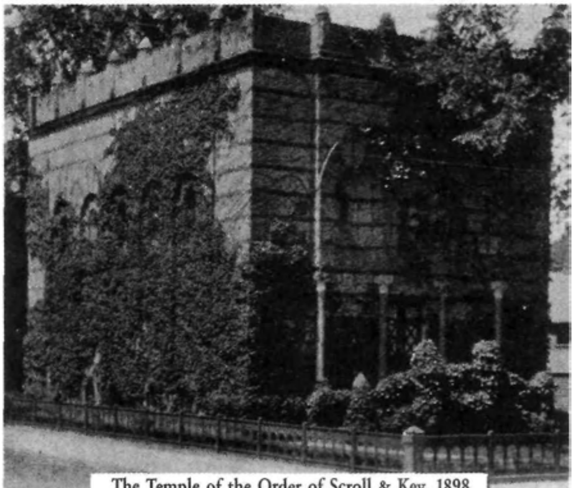
BRITON MARTIN JR.

EDWARD ANDREW MEARNS JR.

LAROM BECKLEY MUNSON

RAYMOND MACFARLANE REID JR.

JAMES STILLMAN ROCKEFELLER JR.



The Temple of the Order of Scroll & Key, 1898

THE TOMB GRAFFITI TRIAL OF 1878

FROM THE YALE NEWS
VOL. II - NO. 47. JUNE 17, 1878. NEW HAVEN, CT

LAST THURSDAY NIGHT

LAST THURSDAY NIGHT the hall on the corner of College and Wall streets, occupied by the Scroll and Key Society, was painted by some unknown person in such a manner as to deface and seriously mar the fine effect of the marble front. All college disapproved the act, and many were glad when it was known that two detectives were engaged in working up the matter. Many, however, considered that the more dignified stand taken by the Skull and Bones Society which had suffered a similar, though from the nature of the building material, less injury would have been the proper treatment.

Friday afternoon several suspicious looking men went through South college in a vague sort of a way, inquiring for bed-room sets, etc., and during annual, one room at least was searched.

Early in the evening Edmund R. Terry, a Senior, from Brooklyn, was pointed out to a constable by a classmate named Jewett. Several men were at the fence at the time, and so the demand for a warrant was met by the answer: "You can't come any Sandy Hollow game over me," allusion being made, according to Chief Allen, to a resident in Sandy Hollow, a low part of New Haven, who demanded to see a warrant and, on its being produced, relieved the constable of it. He was finally persuaded to exhibit his warrant to Terry at a distance from the, party. Terry was taken to the Station House, and bailed out by a classmate, Mr. Briggs. Herbert W. Bowen, also a Senior and Brooklynite, was arrested a little later, and bailed by Mr. A. A Dershimer, 78.

The warrants were examined, and the charge found to be, "defacing the building of the Kingsley Trust Association.

The names of E. S. Charlier, and J. W. Eaton, '79; M. Wilcox, '78; and Tutor E. S. Dana appeared as prosecuting witnesses.

By nine o'clock Friday morning, the Court room was crowded with students, among whom were the following Keys men: Tutor Dana, John A. Porter and M. Wilcox, '78, and Ten Eyck and Donaldson, '79, and several graduates, among them Frank Ingersoll and John W Ailing of this city. No Bones men were visible.

The disposal of three drunks, and a family jar occupied the Court until. 10, and during this time some of the audience got tired and departed. Finally the case of E. R. Terry was called, and the charge of defacing Keys hall read. Terry plead not guilty, and E. S. Dana took the stand. Tutor Dana testified that he was a member of the Kingsley Trust Association, and one of the trustees of the building. He saw the building after the defacement of Thursday night. Mr. Doolittle, attorney for the defence, objected to the word defacement. It was changed, and the witness proceeded to testify that "the hall had been ornamented — we will say decorated, adorned, — " by laying on in black paint, in front and at the side, of certain figures.

"What were those figures?"

"A 5, a 2, and a 2."

E. S. Charlier testified that he was a member of the Junior class resident at 82 Wall street. First saw Terry on Thursday night at 10:30 near Farnam College. He came up and peered into my face. We went over to Key's Hall. There Terry came up and looked into my face. I saw a man at work in front of the hall. Quite a number of men, presumably students were on the N. E. corner. They crossed the street one by one, and, without addressing the painter inspected his work.

Mr. C. testified to a conversation with Bowen, in which Bowen warned him, not to interfere. He did not see the painter's face. Failed to recognize him. Could not describe him. Does not know whether he was a collegian or not.

When the work was done, he followed the painter, endeavoring to ascertain who he was. Bowen went with him. They went down Wall to High, but failed to overtake the painter, although neither party ran. Three or four men were with the painter, who had a pot or vessel of paint with him.

The inscription on the steps was

522

SCULL & BONE.

On the side were two or three 522's.

Does not know to what purpose the building is applied.

The Keys society has no peculiar number to his knowledge. One society in college employs the number 322. Mr. C. was asked if he belonged to any college society. "I belong to Linonia."

"Are you a secret member of Keys?

"I am a member of no secret organization in Yale College."

James W Eaton was called and testified that he met Terry near the south entry of Farnam, between 10:30 and 11:30 Thursday evening. Had a conversation with him. Terry told him of the decoration of the hall, and stating that he had taken no part in the procedure. Had produced a small tube of pigment done up in foil, with the remark that it would make "first-class memorabil."

This closed the case against Terry.

The defense did not introduce any evidence. Pickett, for the prosecution, claimed that Terry had aided and abetted in a conspiracy to deface the hall.

Doolittle, for the defense, called the act a harmless college prank. All injury to the hall could have been removed in a few hours with a little common sense and some potter's clay. The numbers were evidently placed there merely to cause laughter. If Terry had no right to be present, how came Charlier there? Charlier was equally guilty. Eaton's evidence was for the defense, for he had testified that Terry had stated at the time that he had no part in the proceedings.

The Court very justly pronounced the work as low and mean and beneath the dignity of any one who pretended to be a gentleman, but said that there being no conclusive proof, he would have to nolle the case.

Bowen's case came next and seeing no hope of convicting him by Mr. Pickett's tactics, Ailing came to the rescue.

E. S. Charlier testified that he had seen Bowen on the corner of Wall and College streets, Thursday evening. He had but a slight acquaintance with Bowen, having been casually introduced a week before. Nevertheless, he went up to Bowen, notwithstanding the fact that Bowen was an upperclass-man.

Bowen had remarked "Good evening." Charlier replied, "I think this is nice, don't you?" Bowen said in effect that it was none of his business. Charlier said, "I call this low business for a gentleman, a gentleman of Yale." All the rest of the party crossed the street separately. Bowen and Charlier crossed together. They followed the, painter together until Bowen advised Charlier to give tip the pursuit, saying, "What are you meddling here for? You will get into trouble."

Mr. Ailing: "Is Bowen a member of Scroll and Key?"

Charlier: "No. He has the reputation of being 'sat on' in his own class."

Mr. Doolittle: "Have you the reputation of making bets and not paying them in your own class?"

Pickett objected and the question was not pressed.

Pickett began asking about Senior societies, but Ailing and Marion Wilcox spoke to him and he desisted.

Doolittle wanted to know if Charlier was a candidate for membership in Keys. Pickett objected. Charlier's impression was that Bowen was superintending the matter. He, supposed Bowen was engaged in mischief and "volunteered, the information that he thought it was a low business for a gentleman." Doolittle considered such remark to a mere bystander an insult.

Charlier considered himself "as much a gentleman as you are, and" [with a splendid stage gesture] "I appeal to you, your honor."

His honor told him to go on with his evidence. After some evidence of trifling importance, Eaton was called, and testified that he had seen Bowen enter the South entry of Farnam rapidly, Thursday evening, in a dark suit of presumably old clothes. He wore a slouch hat, and had his coat collar turned up about his neck.

E. R. Terry was called and testified. Saw Bowen last Thursday night across from Keys hall. Could not say whether he had seen Bowen on College, West of Wall, that evening or not. Did not know who painted the hall. Had not asked. Did not see or recognize the man, as his back was turned. Thought he was disguised. Did not know. Did not know whether the painter was a college main or not. Had not entered into any conspiracy with Bowen to deface the hall. Did not, wish to testify for fear of criminating himself. He refused to "give away" the parties who were present, and then made a slip and mentioned the name of a well known Senior. He had purchased some black paint from Cutler for ten cents. Had painted signs with it. Asked if he had lent any paint to some one named Moore or Moores, or something similar. He had. Had he been in this man's room. Was in considerable doubt. Finally said he believed he had. He was in the habit of going there.

He had seen some paint there. It was less than four pounds. Had no conversation relative to Keys hall on the evening and in the room mentioned. Had however a prior knowledge of the decoration. Had gone over to the hall on purpose to see it. Did not know who invited him — went in response to a mere campus rumor.

Did not belong to same society as Bowen; B. was a Psi U. man, T. a member of D. K. E. Was not a member of 522. If he had been he would have objected to the name of the society being painted in such a place. Terry's paint can was not out of his room that night. Refused to say who was across the street from Keys hall.

Tutor Dana was called. He saw B. pass him with a rush and enter his, room, Thursday night. Came out in response to a call. "He and a crowd started off on a brisk walk, attended by a peculiar motion of the heel and toe, characteristic of the Keys society; an old but, somewhat childish custom, I should like to be permitted to observe. I heard Bowen start up a song of a popular character, sometimes sung by the society of Scroll and Key, and hence these gentlemen — ." He was stopped by Mr. Doolittle.

Ailing spoke for the prosecution, and Doolittle for the defense.

Doolittle gave Ailing some "taffy" about his membership in Keys. Called him the real conspirator, compared him to Catiline. So sensitive, you know. Argued that there was no proof of Bowen's participation or conspiracy. Called it a college jest. The society considered its hall not disfigured and disgraced by the paint, but by the emblem of a rival Society.

Judge Peck spoke a few minutes treating the perpetrators of the outrage with the contempt they so well deserve, but acquitted Mr. Bowen with the remark that he considered the case as beneath the dignity and unworthy the attention of the Court, and the remark that though he considered Terry's testimony as sufficient proof of the existence of a conspiracy, there was no proof of Bowen's participation. The case was therefore nolled.

Some other notes from same issue:

The man who arrested Terry told I him that if he would turn State's evidence he would be released.

Within a quarter of an hour after court adjourned Saturday, one of the prosecuting witnesses was discharging debts of honor, the result of the spring regatta.

A lawyer was heard Saturday afternoon to say, "This is the first time in the history of the college that one Yale man has testified in Court against another."

The college generally will support the sentiment expressed by some one, Saturday, after the trial. There is just one man in college meaner than the man who painted Keys Hall. He is the man who went into Court and testified against a fellow student.

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FROM AN UNNAMED LOCAL NEW HAVEN NEWSPAPER ACCOUNT

(CUT OUT - CIRCA JUNE, 1878.)

COLLEGIATE VANDALISM

TRIED FOR DEFACING A BUILDING.

JUDGE PECK THINKS THE MATTER ONE TO BE SETTLED OUT OF COURT.

THE CITY COURT ROOM was crowded with students this morning, who had gathered to witness the trial of Edmund R. Terry and Herbert W. Bowen, arrested on a charge of having aided, abetted and conspired to deface the hall occupied by the Scroll and Key Society on the corner of College and Wall streets, on the night of the 13th inst. The accused were defended by Tilton E. Doolittle, and Mr. Pickett was assisted in the prosecution by John W. Ailing, of the class of '62, and a former member of Scroll and Keys.

The first party tried was Mr. Terry. Edward S. Dana, a tutor at Yale, testified that he saw the building after its defacement on the night of the 13th, and also on the same day. He saw the figures "522" on the wall between the staircases leading into the building, painted on the white wall in black figures. He also testified that the building belonged to the Kingsley Trust association, of which he was one of the trustees. Mr. E. S. Charlier, a Junior, who "gave the business away," next told his story. He was going by Farnam hall on the night when the ornamentation of the hall took place, and there saw Mr. Terry, who looked at him full in the face two or three times, he returning the look, so as to be able to fully recognize Terry. He then went along up to Wall street where he has rooms, and found some one engaged in artistic work at Keys hall, and fonr[sic] students, two of whom he recognized as Terry and Bowen, looking at the work, the latter apparently superintending it. He addressed Bowen with whom he had a[n] jgh[sic] acquaintance and returned the salutation. Then Charlier said "Don't

you think this is nice business," and Bowen responded "It's none of your business." Mr. Charlier said "I call it low business for a gentleman of Yale to be engaged in." He was then informed that it would be a very healthy thing for him to do to avoid meddling and go about his own business. At this point the painter whose back was kept studiously turned toward him went away, being escorted by one of the party, the other three remaining behind and intimating to him that he must not interfere and that if he did there would be trouble. He followed the painter for some distance and finally thinking discretion the better part of valor, left the party and went home. Mr. James W. Eaton another junior testified to having seen the ornamentation, as it had pleased Mr. Doolittle to call the defacement. He had also seen Mr. Terry at Farnam college that evening, and they had some conversation in relation to the matter of the decoration, Mr. Terry telling him what was done, and taking a small can of pigment from his market remarked, "This will make a first-class memorabil.' He described the disfiguring of the walls of Keys Hall, which bore in black paint the legend "522 SCULL and Bone 522 [.]" This closed the case against Terry who did not testify at that time, and after short arguments in which Mr. Doolittle claims that nothing was proven and Mr. Pickett that there was a clean case against Terry of his having cognizance of, and aiding in or abetting the disgraceful work. The court pronounced the work as low, mean, and beneath the dignity of any one who pretended to be a gentleman, but said he should have to order the case nolled, as there was no conclusive proor[sic] against him.

Then came the case against Bowen, and Mr. Ailing, seeing there was no hope of convicting him in the way in which Mr. Pickett had been conducting the first, came to the rescue, in order to convict, if possible, the one who was supposed to be the principal in the affair. Tutor Dana testified to having seen a party of four or five students on the Campus, among whom was Bowen, who, when they saw him, started off in the childish walk assumed by the members of the Scroll and Key society, and began to sing a song which is sung by the members of that society almost exclusively. Where they went to he did not know. Mr. Charlier repeated his testimony given in the case against Terry, identifying Bowen fully as the man to whom he said that the "ornamentation" in progress was low business, altogether too low for a gentleman at Yale to be implicated it. He also reaffirmed his statement that Brown said "You'll get into trouble if you meddle." He testified further that he saw Bowen go over or and instruct the painter who was engaged in the disgraceful job, and that Bowen stood within a few feet of him while the painting was in progress. When the party left the building he saw the one that did the painting, whom he did not recognize, and another of the students, each carrying a paint pot.

There was considerable talk about secret societies, witness answering that he belonged to no society in Yale, and he was asked if Mr. Bowen did not belong to one the secret societies. His reply was, "No, sir, Mr. Bowen has the reputation of being one of the men in his class who was...

{unreadable}

... statement was greeted with hisses by the students in the room. One of them sitting near the reporters table said, "He'll get h—1 for that when he gets to college."

Mr. Doolittle turned to the witness when the excitement had subsided and asked, "Haven't you the reputation among the students of being one of those men who refuse to pay bets they have made, when you lose?" This question was greeted with laughter and applause by the students, but court -ordered the witness not to answer the question, and ordered the crowd to keep quiet. The cross-examination elicited no new facts, and Mr. James W. Eaton was called, and testified to having seen Bowen go into Farnham college soon after 11 o'clock, with an old suits of clothes on, his collar turned up, and a slouch hat pulled down over his eyes. He recognized him by his height.

There was considerable excitement when Edmund R. Terry was called, and as he took the stand he appeared to be a most unwilling witness, and appearances in the case were not deceitful this time. He testified to having seen Bowen on the evening on which the outrage was committed, and also to having seen him during the daytime of the same day, but denied that he had entered into any conspiracy with him to deface the building, giving his testimony hesitatingly and guardedly. He testified that he had purchased some black paint, which he had used in painting a sign of furniture for sale. He said he had loaned the paint to one Moore, living in the same building, but on the floor below him, the paint to be used for the same purpose he had used it, and acknowledged having been in Moore's room during the evening, but denied that any conversation relative to the painting of Keys' hall had been had there. He refused to tell who was there beside him, or what the conversation was, on the ground that it might tend to criminate him. He acknowledged having visited Keys hall to see the "decoration," and said that Mr. Charlier's statement was substantially correct, as to his visit. He refused to tell who were in the party besides himself and Bowen, the court sustaining him in his refusal, he claiming that his sense of honor would not allow him to "give away" the parties who were present. He said the party who did the work was disguised, but that he could not tell what the disguise consisted of, as the party kept his back constantly turned toward the street. He acknowledged that both he and Bowen were witnesses of a portion of the defacing, but denied that they knew of it before it was done.

Short arguments by Mr. Doolittle and Mr. Ailing followed, the former claiming that no conspiracy was proven and that the boys happened to be there as spectators as did Mr. Charlier, and that if there had been a conspiracy, Mr. Bowen would have tried to keep out of the way himself. Mr. Ailing held that there was a clear case against the men who, with others of the "Mythical 522" failing to gain elections to either of the secret societies had taken this method of revenge.

The court (Judge Pack) nolled the case, saying that there was no doubt but that the accused knew of the outrage, but that it was a college prank. If a Grand street boy had done the work, he said, I should fine him $25 and costs, and perhaps send him to jail. This is a student's frolic, done in a spirit of fun, and should be settled at the college, and not brought to this court. He therefore, greatly to the surprise of the majority present, ordered a nolle entered in the case.



Wolf's Head

FOUNDED 1883

Henry Hornblower Atkins

Donald Adelbert Boynton

Edmond Taylor Chewning, Jr.

William Welch Collin, III

Winthrop Palmer Eldredge

Robert Anders Emile

James Hinchman Goodenough

Benjamin Avery Hammer

William Francis Howe, Jr.

Julian Stevens Kaiser

John Stuart Lovejoy

John Curtis McIlwaine

Edward Gowling Oakley

John Higgins Remer

Frederic Lincoln

Rockefeller

William Sutcliffe Sagar jr.

Thomas Francis Scannell jr.

Michael Scott

William Hammel Shannon

Robert Kastor Zelle

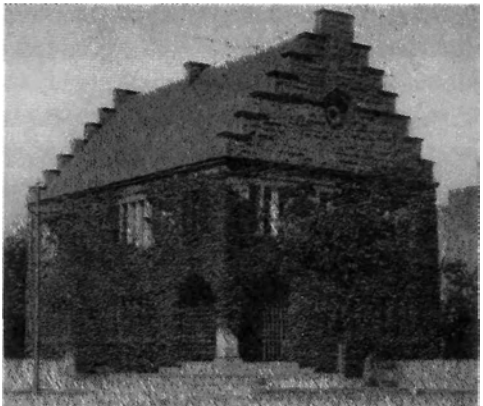
Wolf's Head members - 1947
from the Yale Banner

THE FOUNDING OF WOLF'S HEAD

JOHN WILLIAM ANDREWS

THE FOUNDING OF WOLF'S HEAD - 1934

THE GREAT GOD POPPYCOCK



THE WOLF'S HEAD SOCIETY'S ORIGINAL HOUSE CIRCA 1900

CROTONIA was certainly one of the first of the Yale societies. Little is known of it but it serves us here, for just as Wolf's Head was the product of a wave of protest against the things for which Skull and Bones and Scroll and Key stood in 1883, so the first society to enjoy a long and distinguished life at Yale was started, in part, as a protest against the ways of Crotonia.

Linonia, organized in 1753, was apparently a "crusading" movement designed to bring more democracy to the College. One reads this between the lines of the brief story of Linonia's origin (the italics in the following quotation are the writer's): "Of the class which graduated that year [1754], numbering 17 in all," says the author of Four Years at Yale, "one only belonged to the society [Linonia] . He was the seventeenth on the list-the names at that time being arranged according to the gentility of the families they represented, instead of alphabetically." Crotonia lived on for a few years only, while Linonia came into blossoming days and survived, finally only as a shell of former glory, for over a hundred years.

Linonia, however, was at first closed to freshmen, who "in those days of servitude" were never "admitted to any Society whatever"; and in 1768 Brothers in Unity was founded, definitely a crusading movement. We are told that it was organized "by 21 individuals in the four classes of [17]68, '69, '70, and '71 — seven being upper-class men who seceded from Linonia, and the remaining 14 being Freshmen, who were of course neutrals." The hero of this movement was a freshman "who stood up for the dignity of his class; and having found two Seniors, three juniors and two Sophomores, who were willing that Freshmen ... be admitted to a literary Society, he, with thirteen of his classmates fought for and established their own respectability." Brothers in Unity forced the pace on Linonia, just as Wolf's Head did later on Skull and Bones and Scroll and Key. Linonia opened its doors to the freshmen and thereafter for many years the two societies competed on a basis of equality.

Both Linonia and Brothers in Unity were secret societies; but their secrecy never reached the dignity of "poppycock " — the generic term adopted later by the Yale undergraduate to denote all the elements in the secret society system to which he objected. The chief competition between these societies was in the matter of numbers, each attempting to get "the largest number of the incoming class." Such rivalry in secrecy as existed was a rivalry between two groups of "ins," stimulated to a friendly game of hide-and-seek, it being thought "a great — as it was an infrequent — triumph for a man to find out the name of the president or other officers in a rival society." Both societies, too, had much to engross their attention besides the preservation of mystery. They served an important function in a College still inadequately organized. The accumulation of books was begun by them at a very early period; and by 1870, the number of books in each of the two libraries had reached approximately thirteen thousand. The societies also had reading rooms, which were in general use. In addition, the meetings in their halls, while in part devoted to the popular "pea-nut bums," initiations, elections and the like, included also formal and informal debates, the delivery of orations and the reading of essays and poems, all so much the vogue in those times; and in their hey-day — after 1825 — the societies occasionally put on "exhibitions": "a dramatic poem, a tragedy, and a comedy, all written for the occasion," being delivered or acted, each society trying to outdo the other.

They were general societies in the truest sense of the word, and lived for many years without creating a need for reform.

A third important society was founded in 1779 — the Yale Chapter of Phi Beta Kappa. It was not, apparently, a crusading movement, for it did not compete with the existing societies. It was a national society, giving the "bulk" of its elections to the juniors during the third term, as the senior societies do to this day. Admission to the Society was considered "one of the greatest honors in college"; and in spite of stray cases of personal prejudice and personal favoritism, scholastic achievement was the sole criterion for membership, "the society confining its

elections pretty closely to the list recommended it by the faculty, in response to its own application therefor."

Phi Beta Kappa also had important educational activities, supplementing, like those of the general societies, only more seriously, the all-too-rigid curriculum of the day. "The exercises consisted of an oration and a debate. ... The day after

Commencement, it was customary to hold an 'exhibition,' when two orations were delivered by tutors or other graduates, and a debate was engaged in by four undergraduates." As these exhibitions gradually grew in interest and importance, it was decided to make them public, "and in the 42 years, 1793-1834, there were only 12 Commencements when the Society failed to display itself." Like Linonia and Brothers in Unity, Phi Beta Kappa was an institution with an important private and public life in the College.

It was, however, a secret society; more secret — though in exactly what manner we are not told — than the general societies and hence more open to the temptations of generating "poppycock." Certainly its secrecy was the secrecy of a small group of "ins" against a much larger group of "outs"; and as was to happen so often and so notoriously later on in the case of Skull and Bones and Scroll and Key, "poppycock" was accompanied by its corollary-attacks of a physical nature by the "outs."

In the history of Phi Beta Kappa there is record of at least two breakings-in by the "neutrals" of the College, acting, we are told "under the united influence of envy, resentment and curiosity." In 1786 three seniors broke open the door of rhe secretary's study and "feloniously took, stole, and carried away the secretary's trunk, with all its contents." They were discovered, the papers returned and the thieves appeared before a general meeting of the society with a "voluntary" written confession, swearing never to divulge whatever secrets they had discovered. A year and a half later the trunk was once more raided and its contents stolen, the perpetrators, this time, never being discovered.

But about 1825 a much more serious event took place. "A clamor against Masonry and secret societies generally... swept over the country." It seems to have swept through the American colleges as well and to have resulted in the removal of its secret character from Phi Beta Kappa. "With its mystery departed its activity also; and for forty years past" — the statement is from Four Years at Yale, published in 1871 — "it has been simply a 'society institution' possessed of but little more life than it claims to-day, though membership in it was thought an honor worth striving for until quite a recent period." By 1884, when the Founders of Wolf's Head were getting ready to graduate, Phi Beta Kappa was dead. The College press of the time contains reports of the efforts made by the Yale faculty to revive it. It was dead, however, past all saving except as a symbolic institution.

In 1832 with the founding of Skull and Bones begins the era of the senior societies of the type which existed in 1883. Skull and Bones was organized "by fifteen members of the class which graduated the following year" and was, in all probability, an "outs" movement, it being recorded that "some injustice in the

conferring of Phi Beta Kappa elections seems to have led to its establishment." It was not a crusading movement unless — and this may well be possible — the need of the human animal for secrecy and mystery is a real need which must be satisfied. The elimination of these elements from Phi Beta Kappa-the only important grouping in senior year at this time except Chi Delta Theta, which was distinctly literary — may have left a gaping void. Certainly, like all new institutions, Skull and Bones was not taken seriously at first, being "for some time regarded throughout college as a sort of burlesque convivial club." Certainly too, there is no evidence of any very serious purpose behind its founding. In fact all of the evidence points to its being a group of congenial individuals enjoying, behind their closed doors, a rather riotous good time.

The same elements seem to have motivated the founding of Scroll and Key in 1841. It was definitely an "Outs" movement, "its founders not being lucky enough to secure elections to Bones." But unlike Skull and Bones which had created an organization quite different from Phi Beta Kappa and not in competition with it, Scroll and Key, at least in the eyes of the College, set out from the beginning to rival the older society on its own ground. "Its ceremonies, customs and hours of meeting were all patterned after those of Bones, as well as its manner of giving out elections." That it was considered a "sour grape" society is indicated by the burlesque in The Yale Banger of 1845, in which the Keys scroll bears the legend, "Declaration of Independence and Rejection of the Skull & Bone," and has for its Great Seal "a view of the historical fox reaching after the equally celebrated grapes." This, the author of Four Years at Yale remarks, "probably represents, with substantial accuracy, the motive which originated Keys."

Even more than Skull and Bones the new society had hard sledding at first, failing on at least four occasions prior to 1851 to make up its full quota of fifteen, the number in 1850 falling as low as seven; but like Skull and Bones it seems to have had no important purpose of existence other than pleasant social intercourse.

Being thus limited, these two societies were in a more precarious position than the older societies which had had definite activities, intellectual and otherwise, within and without their halls. Their very secrecy was a temptation and a handicap. It would seem that at first — during the days of their youth, ten, twenty years after their respective foundings — they were merely negatively mysterious. Their members, it seems, said nothing about their activities inside their buildings and concealed the arrangement of rooms and furniture. They used their moments of public appearance to strut a bit before they retired for another year into their "impenetrable mystery." They wore their badges merely as symbols of membership and took themselves more or less lightly as human beings in a human world.

But with no relation to the world except the self-imposed duty of perpetuating the species, and no formalized basis for choice other than a social one, these societies fell, after a while, into the temptation of using what they had most of— their mysteries and ritual — to startle the College into taking them seriously. From a

negative manifestation of mystery they gradually turned to a positive manifestation; and to the ever increasing ranks of the non-society men — the College was growing slowly, but steadily — it appeared each year that the members of these societies were becoming more self-conscious in their position as the "elect" of the College; were interfering more, as societies, in College affairs; and, in general, were thrusting themselves too much upon the attention of the College world.

By 1873 the word "poppycock" was in current use and the "god" who had started life so modestly had become great. But already in 1870 he was strutting and had been strutting for some years. The elements which had gradually come to constitute his most objectionable features will be familiar to all, for many of the hydra-heads have not been severed even to this day, and some which were once severed have grown back again.

It is to be supposed, since there is no evidence to the contrary, that from the beginning the members of both Skull and Bones and Scroll and Key wore their badges on their neckties. But by 1870 the light-hearted wearing of a symbol of membership had become a solemn ritual surrounded by ritual. "This badge is constantly worn by active members," says the author of Four Years at Yale (from which volume many of the preceeding[sic] quotations have been taken), "by day upon the shirt bosom or necktie, by night upon the night dress. A gymnast or boating man will be sure to have his senior badge attached to what little clothing he may be encumbered with while in practice; and a swimmer, divested of all garments whatever, will often hold it in his mouth or hand, or attach it to his body in some way, while in the water." And as for anyone touching the pin or speaking of it or of the society, the words of the Horoscope, written much later, vividly describe the result: "[the society men] rise up abruptly, put their ears behind their beads and sneak off."

A similar ritual was built up around the society buildings: the mystery that might rightly have attached to the four walls of the meeting place being extended to unwarranted distances. The impressive Skull and Bones tomb was erected in 1856, and Scroll and Key inhabited, until the completion of their fine hall on College Street in 1870 rooms "in the fourth story of the Leffingwell Building, corner of Church and Court Streets, across from the Tontine Hotel." We are not told directly that the entire Leffingwell Building was held sacred; but we know that by 1870 the senior society men had progressed to the length of at times refusing "to speak while passing in front of their hall" and even "in some cases [of refusing] to notice a neutral classmate whom they may chance to meet after eight o'clock of a Thursday evening."

Such items of ritual, inasmuch as they related specifically to society paraphernalia, might not have been deemed offensive by the "neutrals" of the College and might have been without harmful results had they been restricted at this point. But once embarked upon, the habit of flaunting their special position in the face of the College grew upon the society men of successive classes like the growing hold of the drug habit.

In 1867 an all-time "high" for the period up to 1870 had been reached. In that year the College, which was apparently not too much concerned over bad manners on the part of senior society men where their pins and buildings were concerned, was distinctly shocked. We know one of the causes. "Two Bones men," we read, "brought from their meeting a sick classmate and put him to bed in his room, without paying any attention to his neutral chum who was there present, though he was also a classmate with whom they were on friendly terms." But there must have been other incidents which have not come down to us, for the young author of Four Years at Yale, an undergraduate at this time, speaks of "exaggerated secrecy" as "a modern outgrowth," and refers to 1867 as the year of its "highest pitch." He indicates clearly that the College did not take it lying down and that as a result of the furore the senior society men thereafter "conducted themselves much more sensibly."

But this temporary recession of the tide was to be followed by new "highest pitches." It is easy to imagine the process, for ritual is a coral growth: new ceremonies are added, but few are ever cut away. With the intense rivalry that existed between Skull and Bones and Scroll and Key the inventive genius of the immature youngesters[sic] of the successive delegations must have been continuously at work. They took what they found after their election and then, consciously and unconsciously, set about devising new ways and means of impressing the underclassmen. They invented new taboos to emphasize a superiority they may-or may not have felt at first. Later, by a boomerang effect, the taboos became hourly proof of an existing superiority, till it came to be believed. Ultimately, they and all those with whom they came in contact were unhappily aware of a chasm between the "elect" and the "non-elect."

The proof of the process is partly illustrated by a story appearing in an 1890 Buffalo, New York, newspaper. The story contains no hint as to the date of the incident, though it is evidently ancient history. It may be apocryphal. It is illuminating, nevertheless. As in the 1867 incident a member of Skull and Bones was lying sick in his room at the hour of the regular Thursday evening meeting. His "neutral" roommate was in attendance. Members of Skull and Bones made their appearance; but this time their care and attention was not limited to a putting to bed and a departure. The technique had become enlarged. In one-hour shifts the members of the delegation came to sit by the sick man's bed. They ignored the roommate completely and their relation with their brother member was that of the deaf and dumb.

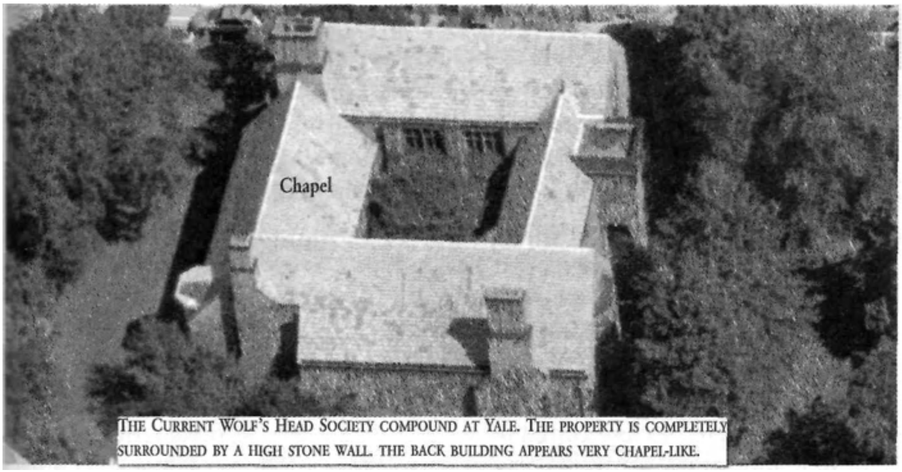
This particular story ended happily. After the second visitation the roommate bolted the door and stoutly informed the next arrival that no deaf-mutes need apply.

THE GOD'S ENEMIES

It was not to be expected that the College "neutrals," already at a disadvantage through their position as "outs" and sometimes smarting under a sense of injustice,

should have remained inhibited in the expression of their feelings or that they should always have been as restrained as the roommate of the deaf-mute invasion.

Each "highest pitch" on the part of the society men was met by a corresponding "highest pitch" counter-activity on the part of the enemy, this activity taking on forms ranging from cat-calls and physical violence to diatribes in anonymous pamphlets and bitter complainings in such College publications as might by chance become available.



THE CURRENT WOLF'S HEAD SOCIETY COMPOUND AT YALE. THE PROPERTY IS COMPLETELY SURROUNDED BY A HIGH STONE WALL. THE BACK BUILDING APPEARS VERY CHAPEL-LIKE.

An entirely unofficial institution, first known as "Bowl and Stones" and later as "Bull and Stones," was the rallying ground for the attacks. Four Years at Yale gives us the picture for the years 1865-1869. "It is in senior year alone," says its author, "that the neutrals largely outnumber the society men, that they have nothing to hope for in the way of class elections, and that they are not overawed by the presence of the upper-class men. These circumstances combine to foster in some of them a sort of reckless hostility toward these societies. ... It was in the class of '66 that this hostility first definitely displayed itself, in the institution of a sort of mock 'society' called 'Bowl and Stones" the name being a take-off on that of Bones, and the duties of its members being simply to range about the colleges at a late hour on Thursday night, or early on Friday morning when the senior societies disbanded, singing songs in ridicule of the latter, blocking up the entries, and making a general uproar. The refrain of one song, to the tune of'Bonnie Blue Flag,' was 'Hurrah! Hurrah! for jolly Bowl and Stones'; of another to the tune of 'Babylon,' 'Haughty Bones is fallen, and we gwine down to occupy the skull.' ... In the class of '67 they were at their worst, and wantonly smashed bottles of ink upon the front of Bones hall and tore the chains from its fence."

By the early 1870's "Bowl and Stones" had become "Bull and Stones," a well established institution occupying a definite and permanent place in the minds of the undergraduate "neutrals" and the object of constant comment by them. The Naughty-Gal All-Man-Ax, for example, devoted much time and space in its issue for 1875 to the origin-entirely imaginary, of course — of this Yale institu-

tion. "Of all the college societies now in existence," it says, "Bull and Stones is the oldest. Before even Hasty Pudding or Phi Beta Kappa were thought of, this fraternity could number its years by the score. Bull and Stones was founded Commencement Day, 1776, by the Rev. Elisha Williams, Rector of Yale College, Ezra Stiles, Jeremiah Day (both Presidents of the University), the Governor of the State, and other prominent men.... Its hall is — no one knows where. However, there is a rumor current that the elected from '76 are to build a fine new hall on Hillhouse Avenue."

In one class the "neutrals" went so far "as to procure a small gilt representation of 'a bull' standing upon 'stones,' which was worn ... even in public ... during the first term of their senior year."

And in very close proportion to the widening of the taboos by the society men, the activities of the "Bull and Stones" men grew more and more violent and spread deeper and deeper among the "neutrals" of all classes.

The Yale News had not been founded in those days, and even if it had been it is to be doubted in view of its subsequent history whether it would have encouraged or even permitted editorials or communications on such a hush subject as the senior societies. The Yale Courant had re-acquired independent existence as an undergraduate organ in 1870; but a search in the un-indexed volumes prior to 1874-75 fails to disclose any editorial, communication or news article, or even a list of members elected, where the senior societies are concerned. And after the 1864 attack upon Skull and Bones in The Yale Literary Magazine (via the leader "Collegial Ingenuity") had resulted in the violent war between the "neutral" editors and the Skull and Bones editors on the Board, and in the formation the same year of the unhappy "Diggers" society, "Spade and Grave," the pages of this aristocrat of the College papers were closed forever to "Bull and Stones" material.

The discontented of the College who were not satisfied with "direct action" but needed the printed word for the release of their emotions, were driven, therefore, to publications of their own creating. Even more than the "physical" violences which they often chronicled, the ideas expressed in these publications were effective in crystalizing[sic] and perpetuating from one class to another the antagonism to the societies and their methods.

The one and only issue of the Iconoclast, which must have startled the College when it was put on sale on October 13, 1873, was frankly directed against Skull and Bones. "Our object," said the editors, "is to ventilate a few facts concerning 'Skull and Bones,' to dissipate the awe and reverence which has of late years enshrouded this order of Poppy Cock. ... Our reason for doing this, is ... because we believe that Skull and Bones, directly and indirectly, is the bane of Yale College. .. .We speak through a new publication, because the college press is closed to those who dare to openly mention 'Bones.'"

The eight pages were full of a variety of charges. Bones, said the editors, takes upon itself to put the final stamp of approval on those whom the Class and the College have seen fit to honor: it is an insult to both Class and College.... Yale

is a poor college; it cannot afford to build adequate buildings, to pay its officers properly, or even to have its magazines bound. Why? It is said that all the rich men go to Harvard. This is not so I The reason is that Bones men have "obtained control of Yale" ; "money paid to the College must pass into their hands"; no doubt "they are worthy men in themselves, but the many whom they looked down upon while in college, cannot so far forget as to give money freely into their hands." ... Again, Bones men are shown special favor by the faculty: "Is it not strange, to say the least, that on Friday the Bones men are invariably called up on the review by our Bones professor?.. ."Bones was responsible for the low state of College baseball ... Bones was responsible (by implication) for the demise of the general societies, Linonia and Brothers in Unity. ... Bones was responsible for everything that ever went wrong in the College-if one were to believe the editors of the Iconoclast! And there were interminable verses:

We are not 'soreheads.' God forbid that we should cherish strong
Desires to be identified with principles that long
Have been a blight upon the life and politics of Yale, —
Before whose unjust aims the glow of 'Boss Tweed's brass would pale.
We represent the neutral men, whose voices must be heard,
And never can be silenced by a haughty look or word
Of those whose influence here at Yale could be but void and null
Did they not wear upon their breasts two crossed bones and a skull.

"What right, forsooth, have fifteen men to lord it over all?
What right to say the college world shall on their faces fall
When they approach? Have they, indeed, to 'sickly greatness grown'
And must each one with servile speech them his 'superiors own?
And after much more the "poetic" venture ends:
And if they will not hear our claims, or grant the justice due,
But still persist in tarnishing the glory of the blue,
Ruling this little college world with proud, imperious tones,
Be then the watchword of our ranks — DOWN, DOWN WITH SKULL
AND BONES !"

The leading article in the Iconoclast contained also this statement: "When Skull and Bones was founded, the evil which we are about to unfold did not exist. It is an evil which has grown up-which is growing today." It closed with a cry which was to grow persistently louder as time went on: "It is Yale College against Skull and Bones!!We ask all men, as a question of right, which should be allowed to live?" All italics, capitalization and punctuation in quotations from the Iconoclast appear in the original.

In the same college year, 1873-74, a new departure cropped up in the war between the "ins and the "outs."

The main attack was directed this time at Scroll and Key as a result of activities which were to acquire for this society an "unsavory reputation in regard to memorabil' thieving." But there was also a subsidiary attack on Skull and Bones, and for the first time apparently, the attacks were carried on not by seniors and juniors as previously, but by members of the sophomore class.

The vehicle was another private publication, a pamphlet printed in the guise of an issue of the Yale Literary Magazine and identical with it in general appearance, except that the dignified and bewigged head of Saint Elihu Yale, and his feet, legs and knee breeches, were replaced by the corresponding members of a lowly bull, the cloven hoofs resting upon a floor of cannon-ball-like stones.

The title gave the tone of the whole: Seventh Book of Genesis, otherwise know as the Gospel according to Scrohleankee. It is recorded by the Naughty-Gal All-Man-Ax, for 1875, that it was written "by a sophomore in revenge for having some of his memorabilia appropriated by one of the college societies." It is dated February 1874.

The author set forth, first, the alleged state of mind of the men who founded Scroll and Key in 1841. "Wherefore do they of Pscullenbohnes," the founders were made to say, "for a space of nine years set themselves up for us to bow down before and worship? Behold, they are no better than we. Go to now, let us congregate together to make unto ourselves a graven image and a great mystery. Let it be called Scrohleankee. And let us afterward take unto ourselves from Phortietoo such of them as are to be saved like unto ourselves. Also let Phortietoo dososummore unto Phortiethrie and so on until perchance by doing sosummore we may rival our enemy, even Pscullenbohnes." "And," said the chronicle, they did sosummore."

The pamphlet then sketched, in an irreverent manner, the progress of "Keeze" down to the year 1872, "when one Noah, surnamed Pohrturr, was King" and the freshman "Klasuv Psevventie Psyx journed that way" and, having become sophomores, beheld "the foolishness and thomfoollerrie of the mysterie of the great Poppiekock," and how "very many of the lesser tribes not yet within reach of the Gospel of Dososummore ... cast to the dogs their natural rights and groveled upon their bellies in the dust, that, peradventure, they might be accepted." It told how "a Nootrahl, bold and skillful, did fasten a banner by night from the top of the chief synagogue of the land ... and on it was written in symbolical characters, Death to Pschullenbohnes"; how a certain sophomore, "named Arayjay," brought down the flag and "loaned it ... to a Nootrahl to keep till Xmas for an altar cloth when offering burnt offerings to Bullensthone his god"; how Scrohleankee" stole the flag from the "neutral's room; how in revenge the "Nootrahls congregated 'round about the new tabernacle [the recently completed Scroll and Key tomb], reviling Keeze and singing their hymns of sacrifice"; and how "Scrohleankee [did] wax exceeding wroth, and would have gone forth and slain all, but they could not."

The story then passed to Arayjay who "vexed over the loss of his flag ... cast about him what he might do." It told how "he spake thus within himself: ... 'I

will wear their pihn; yea, verily, the golden image which they worship.' ... And he did so ... and ... the Keeze men were black with rage ... Howbeit, they did not touch him for fear of his Klasmaytes." Finally it was told how certain men of the class of "Psevventie Psyx," "about the fourth watch... gathered up their loins, and taking their pots came unto Keeze Hall... and behold, they wrote upon the door, in large characters, PSEWENTIE PSYX. Then did they hastily depart... and when the Keeze men saw what was done, their fury surpassed the rage of a mad cow in her wildest cavortings ... and they held Arayjay in suspicion and would have crucified him, but they could not."

The tale ended with a parable of a ram with two horns, attacked by a he-goat with one horn, who smote the ram and broke both horns; and the parable was thus interpreted: "The ram with the two horns is Scrohleankee. The horns .. .are the Gospel of Dusosummore, and the doctrine of the Great Poppiekock .... The he-goat ... is Psewentie Psyx ... and the rest of the prophecy showeth the hostility of Psewentie Psyx to Scrohleankee with its Dusosummore and its Poppiekock, and the manner in which Psewentie Psyx will destroy Scrohleankee and exterminate it utterly."

A few months before the Seventh Book of Genesis, another pamphlet had appeared, The Yale Literary Chronicle. The covers of the two are identical, except in color, and they are probably by the same author, for the Chronicle couches its main story in the peculiar language which was brought to such perfection in the Seventh Genesis. It celebrated, among other things, the "many jokes and tricks ... the Bullenstohnes men [did] play upon the Chosen-phew" and especially how "they did fall upon the chariot [carrying "to the Bohns men their provender"] ... and ... did seize the food ... and that night the Pscullenbohns men went hungry to bed " — a tale reminiscent of the incident related in Four Years at Yale: "The Stones men seized upon and confiscated for their own use the ice-cream and other good things which the confectioner was engaged in taking into Bones hall."

The year of the Iconoclast and the Scroll and Key war was memorable, however, for another event. In May of 1874, the Yale Courant, for the first discovered time, opened its editorial and news columns to discussion and news of the senior societies.

"It would be an unpardonable oversight," said the issue of May 23d," to pass without notice ... an event which occupies so much of the attention and interest of the college world as the announcement of elections to Senior societies." And the elections were not only announced and Tap Day described in detail, but the Courant embarked on a long editorial discussion of the evils of the system, particularly its creation of the politician type among the undergraduates, and closed with the bold words: "May the time soon come when Yale shall be delivered of them [the politicians] and of the system which has produced them."

Such outspokenness may have accounted in part for the quietness of the next college year. When Tap Day was approaching in May, 1875, and the Courant was once more launching its editorials, it was able to say: "The Senior society men of '75 have, as a general thing, conducted themselves in a non-offensive manner;

a great deal of that ostentatious 'poppicock' which caused so much trouble with '74 has not been put on; in fact, the way in which they have acted throughout the year has led us to the belief that a wise choice [in the coming elections] is to be made." But a warning was issued. "However," said the Courant, "whether the following year is to be a quiet one or a season of Iconoclasts, bogus pins, bum thieving, etc., rests entirely with the Society men of the Senior class, and it is to be hoped that they are fully alive to the fact."

When Tap Day was over the Courant was not satisfied and said so. The elections, on the whole, were properly given, it thought, but one man was left out of Skull and Bones "for no other earthly reason than a petty personal dislike." "That is the sentiment," said the Courant, "of the majority of men in the College"; and there was no lack of frankness in the Courant's opinion of such an act. In addition there were three surprises in the elections to Scroll and Key, and while not finding fault with the men taken in, the Courant was troubled about the men omitted. " There has been some talk," it remarked, "about setting Spade and Grave on its legs again and we think that it would be a desirable thing if it could possibly be done ... a third society is really needed in Senior year. Of course it would be difficult to start such a society, but it would surely be a success in the end, provided however, that it was a respectable organization, and not got together to 'grind' the other two."

Most illuminating of all was the Courant's news-story of Tap Day itself. "It has been handed down by tradition that Senior election night is a legitimate time for the non-society men of the Senior and junior classes to range around Bones' Hall, and make as much disturbance and trouble as possible, and then to howl, in the college yard for the rest of the evening, the praises of Bull and Stones, interfering with the society men as they give out elections, rushing them round the campus, locking them up in the entries and building bonfires.... But this year matters have been different.... Instead of congregating around Bones' Hall and making the welkin ring there, the crowd thronged the yard between Farnam and Durfee, eagerly comparing notes as the elections were given out, passing a few remarks upon the general make-up of some well-dressed Keys man, and rushing round to congratulate the fortunate or to sympathize with others. As the Bones' men went around they greeted salutations from the crowd with good natured grins, once or twice answering back in a joking way; a thing never before done and which materially assisted in repressing any tendency to rowdyism."

The Courant closed its year with another editorial: "The organizations in question propose to take in only the 'cream' of the class, and when the best part of that ingredient is left out, what else can be expected than adverse criticism?" It also printed at Commencement time a communication from a graduate of '69. "Well, really," asks E. P. W, the graduate, "has the writer [of the Courant's first editorial after Tap Day] come to regard an election to a society as one of the prizes?... The Alumni do not so regard it. .. ."And at the same time the Courant, not to be found in support of such a system, answered: "The writer has mistaken us entirely. We never said that it was an honor to receive a Senior election. What we did say, was that it is considered an honor....'" (Italics theirs.)

But such frankness could not last. In the College year 1875-76, the Courant was once more feeding the College on a milk and water diet. There is an editorial on the society system, but the high point of criticism was that the evils were known and felt in every class. The news-story was a conventional, a fine time was had by all, and the results of the elections were "anticipated and satisfactory to the crowd and to the class." In 1877 and 1878 reference had dwindled to a mere list of names. In 1879 even the lists had disappeared, reappearing in 1880 and 1881 and vanishing again in 1882. Courant men, strictly "neutrals" before 1880, began in that year to receive elections: one member of the board to Skull and Bones in each of the years 1880 and 1882, and one member to Scroll and Key in 1881.

One suspects a Machiavellian technique for the muzzling of the College press. At all events, with the first return to milk and water in 1876 whether by coincidence or something more, the "Bull and Stones" violences returned.

In 1870 the author of Four Years at Yale had written with a measure of pride and a larger measure of foreboding: "Not yet do they [the "Bull and Stones" men] ever attempt to break into the halls of the [senior societies]." But among the memorabilia of the year 1876-77, we find a small brown pamphlet bearing the title: "The Fall of Skull and Bones, compiled from the minutes of the 76th regular meeting of the Order of the File and Claw. "It is dated 1876, and tells the story of an alleged breaking into the Skull and Bones tomb, "File and Claw" being obviously another manifestation of the chameleon, "Bull and Stones."

"Anyone who was noticing the Bones men of 77," the pamphlet begins, "on the morning of Sunday, October 1 st, 1876, was probably struck by the crest-fallen air which characterized all of them. ... The reason for this is a simple one. As long as Skull and Bones Society shall exist, the night of September 29th will be to its members the anniversary of the occasion when their Temple was invaded by neutrals, some of their rarest memorabilia confiscated, and their most sacred secrets unveiled to the vulgar eyes of the uninitiated."

It may have been on this occasion that the theft reported in The New Haven Register ion March 7, 1887, occurred, for dates meant as little to newspapers then as now. "The original by-laws of the Russell Trust association,'" says the Register, "... were stolen from the temple on High Street by a sorehead student in 1872 or "73, who had failed to get into the society itself, but did succeed in getting into the building through the roof and then making away with the by-laws."

The pamphlet says nothing about by-laws. It deals first with the details of the fortifications of the Eulogian Temple."

"The back-cellar windows," it says, "were fortified as follows: First... was a row of one-inch iron bars; behind them a strong iron netting fastened to a wooden frame; behind this another row of iron bars, one and one quarter inches thick; and still behind this a heavy wooden shutter."

It then proceeds to the tale of the breaking-the outside bars cut "only after many hours of patient and cautious labor"; the long nails in the iron netting drawn "by means of a powerful claw"; the brick "damp-wall" dug away with a

claw and hatchet; and the building entered "at just half-past ten o'clock" on the night of Friday, September 29th.

The Skull and Bones tomb is described floor by floor and room by room, the invaders having discovered, in essence, nothing which they might not have known or guessed before; but "for the benefit of future explorers, and as a directory for new-fledged Bones men for all time," they give the description and include detailed floor plans. The narrative is in all ways uninteresting. It is only important in that it is the first recorded breaking into a senior society building and that the note upon which it ends — a sincere, if slightly bombastic note-fits so accurately with all else that is known of the thoughts and activities of "neutrals."

"Before leaving the hall," the author says, "it was asked whether we should inform other members of the college of what we had done, and throw open the hall to the public. We think no one will deny that we had it in our power at one stroke not only to take away forever all the prestige which her supposed secrecy has given this society, but to make her the laughing-stock of all college, and render her future existence extremely doubtful. But while we had no consideration for the mysterious poppiecock of Skull and Bones Society, we nevertheless remembered that some of the Bones men of '77 are our warm personal friends, and therefore we preferred a less radical course. To Bones as a pleasant convivial club, we have no objections. Let her live on as long as men enjoy good suppers and quiet whist. But her mystery and her secrecy are at an end, and we hope her absurd pretensions and her poppiecock are dead also."

THE CHANGING COLLEGE AND THE GOD CHALLENGED

THROUGH all these years one can detect a distinct change taking place in the College, fostered by the faculty, but responded to readily by the undergraduates. Yale College was growing up, "hallowed institutions" were being abolished right and left and among them, in 1875, the two sophomore societies, Beta Xi and Theta Psi.

Their abolition had been mooted for a long time, the faculty merely waiting for the proper moment and excuse. It came on Monday, May 24, 1875, a few days before that so-peaceful Tap Day of the year after the Scroll and Key "memorabil" war, though just what happened is not clear. The Courant said of the recently tapped senior society members: "The newly elected were requested to remain in their rooms all night, probably to prevent any possible repetition of Monday night's scene"; and added, "It was no use, no one stayed in; but everyone kept sober." The Courant also, in announcing that the freshmen had been notified by their division officers not to be initiated into sophomore societies until further notice, said: "Last Monday's spree ... was the last straw that broke the camel's back."

The burial of the societies was as tumultuous as their lives. Both halls were raided by undergraduates and the appurtenances-" hymn books, the archives, the old Sigma Phi curtain, the ballot box, posters and pictures " — carried off as "memorabil'." Most bemourned was the Theta Psi raven "imported from

England and ... valued at fifty dollars." The thefts were charged to the senior societies — to Scroll and Key, "that society having an unsavory reputation in regard to memorabil' thieving"; to Skull and Bones, "as a prominent Bones man was seen going up there Wednesday evening" and two Bones men were caught "at the doors of Theta Psi Thursday morning, and immediately ran away upon the approach of the Sophomores."

But significant of the changing times, no one mourned the demise of the organizations. "Talk of the Faculty disbanding them has been rife at frequent periods," wrote the Courant," it is probably done for a good reason. ... The majority of thinking men in college will not be sorry for this action of the Faculty." The horseplay and general disorder they bred was becoming, intellectually at least, unfashionable.

Five years later when the Founders of Wolf's Head from the class of '84 had barely settled themselves in New Haven as freshmen "on probation," the freshmen societies, Delta Kappa and Sigma Epps, met a similar fate.

Like the sophomore societies these freshmen organizations had been notorious for years as riot breeders and wasters of time. The author of Four Years at Yale gives us the picture in a description that still applied in 1880: "When 'the candidate for admission to the freshman class in Yale College' draws near to New Haven," he says, "he is usually accosted with the utmost politeness by a jaunty young gentleman, resplendent with mystic insignia. ..." The "jaunty young gentleman" then attempted to pledge the sub-freshman to his society, which might be Sigma Epps, Delta Kappa or Gamma Nu. On arriving at New Haven the sub-freshman was surrounded by society runners. "At a sign from the first," the account continues, it one takes his valise, another his umbrella, a third his bundle. ... And before the sub-Fresh has time to protest, he is rolling along in a hack, and his new found friends are enquiring the number of his boarding house. ... Sometimes the transfer to the hack is not so easily accomplished, for the runners of another society may scent the prey, rush for it, and bear it off in triumph. There are plenty of representatives from all three societies hanging about the railroad station. ... They jump upon the platforms of the moving cars, they fight the brakemen, they incommode the travelers, they defy the policemen, — but they will offer the advantages of 'the best freshman society' to every individual 'candidate.'"

This picture is supplemented by the Yale Courant, already, in 1872, forecasting the abolition of these societies: "If they [the freshmen society runners] do their duty as we used to do it, they must visit the depot twenty-three times a day, besides attending to the morning and night boat." (Italics ours.)

Quite apart from all this local disorder, the vast campaign machinery that had been built up was an impossible drain on student time and money. "I was pledged while at Williston," writes Francis Bartlett Kellogg, Founder, Of '83, of his freshman society experience; and this was merely typical of the general policy of sending emissaries broadcast to the prep, schools just before Commencement to pledge members — often futily and foolishly, for we have a record that, in 1880, representatives of Gamma NO were sent to the Hartford High School and there pledged all the members of the graduating class although none of them came to Yale or, it seems, had any prospect of coming.

In addition, as had been the case with the sophomore societies, the freshman initiations, pea-nut bums, and purposeless meetings and politics were seats of continuous disorder.

The excuse to disband them appeared at the freshman initiations of 18 So. These ceremonies were held in the middle of the Garfield-Hancock presidential campaign, and presidential campaigns of that day were as immature as the horseplay of the undergraduates. Yale was largely Republican. The Democratic candidates were apparently associated in Republican minds with the rebels of the Civil War. Organization for the campaign was not casual, as witness the notice in the Yale News: 'Order No. 2. The University Garfield and Arthur Regiment will meet for company drill at 9:30 A.M. Saturday." And by a stroke of fate the hall of the Jeffersonian Club, boosters of General Hancock, was just across the street from the initiation hall of Sigma Epps; and between the two halls was hung a "flag of the union with Hancock's name across its sacred folds."

The inevitable happened. "The initiation," writes Frank Kellogg, "turned out to be an historical event. It rang down the curtain for the freshmen societies Incidentally, being tossed in a blanket is rather exhilarating. The grand climax, however, came with the discovery of a rope tied to a bar across one of the front windows. Investigation disclosed that the rope extended across Chapel Street and that from it, in mid-street, hung a large American flag with the words 'Hancock and English' emblazoned upon it. These were the Democratic candidates for President and Vice President. Political stupidity had anchored that rope within reach of student hands which were promptly in action. The flag was quickly hauled in and as quickly torn into a thousand pieces, henceforth to function as memorabilia of a momentous occasion."

This act, coming when the New Haven political blood was hot, assumed major political proportions.

A despicable outrage, cried the New Haven Register, Democratic. Give us the sacred pieces, shouted the Jeffersonian Club. It was an unpardonable act, said the Yale News calmly, but stop making political capital out of what was simply the act of a few rowdy Sophs at a freshman initiation. Not rowdy Sophs — upperclassmen, protested "Justice" in a communication to the News. And committees from the College waited on the Jeffersonian Club with apologies and offers of cash payment. The Register then acquired-feloniously according to the News the Sigma Epps constitution, publishing it in full. Dastardly, thieving act, howled the News, and a secret society tool The Jeffersonian Club, having turned down the cash offer and still crying for the "sacred pieces," waited surreptitiously upon President Porter and demanded-of all things-money, which commodity "peace-loving" President Porter dug out of his own pocket to quell the uproar-one hundred and two dollars and some cents. The entire College was furious at this traitorous act of the "rebs" Then the campaign ended; and with the approval "of all thinking men" the freshman societies were abolished forever.

That is, Delta Kappa and Sigma Epps were abolished. Gamma Nu, the third freshman society, and as far as can be learned, quite as much involved as the

other two in the evils of campaigning, was permitted to survive. But Gamma Nu was a "reform" society. Its founders had suffered "the fate of all reformers ... despised, derided and abused." Gamma Nu men, by and large, were "harder workers, and in proportion to their numbers ... [secured] a far larger share of the substantial college awards." Even in 1870 Gamma Nu "was sometimes favored ... [by the faculty] as against the others." But most important of all, Gamma Nu was an open society-not exactly an open club, the ideal of the College "neutrals"!—but still not a typical "Yale secret society." Its survival was a symptom of the times.

Two other "immemorial traditions" were sacrificed in this period to die eradication of immaturity: the Thanksgiving jubilee, a more than usually riotous affair frequently censored by the faculty, and the custom of the senior societies of giving their elections in the rooms of the candidates.

The Tap Day tradition had already undergone one major change. Much earlier it had been the rule for all fifteen undergraduates of each senior society to march in a body to the room of each candidate where the elections were offered, the leader of the group, in the case of Skull and Bones, "displaying a human skull and bone," and in the case of Scroll and Key, in addition to "the large gilt scroll-and-key" being borne by the leader, with each member carrying "a key some two feet in length." This marching of an army, however, called forth the best efforts of the "neutrals" in mass formation. Free-for-alls in the rooms and entries resulted until, after a period, a major break with tradition was made and the senior society men were sent out one by one, each individual tendering an election to an individual candidate.

As we have seen this change had achieved nothing substantial and the "neutral " activities — the catcalls, bonfires and kidnappings — grew burdensome. Daylight and supervision-probably by the faculty — were required. The rites were, therefore, transferred to the Campus, to the corner under the elms next to the Chapel, and the Tap Day known to most living Yale men and objectionable to so many of them, came into existence.

Under the impact of all these abolitions the "Bull and Stones" violences dwindled. We know that the breaking into Skull and Bones —" this unprecedented vandalism " — was followed "in 1878, by another set of marauders defacing with paint both Senior buildings," that "the offenders were tried in the City Court" and that they "escaped free of fine or imprisonment, through technicalities." We know, too, that in the same year, probably as a part of this same anti-society wave, a supplement to the Yale Year Book was devoted in part to a cut of the Keys scroll, with key-crossing, sealed with the "Great Seal" — the fox and grapes view — and bearing the legend, obviously an imitation of the Banger burlesque already referred to: "Declaration of Imbecility and Rejection of Skull and Bones." The accompanying letter-press reads: "The club occupying the so-called striped zebra Billiard Hall ... after acting in the most unaccountable, ungentlemanly and underhand way during the past year, decided not to permit their cut to be used by anything except their own masterpieces of publications as the Yale Index.... The following cut has been agreed

upon by the dub as a proper heading for all college papers except the enterprising (1) valuable (!) yea, PRICELESS (!!) Index." (Italics, etc., in the original.)

But after 1878 there seems to have been a cessation of physical violences and less of the old childish forms of attack.

"What were the 'Bull and Stones' activities in your time?" was the question put in the recent questionnaire to the living members of the first three delegations to Wolf's Head who, together, cover the college generation, 1879-1885. "None," is the substance of the statements of the nine men who answered: Frank Bartlett Kellogg and Frank Cunningham; Founders, of '83; Franklin Davis Bowen, Henry Raup Wagner and Harry Augustus Worcester, Founders, of '84; and Albert Heman Ely, Lafayette Blanchard Gleason, William Procter Morrison and William T. G. Weymouth, of '85; either by direct statement, or indirectly by failing to answer the question. Weymouth says, "I hardly remember the name," and Gleason adds, "Not until the meeting of the Senior class in 1884."

This does not mean, however, that the "poppycock" of the society men had diminished in intensity or scope or that the College had grown reconciled to it.

We read in the New Haven press of those days of an operation in Bridgeport, Connecticut, upon a Skull and Bones man in a very serious condition after having swallowed his society pin: humorous, if it were not so sad; and Frank Kellogg writes:

"I recall a prank of Sophomore year. The D'Oyly Carte Musical Comedy Company gave 'The Pirates of Penzance' in New Haven. The pirate king wore a Napoleon hat with a skull and cross bones emblazoned on it. I enlisted the co-operation of Ted Buell and Charlie Foote in my plot and we visited the 'king' at his hotel. We told him that it would make a local hit if he would put '322' below the death's head. Then we went to the evening performance and sat in the front row of the balcony. When the 'king' appeared he had the mystic number on the hat all right.

"I don't suppose the singer noticed that several students in the audience got up and left the hall. Much less did he know that they were 'Bones' men. However, we did, and got quite a kick out of it, but more especially out of the universal grin on the faces of all the other Yale men in the audience."

But whether these activities and all they typify were confined to Skull and Bones men, or were affected by Scroll and Key men as well, and whether by all fifteen men in each society or by a few only, there is no direct evidence to show. Scroll and Key as a rule seemed to confine its unpleasantness to "memorabil"' raids and such, leaving to Skull and Bones the development of "haughty manners." In all probability, it was the old story of "high pitches" and "low pitches," for we know that the society men of '82, like their predecessors of a few classes after the "highest pitch" of 1867, conducted themselves " more sensibly" That there was an immediate reaction is proven by the tidal wave of antagonism that threatened to overwhelm the societies in 1883 and 1884.

The forerunner of this wave was a " daily anti-senior society newspaper ... vigorously conducted so as to thwart the society men in every way." No copy of

this publication has been discovered; but the fact that it was issued daily proves that its attack was, like that of the Iconoclast, general and not specific, and that the antagonism behind it unlike the quickly released antagonisms of the Iconoclast, the Seventh Book of Genesis and the Fall of Skull and Bones, was something functioning twenty-four hours a day.

The wave itself, however, was characterized by a rebellion in the ranks of the senior societies themselves, as is evidenced by an " elaborate pamphlet from a man who had belonged to the societies from each year, from first to last," and who, in spite of these affiliations, " sought to prove that the whole system was pernicious and should be abolished." This was alarming enough, but worse followed. The crusade against the societies, until then confined to the Campus activities of the "Bull and Stones" men and the presentation of views in special publications of limited circulation, spread violently outward and "was transferred to the columns of prominent metropolitan journals." The alumni bodies were infected: " alumnus and undergraduate emulated each other in striving to point out the enormities committed by the societies," and before the astonished eyes of the world-at-large, and aided and abetted by editors forever welcoming dissension at Yale to increase their circulation, "the good name of the University ... [was) dragged through the mire by her own sons."

The situation affected all Yale men, but from the point of view of the harassed societies the immediate danger lay in the fact that the attacks upon them had lost their informal and indirect characteristics. A few isolated expressions of adverse opinion could be ignored by the Yale authorities as unrepresentative. "Bull and Stones" physical violences could be cried down as immature horseplay of undergraduates and counter-attacked as clean-cut violations of law. But when "the faculty and corporation were directly appealed to" by the enemies of the system, then the situation was obviously out of hand. It was entirely possible that, legally and drastically approached, the faculty and corporation would be driven into legal and drastic action.

We have this general picture on the unimpeachable authority of John Addison Porter, prominent Yale and Scroll and Key man, in his article in the New Englander for May, 1884, "The Society System of Yale College." It is to be gathered directly from what he says and indirectly from what he implies. The vital nature of the question is to be read in his choice of vehicle: a publication traditionally devoted to Yale matters of the highest importance. The quality of the danger appears in his statement that whereas "the societies have never yet: been forced to ... offer explanations to their assailants, and it is extremely improbable that they will ever condescend to do so," nevertheless the occasion has now arisen "for plain words between man and man ... the time for delay, for allowing things to 'adjust' themselves, would appear to have passed."

"Whether the Yale Societies are guilty or not of the charges made against them," says Mr. Porter," is not the first question. ... The very fact that almost every year the students are more or less divided on this score, that twice within the past ten

years the faculty have thought necessary to exercise their rarely used prerogative of suppressing time-honored customs the Freshmen and the Sophomore Societies augurs that germs of further dissension may exist fatal to that harmony which is indispensible(sic) to the greatest usefulness of the University."

He then proceeds to a series of charges and answers to the charges, that may well be taken as typical of the attacks and defences of the "societies war and of their extraordinary futility. The "neutrals were in the grip of psychological factors created, in part, by the presence and growth of "poppycock," while the societies were unable to recognize the impossibility of a reconciliation of views without a major change of policy.

Charge: 'The Senior Societies ... have muzzled the college press ... ."

Answer: 'On all the college press proper (i.e., excepting the Yale Literary Magazine) the nonSenior-society men always greatly outnumber the elect"; but "to preserve a constant equilibrium [in the College] would be simply an impossibility ... if general society discussions were allowed to overload the columns of college news-papers."

Charge: "The evil worms itself into our religious life ... i.e., by estranging from their classmates the 'deacons' who are society men."

Answer: 'Coming merely as an anonymous and unauthenticated assertion, in the N. Y. Nation, it may be dismissed ....

Charge: The societies are over-expensive.

Answer: No men, however bitter, have boasted that they were left out of the societies simply on this score."

Charge: 'College work deteriorates about the time the society elections are announced."

Answer: It is "the hottest portion of the Spring. ... The discerning faculty ... invariably shorten the advance work and institute review lessons .... What connection there is between the societies ... and deterioration in scholarship, is not patent on the surface."

Charge: 'Politics ... are to some extent increased by the presence of the societies."

Answer: "The author of Four Years at Yale, a non-Senior Society man, and not over partial to them, states in his book, 'The part played by them in politics is simply a negative one.'"

Charge. "Favoritism rules the elections ... relationships and personal friendships are acknowledged before merit."

Answer: 'Year after year the nearest relatives, sons, brothers, nephews, the most cordial friends and room-mates are left out... simply because they fall below the required standard for membership."

Charge: "Men admit just before they join the societies ... that they tend to keep the non-society men from coming back to Commencements and other reunions after graduation."

Answer: 'Yale non-society men come back to New Haven more regularly and in larger numbers than the alumni of non-society colleges."

Admission and defence. 'The societies ... are tempted occasionally to abuse their privileges .... Their 'etiquette' ... which prevents them from discussing society matters with outsiders, thus being directly opposed to wirepulling, is ... commendable. When it is perverted into rudeness to strangers, or swaggering with under-classmen, it is puerile and snobbish."

Charge in conclusion: 'Society influence pervades the faculty and corporation, influencing the bestowal of prizes, appointments to tutorships, etc."

Admission in conclusion: If such cases can be authenticated they are danger signals of the downfall of the one society, or both."

Defence desperate: "Ms doubtful if the faculty and corporation themselves could abolish them without legal proof that they had abused the privileges which had been guaranteed them.

The immediate cause for the publication of this article was the direct, open and organized attempt, on February 1, 1884, to kill or cure the diseased society "pyramid" by the amputation of its senior society top-knot. Said The New Haven Register, in 1887, "In 1884 ... opposition to 'poppycock' ... was at its height"; and The New York Tribune, in 1896, "From time to time the opposition to the senior society system takes organized form, but perhaps the most vigorous attack ... was made by the class of 1884"

The wave was breaking.

The senior class had met, according to custom, for the election of its class day committees: Promenade, Class Supper, Class Day, Class Cup, Ivy, and the election of a Class Secretary. Well beforehand, however, it had become known that after the transaction of this business, a resolution against the senior societies would be introduced. "[The movement] was fostered and conducted," writes Lafayette Gleason, "by William McMurtrie Speer, afterwards prominent in newspaper and legal circles in New York"; and Speer had done a thorough job. "The supporters of this motion entered the meeting confident of their ability to put it through," the Yale News says, and this is confirmed by the statement of the Horoscope of a year later: "There were a sufficient number who had promised to vote for it to make it a success."

The society men were genuinely alarmed. One more "abolition" in a season of "abolitions" was entirely within the bounds of possibility. They themselves conducted a counter-canvass of the class insofar as their policy of never condescending to face an opponent man to man would permit them; but this policy had them at a distinct disadvantage. The mathematics of the meeting disclose two illuminating possibilities. There were 151 men in the senior class. 117 of these voted "yea" or "nay" on the anti-society motion. 117 Plus 30 equals 147. Allowing for a few natural absences, the conclusion is inevitable either that not a single member of Skull and Bones or Scroll and Key was present at the meeting or that, being present, they were too proud to vote. In either event, they were forced to rely on such allies as could be induced to support them.

The Class Day officers were duly elected, among them a number of the men to be found among the Founders of Wolf's Head: Charles Walker, William Bristow

and Charles Phelps, to the Promenade Committee of nine; William Holliday, Harry Worcester, Harry Wagner, and James Dawson, to the Class Supper Committee of five; Edwin Merritt, Henry Cromwell and Sidney Hopkins to the Class Cup Committee of three.

"The way was now clear," says the Yale News, for Mr. Speer to introduce the following resolution, which the meeting had declined to receive before, prefering[sic] to postpone its discussion until all other business had been transacted:

"WHEREAS, The present senior society system creates a social aristocracy, exercises an undue influence in college politics, fosters a truckling and cowering disposition among the lower classes, creates dissensions and enmities in every class, alienates the affections of the graduates from the college, stifles the full expression of college sentiment by its control of the college press.

"Resolved, That we believe this system detrimental to the best interest of Yale College and injurious to, ourselves. That we request the college press to publish this resolution of the senior class. That the chairman and two others, to be appointed by him, be a committee of three to lay this resolution before the president, faculty and members of the corporation."

Debate then followed, but true to the general policy of suppressing society news and views as far as possible, not a word appears in the College press, or elsewhere, of the sentiments expressed. We know only the outline of the parliamentary procedure: that after the resolution had been read, "Mr. Merritt" — no other than Edwin Albert Merritt, of '84, a Founder of Wolf's Head — demanded that the mover should make known to the meeting his reasons for supporting it. Mr. Speer, thereupon, did so, when Mr. Merritt spoke at some length in reply. The debate was continued by Mr. Kinlay, for the resolution, and Mr. Judson, against."

Then after some skirmishing — a majority vote to lay on the table having been ruled insufficient by the chair, with a two-thirds vote impossible to secure — the motion was put to a vote. The chair ruled "that the voter, on his name being called, could answer from his seat, could whisper his vote in the ear of the chairman, or could deposit a ballot in the hat at the desk"; and amid great excitement, 117 men of the senior class, one by one, recorded their vote in these varying fashions. The process was slow, with the outcome unrevealed and in doubt. At length all the votes were in and counted.

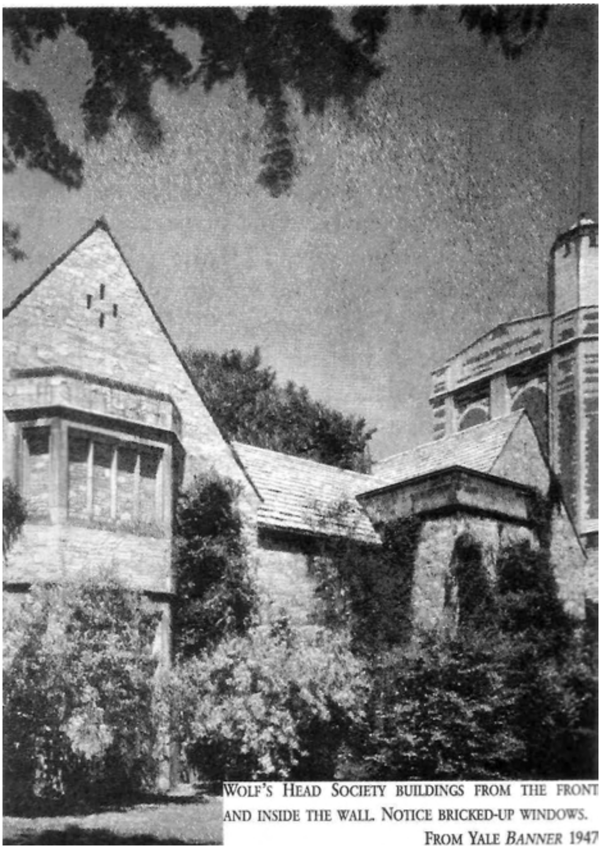
There were 67 "nays" and 50 "yeas."

"It is a disgrace to the Yale manhood so often spoken of," writes the Horoscope bitterly in 1885, "that the last graduating class was unable to pass resolutions condemning the methods of the two eyesores." This from the "neutral" side. On the "society" side haste was made to follow up the advantage gained and within a few hours almost, John Addison Porter had been spurred into the preparation and proposed publication of a "defense" of the system and was abroad on the Campus collecting his material before worse should happen.

The outcome seems to have been a complete surprise both to the two older societies and to the College. It was due, however, to the introduction of a new

element. In June of 1883, eight months before, entirely unknown to the College or the world-at-large, a third senior society had been successfully founded — the society which was to be called later Wolf's Head " and "The Phelps Association."

"I remember the meeting ... very well," writes Harry Wagner. "On this occasion the two older societies requested our assistance. I think that most of our members voted with them." Lafayette Gleason says: "Speer counted upon the votes of Wolf's Head members, as we were supposed to be organized in opposition to the two societies, but for obvious reasons, such as the Hall being under construction, etc., he did not get those votes."



WOLF'S HEAD SOCIETY BUILDINGS FROM THE FRONT AND INSIDE THE WALL. NOTICE BRICKED-UP WINDOWS.
FROM YALE *BANNER* 1947

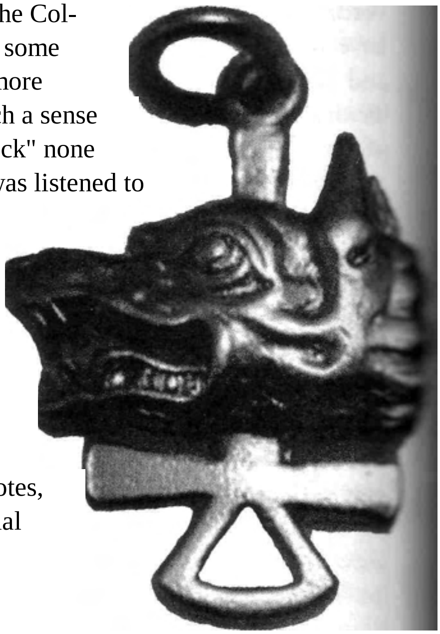
The shift of fifteen votes would, of course, have reversed the "yeas" and "nays" and brought victory to the proponents of the resolution, so that the Founding may be said to be directly responsible for the outcome. But while some of the fifteen Founders must have voted as they did from loyalty to a system of which they were now a part or from a feeling that the system was too entrenched to be affected by a mere vote, nevertheless, from an historical perspective the reason for the defeat appears to lie much deeper.

The Founders of the new Society had been, of course, of the great body of the College "outs." For this very reason they had not been bound by tradition and were able with dear eyes to discern the defects in the existing system, and to attempt its cure through the introduction of new and progressive elements rather than through the over-drastic process of the axe. Not by accident had they gathered into the platform of their institution the spirit of the ideas expressed over long years by the "neutrals" of the College-the spirit of the Courant's description of that one peaceful Tap Day after the bitter Scroll and Key memorabilia war: "As the Bones men went around they greeted salutations from the crowd with good-natured grins, once or twice answering back in a joking way; a thing never before done...";

the spirit of the Courant's "third society" proposal: "a respectable organization.. not got together to 'grind 'the other two "; the spirit of the constructive elements of the Iconoclast, the Seventh Book of Genesis and the Fall of Skull and Bones.

In addition, like the founders of Linonia and Brothers in Unity, they had embarked upon their venture with something of a crusading fervor — " to bring more democracy to the College." As a first witness of this, unlike the members of Skull and Bones and Scroll and Key who were skulking in their tents — haughtily absent or more haughtily present but not voting — the fifteen members of the new society were full participants in the meeting with their non-society classmates.

It would not have been possible in the course of a bitter and long debate to have kept the basic principles of the founding of the new Society wholly hidden. Wolf's Head, at this time, was still without a name; its building was no more than a foundation covered with snow; but its existence was known by this time and its membership, in part at least, identified and something of the ideas behind its founding must have percolated into the College. When, therefore, Edwin Merritt spoke "at some length" in defense of the society system — or more probably in defense of a society system in which a sense of humor would play a large part and "poppycock" none at all — it is impossible not to believe that he was listened to by his classmates with deep interest as the possible prophet of a new order, or that 'votes — whether of some of the Founders or of the "neutrals" — previously "promised" to Speer were changed under the persuasiveness of the new idea.



More than this, the very presence of the members of the new society at the meeting, taking part in the debate and registering their votes, must have been a happy and effective testimonial of the possibility of a new order.

Pages 17-67 of The Founding of Wolf's Head, by John Williams Andrews. The Phelps Association, 1934.

UNDERGRADUATE DAYS

HENRY SELDEN JOHNSTON

APPEARED IN THE DECENNIAL RECORD OF THE CLASS OF 1896, YALE COLLEGE - 1906

IN LOOKING ABOUT FOR A FURTHER OBSERVANCE of the general history of the Class it seems proper to count among those changes it saw transpire and those new experiences common to all, an institution not very closely connected with the University, not created at the instance of the faculty or student body, but bringing an amusement and diversion that was quite generally indulged in — namely, Poli's Theatre. Prior to the coming of the vaudeville performances the succeeding classes of Freshmen and others had made periodic descents in bands upon some dreadful melodrama or cheap comic opera at Proctor's Theatre, where was to be found more trouble than amusement; but times are now so changed in these affairs that not only is Poli's a regular resort for students, but it is even said to be a place where New Haven's superior society and Yale's Faculty are not above attending.

The mummer's art that so flourished in the universities situated in the larger cities had not racked the simple souls of Yale before our day. They had been content to read of lutes trimmed to the beating foot and to imitate in cheers the classic chorus of the frogs. The secret societies, however, had long found amusement in giving on their own hallowed stages plays that were not seriously prepared or skillfully performed, and in our middle years the junior Fraternities sought the clamor and the glare of the theatre by the public production of musical comedies, in one of which our classmates appeared as brigands, nymphs, and gallowglasses. It is amazing, now that the enthusiasm of seeing our college favorites in new roles has waned, to think of the bad acting, singing and dancing that an audience, fetched from afar and exhilarated by the conscious presence of its "nice people," would tolerate. After two performances the Faculty, not outraged at the quality — for that could

be forgiven — but fearful of offending puritanism by a toleration of Dionysian revelry, forbade a further trial of the art.

No commentary, however abbreviated, on the life at Yale would be adequate without some allusion to the system of secret societies existing there. The establishment of societies is fixed, although they are continually undergoing a series of changes and developments, thereby indicating some disorder of the social state. When we entered college there were two Sophomore societies that kept the entire Class in a state of unrest throughout Freshman year; their only outward indications being exhibited by machinations in Freshman politics and by their marching in a body, as of course, into the two larger junior societies, Psi Upsilon and Delta Kappa Epsilon. In our junior year a third Sophomore society was started by the members of Ninety-Six, but shortly after our day all these Sophomore societies, having met with a widespread condemnation, were abolished by the Faculty.

At the close of our course Alpha Delta Phi, which had been a general four-year society, was made a junior fraternity, resulting in a shifting in the system to overcome the criticism then prevailing. The Senior secret societies have continued withour change, except that there is to be recorded the recent birth of a non-secret Senior group styled the Elihu Club.

The subject of societies is so abundantly, though furtively, discussed in undergraduate days that any consideration of the various views would perhaps be unwelcome here, and the social problem involved is referred to only to cut the ten-year notch in our opinions, and to pause, as we reflect once more upon that powerful undercurrent of Yale life, for the observing of the modifications that a decade of experience and of contact with a different community have made in us.

A comment on the American people has been frequently made that they are inordinately given to forming a multiplicity of secret orders and associations. Certainly in the colleges this propensity has developed to a high degree, and Yale has indulged in it in due proportion. Secret societies abound, especially in preparatory schools, where they are subjected to no very intelligent control. Boys are entranced by the appeal of mysticism newly awakened in a dawning life, and captivated in their unbalanced days by an apparent superiority established by themselves and accepted by the uninitiated. They bring to Yale all the ardor and all the undesirable attitudes that school societies can create, and, with the latter, supply to the social life an element that is in constant conflict with more wholesome influence.

A Yale graduate will be most likely to form an opinion uncolored by loyalty to his fraternity, or without bias as to the society system, if he calmly considers the characteristics of some outside fraternal order of whatever species of Independent Reindeers it may happen to be. The very fact that he himself is not a member—as not many college men join in after years such associations—is an expression of his opinion of their allurements; he knows that their secrets amount to nothing, that their symbolism is the emptiest kind of trumpery. He recognizes the valuable features which abound, — the insurance securities, the commercial opportunities, and the social benefits, — but utterly scouts the serious claims of hidden power in their

secrecy. He turns again at this extended day to view the societies of Alma Mater, to discover, doubtless with some shock of surprise, how like in part they are to those

fraternal orders viewed with his indulgent eye. True, there is a marked divergence, but on the point of secrecy he finds college men no less ridiculous, except they are not so old and fat.

To turn over the pages of the Yale Banner, or any college year book, is to find emblematic engravings of secret orders with smouldering sarcophagi, exhaling the odor of mystery, skulls, masks, spades, keys to the secret of knowledge, books of sibylline prophecy, and a host of gewgaws that symbolize the ages of credulity and ignorance. The sacred iron doors at Yale no more close on the world than do the wicker wings of a summer barroom; the societies have no secrets, except for the pitiful agreement not to tell the meaning of A.B.C. or the significance of chained hearts and clasped hands.

It cannot be denied that a spirit of mysticism, finding its only expression in tokens of tragedy and darkness, appeals strongly to all men and especially to the spirited and immature temperament of youths. If Yale men take a delight in the allurements and romances of the occult, they are to be allowed that liberty, even at the seat of a university, where it is the business of the Faculty to enlighten the blind, and the practice of a student body to seriously administer the social law. In general the liberty is harmless, but the spectacle is to be tolerated only where it does not interfere or conflict with the wellbeing of the college community. Whether it does so at Yale is the question now raised for our maturer judgments.

It has been stated that but few graduates join fraternal orders. A further reason for this is found in the fact that those orders cannot bestow the favors or inflict the pains that lie in the laps of the college fraternities. In the world at large we have courts of law to govern the conduct of men, and the requirements of the entire community over conduct extend not much beyond the reach of the penal statutes. For the vast admixture of society there are many standards imposed on as many classes, among which the fraternal organizations by their paucity in membership are entirely lost, so that a breach of any particular requirement of a fraternal order not corresponding with a general rule of conduct of the entire community will bring no penalty except from the order. One is permitted to observe a march of decorated Templars without much concern for his own welfare, but at Yale the underclass man lurks to watch a midnight parade as fearful of detection as a Peeping Tom.

The college community is quite differently constituted from the general, and me system of ethics which prevails richly transcends that penumbra closely clinging to the portals of the jail. Undergraduates come largely from a single stratum of society and respond with almost equal sensitiveness to the praise or blame of their fellow-men. Their numbers are few, all are eligible to the same clubs, and most regard an election as a thing greatly to be desired. The secret societies dominate the entire activity of college life, they establish by their elections a system of rewards that are accepted by the community as the highest gifts that man can have for man, and of punishments whose sting no one is too independent to ignore or too degraded to

feel. They establish a morale, their imposition of social regulations is accepted by all, and the violation of their rules brings not only the disapproval of the initiated and a failure of election, but shapes the judgment of expectant underclassmen on the propriety of conduct. Whether this situation is deplorable or beneficent is for the moment immaterial; the fact to be noted is that it exists.

The government by a tribunal of public opinion, so constituted, exercises a control, powerful, sustained, and complete, over the behavior of men from the moment they arrive in New Haven as Freshmen; it is powerful only because its standards are high, sustained because it affects a class superior in culture, and complete because it manages men in their most dependent days. This system, unique in its class progression and wholesome in its achievement, is highly valuable. Yet in spite of its wide and efficient control of conduct, and because of its great authority, it has established a certain attitude and exercises some requirements that neither appeal to reason nor freely meet the approval of sober-minded graduates. It is out of the feature of secrecy that there arises a strong doubt.

It has been maintained here that the secret societies have no substantial secrets, and that their claims of the supernatural or of hidden experience are as unreal as they are pretentious, yet the power and the prestige they have gained, coupled with the show of secrecy, give birth to a feeling of superiority and exclusiveness that quite intoxicates. If men want to feel superior and exclusive, of course they may be allowed the opportunity so to indulge their intellects, but when they are the same men whom circumstance has elevated to a position of authority, the maintenance of their attitude may, and in undergraduate days ought to be fairly questioned. That the entire system is conducted with a fostered exclusion is beyond doubt; the countless prohibitions that are imposed on non-members is proof enough. The quality of exclusion is displayed not in an aloofness from non-members, such conduct could be nicely tolerated, but in a pointed commingling, a subtle insistence on a difference, and a constant appreciation of a barrier, perhaps as wilfully raised by the non-member, but certainly the fabric of the other. It may be urged that men need not accept these prohibitions, but the college world does submit to them—the worst being a restriction upon free discussion. The decrees of exclusiveness are administered conjointly with the wholesome rules of conduct, and most men while willingly submitting to the latter feel hotly the effrontery offered in the former, for effrontery and chivalry can be maintained together in any community and they so thrive in Yale's societies. As the secrecy is false, the exclusiveness is manufactured, and as it is manufactured it is offensive. A proper answer is not given if it be said that no man need feel the exclusion unless he chooses to take it as such, for when a condition is ostentatiously created, as this is, and a prohibition against open recognition is decreed, then exclusiveness is deliberately maintained. Objection arises not out of pique at the assumption of the chosen few but out of the injury submitted to, perhaps weakly, by the uninitiated. In a hundred ways Yale men have been hurt, have received wounds that have smarted even in later years, wounds that could have been avoided only by refraining from entering Yale, and it is difficult to

believe that among those who have removed the spectacles of loyalty there are not many who have come to think that the whole system of societies, in so far as they are 'secret, is prejudicial to the best possible undergraduate life.

The societies at Yale are essentially clubs for the development of friendships, all have the interest of Yale at heart, and election to their number is an honor not lightly considered and a trust not wilfully violated. Their power is great, their influence inspiring. Without secrecy and the offense growing out of it, these clubs would still maintain their high position and authority, and they would remove from life at Yale a feature that long has been an object of criticism and regret.

While the society system has a strong influence on college social life it is still only an undercurrent above which is a stronger, wider stream, rich with experience and opportunity from earliest Freshman days. At a casual glance it seems amazing to think how quickly the members of the Class in Freshman year came to know each other. An universal intimacy sprang up that finds, as we continually observe, no correspondence in the outside world. Mere boys, shy and diffident, from all corners of the country, made up the membership; they were not thrown together by the force of college regulations, but were marshalled in divisions of thirty or so, and yet in no time they were on terms of Nym and Pistol from A to Z. This of course was due to the men coming in groups from the preparatory schools, like Andover and St. Paul's, and lesser institutions, where they lived in closest relation. Each group stood practically as a unit, so that to know one meant immediately to know all. Those who came singly from remotest towns and isolated high schools soon became attached to and a part of one of the larger groups, with the consequence that from the very start of the course the men gained acquaintances widespread that later were to develop into friendships, fraternities, clubs, and carousals.

Henry Selden Johnson (Yale 1896)

HOW IT LOOKS TO US NOW

A TABULATION OF THE ANSWERS TO HAWKES' CIRCULAR LETTER OF DECEMBER, 1905

Herbert E Hawkes

QUESTION VIII

What relative importance would you now place on study and on activities outside the curriculum (e. g., athletics, societies) ?

A few more than half the men answering this question (151) are clear that study is of first importance, very many regarding the outside activities merely as a relish. The sentiment of the entire body of answers is contained in the reply: "1. Study, 2. Social associations with classmates and others, 3. Athletics, 4. Societies." Other suggestive replies of men who look on study as of primary importance are: "To any one of ordinary intelligence, there seems to be time for both. An honest day's work

every day on the studies and all the rest of the time devoted to outside activities or to recreation would seem to be desirable." "Study first. Many activities which at college seemed of first importance lose much of that importance in the retrospect."

A number of men (about 40) seem to place general association with their classmates (including athletic and social activities) in the first place, though the common intellectual interests seems to be the substratum that makes this association valuable, or in fact possible.

"Study is the basis of college life, and indispensable, but the greatest good from the stay at Yale comes in my experience from the constant intercourse with men. Athletics and societies are first-rate mediums through which the pressure of many may cause the individual to modify his peculiarities and faults. Four years at New Haven seeing no one but instructors, and devoting the whole time to study would be less valuable than four years under the present system, with study left out and some regular physical labor substituted as the reason for our presence,—No, on reading this I convert myself to the contrary. The improvement would not come without the mental activity of study. It is absolutely essential."

The chief complaint against athletics is that comparatively few are encouraged to take part in them. A very common sentiment is expressed by the man who says: "I think athletics should be more generally indulged in and less attention paid to University teams."

Although the question does not suggest a criticism of the society system, about 20 men add such criticism. Their replies are mostly to the effect either that societies are very much over-emphasized or that they should be abolished. Six of them, however, feel that the societies do more good than harm. Of these six men five were in Senior societies. The only Senior society man to criticize the society system stated the following: "I do not think a man should make a Senior society unless he has a junior appointment." Of the critics a very few were members of junior societies. Sentiments expressed are as follows: "The fetish of Senior societies seems to me wholly bad. Its evil influence penetrates even the lower grades of preparatory schools." "Societies (all of them) root and branch should be abolished." "Societies seem to me of less importance each year." These from Junior society men who did not make a Senior society. Non-society men who mention them at all criticize severely.

Our epigrammatic member says: "The four things which did me more good than all the curriculum were learning:

1. In Freshman year, that a man is a fool to sport.
2. In Sophomore year, that a 'pull' is a great help.
3. In Junior year, that general acquaintance with current affairs is very desirable.
4. In Senior year, that the best man doesn't always win."

YALE UNIVERSITY

EDWIN E. SLOSSON

AN EXCERPT FROM: THE INDEPENDENT - A WEEKLY MAGAZINE Vol. LXVI THURSDAY, FEBRUARY 4, 1909, NEW YORK

A stranger who tries to see Yale will be disappointed because so much of it and the best of it is invisible. I felt on the campus as I do in the dynamo room of a great power house. I knew that I was in the presence of forces obviously powerful but imperceptible to my senses. There is not enough tangible machinery about Yale to account for the work it is doing. The Yale undergraduates seem to train, control and discipline themselves, leaving little for the official authorities to do in this way. In fact President Hadley has explicitly recognized this in saying that "if the chairman of the Yale News Board is a man of the right type — and he almost always is — he is the most efficient disciplinary officer of the university.

However strained the relations between the officers of the university and the student body might become the News would never attack the President so bitterly as did the Harvard Crimson President Eliot or the Stanford Sequoia President Jordan last year. The Record never prints malicious jokes on the professors, as do so many "college comics." The Yale men who have patiently endeavored to explain to me the influences which mold the undergraduate into the Yale type have laid great stress on the common dormitory life and the effect of the senior societies. There are three secret societies, Skull and Bones, Scroll and Keys, and Wolf's Head, and it is the ambition of every normal College man to get into one of them. Toward this all his efforts are directed from his freshman year, and Tap Day marks for him the success or failure of his college career. As one graduate said to me: "I would willingly have sacrificed a year of my life if it had been necessary in order to make Bones."

Since the ideals of the senior societies set the standard for the college it is important to know what are regarded as the qualifications for selection. In so far as I have been able to ascertain them from talking with Yale alumni these qualifications may be formulated as two, one passive and one active: First conformity; second, achievement. The first requirement of eligibility is that the student "be a gentleman" according to the prevailing definition of that word; that he be clubbable; that he conform to Yale customs and violate none of its traditions. The second distinguishes the few men of prominence from the crowd of those who are merely negatively eligible thru conformity with establisht ideals of manners and conduct. A man must have done something, particularly something that has brought glory upon the college; he must be a leader among his mates in college activities, such as athletics, journalism, college politics, or religious work.

These criteria are on the whole good ones, at least very similar to those that measure a man's success in the outside world, but some questions would arise as to their interpretation. Youth is naturally intolerant and exclusive, even, or perhaps especially, college youth, and probably too rigid a conformity is insisted upon and too narrow a definition given to the word "gentleman." Then, too, the activities in which prominence is rewarded are rather apart from the purposes for which the university exists, and devotion to some of these activities may easily become so absorbing as to give rise to a general sentiment that high grades are indicative of a narrow mind.

The societies should in my opinion add scholarship to their list of undergraduate activities in which a student may legitimately attain distinction, and should take cognizance of the fact that a man who presents an original thesis, who discovers a new species of plant or writes a genuine poem, may be said in a sense to have brought glory upon his university as well as a man who has won a game.

That scholarship has very little weight in the question of eligibility to the senior societies was shown by Mr. Maurice F. Parmelee in the Yale Courant of December, 1906, from which I obtain the following figures:

TABLES OF GRADUATES FROM ACADEMIC DEPARTMENT, 1882-1905			
		HONOR MEN	%
WOLF'S HEAD	308	19	6.1
SCROLL & KEYS	349	37	10.6
SKULL & BONES	358	83	23.1
SOCIETY MEN	1,015	139	13.6
NON-SOCIETY MEN	3,984	967	24.2
TOTAL	4,999	1,106	22.6

The "Honor Men" are those that have received the highest marks in their classes and are, according to tradition, placed upon the commencement program for Philosophical Orations, High Orations and Orations, altho these are not now given. These men also become members of the Phi Beta Kappa, a national non-secret honorary society. The figures show that only one of the three secret senior societies contains a higher percentage of honor men than the College as a whole, and even that society had a less percentage than the student body outside. That is, if a blindfolded man had entered the crowd assembled around the oak tree near Battell Chapel on the third Thursday in May and tapped forty-five men at random, the chances are that he would have obtained men of higher standing than those actually chosen, after the long and anxious deliberations of the secret conclaves. Or, in other words, after the forty-five happy men had gone to their rooms there was better picking in the crowd than there was before, so far as scholarship goes.

But the faculty estimate of a man's ability based on grades alone is as narrow as the student estimate based on activities which often interfere with the making of high grades. To get some light on this point, I asked seven Yale graduates in classes from 1872 to 1896, to mark in the directory of graduates the names of their classmates who had in some way distinguished themselves since graduation. No instructions were given as to the degree of prominence or the proportion of the class to be indicated, but they checked on an average 24 per cent, of the names on their class rolls. On comparing these with the lists of living graduates in these classes who are members of the three senior societies and of Phi Beta Kappa (the latter being Honor Men), the following results were obtained:

38 per cent. of the Phi Beta Kappa men became prominent.
37 Per cent. of the Society men became prominent.
19 per cent. of the men not in Phi Beta Kappa became prominent.
18 per cent. of the men not in the societies became prominent.

Of course the question of which men in these classes had shown special ability depended upon the personal judgment of the men marking the lists and their knowledge of their classmates and the examination was not extensive enough to give accurate figures.* [* But two men marking the same class gave practically the same figures.] No allowance can be made for the fact that the honors conferred upon an undergraduate give him thereafter a certain prominence in the eyes of his classmates and may directly contribute to his success in life. Still we should probably be justified in concluding that the senior societies and the Phi Beta Kappa, tho their standards of judgment are different, are equally successful in picking out the men of superior ability and that a student belonging to either of these groups has twice the chance of future prominence as one belonging to neither. There are several interpretations that might be given to these figures. One is that the importance attached to non-scholastic activities in Yale draws a large proportion of the ablest students away from their university duties.

Most conspicuous of the activities is, of course, athletics, which at Yale as in all the other American colleges, absorbs too much of the student's time, energy, ,and enthusiasm. By athletics I do not mean physical exercise or even sport, for these two desirable elements of student life have been so overshadowed by other features of the intercollegiate contest system as to be negligible in the consideration of the question. Whenever the number of spectators exceeds the number of players the limit of true sport has been past, and when the spectators outnumber the players a hundred to one, the game becomes merely an exhibition. If there were some way by which the strength and agility, or rather the health and symmetrical development of the entire student body of one university could be matched against those of another, some good might come of it, but under present conditions success in intercollegiate contests does not prove that the winning university is superior to its rival in these important qualities nor does it do much to promote them. Young men got excited enough over their games naturally without outside pressure, and when they know that in every city of the United States crowds art assembled to watch and bet on their feats the pressure is too great. Overstrain, physical and moral, necessarily results, as in the boat race of last June, when, with a President rooting on one side and a future President on the other, a Yale student collapsed and has since died and two Harvard men broke the rules of the university and were expelled.

I find that I am expected to say something about democracy in this article on Yale. I will therefore take this opportunity of explaining that I have not been able to find out much about democracy in American universities because it means different things or takes different forms in the different institutions I have visited. In Yale, for example, the students resent the introduction of valets and automobiles as a menace to democracy. In Princeton the authorities regard the use of Greek letters in the name of a club as too dangerous to be tolerated. In Wisconsin it is thought democracy will be lost if the tickets to the junior Prom are raised from $3 to $5. In Michigan any system of marking grades except "passed" and "not passed" is considered undemocratic and it was only this year that that aristocratic institution, the Phi Beta Kappa, was allowed to be establisht. In Harvard the word "democracy" seems to mean "promiscuity" or else some spiritual condition altogether unaffected by external circumstances. When I started out on my quizzing tour I had at the head of the list of questions which I proposed to ask. in one form or another, "Does the spirit of democracy prevail in this university.

But I soon dropped that question as unnecessary and fruitless, because it was answered everywhere before I asked it, and always in the same way. There were two things about which faculty, students and alumni of each university visited agreed, that is on the purity of their democracy and the beauty of their campus. In admitting deficiencies in other respects they were usually frank enough and on some points even effusive, but on these two they would acknowledge no superiors. Therefore as the net result of a hundred conversations bearing on this subject I have left in my memory a hazy composite something like this: "There are other

universities that are richer or older than ours; some that have at present more students. Our president is not all that he should be. The trustees do not always do the right thing. The faculty might be improved by process of elimination and substitution. But nowhere will you find a prettier campus or a more democratic body of students." On the former point I was able to use my own eyes, and shall take the liberty of expressing my personal opinions, but on the latter I was obliged to rely on hearsay evidence. Having just given this evidence I shall dismiss the subject with the remark that in view of alarmist reports about the growth of luxury, narrowness and class distinction, it is distinctly encouraging to find that the democratic spirit is still regarded as a desirable thing to have in a university, even tho there may be a disposition to assume that it is already attained.

I have observed a curious difference between Eastern and Western colleges in regard to the influence of the alumni. In the West the alumni are always urging forward their Alma Mater into untried paths. Sometimes a State Alumni Association will take things into its own hands and, overruling president, trustees and faculty, will, by control of the legislature, force the university to take steps which it believes are necessary to bring it closer into touch with modern life. In the East on the contrary the alumni seem to be, as a whole, a conservative, even a reactionary influence, opposing almost any change, wise or unwise. I have asked many persons the reason of this and tho they generally have agreed that it is so, they have not given any explanation which, in my opinion, satisfactorily accounts for it. The most plausible of the explanations suggested to me is that the Eastern alumni are older on the average. But are not the freshly graduated about as reluctant to have their Alma Mater changed as the older men? Whatever the cause it raises the question whether the present movement to give the alumni a larger representation on the governing boards of State universities may not ultimately result in impeding rather than accelerating these institutions.

Eastern alumni are generous in the matter of financial support and certain individuals initiate important changes thru specific gifts, but as a body they are inclined to regard their Alma Mater as a relic of happy schooldays and as such to keep it intact and unaltered, so that when they return they may find it as they remembered it. In 1888 several thousand of the Yale alumni signed a petition to the corporation remonstrating against the removal of an old fence that was in the way of one of the new buildings, and what is worse, they celebrated twenty years later the anniversary of "the fight that failed." It is the alumni, I believe, who are responsible for the preservation of Old South Middle, which makes Yale look like a full-grown rooster with a bit of the shell from which it was hatched stuck on its back. In important matters it is the same. If it were proposed to cut down the college course to three years or to raise the Sheffield course to four; to make the Sheffield boys go to chapel or to release the college boys from going; to abolish the senior societies or to have more of them, probably the majority of the alumni would oppose the change regardless of its advantages or disadvantages. I presume that Secretary Stokes, altho I have never heard him say so, is more often

called upon in local alumni associations to explain why some things have been changed than why more have not been changed.

The finest thing about Yale is the student body. I do not think this is true of all the universities in this country. In some laboratories and libraries I have visited the students appeared out of place, unworthy of their beautiful buildings. In some classrooms 1 have pitied the instructors because they were expending so much good teaching on such poor material. But I did not pity the instructors in Yale. If they could not do something worth while with the earnest, energetic, wide-awake, well-ordered young men in the scats before them, they could not anywhere. The Yale students as a rule are not blase, cynical and prematurely aged, nor on the other hand are they awkward, unruly and obstreperous. They are not so studious and diligent as the average run of students in the State and city universities, but they come from more cultured homes and with more thoro preparation. After seeing the Yale boys in mass, I have come to think that the university gets more credit than it deserves for the achievements of its graduates. This educational machinery that we talk so much about is, after all, of minor importance. The product of the mill depends mostly on what kind of grain is poured into the hopper.

I liked the way a man would stroll across the campus in the evening, bareheaded and hand-pocketed, and call "Oh Billy Rogers!" to a four-story building, then hold a confidential conversation with the student who stuck his head out of one of the upper windows. I like the way they played diabolo and tops. I liked the way they heeled for the News. I liked the way they sang. Altogether they are a likable lot of fellows.

SOCIAL SYSTEM IN THE COLLEGE

CLARENCE W. MENDEL
FROM FIFTY YEARS OF YALE NEWS: YALE DAILY NEWS, JANUARY 28,1928, NEW HAVEN CONNECTICUT

THE OLDEST SECRET SOCIETY at Yale is Phi Beta Kappa. It may seem curious at present to think of the learned society as a secret fraternity but such it was from its first year at Yale in 1780 down to 1825 and it is more truly in many ways the predecessor of the modem fraternity than are the ungainly open societies that preceded it at Yale. Chi Delta Theta was also a secret fraternity for many years and the societies that succeeded these two always maintained at least a political interest in things intellectual.



The whole question of societies and fraternities and their place on the campus does not seem today to be the leading question that it was fifty years ago. At that time, or approximately then, appeared the greatest book on Yale life that has ever been written in the way of a compilation of facts. "Four Years at Yale" devotes the first 186 pages to societies and only in what follows deals with

student life in general. Probably the best way to understand the changes is to visualize the situation in the early 70s.

At the top of the system were the two Senior societies, Bones and Keys, then as now taking fifteen members each, elected at the end of junior year. These societies were local and entirely secret. Bones, which was originally Skull and Bone, was founded by fifteen men of the Class of 1833 as a result, it is said, of some injustice in the Phi Beta Kappa elections so that in another way Phi Beta Kappa may be considered the unintentional sponsor for the system. There was never any pledging or discussion of elections which were given out on a Thursday evening in the individual rooms. A sharp distinction from all other societies except Keys which was modeled exactly upon Bones lay in the fact that graduates attended initiations and commencement dinners in large numbers. Keys and an unsuccessful society called Spade and Grave were the only other Senior societies at the time. Spade and Grave started as the result of a quarrel between three Bones editors of the Yale Lit and two non-society editors, but was soon buried.

In Junior year there were three fraternities, Alpha Delta Phi, Psi U and DKE all established between 1836 and 1844. In the 70s the last two had what were considered extravagant houses, one on High street and the other on York of which the more elaborate was valued at nearly $15,000. These junior societies were chapters of national fraternities and took about thirty men each. Their chief function seems to have been to engineer the election of the Wooden Spoon Committee and the Yale Lit editors. There were nine men on the former and five of the latter. Coalitions between various pairs of societies always determined who should be the Spoon man and the editor in chief of the Lit. Beyond this political function the only object of the fraternities seems to have been self-perpetuation. So far as we can judge there was absolutely no fraternity feeling. Only the Junior Class members were interested or attended meetings. There was no Senior delegation at all.

In Sophomore year we find the societies which really created some intense interest. Kappa Sigma Theta and Alpha Sigma Phi had died out. But the result of a ruction between Psi U and DKE in 1864 had produced two societies known as Phi Theta Psi and Delta Beta Xi, vouched for by no lesser notables than Professor Thacher and Cyrus Northrop. The motto of the former was the familiar but tantalizing amici usque ad aras. Freshmen were pledged for these societies early in the year, about thirty to each. There was a notification night preceded by marching on the campus with dark lanterns and songs outside the rooms of the chosen. The Freshmen furnished the banquets. Initiations were secret and inside the houses, followed by a play and dinner. The meetings were on Friday and the graduates had nothing to do with the fraternities except by invitation. In these Sophomore societies are to be found most of the traditions which have continued in the modern fraternities and they rather than the junior fraternities were the hunting grounds of the Senior society campaigners. Probably this was one of the reasons why they and one or two others founded later were short

lived. They were the step in the pyramid around which centered the most severe general criticism, especially that which came from the faculty who in those days wielded rather a big stick.

At the bottom of the social pyramid were the Freshman societies Kappa Sigma Epsilon, Delta Kappa, and Gamma Nu. The last was an open society, the other two semi-secret. At first in the 40's the membership of a Freshman society had been twenty but in the 70s the whole class was divided between the three societies after a vigorous campaign for the best men which extended back into pre-college days. One blackball rejected a man but every Freshman must belong to one of the three societies! How this worked out is something of a puzzle today. These Freshman societies tried to extend themselves to other colleges as the fraternities had done, but without much success. At some period certain schools regularly supplied particular societies. There was some open hazing of candidates, and each initiate was in charge of one Sophomore to see that life did not become dull for him at any moment.

Such in abstract was the society situation fifty years ago. The two great debating societies so-called, Linonia and Brothers in Unity, established in the middle of the eighteenth century, were purely voluntary and included all four years. They had rooms in Alumni Hall, held debates and listened to orations, poems, and essays. Their chief treasures were their libraries, which were kept in the wings of the old library. They had over 13,000 books each in 1870. There was a reading room supported by the societies and run by the College in the central part of South Middle with space for the College Book Store. On the racks of the reading room were to be found one hundred and twenty periodicals, including Punch. A tax of $8.00 per annum was assessed on the members, and the reading room was presided over by an "indigent student." This reading room superseded a newspaper rack in the bowling alleys of the old gymnasium.

The evolution from this situation of the 70 s to the present day social system is fairly obvious. The general societies, Linonia and Brothers, have become in part a library collection, in part mere names in Harkness Quadrangle. The most iron clad democracy could not maintain "societies" that took in every one of the increasingly numerous boys that came to Yale. Phi Beta Kappa, the source of the whole trouble, is now a respected badge of scholarship. At the bottom of the pyramid the great unwieldy Freshman societies died in the 80s. There seems to have been some merciful assistance given them from without to hasten their last moments, and the assistance was even more effective in the case of the Sophomore societies, which died a little later. There soon sprang into existence, however, a new group of Sophomore societies taking in fifteen men apiece and quite obviously out of tune with the pyramid principle. He Boule, Eta Phi, and Kappa Psi formed a group of forty-five men who quite regularly stuck together and furnished the material for the three Senior societies (Wolf's Head had been founded meanwhile). Quite obviously they injured the system in two ways. In the first place they selected and established a chosen group early in the collesr

course, shattering the existing ideals of democracy. In the second place they produced something of a continuity of experience which the old class system of societies had, in the interests of class spirit, prevented. They were abolished by faculty action in 1902, and the present system really dates from that time. With no Sophomore or Freshman societies the Junior fraternities slipped down to the beginning of Sophomore year, and in place of a pyramid there came into being a large group of fraternities with continuous existence through three years, the group of smaller senior societies in the final year continuing as before.

From this survey of the situation fifty years ago and now it is clear that most of our older customs and methods are more or less intact although they now belong to different organizations and different kinds of organization. The fixed element amongst the many changes has been the Senior society and even there the Elihu Club has introduced some relaxation of the old austerity. In spite of external resemblances in custom and tradition the fraternities have largely reversed the theory of the early years that only the members of a given class should be interested in a given society. The delegation system inside of the fraternities is, however, a direct outcome of this old theory, a trait persisting within a system which has practically discarded the theory as a whole.

One distinct change is to be found in the present day principle that in general less than half of a class should be comprised within the fraternities. In the 70's everybody belonged to a Freshman society and a good deal more than half the class to a Junior society. The modern principle is different.

Fraternities have increased in numbers in the College but only in proportion with the growth of the College. From decade to decade the Sophomore societies were always a little out of gear with the rest of the system. A curious incongruity in the system of the 70 s, namely the appearance of fraternities as the junior group in the society system, probably accounts for the traditional difficulty which the Yale chapters have always had with their national organizations.

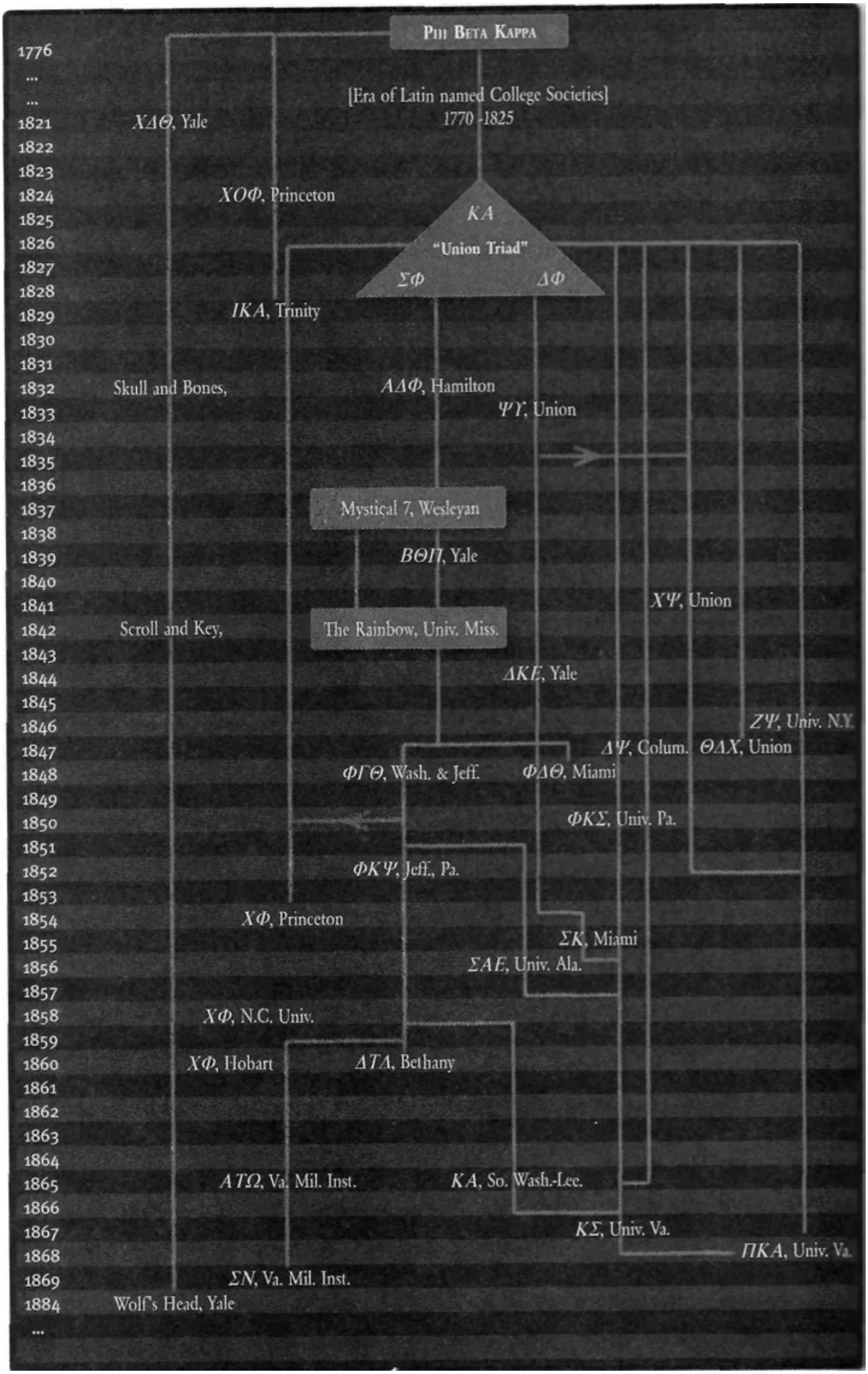
The fraternal urge was originally connected with scholarly interests. Witness Phi Beta Kappa and Chi Delta Theta. Witness the great debating societies — open and general to be sure, but always cultivating club rivalry. Throughout the history of societies at Yale, and even in the last fifty years, the various organizations have never entirely thrown overboard the principle of intellectual stimulation as an excuse for existence in association with the principles of good fellowship and service to Yale. The relative importance of the various principles is a most variable quantity. In the seventies we are told "the sight of a Phi Beta key would raise a cry of derision." Today it may be that we have gone too far in the direction of shuffling off onto Phi Beta Kappa, The Elizabethan Club, The Pundits and so on, all the responsibility of carrying our intellectual burden. But still the debates of the old freshman societies, the essays and orations and poems of the others have left their mark on our present society procedure. The descriptions of the absurdities of rushing week in the seventies and in the present decade are interchangeable. The solemnities and the excesses and the

constantly renewed agreements — these are all recurring motifs throughout the fifty years.

And what of the resulting situation? Senior Societies still loom overwhelmingly large on the Yale College horizon. In the past they have been the conservation of the best traditions of Yale. Today they do not maintain the standards as they have been reputed to in the earlier days. They must meet the fact that last year more than half their men were taken from the graduates of three preparatory schools and that only two high school men were chosen. They must face the charge that the senior society men are no longer, through the fraternities, establishing standards which in themselves justify their existence.

The Junior Fraternities are confronted today with a considerable body of honest conviction that they are worthless or even harmful at Yale. The foolish, small-town quality of open initiating is to say the least in bad taste. The marked tendency to encourage (some would say compel) drinking on the part of the initiate is intolerable. The open house system now inaugurated has a tendency to increase the drift toward snobbish aloofness.

All true — much of it too true. But the answer is what it always has been and must be. The human animal will make for itself groups within its social confines. The value of the smaller group is to accentuate and perpetuate the best in the larger group. To justify themselves the societies must do this, otherwise they must give way to something better. They can be a blessing to Yale and Yale will not tolerate their being a curse.



GENEALOGICAL CHART OF GENERAL, GREEK-LETTER, COLLEGE FRATERNITIES IN THE UNITED STATES

THE
CYCLOPEDIA OF FRATERNITIES

ALBERT C STEVENS
1907

GREEK-LETTER OR COLLEGE FRATERNITIES

COLLEGE FRATERNITIES — Secret, literary, and social organizations of students at American colleges and universities; sometimes called Greek-letter societies, because the names of nearly all of them are made up of two or three Greek letters, which are presumed to refer to mystical words or to mottoes known only to members. It is as if the Odd Fellows called themselves the "F. L. T. " Fraternity, referring to their well-known watchwords, "Friendship, Love, and Truth." College fraternities may be classified as general, local, professional, and women's. There are twenty-six fraternities in the first group, which have chapters or branches in from four to sixty-four of the higher institutions of learning in the United States. Membership is confined in almost all instances to students studying the classics or those in the literary and scientific departments; membership originally was, and in a few instances to-day is, restricted to upper-class men. This has resulted in the formation of similar societies among students in professional schools, of which four have achieved prominence and a considerable membership. With the increase of institutions for the higher education of women, there have appeared nearly a dozen Greek and Roman letter secret societies for women undergraduates, half a dozen of which made themselves known beyond the walls of the colleges where they have an active existence. There are many college secret societies classed as local, that is, existing only at colleges where founded, some with Greek-letter and some with other titles, among the better known of which are the three senior class societies at Yale. If to the foregoing there be added those which have lived, shone, and left a record, American college life will be found to have given birth to almost one hundred secret societies of this particular and unique type.

The form of government prior to 1870 was weak, consisting of general supervision by a Grand, usually the parent Chapter, or by one chapter after another in turn, which made laws and regulations as it pleased, communicated the fact to the other chapters and left it to their option to obey them. But within the last quarter of a century conventions made up of delegates from chapters, with administrative bodies or councils, composed of alumni members, have had a general supervision over and management of affairs, and in leading, instances have taken the place of an imperial form of government. Annual conventions are held with undergraduate chapters, in turn, when undergraduate delegates act in the capacity of legislators, leaving the duties of all executive to the council of alumni. These reunions generally end with a banquet and formal public exercises at which distinguished members deliver addresses of welcome, poems, and orations in the presence of delegates and other undergraduate members, their relatives and friends. These exercises are rendered the more attractive because of the long list of alumni prominent in the various walks of life, who may be called on to discourse eloquently touching the fraternity and what it means to those who enjoy its privileges, or on literary and economic topics.

Membership in college fraternities includes active, alumni, and honorary; but the latter, with a few exceptions, is no longer permitted to increase, initiations being confined to undergraduates. At some of the larger cities, graduate members have established alumni chapters or clubs. The older fraternities, for they do not rank necessarily according to membership, have published accounts of their origin and growth; a number have issued elaborate and ornate catalogues, with lists of names of members arranged alphabetically by States and by colleges, with memoranda as to rank in the society or at college and biographical sketches of members distinguished in public life; not a few issue magazines and other periodicals, some of which are circulated privately. Nearly all have published music and song books of their own, in some instances have adopted distinctive colors, and in others, flowers, as having a special significance. But most important, perhaps, are college fraternity badges, almost always made of gold, sometimes enamelled, and generally set with precious stones. These are worn conspicuously by undergraduate members and by many long after leaving college. In a number of instances the badge consists of a monogram formed of the Greek letters composing the name of the fraternity; in others, of a representation of one or more emblems and in many instances of shields or rhombs, ornamented with enamelled, jewelled, or engraved letters and emblems.

The Greek-letter fraternity is unique among secret societies, in that it is the only organization of the kind founded on an aristocracy of social advantage and educational opportunity. Students have to be invited to join them, and the undergraduate who should prove so unfamiliar with college customs as to ask to join one would probably never be permitted to do so. So "secret" are the Greek-letter fraternities, or most of them, that, although wearing jewelled badges, members generally refuse to mention the organization in the presence of profanes. Instances

nave been known where a member of one college fraternity resigned and joined another, or was expelled and elected by a rival society, but they are like hens' teeth. Though this does happen, the member is said to be "lifted." A student whose acquaintance has been cultivated, has been "rushed;" when he has been asked to join, he has been "bid;" and when he has agreed to do so, he is "pledged;" when he has been initiated and appears wearing the society's badge, he is" swung, out." In "rushing" a man it is customary to invite him to the fraternity house, where he meets the members, who watch his conduct and his conversation. If he makes a good impression, he is invited again, taken to football games, to the theatre, and invited to social affairs, and if all are satisfied the new man is a desirable acquisition he is invited to join. After initiation the watch over a new member is kept up. He is guarded against falling behind in class work and is taught during all his rirst year that neither he nor his opinions are of importance. By the time he is a sophomore he has learned to make allowance for every one's point of view.

Among about six hundred and fifty chapters of American college fraternities nearly seventy possess houses or temples valued at over $ 1,000,000, costing from $1,200 to $100,000. Some of them are elaborate and fanciful in design, others severely classic and still others sombre piles of brick and stone. In many instances members lodge in fraternity houses, in others out of them. The tabular exhibit on page 330 respecting some of the better known general Greek-letter fraternities is condensed from data for 1890 and 1891, furnished by William Raimond Baird in Johnson's Encyclopedia.

The system of Greek-letter fraternities, nearly if not all of which are chartered corporations, is fitly characterized by John Addison Porter, private secretary to President McKinley, in a "Century Magazine" article, September, 1888, as "the most prominent characteristic of American undergraduate social life." A reference to brief sketches of them will reveal the names of a few of the 125,000 members who during, the greater part of the present century have done much to add lustre to the professional, political, and business life of the Republic. The novitiate of the college fraternity soon learns to think of these men not only as brethren, but as models. President Seelye of Amherst College, in an address on June 28, 1887, said:

> It is not accidental that the foremost men in college, as a rule, belong to some of these societies. That each society should seek for membership the best scholars, the best writers and speakers, the best men of a class, shows well where its strength is thought to lie. A student entering one of these societies finds a healthy stimulus in the repute which his fraternity shall share from his successful work. The rivalry of individuals loses much of its narrowness, and almost all of its envy, when the prize which the individual seeks is valued chiefly for its benefit to the fellowship to which he belongs. Doubtless members of these societies often remain narrow-minded and laggard in the race, after all the influence of their society has been expended upon them, but the influence is a broadening and

> a quickening one notwithstanding. Under its power the self-conceit of a young man is more likely to give way to self-control than otherwise.

Mr. Porter adds this

> These "little societies" have supplied forty governers [sic] to most of the largest States of the Union, and had, in the last administration, the President of the United States and the majority of his Cabinet. On the Supreme Bench of the United States the fraternities are now (1888) represented by five of the associate justices. A summary, published in 1885, showed Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon, to have furnished of United States senators, 39, 25, and 36, respectively; while in the last Congress thirteen representatives and two senators were members of the last-named fraternity alone; and in the membership of these three fraternities are included twenty-four bishops of the Protestant Episcopal Church.

In view of the foregoing, it is with amusement rather than concern that one recalls the active opposition to college secret societies between 1845 and 1885 by the faculties of a few distinguished colleges and officers of a number of other institutions of learning. This was due in part to the antipathy for all secret societies engendered in the minds of some who were close to but partly ignorant of the facts underlying the anti-Masonic agitation of from 1827 to 1840; partly to the warfare waged against secret associations of all kinds by one or two religious denominations, and to some extent, to ignorance of all that pertains to these societies, or because antagonists had been refused by or expelled from membership in such organizations, or for special reasons applying to particular instances. All of this opposition, except that at Princeton, has practically disappeared, the other colleges prohibiting Greek-letter fraternities not having either the standing as institutions of learning or the personnel among their students which would suggest the propriety of establishing chapters of these societies.

The earliest warfare of this character was at Harvard College in 1831, when John Quincy Adams and others, notably Joseph Story and Edward Everett, induced the parent Greek-letter society, Phi Beta Kappa, to make public its so-called secrets and become an open, honorary organization. It is worth recalling that in 1831 Mr. Adams was elected an anti-Masonic and Whig candidate for Congress and that he had been defeated for reelection to the Presidency three years before by Andrew Jackson, a Freemason, at a time when public feeling ran high against the Masonic Fraternity, owing to its supposed responsibility for the mysterious disappearance of one Morgan who, it was said, proposed to reveal its secrets. Mr. Adams was led to "'hate Freemasonry," not from any personal knowledge he had of it, but because of the attitude of politicians toward the institution who exercised a great influence over him. One result was a series of letters abusive of Freemasonry which he published in the papers between 1831 and 1833, and another

evidently, was his rescuing the chapter of Phi Beta Kappa at Harvard, his alma mater from the depths of iniquity to which he evidently thought its secrecy was leading it. Associate Justice Story was professor of law at Harvard at the time, and Edward Everett, then member of Congress, was the candidate (such is the irony of fate) for the Vice-Presidency of the Constitutional Union party in 1860. The latter organization, it will be recalled, was the residuary legatee of the so-called Know Nothing party, a proscriptive, political secret society, which antagonized aliens and Roman Catholics from behind closed doors and at the ballot-box during the early fifties. [1850s] (See Know Nothing Party.) There were few chapters of college secret societies in 1831, not more than a dozen scattered throughout New England, New York, and New Jersey, and communication between them either by mail or in, person was infrequent. There was no other effect of the effort by Adams, Story, and Everett until in 1834, when a "non-secret" Greek-letter society, Delta Upsilon,* [*There is an anti-secret society called Delta Upsilon which exists at a number of colleges and grew out of a confederation of societies having their origin in opposition to the secret societies. It makes more or less point, of the alleged immorality of the secrecy of the fraternities and its chapters work with or against the fraternities as may seem to them expedient.—Baird's American College Fraternities, New York,] was formed at Williams College. It exists to this day, with chapters in twenty-six colleges, and has many of the outward peculiarities of the secret Greek-letter fraternities. It reveals very little more of what it does than the latter, and calls itself private instead of secret. Eleven years later, 1845, the faculty of the University of Michigan demanded the disbandment of chapters of Alpha Delta Phi, Chi Psi, and Beta Theta Pi under penalty of expulsion of members and required new students to sign a pledge not to join such societies. The fight between the faculty and the few members of the then far western branches of those fraternities lasted five or six years. The members of Beta Theta Pi tried to 'evade the rule and killed the chapter in the attempt, Alpha Delta Phi and Chi Psi fought the faculty tooth and nail, in the press throughout the State, by means of an informed and healthy public sentiment, and with the aid of Freemasons and Odd Fellows, until the rule was rescinded. Two professors were expelled from the faculty by the Board of Regents and one was allowed to resign. A new president of the university was appointed shortly after and there was no further trouble. This anti-fraternity war, almost one of extermination, was another outcome of anti-secret society sentiment created by the anti-Masonic agitation a few years before. Opposition to the Greek-letter fraternities continued to show itself at some colleges through faculty regulations prohibiting their organization, notably at the Universities of Alabama, North Carolina, and Illinois; at Oberlin and others by requiring students to sign a pledge at matriculation, not to join such societies, which was the course pursued at Princeton in 1857, at Purdue, Dennison, and elsewhere. The refusal of the University of California in 1879 to permit a chapter of one of these societies to exist roused the press of that State, and the order was speedily rescinded. At Purdue University, Indianapolis,

the faculty opposed Greek-letter ' fraternities, on the ground that they exercised an undue influence to enlarge the classical course of studies at the expense of the scientific. A test case was made of the faculty's refusing to admit to college a member of the Sigma Chi Fraternity who was otherwise eligible. The case was taken to the Supreme Court and the college authorities were beaten,* [*Baird's American College Fraternities] "the fraternities" being placed by this decision "in a position entirely similar to that of other secret societies," putting the burden of proof upon the faculty passing anti-fraternity laws, "to show that attendance -upon the meetings of a fraternity interfere with the relation of the members of the college." The president of Purdue resigned soon after and was succeeded, strange to relate, by a member of the Sigma Chi fraternity. Within the past fifteen years anti-fraternity laws have been repealed or ignored by Harvard as well as Vanderbilt, and by the Universities of North Carolina, Georgia, Iowa, Missouri, and Alabama. The secrecy of these societies is confined to so little besides privacy of meetings that it hardly calls for comment. While largely social, their aims are high and ideals lofty. Advantages secured and friendships gained through them are often among the most valuable acquisitions of the college student.

Origin and Extension. — American Greek-letter college secret societies began with the formation of Phi Beta Kappa at the College of William and Mary, Williamsburg, Va., December 5, 1776. Secret or semi-secret, as well as open, literary college societies, usually with Latin names, already existed, where debates and annual elections of officers were often the first training of the young student in public speaking and in politics. William and Mary was a successful and prosperous college one hundred and twenty-one years ago, and there it was that five young men formed a new and, as they believed, more effective students' organization. There was already a society there with a Latin name, and as one of the five students was a good Greek scholar, it has been thought that may have suggested the propriety of a Greek-letter name. In any event, they chose a Greek motto of three words, the initials of which are Phi Beta Kappa; decided to keep the society's proceedings secret; declared themselves a fraternity; established a few local branches, of which nothing has been heard since, and chapters at Yale and Harvard, which preserved the society and founded what has grown into a veritable world of Greek-letter fraternities. (See Phi Beta Kappa; also accompanying genealogical charts showing the order and place of establishment of earlier chapters of Phi Beta Kappa, and some of the other older Greek-letter fraternities, whether imitators of or merely inspired by a spirit of rivalry to those which preceded them.) The parent chapter of Phi Beta Kappa became dormant at the approach of Lord Cornwallis in 1781. The Yale Chapter was established in 1780, and that at Harvard a year later. These were originally the Zeta and Epsilon Chapters, Beta, Gamma and Delta having been assigned to now extinct, local, non-collegiate Virginia chapters. They subsequently became the Alphas, respectively of Connecticut and Massachusetts. From this, doubtless, arose the custom

in many of the Greek-letter fraternities of designating chapters by Greek letters, the oldest in a State as Alpha, and so on. Six years later, in 1787, the Yale and Harvard Chapters took Phi Beta Kappa to Dartmouth, at Hanover, N. H., and in 1817 thirty years after, it was established at Union College at Schenectady, N. Y. It was during this thirty years' interval that the older college literary societies flourished, many of which had Latin names, some of which are still active, but most of which have given way to the Greek-letter fraternities, except at Princeton, where Whig and Clio continue features -of student life; and at Lafayette, where Washington and Jefferson claim a large share of attention. Four years after Phi Beta Kappa was taken to Union College, a second Greek-letter fraternity was founded at Yale, manifestly suggested by Phi Beta Kappa, which had been there forty-one years. It was called Chi Delta Theta, and differed from its progenitor in that it never established branches or chapters at other colleges, but remained a local, and, more recently an honorary society, membership in it being practically an honor conferred upon the editorial staff of the Yale "Literary Magazine." Two years later, in 1823 according to tradition, a Kappa Alpha club was formed at Union College, there being at that time no intention of making it a secret society. Whether the thought of rivalling the then comparatively widespread Greek-letter fraternity Phi Beta Kappa was the inspiration is not known, but the probabilities indicate that the second Greek-letter fraternity at Union was modelled after the first. Their names are suggestively alike and a comparison of the watchkey badges of both would seem to settle the question. In 1825 Kappa Alpha club blossomed out as a regular Greek-letter fraternity, and two years later, stimulated by a spirit of emulation, Sigma Phi was founded and within a few months Delta Phi was organized, the third at Union College, which institution has proved a veritable mother of fraternities. These three societies, the "Union Triad," are, more than any others, except Phi Beta Kappa, responsible for the widespread interest shown during the past sixty years in this department of secret, social, and literary life at American colleges. Sigma Phi was the first to follow the example of Phi Beta Kappa by establishing chapters, its original branch being at Hamilton College, Clinton, N. Y, where it was established in 1831. Kappa Alpha was quick to follow the example, but the Hamilton students who were approached by the "Kaps" declined to become members of that society, and in 1832 founded one of their own, calling it Alpha Delta Phi. It was in 1832 also that the Yale society commonly called Skull and Bones appeared. It has continued a purely local organization, on the lines of other college fraternities, without a Greek-letter title, but with more mystery and prestige than usually surrounds a society which does not venture beyond the place of origin. It is due to Skull and Bones that what is known as the Yale secret society system differs from that at almost all other colleges. At the latter, members of a fraternity would as soon think of committing treason as join a second college society; but at Yale the sophomore joins one of the junior Greek-letter fraternities, if asked, and then lives in the unuttered hope of being invited to join one of the local senior-year fraternities.

Whether successful or not, his interest in his junior society (one of the three most renowned which have chapters at the older institutions of learning) is not, as a rule, of that deep and lasting nature which characterizes members of the same society at other colleges. In 1829, three years before Skull and Bones was founded, I. K. A. (not Greek), appeared at Washington, now Trinity College, Hartford, Conn., and, like the former, has remained a local senior society ever since. In 1833 Union College gave birth to another fraternity, Psi Upsilon, which, within a few years, followed Alpha Delta Phi, which led in placing chapters in the then foremost colleges and universities. Alpha Delta Phi shocked some of the conservative spirits of 1835 by placing chapters at the University of New York and in what was then regarded as the far West, at Miami University, Oxford, Ohio. In 1836 it appeared at Columbia in New York City and at Amherst in 1837 at Yale, Harvard, and Brown, and in 1838 at the Cincinnati Law School; so that within six years it possessed nine chapters as contrasted with only four chapters of Phi Beta Kappa, four of Sigma Phi, one of Delta Phi, all older societies, and as compared with two chapters of Psi Upsilon. A brief account of the local, senior-class society, The Mystic Seven founded at Wesleyan University (since absorbed by Beta Theta Pi), may be found in the sketch of the Heptasophs, or Seven Wise Men. The advent of Alpha Delta Phi at Miami resulted in the formation of BetaTheta Pi. In 1837 Psi Upsilon went to the University of New York, to Yale, and in 1840 to Brown, in which year Alpha Delta Phi was established at Hobart. In 1841 Union arose to the occasion again and gave birth to another, its fifth fraternity, Chi Psi, and in 1842, stimulated by the success of Skull and Bones at Yale, Scroll and Key made its appearance there, to choose fifteen juniors annually and divide the honors, as far as possible, with the older senior society. In 1844 a schism from the Yale Chapter of Psi Upsilon resulted in the formation of a third "junior-year fraternity" Delta Kappa Epsilon, the only living society originating at Yale which has established chapters at other colleges and has conformed to the college society system existing out of New Haven. Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon, for fifty years, have been closely associated in the minds of the members of the college world, and are fairly classed as the three great college fraternities. They are great rivals and number many distinguished names in professional, political, commercial, and industrial life on the lists of their alumni. A large proportion of their chapters own their own houses or temples. At most of the older Eastern and Middle State colleges and universities chapters of two of these fraternities are to be found, and at many such institutions the three meet as rivals. In the latter instance, as pointed out by Baird,* [*American College Fraternities; New York, James P. Downs, 1890.] the colleges are historic, which is due to the fact that forty years ago such colleges were the centres of the literary activity of the country.

New chapters of Alpha Delta Phi, Psi Upsilon, Delta Kappa Epsilon, and Beta Theta Pi were established with comparative frequency between 1844 and 1861, the societies ranking during that period about in the order named. Dur-

ing those years thirteen new college fraternities appeared to dispute supremacy, so far as possible, with those which were practically their inspiration, Zeta Psi at the University of New York in 1846; Theta Delta Chi at Union in 1847; Delta Psi at Columbia in the same year; Phi Delta Theta at Miami, and Phi Gamma Delta at Washington and Jefferson in 1848; Phi Kappa Sigma at the University of Pennsylvania in 1850; Phi Kappa Psi at Jefferson in 1852; Sigma Chi at Miami in 1855; Sigma Alpha Epsilon at the University of Alabama in 1856; Chi Phi (southern) at the University of North Carolina in 1858; another Chi Phi, this at Hobart College in 1860, and Delta Tau Delta at Bethany College in the same year. The original Southern college fraternity, "The Rainbow," founded at the University of Mississippi in 1841, believed to have been an offshoot from the Mystical Seven of Wesleyan, did not live long. (See Order of the Heptasophs.) The Princeton and Hobart orders of Chi Phi united in 1867, and the Southern order of Chi Phi joined them in 1874, when the amalgamated orders took the name of the Chi Phi fraternity. After the Civil War there was not much opportunity for new college fraternities to compete with those already in the field, except in the South, where chapters of Northern fraternities had disappeared. As shown in an accompanying genealogical chart of these organizations, five Greek-letter fraternities were established at Southern educational institutions between 1864 and 1870: Alpha Tau Omega at Virginia Military Institute, and Kappa Alpha (southern) at Washington-Lee University, Virginia, in 1865; Kappa Sigma at the University of Virginia in 1867; Pi Kappa Alpha at the same place in 1868, and Sigma Nu at the Virginia Military Institute in 1869, all of which have sent out branches and prospered. Aside from the founding in 1884 of a third local senior society, Wolf's Head, at Yale, the past twenty-seven years have developed few, if any, college fraternities of national repute except professional and women's societies. The quarter of a century in this department of college life has witnessed a rapid growth on the part of some fraternities which, just after the war, were not ranked among the first half dozen, and by others, the development of abnormal conservatism, with a tendency to let well enough alone, and in some instances to live on prestige. An accompanying chart makes it plain that after Kappa Alpha, Sigma Phi, and Delta Phi at Union bad given rise to Alpha Delta Phi and to Psi Upsilon, the former to Beta Theta Pi and the latter to Delta Kappa Epsilon, that the line of propagation, as it were, was divided. One course was the outcome of the activity of Alpha Delta Phi and Beta Theta Pi, resulting in Phi Gamma Delta, Phi Delta Theta, Phi Kappa Psi, Sigma Alpha Epsilon Delta Tau Delta, Alpha Tau Omega Kappa Alpha (southern) and Sigma Nu, the other, the result of Psi Upsilon and Delta Kappa Epsilon stimulus, including Sigma Chi, Kappa Sigma, Pi Kappa Alpha, and Phi Kappa Sigma. Among remaining prominent societies Chi Psi and Theta Delta Chi had their origin at Union, and Delta Psi and Zeta Psi in New York city, where Alpha Delta Phi, Psi Upsilon and Delta Phi had each preceded them. The foregoing suggests a classification of college fraternities into general, honorary, professional, women's and local.

The older societies in the first group may be subdivided according to seniority and place of origin as follows:

GENERAL FRATERNITIES.

Union Triad.—Kappa Alpha, Sigma Phi, Delta Phi.

Historic Triad.—Alpha Delta Phi, Psi Upsilon, Delta Kappa Epsilon.

Pennsylvania Triad.—Phi Gamma Delta, Phi Kappa Sigma, Phi Kappa Psi.

Double Triad (East).—Mystical Seven, Chi Psi, Zeta Psi, Theta, Delta Chi. Delta Psi, Chi Phi (Princeton, 1854).

Miami Triad (West)—Beta Theta Pi, Phi Delta, Theta Sigma Chi

Triple Triad (South)—W. W. W., or The] Rainbow (dead), Sigma Alpha Epsilon, Chi Phi (University of North Carolina), Delta Tau Delta, Alpha Tau Omega, Kappa Alpha, Kappa Sigma, Pi Kappa Alpha, Sigma Nu.

The characteristics of the three earlier fraternities at Union College are broadly marked. Twenty years ago and for a long time preceding, the membership of the few chapters of Kappa Alpha (very few had or have been established) was limited and exclusive, while the policy of the fraternity was distinctly one of non-extension. Its immediate imitator, Sigma Phi, was not long in securing a like classification. It, too, had a restricted number of chapters, and a tendency to regard the grandfather as having much to do with the man. Delta Phi was less exclusive, but did not establish many new chapters and has held to its earlier standard with less success than the other two. Baird says of the three great fraternities, Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon, that "they are rivals of each other more frequently than of other societies, and have the common characteristics of chapters of large size, literary work in their meetings, and wealth in their outward appointments." He thinks the first excels in literary spirit, the second in the cultivation of the social side of life, and that the third "occupies a middle ground." At Yale they are junior societies, and at that place, more often than otherwise, are stepping tones to the senior societies. They are found as rivals at Hamilton, Columbia, Yale, Amherst, Brown, Bowdoin, Dartmouth, Michigan Rochester, Wesleyan, Kenyon, Cornell, Trinity, and Minnesota; the first and third at Western Reserve, Williams, and College of the City of New York; the second and third at Chicago and Syracuse, and the first two at Union. Psi Upsilon also has chapters at New York University, University of Pennsylvania, and Lehigh; Alpha Delta Phi at Harvard, Johns Hopkins and Toronto; and Delta Kappa Epsilon at Colby, Lafayette, Colgate, Rutgers, Middlebury, Rensselaer Polytechnic Institute, De Pauw, Central, Miami, California, Vanderbilt, Virginia, North Carolina, Alabama, and Mississippi. Alpha Delta Phi and Psi Upsilon continue to pay that attention to the social standing and literary excellence among their members which has ever characterized almost all of the chapters of each, but are more conservative as to extension than formerly. Delta Kappa Epsilon is noticeable for good fellowship and numerous chapters, some of which as noted, are at minor colleges.

Beta Theta Pi, the first western fraternity, is now one of the largest and best governed. It places less weight on the propriety or desirability of what has been called conservatism with respect to increase of chapters and maintains as high literary excellence among members as older and formerly more distinguished fraternities. Chi Psi, while not so restricted as to number of chapters as Sigma Phi or Kappa Alpha, continues one of the smaller societies; its reputation is as much for good fellowship as for social or literary excellence. Zeta Psi was formerly one of the smaller fraternities, but adopted a policy of extension and has grown rapidly. It is very secret, was founded by Freemasons, and in recent years has made a remarkable advance in standing and membership. The socially exclusive members of Delta Psi, like those of Sigma Phi and Kappa Alpha, do not add to their few chapters. There is considerable wealth centred in this organization. Among western societies which have shown enterprise and have become prominent of late years are Phi Kappa Psi, Phi Delta Theta, and Phi Gamma Delta. Some of the relatively smaller or younger societies, such as Theta Delta Chi, the (amalgamated) Chi Phi, Sigma Chi, and Delta Tau Delta, are particularly strong at a number of colleges. The fraternities in the Pennsylvania and Miami groups, as a whole, have paid more attention to extension than to the exclusiveness which has marked societies forming the Union, Historic, and Double Triads. Most of the Chapters of the Southern group are confined to colleges in the South. Since 1880, Beta Theta Pi, Phi Delta Theta, Delta Tau Delta, Phi Kappa Psi, Sigma Chi, and Phi Gamma Delta, which, prior thereto, were found almost exclusively in western and southern colleges, began to invade colleges and universities of the North and East, where to-day, in some instances, they dispute supremacy with older fraternities.

HONORARY FRATERNITIES.

Phi Beta Kappa; Chi Delta Theta, local Yale, and Sigma Xi, local, Cornell, 1886.

PROFESSIONAL FRATERNITIES.

Theta Xi, English and scientific, Rensselaer Polytechnic Institute, 1864: four chapters in 1890; membership estimated. 450.

Phi Delta Phi, law, University of Michigan 1869; sixteen chapters in 1890; membership in 1897 estimated,. 2,000.

Q. T. V., (not Greek-letter), agricultural and scientific, Massachusetts Agricultural College, 1809; four chapters, in 1890; membership estimated, 650.

Phi Sigma Kappa, scientific and medical, Massachusetts Agricultural College' 1873; three chapters in 1890; membership estimated, 210.

Nu Sigma Nu, medical, University of Michigan, 1882; three chapters in 1890; membership in 1897 estimated, 200.

Alpha Chi Omega, music (women students), De Pauw University, 1885; two chapters in 1890; membership estimated, 200.

Phi Alpha Sigma, medical, Bellevue Hospital, 1887; two chapters and an estimated membership of 150.

COLLEGE SISTERHOODS.

Pi Beta Phi, founded at Monmouth College, Illinois, by eleven young women; originally called the I. C. Sorosis, now known by the Greek letters which, placed on the feather of a golden arrow constitute the society's badge; colors are wine red and pale blue and its flower is the carnation; there were nineteen chapters reported in 1890 in Illinois, Iowa, Indiana, Kansas, Michigan, Nebraska. Colorado, District of Columbia, Ohio, and Minnesota. Total membership is probably not over 1,600.

Kappa Kappa Gamma, organized at Monmouth, 111., 1870 by four young women, in preference to accepting membership in a proposed sisterhood. It spread to colleges through the central western and northwestern States, and by 1890 had twenty-two active chapters, with a form of government similar to that of many Greek-letter fraternities. It's colors are dark and light blue and the badge is a jewelled key with the letters Kappa Kappa Gamma and Alpha Omega Omicron enamelled in black thereon. Present membership: about 2,200

Kappa Alpha Theta, organized at De Pauw University, Indiana, in 1870, by a daughter of a member of Beta Theta Pi and three other women students, assisted by the father of the founder. Its government was vested in the parent chapter until 1883, when it was placed in the hands of a Grand Chapter composed of one member from each chapter. Its flower is the pansy, its colors are black and gold and its badge is a kite shaped shield with a black- field and white chevron bearing the Greek letters forming its name. Its twenty active chapters in 1890 were scattered through the central western and northwestern States, with a few in California, Pennsylvania, New York, and Vermont. Present membership is approximately 1,900.

Delta Gamma, founded at the University of Mississippi, in 1872, by three women, the outgrowth of a social organization at a neighboring educational institution. The twelve active chapters in 1890 were distributed through south-ern, central, northwestern, a few far western, and in eastern States. March 15 is observed as a day of reunion, when the alumni, so far as possible, visit active chapters or communicate with them by mail. A Grand (governing) and a Deputy Grand Chapter is chosen every four years. There are alumni chapters at Cleveland, Milwaukee, Chicago, and other cities. Its colors are pink, blue, and bronze, and the pearl rose is the society flower. The badge is a gold anchor, with a shield above the flukes bearing the letters forming the name of the organization.

Alpha Phi, founded at Syracuse University in 1872, by ten women students. Nine years later it established the second or Beta, Chapter, that at Northwestern University, but has continued a conservative policy in this respect, having formed only five chapters by 1890, the others being at Boston University, De Pauw, and Cornell. There are several alumni chapters. The first society chapter house among

Greek-letter sisterhoods was erected by the Alpha (Syracuse) Chapter of Alpha Phi. Lilies of the valley and forget-me-nots are the flowers of the sisterhood. Its colors are silver gray and red, and its badge is a monogram formed of the letters composing its name. Frances Willard, late President of the W C. T. U., was one of its alumni.

Gamma Phi Beta, founded at Syracuse University, 1874, by four women students, aided by Bishop E. 0. Haven, then Chancelor [sic] of the University. Its four other chapters in 1890 were located at Ann Arbor, University of Wisconsin Boston University, and Northwestern University. The society flower is the carnation. Its colors are fawn and seal brown, and the badge is a monogram of the three Greek letters within a crescent.

Sigma Kappa was organized at Colby University, Waterville, Me., 1874. Estimated membership 130.

Alpha Beta Tau was founded in 1881, at Oxford Female Institute, Oxford, Miss., with a branch at the University of Mississippi. Its total membership is about 290.

P. E. 0. (Not Greek-letter,) Little is known of this society, which exists West and South, both at and without college cities and towns. There appears to be an especial element of secrecy attached to it. Its membership, has been estimated at about 2,000.

Delta Delta Delta was organized in 1888 at Boston University by four young women. In 1890 it had five chapters. It is governed by convention, and during recess by the officers and parent chapter. It displays the pansy, gold, silver, and blue colors, and a badge consisting of a crescent with three deltas upon it and three stars between the horns. Its membership is about 300.

Beta Sigma Omicron was founded at the University of Missouri in 1889.

LOCAL FRATERNITIES.

1. K. A. (not Greek), Trinity, 1829. Founded by six students of the classes of '29, '30, and '32. Its color is royal purple. The badge is a St. Andrew's cross, bearing the initials of its title on three of the arms, and 1776 on the fourth. Rev. Thomas Gallaudet, St. Ann's, New York, and Rev. George Mallory, editor of the "Churchman "New York, are among its best known alumni.

Skull and Bones was founded at Yale College, as a senior society, by fifteen members of the class of 1832. A writer in the New York "Tribune," in 1896, states that:

> The father of "Bones," first of the senior societies, is believed to have been General William H. Russell, '37, who died a few years ago, after having been for many years at the head of a famous military academy in the city of New Haven. It is a part of college tradition that "Bones" is a branch of a university corps in Germany, in which country General Russell spent some time before his graduation. One of the classmates who joined with him in establishing the society at Yale was the late Alphonso Taft of Cincinnati, President Hayes's Attorney-General. The

> society flourished from the start. For a long time it held its meetings in hired rooms; but in 1856 the windowless, vine-covered brown stone hall in High Street, near Chapel Street, opposite the campus, was erected. A few years ago the society found more space necessary and built a large wing to the hall. The building is about 30 feet high, 33 feet wide, and 44 feet deep. The property is held by the Russell Trust Association, a name assumed in honor of General Russell. On the last Thursday in May the entire college assembles before Durfee Hall, among whom the juniors are conspicuous, for they all know that lightning is to strike forty-five of them. Soon a "Bones" man appears who, however good natured, wears a solemn look as he passes in and out among the crowd. Suddenly he taps or slaps a junior on the shoulder,* and says sternly, "Go to your room." Amid wild cheering the lucky man obeys mutely followed by the one who tapped him, who says, "Will you accept an election to the society known as 'Skull and Bones?"' and goes away in silence, while the junior returns to receive the congratulations of friends. About the same time a Keys man, and a "Wolf's Head" man in his wake, go through the same evolutions. Between "tapping time" and initiation a week elapses. During this time the slapper and the slapped preserve a sacred mutual silence, except when the new man is notified of the time and place of the awful ordeal, to be consummated in the recesses of the society house.

This peculiar ceremony of nominating or choosing new members of the Yale senior societies, original there with Skull and Bones and imitated by "Keys" and by Wolf's Head, is, doubtless, derived from the accolade, or conferring of knight-hood, in ancient times an embrace; but more recently a blow on the shoulder with the flat of a sword. But still more singular is the custom of the Yale juniors in assembling on the campus between four and six o'clock, on the particular Thursday in May, accompanied by half the college, and hundreds of other spec-tators, entirely without announcement from or arrangement by any one. The writer first referred to points out, in addition to the fact that Yale's senior societ-ies meet Thursday nights in closely guarded society houses, that a "Bones" man. while in college, is never without his badge, a skull and bones, with the figures "322" in place of the lower jaw; that if in swimming without bathing costume, he carries it in his mouth; that one of the newly chosen "Bones" men wears two (overlapped) badges for six months, and that the "sanctum sanctorum" in the "Bones" house is referred to by the figures "322." There is a tradition, however, that the "322," the sum of which is the perfect number and suggests a "mystical seven," means "founded in '32,2nd chapter (the first being "the German corps"): also, that the members trace their society "to a Greek patriot organization, dat-ing back to Demosthenes, 322 B.C. The 'Bones' records of 1881, it, is alleged, are headed 'Anno-Demotheni 2203.' " An election to "Bones" is generally the secret ambition of almost all Yale men, even over the bones of the Greek-letter societies, although Scroll and Key, and Wolf's Head, of late, have made such

*Secret Societies at Yale. Rupert Hughes, McClure's Magazine, June, 1894.

[Editor's Note: The article was in Munsey's Magazine. not McClures Magazine and is reprinted in this book.]

strides as to frequently dispute the first place which the older senior society has had in the minds of available material. "Bones" generally elects honor men and athletic stars. Scroll and Key takes men of the same rank, but more frequently from among the social element, while Wolf's Head has taken men which might have been welcome additions to either

Bones" or "Keys." The following are the names of some of the better known Yale graduates who are "Bones" men: President Dwight, Ellis H. Roberts, William W. Crapo, Daniel C. Gilman, Andrew D. White, Chauncey M. Depew, Moses Coit Tyler, Eugene Schuyler, William Walter Phelps, Anthony Higgins, Daniel H. Chamberlain, Franklin McVeagh, William Collins Whitney, William Graham Sumner, George Peabody Wetmore, Wilson Shannon Bissell, John C. Eno, Theodore S. Woolsey, Walker Blaine, Arthur T. Hadley, Robert J. Cook, Judge William II. Taft, Walter Camp, Sheffield Phelps, and Alonzo A. Stagg. The three historic junior societies at Yale are Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon, although Zeta Psi has figured there of late years as a sophomore and junior society. Skull and Bones, Scroll and Key, and Wolf's Head, as a matter of practice, each elect fifteen members annually, generally from among members of the first three societies named, seldom from members of that last named, and still less frequently elect a junior who is not a member of any, of the Greek-letter fraternities.

Lambda Iota was founded at the University of Vermont by thirteen students, where it has since maintained a prosperous existence. Its badge consists of an owl on the top of a column or pillar between the letters forming the society's name. It numbers three governors of Vermont among its alumni. Its membership is more than 400.

Scroll and Key was founded at Yale in 1841, by members of the class of '42, as a rival senior society to Skull and Bones, most of the peculiarities of which it copied. (See Skull and Bones.) It celebrated its fiftieth anniversary with a three days' jubilee in May, 1892, in its society house at New Haven, one of the handsomest structures of the kind in the country. It is incorporated as the Kingsley Trust Association. It is related that on the nights when the society meets all the active "Keys" men in New Haven are required to be in the society house from half-past six until half-past twelve, and that none of them is allowed to leave the building during that period, "unless accompanied by another man." In preserving a deep mystery about its affairs, in not mentioning the society in the presence of an outsider, and in retaining constant possession of badges by undergraduate members, "Keys" parallels its prototype. While members of the latter wear their badges on their vests, "Keys" men frequently wear theirs on their necktie. The "Keys" badge consists of a gold key across a scroll, with the letters "C. S. P." above, and "C. C. I." below. It selects annually fifteen members of the junior class by the same process described as originating with Skull and Bones. Its membership, on the whole, is characterized as conspicuous for social standing and wealth rather than for college or athletic honors, though many Yale athletes and honor men have

joined it. Among its prominent graduates are Theodore Runyon, John Addison Porter, George Shiras, General Wager Swayne, the Rev. Joseph IT. Twitchell, Dr. James W. McLane, George A. Adee, Edward S. Dana, Isaac Bromley, Bartlett Arkell, and James R. Sheffield.

Wolf's Head was founded at Yale by a number of members of the class of '84, as a rival senior society to Skull and Bones and to Scroll and Key. (See those societies.) It copies most, if not all, of the peculiarities of the two older senior societies. For a few years it was not rated as highly as either "Bones" or "Keys," and was able to take only the so-called better men in the Junior Class overlooked by "Bones" and "Keys;" but with the increase in the size of classes, and the fact that each of the senior societies takes only fifteen men each year, with increased age and its handsome ivy-clad society house. Wolf's Head continues to gain upon its older rivals. It is incorporated as the Phelps Trust Association. Its badge consists of a wolf's head transfixed on an inverted Egyptian tau, the symbolism suggested by which is significant, yet probably different from that taught within the pale of the society.

Phi Nu Theta was organized at Wesleyan University, 1837, shortly after the appearance there of the Mystical Seven which is now dead, and in some respects one of the most remarkable college societies in the country. Phi Nu Theta sought to bring together a few members of each class for mutual helpfulness and within the past sixty years has initiated about 460 members. It has a handsome house, and ranks well among Middletown college fraternities. Its badge is a scroll watch-key with the letters forming its name engraved thereon. Among its alumni are Rev. Dr. Winchell, formerly of Syracuse University, the late Bishop Haven and Professor W. O. Atwater.

Kappa Kappa Kappa. Founded at Dartmouth, Hanover, N. H., in 1842, by six students, assisted by Professor C. B. Haddock, the year following the appearance of Scroll and Key at Yale. It numbers about 850 members. The badge is a Corinthian column and capital of gold with the letters K. K. K. at the base. It has generally ranked with other fraternities at Dartmouth.

Delta Psi. Organized at the University of Vermont in 1850. For a few years it was an anti-secret society. It has no connection with the fraternity by the same name which was founded at Columbia in 1847. It numbers about 350 members.

Alpha Sigma Pi. Organized at Norwich University, Vermont, in 1857, by seven students. The military character of the society was the natural outcome of the college where it appeared. Its colors are blue and white, and the badge is a gold shield displaying a flag and musket crossed over a drum and the Greek letters forming the name of the organization. Present membership, about 290. General Granville M. Dodge is, perhaps, its most widely known alumnus.

Phi Zeta Mu was organized in the scientific school, Dartmouth, in 1857, by five students, members of '58 and '59. It has a monogram badge, a fine society-building, and about 400 members.

Alpha Sigma Phi was founded at Yale in 1846 as a sophomore society. It established chapters at Harvard in 1850, Amherst in 1857, Marietta College, Ohio, in 1860, and at Ohio Wesleyan University in 1865. The parent chapter died from internal disagreements, the first two branches were suppressed by college faculties, and the fourth was withdrawn by the society itself, which flourishes, therefore, solely at Marietta College. It has about 300 names in its catalogue, and there are several organizations of its alumni. The society has a fine house. Its badge consists of a shield bearing an open book on which are hieroglyphics, across it a quill and letters forming the name of the society.

Berzelius was established at Sheffield, Yale College, in 1863. Its membership is about 370. The badge "is a combination of potash bulbs in gold," over which is the letter "B." It ranks high among Yale scientific students.

Sigma Delta Chi was founded at Sheffield Scientific School, Yale, in 1867. It is sometimes referred to as Book and Snake, because its badge consists of an open book displaying the letters Sigma Delta Chi, surrounded by a serpent. It is prosperous and has about 300 members.

The foregoing makes it plain that the secret society system at Yale is something radically different from that at other colleges. The difference may be made clear by stating that at almost all colleges the freshman who receives a bid from and joins a Greek-letter fraternity unites with an interstate or national society which represents the social, literary, and human side of college life and binds him closely to itself not only while an undergraduate, but for life.

At Yale when there used to be freshmen as well as sophomore,' junior, and senior societies, the same general cliques or group of "fellows" were taken into the same freshman, sophomore, junior, and senior societies in a mass, a sort of four degrees system, each society representing a different "degree." The freshmen societies were merely Yale affairs, with no ligaments reaching to other colleges, and the like is true to-day of Yale's sophomore societies. Its three junior fraternities are, indeed, parts of as many national college societies, with a prestige not second even to Yale's senior societies, but one must leave the shadows of Yale to appreciate the fact. The Yale senior societies, owing to this exceptional and unfortunate system so far as the Yale sophomore and junior societies are concerned, are goals, and the sophomore and junior societies are merely stepping-stones. Twenty-five years ago the rival freshmen societies were "D. K." (Delta Kappa) and "Sigma Epps" (Kappa Sigma Epsilon). The sophomore members endeavored to select freshmen most likely to make a mark while in college, and great efforts were made by the rival societies to outwit each other and get "the best men." When the initiation ceremonies were held, a month later, the sophomores felt that they were rewarded for their trouble. A correspondent of the New York "Sun" has described substantially what took place at the initiation of freshmen during the palmy days of "D. K." and "Sigma Epps," as follows:

The candidate received a black-bordered notification of his election, with instructions to repair the following evening to some remote street corner. There

he was met by two sophomore members who straightway blindfolded him and grasped him firmly on either side. Then ensued a Walhalla dance through bypath and wood and dell. Now the candidate was run at full speed against a tree, now he trembled astride a picket fence, now the bandage was slipped so as to give one glance of an open grave or the dizzy verge of East Rock. Then, after many miles and countless turns he was hurried, all panting, struggling, and stumbling, through a busy street, made evident by jostlings and derisive calls. He was forced step by step to mount backward a seemingly interminable flight of stairs, and to wait in a close and heated room until there was a sudden upward jerk, the bandage was removed, and be found himself on the roof of a high building with others of his classmates, equally confused and exhausted. When at length the candidate's name was called in sombre tones he advanced all uncertain to the scuttle. There he was bound and blindfolded. Strong arms grasped him from above and from below. He descended rapidly with many a bump. He was dragged into the main hall, flung into a great canvas blanket with rope handles, and then, with all the force of a score of excited young devotees, tossed and slapped again and again against the lofty ceiling. He was rolled in a cask and nailed in a coffin, and stretched on a guillotine with one blade—all to an accompaniment of sulphurous smoke and lurid flashes and piercing yells of "'My poor fresh."

But these ceremonies were not always without unfortunate results, and at times were marked, by a degree of hilariousness not explained entirely on the ground of good nature and a desire to look on the humorous side of life. The displeasure of the faculty was an outcome, and in 1880 the societies were abolished. The only remaining Yale freshman fraternity, Gamma Nu, founded in 1859 as a non-secret, literary society, died from internal weakness in 1889, since which time Yale Greek-letter or other secret freshmen societies have been extinct. Twenty-five years ago Yale's sophomore fraternities were Phi Theta Psi and Delta Beta Xi, founded on the ruins, as it were, of Kappa Sigma Phi and Alpha Sigma Theta. The first, called "Theta Psi," was practically a stepping-stone to Psi Upsilon, and Delta Beta" was all ante-room leading to the sanctum sanctorum of Delta Kappa Epsilon. They took about thirty men each and held weekly meetings, features of which were mild-mannered literary exercises and sometimes punch that was anything but mild. So serious were the results of one occasion of that kind, in 1878, that the faculty unceremoniously "twisted the neck" of the "phoenix of Theta Psi" and closed "the book of Delta Beta forever." The two existing sophomore societies are He Boule and Eta Phi, the first formed in 1875 and the latter in 1879, among the most powerful organizations at Yale, it being seldom that a member of each fails of an election to the junior societies. They are almost if not quite as secret in their workings as the senior societies, and constitute a formidable factor in college politics. The names of the seventeen members of each, together with their places of meeting, are confidently believed by members to be unknown to the outside world; and while, as a matter of fact, such is seldom or never the case, the fiction is encouraged. The owl and initials of He Boule and the mask of Eta Phi are worn

near the left armholes of the waistcoat. Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon of national fame, with chapters at many other colleges, each takes thirty-five sophomores at the end of the year. Zeta Psi, a two-year society at Yale, also takes its quota. As explained in the sketch of Skull and Bones, these elections have an important bearing on the chances of those selected for securing membership in one of the three senior societies. About twenty-five years ago Alpha Delta Phi refused to continue to be made a means to an end, merely a way to a senior society, and withdrew its Yale Chapter. For nearly a score of years thereafter Psi Upsilon and Delta Kappa Epsilon monopolized desirable junior recruits on their way to "Bones" and "Keys," and after 1881 to Wolf's Head. Six or seven years ago Alpha Delta Phi revived its Yale Chapter, the oldest secret society at Yale except Skull and Bones, as a four-year fraternity, and tried to make it a Yale organization on a par with even the senior year fraternities. It met with only moderate success, owing to the overpowering, weight of Yale sentiment in favor of class societies, and within a few years accepted the situation, became a junior society again, so far as that chapter is concerned, built one of the handsomest and most expensive fraternity houses at New Haven, and revived its ancient standing as a worthy rival of the Yale variety of Psi Upsilon and Delta Kappa Epsilon.

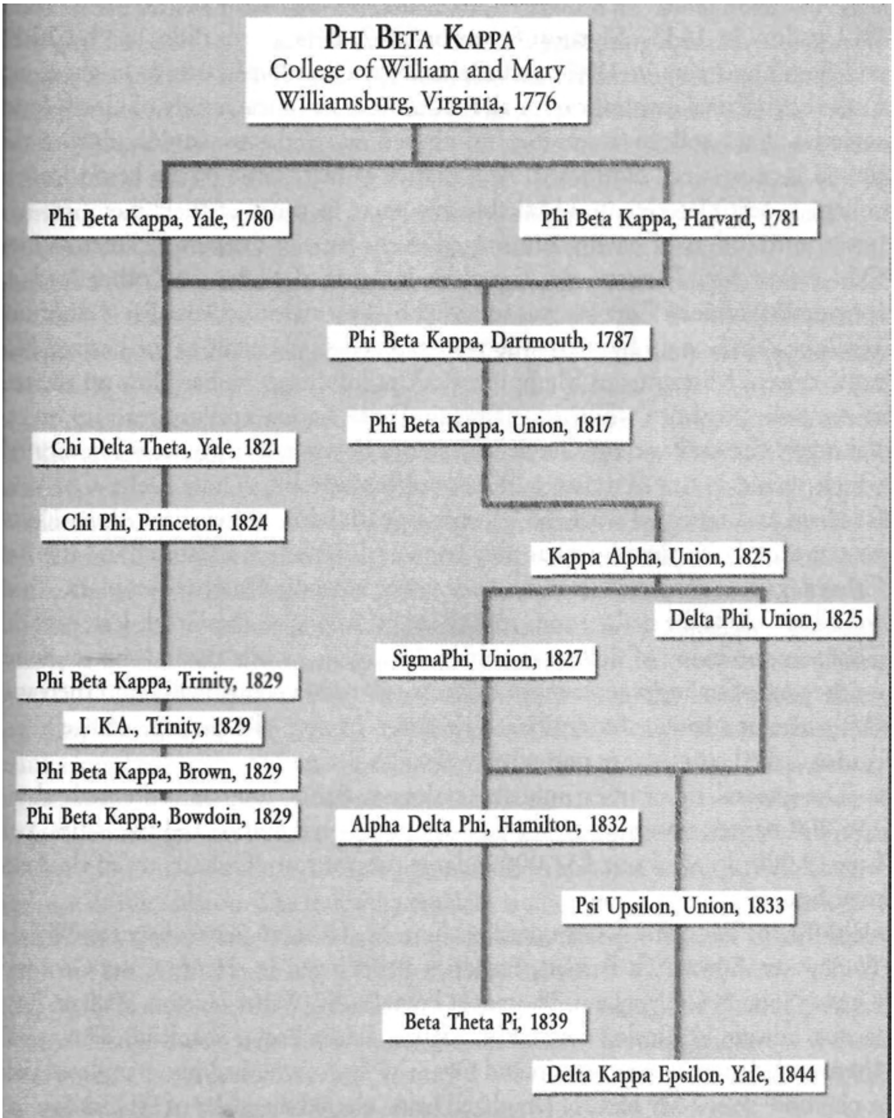
This junior society rivalry, however, is more on the surface than otherwise, the three fraternities being practically private social clubs which meet separately, of course, to cooperate in the production of plays and burlesques and in even more distinctively social entertainments. The "Alpha Delt," "Psi U," and "Deke" halls, or houses, at New Haven are among the most elaborate and costly structures of the kind in the country. In the week prior to the "tapping" ceremonial of the senior societies, in May (see Skull and Bones), the junior societies appear on the campus attired in gowns and hoods, singing each its own peculiar songs, after which they retire to their several buildings and proceed to initiate the thirty-five newly pledged members who are to act as heirs and assigns of these fraternities for the ensuing college year.

The inspiration, development, rituals, and function of the general college fraternities, those which do not live in vain, which hold the remembrance and affection of members well on into their declining years, which often divide the regard felt for alma mater, call for an analysis which the mere chronicler may well be excused for not attempting. A recent writer stated that many men who have belonged to a Greek Letter society during their undergraduate days lose interest in the matter before they are five years away from their alma mater. This is almost inevitable because of new interests and because a large number of graduates are not associated in their homes with men who belong to their fraternity. "One can hardly refrain from believing the author of the sentiment is a Yale man. The "Bones" or "Keys" graduate of Yale might naturally find the height of his ambition in an election to a senior society. Neither his sophomore nor junior year fraternities cuts much of a figure beyond the fact that he used them in an effort to get to "Bones," "Keys," or Wolf's Head. But the alumnus of Cornell, Columbia, Amherst, the

University of Michigan, and many other colleges, who is an Alpha Delt," a "Psi U, " a "Deke," a Beta," a "Zete," a "Kap," a "Sig," or a member of any of a score of others with a national reputation, remains more often than otherwise a faithful son of such society so long as he lives, and treasures its records, its traditions and its influences to' the latest days of his life. The Greek-letter fraternities antedate all other existing secret societies in America, except the fraternity of Freemasons. They vary more than might be supposed, for members are always convinced of the superiority of their own fraternities over all rivals and confident of the greater loyalty of their own alumni. Some have elaborate rituals and others ceremonials which would be regarded by good judges as commonplace. The world at large, unfortunately, has had abundant evidence during the past twenty-five years of the sensational if not solemn character of the initiation ceremonies of some, as the results were such as to endanger the lives of initiates.

Heckethorn [Secret Societies of All Ages.] and some others attribute the founding, in 1776, of Phi Beta Kappa, the mother of American college Greek-letter fraternities, to the Illuminati, of Weishaupt, in Bavaria, but this is undoubtedly mere conjecture. The Illuminati itself was founded in 1776, and it is hardly likely that a few boys at the College of William and Mary in Virginia, in those days of extremely infrequent letter-writing and trans-Atlantic voyages, were inspired in their formation of a Greek-letter secret society by the illustrious foreigner whose name is linked to an order which for a short time was grafted upon Freemasonry and then disappeared forever. There is no reason for believing that American college Greek Letter societies had any inspiration beyond what appeared on the surface, until after 1828, the year following the disappearance of Morgan, who was accused of being about to betray Masonic secrets. In that and several succeeding years politicians made use of this "good enough Morgan until after election," and so fanned the anti-Masonic flame that thousands of well-meaning people discovered prejudices against the fraternity which they never till then suspected themselves of possessing. Reference has been made to the effect on John Quincy Adams, Edward Everett, and others, and the history of that time will reveal some, notably Thurlow Weed, who were less sincere in their antagonism to Freemasonry, even though no less bitter. This presented an opportunity to cranks and charlatans which was not to be despised, and the country was speedily flooded with suppposititious Masonic ceremonies and alleged accounts of revelations of Masonic secrets. The public mind was directed to that subject as it never had been before, and probably never will be again. Secret societies of the middle ages, the mysteries of Isis and Osiris and of Eleusis, and the revolutionary secret societies of this and of other countries, all came in for a critical examination and premeditated condemnation and got both. The only importance attaching to this reference is to recall what seems not to have been pointed out before, that it was during the period from 1828 to 1845, covering the anti-Masonic agitation, that the older among the best known national Greek-letter college fraternities were born. At that time the English Order of Foresters was just being introduced here; the

English Order of Odd Fellows had not been domesticated more than a decade and had only a few members; the English Order of Druids was a newcomer; the American Improved Order of Red Men as at present organized, was only then taking shape, and the Ancient Order of Hibernians had just arrived at New York City from Ireland. Curiosity and prejudice had been mingled in an effort to find out something with which to condemn the type of the secret society, Freemasonry, and the effort resulted, among other things, in a study of secret societies



GENEALOGICAL CHART OF EARLIER CHAPTERS OF PHI BETA KAPPA, AND THE BETTER KNOWN COLLEGE FRATERNITIES IMMEDIATELY FOLLOWING THEM

in general. If one can read of groups of college students at New York and New England centres of intelligence organizing Greek Letter secret societies on the outward lines established by Phi Beta Kappa, Kappa Alpha, Sigma Phi, and Delta Phi without appreciating that they must have utilized some of the raw material which was floating in the air, he must be deficient in imagination. The societies which saw the light in 1825 and 1827, Kappa Alpha, Sigma Phi, and Delta Phi, probably did not have elaborate rituals at that time. There are those who know they had them later. Then came Alpha Delta Phi and Skull and Bones in 1832, Psi Upsilon, in 1833, 'Mystical Seven in 1837, Beta Theta Pi in 1839, Chi Psi and Scroll and Key in 1841, and Delta Kappa Epsilon in 1844. In these one finds the practical inspiration for all that came after in the family of Greek-letter societies. That college fraternities multiplied fast and grew rapidly during this period is more than significant. As a matter of fact, some of the better known college fraternities give unmistakable evidence, to those of their members in a position to judge, of having rummaged in the bureau drawers of Freemasonry, Odd Fellowship, Forestry, the Templars, Knights of Malta, and other "orders" for ritualistic finery. Zeta Psi was founded by Freemasons. Delta Psi, Columbia, 1847, was dressed up by some one who had access to rituals of the bastard Masonic rites of Misraim and Memphis. Psi Upsilon hung its harp low on the tree of symbolic Masonry while its offspring, Delta Kappa Epsilon, read up on the Vehmgerichte and ancient Grecian mysteries before selecting a few ceremonials which would better fit nineteenth-century college life. Theta Delta Chi went far afield and returned with the Forestic legend, while the earlier "Alpha Delts" were evidently inspired by what they knew of Royal Arch Masonry and the Red Cross degree as conferred in commanderies of Masonic Knights Templars. There would appear to be little room to-day for additions to the Greek-letter world. There are too many of these fraternities already, and while there is no tendency on the part of stronger societies to unite, weaker ones occasionally find their way into older or stronger fraternities. The latter, having the prestige of age and a distinguished alumni, are naturally well-nigh invincible.

The general fraternities publish catalogues containing, as estimated, about 111,000 names, honorary about 6,500, professional 4,400, and the ladies, perhaps, 9,000; in all about 131,000, a large proportion of which are of deceased members.

Delta Kappa Epsilon. — Organized on June 22, 1844, at Yale College, by William W. Atwater, Edward G. Bartlett, Frederick P. Bellinger, Jr., Henry Case, George F. Chester, John B. Conyngham, Thomas L. Franklin, W. Walter Horton, William Boyd Jacobs, Edward V. Kinsley, Chester N. Righter, Elisha Bacon Shapleigh, Thomas D. Sherwood, Alfred Everett Stetson and Orson W Stow, who had just completed their sophomore year. They had contemplated being elected members of Psi Upsilon in a body, but some of them failing to secure an election to that junior society, the fifteen stood together and formed a new junior society with the foregoing title, to compete with Alpha Delta Phi and Psi Upsilon, which, until then, had monopolized junior

year Greek-letter society interests at Yale. Delta Kappa Epsilon, or "D. K. E." as it is usually called, beat all records at extension, by placing chapters at thirty-two colleges and universities between the year it was founded and the outbreak of the war in 1861, going as far as Miami and the University of Michigan in the "West and to colleges in Virginia, Kentucky, Tennessee, Mississippi and Louisiana at the South. The southern chapters were rendered dormant by the war, and since 1866 the fraternity has been much more particular in creating branches, has made more of an effort to revive inactive chapters than to place new ones. Its original plan did not contemplate a general fraternity, but early opportunities for new chapters presenting themselves, a plan for the propagation of "D. K. E." was organized and was carried out with a thoroughness which, owing in part to the war, reacted upon the general standing of the society. From 1870 to date the society has built upon far better foundation and with more care and skill, and ranks as the largest general college fraternity, with more than 12,000 members, nearly 10 per cent of the total membership of the world of Greek-letter societies. The impression has always prevailed that the parent chapter of "D. K. E." exercises a dominant influence over the entire organization, but this has been denied. Certain it is that, at times, the tie between the Yale "Deke" and his fraters from other colleges is not as strong as that between members of different chapters of almost any other college fraternity. But this may be due to the peculiar society system at Yale rather than to a peculiarity in the government or personnel of Delta Kappa Epsilon. Its Harvard chapter ran against the anti-fraternity laws there in 1858 and practically ceased to exist as a chapter of Delta Kappa Epsilon until 1863. It had not initiated members, for several years, but held meetings in Boston, where it became known as the "Dicky Club." The chapter was revived as a sophomore society in 1863, and exists to-day, occasionally challenging attention when some accident reveals to the public its ridiculous and at times reprehensible method of initiating candidates. Dicky Club is no longer "D. K. E." Quite a number of chapters of "D. K. E." have houses of their own; the "D. K. E." club in New York stands as high as similar institutions there, and there are associations of "D. K. E." alumni at a score of cities which hold annual reunions and cultivate the fraternal relations begun during college life. The fraternity is governed by an advisory council which is incorporated. The badge resembles that of Psi Upsilon, except that in the centre of the black field the golden letters Delta Kappa Epsilon appear upon a white scroll. Much is made of armorial bearings, each chapter having a distinct blazon. The fraternity emblem is a lion rampant, in black, on a gold background. On its list of names of distinguished members are those of United States Senators M. C. Butler and Calvin S. Brice; Perry Belmont, W. A Washburn, John D. Long, A. Miner Griswold, A. P. Burbank, Theodore Roosevelt, John Bach McMaster, George Ticknor Curtis, Julian Hawthorne, Robert Grant, Theodore Winthrop, William L. Alden, ex-Governor McCreary of Kentucky; Wayne McVeagh, Charles S. Fairchild, General Francis A. Walker, Whitelaw Reid, Robert T Lincoln, Stewart L. Woodford, Marl, H. Dunnell, and Henry Cabot Lodge.



This is the heraldry for Delta Kappa Epsilon. AKE is known in its own literature as an international secret society. It was begun at Yale in 1844 as a junior society. Both President George W and George HW are members of the founding Phi Chapter at Yale University. Notice the use of the Winged Sun-Disk, the eye of Horus in a upside down triangle

COLLEGE FRATERNITIES*



SIGMA DELTA CHI CLOISTERS AND CHAPEL, S. S. S., YALE.

Of college fraternities in the United States one significant fact may pass unquestioned— they have retained the affection and kept the support of a large number of those who knew them best. On their rosters are found not only the names of undergraduates, but also those of men who long since left youth and folly far behind. Indeed, one now and then runs across a name that adds a certain dignity to the catalogue and becomes an inspiration for ambitious youth. Of these many find no small satisfaction in identifying themselves from time to time with the life of the various clubs and societies of which they were members when boys at college ; they take a mild, half-melancholy pleasure in reminiscent talk, and delight to meet and wander with half-regretful sadness in halls where youth wears the crown.

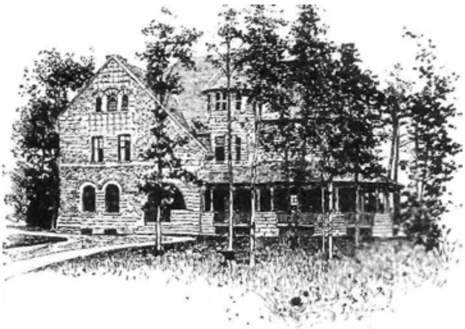
The charm of life in the society hall is much easier for one to imagine than for another to relate. A stereotyped phrase, " mere boyishness," fails to explain it; a compendium of dry facts and arguments would be farther still from picturing the life that often masquerades under the thin veil of a half-pretended secrecy.



WHIG HALL, PRINCETON.

More "sweetness and light " seems always to have been the goal towards which the fraternities strove, and the story of their development is a plain tale of natural and steady growth from small beginnings.

Towards the end of the first quarter of the present century the social life of our colleges had become barren— not more barren, perhaps, than it had been for many years, but relatively so in view of the fact that life was becoming richer and the spirit of the times more liberal. Boys from families in which puritanical methods were obsolete naturally hated the puritanism of college discipline; they chafed at the petty decorum of the stuffy class-rooms, and fretted at the deadness of the iron-bound curriculum. Almost the only means of relaxation countenanced by the faculties were open



KAPPA ALPHA LODGE, CORNELL.

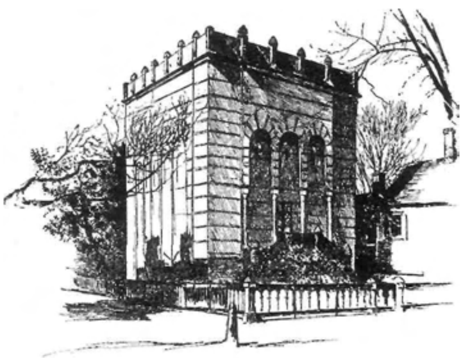
debating societies, which met on the college grounds, and to the meetings of which both professor and student might go. In view of the fact that students, from the days of Horace down, were wont to hold their preceptors as their natural enemies, the presence of professors did not increase the popularity of these societies. Indeed, they languished. Here was the opportunity of the typical college fraternity. Of these societies the first to assume the characteristics that are now recognized as their essential, albeit it soon lost them, had been Phi Beta Kappa. It was founded at Williamsburg, Virginia, December 5, 1776, in the very room where Patrick Henry had voiced the revolutionary spirit of Virginia. The story is a simple one: John Heath, Thomas Smith, Richard Booker, Armistead Smith, and John Jones,

* For friendly assistance in the preparation" of this article the writer cordially acknowledges his obligation to Mr. John De Witt Warner, of New York.



HASTY PUDDING CLUB-HOUSE, HARVARD.

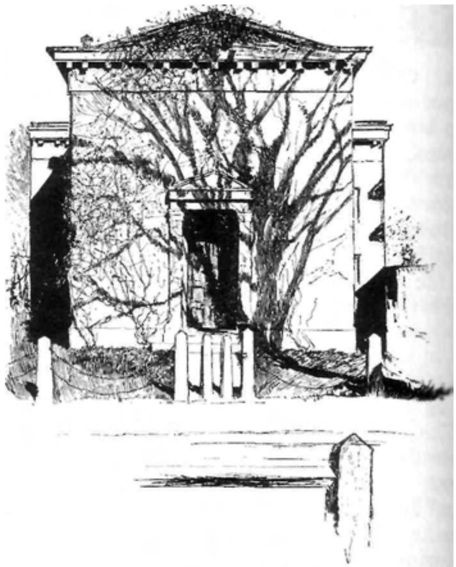
students at William and Mary College, then the most wealthy, flourishing, and aristocratic institution of learning in America, believing that there was room for a more effective student organization than the one of a Latin name that then existed there, and recalling that one of their number was the best Greek scholar in college, resolved to found a new society, the proceedings of which were to be secret, to be known by the name of the three Greek letters that formed the initials of its motto — Phi Beta Kappa. The minutes are discouraging to those who would like to consider Phi Beta Kappa as a band of youthful enthusiasts planning a union of the virtuous college youth of this country, who were afterward to reform the world; and even more so to those who have declared infidel philosophy to be its cult. Youths of fine feelings and good digestion, they enjoyed together many a symposium like that on the occasion of Mr. Bowdoin's departure for Europe, when, " after many toasts suitable to the occasion, the evening was spent by the members in a manner which indicated the highest esteem for their departing friend, mixed with sorrow for his intended absence and joy for his future prospects in life." They called themselves a " fraternity." More thoroughly to enjoy the society of congenial associates, to promote refined good-fellowship, was the motive of these hearty young students who founded the first of the true Greek-letter fraternities, with (to quote from its ritual) " friendship as its basis, and



"KEYS" HALL, YALE.

benevolence and literature as its pillars "— one which thrived in their day as its successors on the same basis flourish in ours. So far from being inspirers, or a product, of American national spirit, or of a union of the wise and virtuous to which they invited all known American colleges, the only reference in their record to the Revolution is the single mention of the " confusion of the times" in the record of the final meeting; and the only recognition of the existence of other colleges is the record of the granting of charters for "meetings" at Harvard and Yale, which institutions were never mentioned again.

Meanwhile Cornwallis was coming nearer, and after having chartered additional chap-



"BONES" HALL, YALE.

ters,— Beta, Gamma, Delta, Epsilon, Zeta (Harvard), Eta (Yale), and Theta,— the Alpha, or mother chapter, passed ou t of existence. From Epsilon and Zeta have descended the latter-day chapters of Phi Beta Kappa. Of the fate of Beta, Gamma, Delta, Eta, and Theta nothing is known. After a lapse of seventy years, William Short, of the mother chapter, at the age of ninety, traveled from Philadelphia to Williamsburg and revived the Alpha, which, however, soon succumbed to the vicissitudes of its college. It is not known what was its first follower. But of those whose activity have been continuous to date, Kappa Alpha, founded in 1825 at Union College, adopting with its Greek name, a badge planned similarly to that of Phi Beta Kappa (except that it was suspended from one corner, instead of from the center of one of its equal sides), and inspired by similar ends, began



BERZELIUS HALL, S. S. S., YALE.

the career that has made it the mother of living Greek-letter societies. For Phi Beta Kappa has long since become an honorary, as distinguished from an active, institution, though the reunions of its chapters, especially of the old Zeta, now the " Alpha of Massachusetts," founded at Cambridge in 1779, are still noteworthy events.

Even before Phi Beta Kappa came into existence, Oliver Ellsworth, afterward Chief-Justice of the Supreme Court of the United States, had founded Clio Hall at Princeton, and a few years later, in 1769, Whig Hall arose at the same college with James Madison, afterward twice President of the United States, for its founder; and from that day to this these friendly rivals have never ceased to exert a healthful influence on the intellectual life of Princeton. These were the prototypes, and are the most vigorous survivals, of what, for nearly a century, were the most flourishing and numerous of student societies — the twin literary societies, or " halls," generally secret, and always intense in mutual rivalry, which have been institutions at every leading college in the land.

Another and a third, though less homogeneous, class of student societies may be best described by noting separately its only important examples — at Harvard and Yale. The Hasty Pudding Club of Harvard also took its rise in those interesting and formative years just subsequent to the close of the Revolutionary war, and was founded, as its constitution says, "to cherish the feelings of friendship and patriotism." For the display of the latter virtue the club for many years was wont to celebrate Washington's Birthday with oration and poem, with toasts and punch. Alas, for these degenerate days! Conventional theatricals have taken the place of poem and oration, though, for aught I know, the toasts and punch may yet survive. " Two members in alphabetical order "— so ran the old by-laws — "shall provide a pot of hasty pudding for every meeting," and it is said that this practice is still religiously kept. That the banquet was not lightly considered by the old Harvard clubs may be seen in the tendency to exalt in the name of the club the peculiar feature of the club's fare, the Porcellian taking its name from the roasted pig — classical token of hospitality — that one of its bright young members provided for the entertainment of his fellows on a time when the feast fell to his providing. But the Porcellian has not wholly given itself up to the things that go with banqueting, for no other college society has so fine a library as it possesses. Indeed, its seven thousand well-selected and finely bound volumes might be coveted by many less fortunate small colleges. The A. D. Club is a younger rival of the "Pork," and, in the comfort of its house, the brilliancy of its dinners, and its good-fellowship, is by no means inferior. The development of this species of undergraduate activity has taken a widely different and rather unique form at Yale. The Yale senior societies are the most secret and clannish of college societies. No outsiders ever enter their buildings, and their goings and comings are so locked in mystery that one can only guess what their aims and purposes are. A passion for relic worship and a taste for politics are generally ascribed to both, though the class of men taken by Scroll and Key differs widely from that chosen by Skull



DELTA KAPPA EPSILON HALL, YALE.



ALPHA DELTA PHI (EELL'S MEMORIAL) HALL, HAMILTON.

and Bones — the men of the former being selected, it is supposed, for their social position and qualities of good-fellowship, while those of the latter are usually good scholars or prominent athletes.

Thus we have the three classes of student societies — the old literary societies, still flourishing in the older colleges of the South, but languishing elsewhere, except at Princeton, where Clio and Whig are still the great institutions of the student body, and at Lafayette, where the Washington and Jefferson are scarcely less prosperous; the peculiar local institutions of Yale and Harvard, sui generis and not to be propagated; and the Greek-letter system of chaptered fraternities, the chartered corporations of which are to-day the most prominent characteristic of American undergraduate social life.

The interval of thirty-five years from the founding of Kappa Alpha to the outbreak of the civil war was the golden age of these fraternities. They sprang up and multiplied with a persistency that should forever make firm the doctrine of the strengthening power of persecution. They were not confined to any one grade of college or to any particular part of the country. They flourished everywhere, and increased in number through almost every imaginable combination of the letters of the Greek alphabet. Many, of course, have vanished from the face of the earth. Of those that still remain, Delta Kappa Epsilon, founded at Yale in 1844, is the largest, and has now above 9000 members, representing 30 active chapters situated in 19 different States Psi Upsilon, originated at Union in 1833, enrolls some 6600 members, distributed among 19 chapters in 10 States; and Alpha Delta Phi founded at Hamilton in 1832, has a membership nearly as large. Delta Kappa Epsilon appears to have made good its claim to be reognized as a national institution; and while certain smaller fraternities are favorites in particular parts of the country, all barriers are rapidly disappearing before these three favourite societies in their march towards representation at all the important colleges of the country.



ALPHA TAU OMEGA HALL, SEWANEE.

Though fraternities are organized less frequently now than formerly, because of the



DELTA KAPPA EPSILON HALL, ANN ARBOR.

increased difficulty of competing with those that have been long established, still, as the colleges themselves grow, the chapters of the most flourishing fraternities grow with them, so that the increase of the system, as a whole, is both very regular and very considerable. Up to 1883, the date at which the latest general manual of the fraternities appeared, there were enrolled among the 32 general college fraternities of this country, forming an aggregate of 505 active chapters, no less than 67,941 members, representing every possible profession and branch of business, every shade of religion and political opinion, and every State and Territory of the United States. But these figures by no means tell the whole storyof



ALPHA PHI (LADIES') LODGE, SYRACUSE.

the growth and spread of the "little" college fraternities. Many colleges and advanced technical schools in every section of the country, besides welcoming the general fraternities to their privileges, have ambitiously started and preserved local fraternities that are limited or have no branches at other institutions, but nevertheless often enjoy a large share of local patronage. These societies, of which there are 16 now in existence, had a membership of 4077. But this is not all. The female students, not to be outdone, about a dozen years ago began to organize sisterhoods, from which males were ignominiously debarred from membership, and had meantime succeeded in building up 7 prosperous societies, with 16 chapters and 2038 members, situated mostly in co-educational institutions. When to this grand total of 74,056 names are added the large membership of the Princeton halls, the Harvard clubs, and the Yale senior societies, already described, together with the very numerous class organizations in various colleges, it may be seen how firm ahold the spirit of co-operation has taken upon the collegians of the country. The fraternities have grown far away from the persecutions of their early days, when the hands of all men and faculties were raised against them. Because they met in secret, and held themselves free from the intrusion of the faculty for one night in the week, and adorned their poor little badges with Greek letters, all evil and rebellious conduct was charged against them. Though their purposes were sensible enough, and good rather than evil has come from them, a nameless stigma of bad parentage still rests upon the whole system, to live down which, by an overplus of actual and visible good attainment, has not been possible till within recent years. But prejudice has an unequal contest with conviction. Through persecution, and poverty of opportunity, and lack of means the new society men fought their way towards solid ground, finding in their struggles and in their ambitions for the success and honors of their fraternities an incentive and charm college life had till then never yielded.

Whatever may have been the shortcomings of the American college boy of a quarter of a century ago, want of energy was not one of them. To take off his coat and go to work with his hands seemed to him the most natural thing when he needed a society lodge. In this way was built, in 1855, the famous "log-cabin " of Delta Kappa Epsilon at Kenyon College, Gambier, Ohio. The site selected was a deep ravine, far away from any human dwelling. Neighboring farmers were hired to fell the trees and to raise the frame of this ark of a house, forty-five feet in length by ten in height. The entire chapter (including its youngest member, now an orator of national reputation several times elected to Congress) rested not until they had plastered the outside crevices with mud. Inside the room was nicely ceiled, and furnished with good tables and chairs, a carpet, and several pictures. The walls and roof of the building were ingeniously deadened with saw-dust and charcoal, so that not the remotest whispers could reach the ears of curious eavesdroppers, if any such should have the temerity to penetrate to the recesses of this sylvan retreat. " A cooking-stove, with skillet, griddles, and pots complete, was the pride of the premises," writes an old member, " where each hungry boy could roast his own potatoes, or cook his meat on a forked stick, in true bandit style."



DELTA KAPPA EPSILON LOG-CABIN, KENYON.

The building of this lodge gave a great impetus to the owning of society homesteads. Before this the various chapters had been accustomed to rendezvous stealthily in college garrets, at village hotels, or anywhere that circumstances and pursuing faculties made most convenient. But when the assurance was once gained that the fraternities might own their premises and make them permanent abiding-places, the whole system became straightway established on a lasting foundation. In 1861, at Yale, the parent chapter of



ALPHA DELTA PHI LODGE, ANN ARBOR.

the same fraternity, Delta Kappa Epsilon, built for itself a two-story hall in the form of a well-proportioned Greek temple, and this proved to be the beginning of a long epoch of more and more elaborate house-building, the culmination of which has scarcely been reached at the present day.

From the temple-shaped hall with its facilities for the routine work of the chapter, its dramatic and social festivities, the most enterprising fraternities progressed gradually towards ample homesteads, thoroughly equipped for dealing with every phase of student life, including the furnishing of comfortable board and lodging, which, in some features, excelled the average dormitories. The work began in earnest about fifteen years ago, but the past two or three years have excelled all the others combined, both in an intelligent understanding of what was needed to make the houses thoroughly habitable and creditable in appearance, and in the amount of superior work planned in detail or actually accomplished. A critical comparison of the specimens in existence reveals the fact that pretty nearly every kind of known architecture has been tried. At Princeton one may see in the twin temples of Whig and Clio copies of the Ionic architecture; at Cambridge, should he visit the A. D. Club, he could scarcely fail to notice



CHI PSI LODGE, AMHERST.

that this hospitable mansion is the veritable traditional New England homestead, with its air of little pretense and much comfort. At Yale, " Bones Hall" is venerable and picturesque when covered by the foliage of its ivy; the magnificent building of " Keys " is of Moorish pattern; the new " Wolf's Head " society, at the same college, honors our ancestors in the " Old Home" by choosing a corbel-stepped gable, " fretting the sky," to which the English and the Dutch of several centuries ago were noticeably partial; the stone Delta Psi lodges at New Haven and Hartford are veritable castles for strength and ruggedness of outline; no gentleman would need a more tasteful or finely located villa than one of the fraternity houses which he would find at Ithaca; while by Delta Kappa Epsilon at Amherst has been



DELTA PSI HALL, S. S. S., YALE.

introduced, and by Sigma Delta Chi at Yale has been elaborated, what seems probable to become the reigning type — that of " cloisters," in which are lodged the members, joined by gallery or covered way to the " chapel," where are celebrated the rites of the chapter.

If the fraternities as a whole have had a weakness, it has been for what they were pleased to believe was the " Queen Anne style "— a " spread " of red bricks, irregular, very irregular, tile roofs, and an unknown quantity of bowed windows, with the usual accessories of modern stained-glass "Venetian" blinds, and unlimited opportunity for portieres These experiments, as embodied by some amateur architect, most likely a well-meaning but untrained member of the chapter, have not always been successful; but lately the bizarre mode has given way to better taste, and in all probability the next efforts of the fraternities

at house-building will be characterized by solidity rather than show, by harmony rather than conspicuousness. Several of the college faculties have, with the consent of their boards of trustees, presented enterprising societies with valuable building-sites on their grounds; and where their invitations have been accepted, they have no cause to regret their generosity.

In interior decoration the houses of the American college fraternities differ no less radically than in external appearance. At a Western lodge the members are often content with, and indeed think themselves fortunate if



DELTA PSI LODGE, TRINITY.

they have at their command, the bare necessities of life, while not a few of the wealthy chapter-houses of the East are furnished with all the luxury and refined taste of the highest modern art as applied to club life. For instance, the lodge-room of the Delta Psi fraternity in New York City is magnificently furnished in Egyptian designs especially imported from Thebes for this purpose, at a cost of several thousands of dollars; and in the buildings of the Alpha Delta Phi at Wesleyan, the Psi Upsilon at Cornell, the Chi Psi at Amherst, and the Sigma Phi at Williams may be found wood-work, furniture, and objects of art which would be in no wise out of place in the most attractive of modern city homes. Several of the foremost chapters, such as the Sigma Phi, the Alpha Delta Phi, and the Kappa Alpha of Williams College, have been presented with valuable memorials by the friends or relatives of deceased members, which are introduced so as to form conspicuous features of the buildings. Thus the last



SIGMA PHI LODGE, WILLIAMS.

of the three societies just named contains a strikingly beautiful emblematic window, designed by Tiffany & Co. of New York. The Samuel Eell's Memorial Hall, at Hamilton College, is itself a tribute to the brilliant young founder of the Alpha Delta Phi fraternity, who died after a short career of great promise at the Cincinnati bar as a law partner of the late Chief-Justice Chase. Other representative lodges have been built or beautified by the generosity of individuals.

With the aid of rich sons and generous parents and friends, the loading down of college lodge-rooms might easily be carried to an unfortunate extreme, especially if a false spirit of rivalry should gain a foothold in our college world. But at present there seems little danger of this. An honorable ambition prevails among the leaders of the best fraternities to make their homes complete and attractive in every particular, but beyond this they do not seek to go. The energies of those who



DELTA PSI HALL, NEW YORK CITY.



DELTA KAPPA EPSILON LODGE AND HALL, AMHERST.

have charge should be directed especially to adorning the chapter-houses with what illustrates and improves student life in general, and with what is of particular importance to the members of the college or university at which the chapter-house is located.

Of the value of the real and personal property belonging to the ten American college fraternities that are represented by at least one chapter-house each, and the leaders by



ALPHA DELTA PHI LODGE, WILLIAMS (MEMORIAL PORCH).

five or more, it may safely be said that the sum is fast approaching a million of dollars; while numerous other fraternities and chapters have well-invested and rapidly accumulating building-funds.

The fraternity literature is another interesting subject. The hideous reptiles and winged monsters, the burning altars and dungeon bars, and other such fantastic symbolism with which the magazines and newspapers of some of the fraternities are decorated, prove to cover interesting and oftentimes useful tables of contents, including reminiscences of college life and literary articles by prominent graduates, news-letters from the chapters at the different colleges, personal gossip concerning alumni, official notices from the officers of the fraternity, editorial comments, and notes from exchanges. Two or three of these society periodicals have attained a large circulation. The fraternities have not confined their energies to current papers, however, but have compiled elaborate record books of their members, in the form of catalogues, which, besides containing the names and occupations of members, give succinct sketches of the chapters and the colleges at which they are situate, interesting tables of residence and relationship, and brief biographical sketches of the most distinguished graduates. But decidedly the freshest and most characteristic literature possessed by the fraternities are their song-books, where,

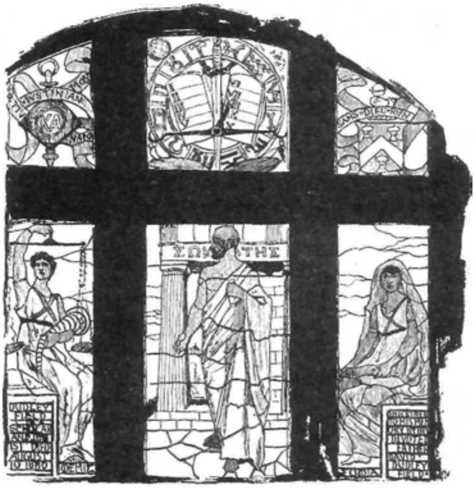
in varied and not always correct verse, the youthful laureates have sung the praises of their clans, comrades, festal nights, the charms of good-fellowship, and many other such tempting themes for the imagination and the heart.

Till about a dozen years ago few or none of the fraternities had a strong executive government, but were managed by the oldest chapter, or by several chapters in turn, and by the hasty edicts of the general conventions of the order. But this system proving inadequate, the leaders conceived and boldly acted on the idea of taking the general executive administration of the college fraternities out of the hands of the undergraduate members, at. the same time appealing to the graduate members to assume an active share in their welfare. So far their success has been noteworthy. The graduate councils, which now form the executive department of most of the leading fraternities, are ably managed, and graduate associations of the larger fraternities have been formed in most of the important cities. They hold reunions, banquets, and business meetings, and in most essentials serve as graduate chapters of their orders, cementing old college ties and forming new ones between members of different colleges; and several of the fraternities, such as the Delta Psi, the Delta Phi, the Delta Kappa Epsilon, the Alpha Delta Phi, the Psi Upsilon, the Zeta Psi, and the Delta Upsilon, have lately taken the advanced step of establishing in the large cities regular club-houses, which are well equipped, and well patronized by men of all ages; while at Chautauqua, the "Wooglin " club-house, with its ample accommodations and grounds, is the summer headquarters of the Beta Theta Pi, by a graduate corporation of which it is owned.

The legislative functions of the fraternities still rest with the annual conventions, which are usually held with the different undergraduate chapters in turn, when, be-



KAPPA ALPHA LODGE, WILLIAMS.



FIELD MEMORIAL WINDOW, KAPPA ALPHA LODGE, WILLIAMS.

sides the transaction of routine business, the several hundred students present from all parts of the country are occupied with social courtesies extended to them by local residents, and with literary efforts in the form of orations and poems, often delivered by members of the fraternity who have attained eminence in public life.

In view of the facts already presented in the course of this narrative, a defense of the fraternities, a summing-up of all the reasons on which their existence and continuance might be justified, seems altogether superfluous. This one significant feature of the case may however be offered to the dubious without comment, as pointing its own moral — that so far, whenever the majesty of the law has been invoked by still obstinate faculties or trustees to drive the fraternities from their institutions, the law has upheld the continuance of the societies and the free rights of the students to join them, provided that in doing so they do not violate any of the proper functions of the college. It was so in 1879, when the faculty of the University of California tried to disband a society which had been allowed to erect a house on college land, and was met by the hostile criticisms of the entire press of that State; it was so in 1882, when the president of Purdue University, Indiana, striving to compel students entering his university not to join any of the societies, was prevented by a decision of the superior court of that State, and in the end resigned his office. The one notable exception to this rule is the case of the College of New Jersey. Here the faculty succeeded in expelling all the fraternities; but it was before the era of their house-building. All of those chapters



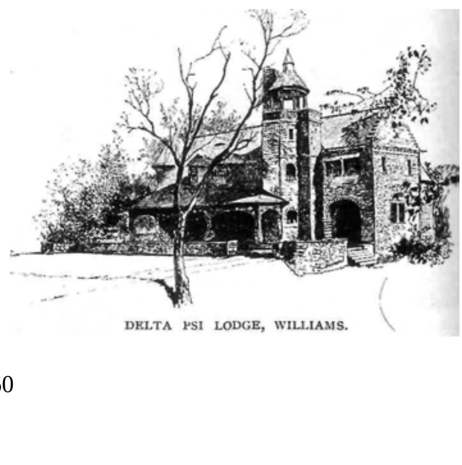
PHI KAPPA PSI (MEMORIAL) LODGE, GETTYSBURG.

which have built houses are now incorporated institutions, paying taxes on their real and personal property, and entitled to the full privileges and protection of local and State laws.

They therefore appear to rest on a more solid basis than mere sufferance; and however ardently certain individuals may wish to see them abolished, it is extremely doubtful if even an organized crusade against them, headed by all the college presidents in the United States and the majority of the faculties under them, could succeed in doing more than to drive the reputable societies into a temporary seclusion, from which, in a few years, they would emerge stronger than ever. Such at least has been the case at many representative institutions.

But the above supposition is relegated to the realms of the impossible when one discovers that a large portion of the educators referred to are themselves members of the fraternities, and in many cases actively associated with their progress. This list includes such men as President Eliot of Harvard, Dwight of Yale, Walker of the Boston Institute of Technology, Seelye of Amherst, White of Cornell, Dwight of the Columbia Law School, Oilman of Johns Hopkins University, Johnston of Tulane, and Northrop of the University of Minnesota. There is not a faculty of any size in the United States that does not contain society members, and few professorial chairs at the largest colleges are not filled by representatives of the leading fraternities. These "little societies" have supplied forty governors to most of the largest States of the Union ; and had in the last administration the President of the United States and the majority of his Cabinet. On the Supreme Bench of the United States the fraternities are now represented by five of the associate justices. A summary, published in 1885, showed Alpha Delta Phi, Psi Upsilon, and Delta Kappa Epsilon to have furnished of United States senators and representatives 39, 25, and 36 respectively; while in the last Congress 13 representatives and 2 senators were members of the last-named fraternity alone; and in the membership of these 3 fraternities are included 24 bishops of the Protestant Episcopal Church. In the class-room they are represented by Whitney and Marsh; in the pulpit, by R. S. Storrs and Phillips Brooks; in the paths of literature, by James Russell Lowell, George William Curtis, Donald G. Mitchell, Charles Dudley Warner, Edward Everett Hale, and E. C. Stedman; in recent public life, by Presidents Arthur and Garfield, by Wayne MacVeagh, Charles S. Fairchild, Robert T. Lincoln, John D. Long, William M. Evarts, Joseph R.Hawley,and William Walter Phelps. These gentlemen were not elected into the fraternities after graduation, but were active supporters of these organizations during their undergraduate days. Whatever, then, may be the shortcomings of college secret societies, it is to their credit that their exponents are men noted for ability and prominence in every useful sphere of life, as well as for mere culture and congeniality, while from end to end of the catalogued chapter-lists run in thick procession the starred names of the most brilliant and lamented of the young officers who fell in the battles of our civil war — in the blue and gray ranks alike. Judging the system by its deeds only, it is difficult to escape the conclusion that the best societies have in reality been groups of picked men among the fortunate few, comparatively speaking, who are able to incur the expense of a college education.

In almost every college where the secret societies have flourished attempts have been made, some of them quite successful, to carry on local anti-secret societies; and there has existed for many years an anti-secret fraternity, with chapters placed in different colleges, which has been patterned very closely after the societies calling themselves secret, both as to means and ends. But in one case only, that of Delta Upsilon, have the anti-secret orders



DELTA PSI LODGE, WILLIAMS.



PSI UPSILON LODGE, HAMILTON.

been able to keep pace with their secret rivals, in either the quality of their membership, their activity in college affairs, or their increase in material resources. Even here this has been the result of assimilation to the secret fraternities, till now, so far as Delta Upsilon can effect it, the distinction between itself and the secret fraternities is simply that the latter exposes somewhat more private business than do they, and, as to the rest, terms " privacy " what they call " secrecy." Mr. Warner has said:

> Notwithstanding their formation is only in obedience to an ancient and universal love in human nature, they are attacked because they are secret. I suppose that some of them are guardians of the occult mysteries of Egypt and India, that they know what once was only known to augurs, flamens, and vestal virgins, and perhaps to the priests of Osiris; others keep some secret knowledge of the formation of the alphabet, or preserve the secret of nature preserved in the Rule of Three, and know why it was not the Rule of Four; while others, in midnight conclave, study the ratio of the cylinder to the inscribed sphere. It matters not. I have never yet met any one who knew these secrets, whatever they are, who thought there was any moral dynamite in them; never one who had shared them who did not acknowledge their wholesome influence in his college life. I mean, of course, the reputable societies; I am acquainted with no other.

The constitutions of many college fraternities are now open to the inspection of faculties; the most vigorous publish detailed accounts of their conventions and social gatherings; nearly all of the homesteads are on occasions opened for the reception of visitors; their rites, ceremonies, and even the appearance of their sancta sanctorum, are quite accurately apprehended by rival societies — in short, the old shibboleth of secrecy is a myth rather than a reality.

The shrewdest college presidents have long since discovered that to control undergraduate action with a firm though gentle hand they have only frankly to bespeak the aid and win the confidence and assistance of the fraternities represented at their institutions. It is thus that we come to see and to realize the importance of such unique departures from the traditional, ever-antagonistic relations between the faculties and the students of large colleges as those lately put into operation at Amherst, Bowdoin, and other colleges; where all matters relating to the privileges and penalties of the students are adjusted to a code of laws which is administered, and from time to time amended, by a council of undergraduates, representing the fraternities, acting in concert with one or more members of the faculty. This simple and amicable relationship between those desiring to obtain knowledge and those desiring to impart it has already been attended with very gratifying results.

Illustrated by such cases as that of Amherst and Bowdoin, and reenforced by the healthy tone of the fraternity press, which has not failed to wage war on what is reprehensible or deficient in our college life, and has labored to inculcate in their members the obligations which they owe to their college and to the members of rival societies as well as of their own, the words of General Stewart L. Woodford, in speaking of the early days of the societies, seem amply justified, and to promise even larger and still more excellent fruit in the near future:

> To no one cause more than to the fraternity movementhas been due the altered conditions of college culture. ... In matters of study and discipline each student is now largely guided by his personal predilections, by the advice of those whom he sees fit to consult, by the moral force of his chosen associates. These associations are now determined in many colleges by the Greek-letter societies or fraternities.



PHI NU THETA LODGE, WESLEYAN.



DELTA UPSILON LODGE, MADISON.

That they can use without abusing their privileges was very well expressed by President White, at the dedication of the new Psi Upsilon house at Cornell:

Both theory and experience show us that when a body of young men in a university like this are given a piece of property, a house, its surroundings, its reputation, which for the time being is their own, for which they are responsible, in which they take pride, they will treat it carefully, lovingly, because the honor of the society they love is bound up in it.

He added the following profound observations as the result of his long experience, both here and abroad :

One of the most unpleasant things in college life hitherto has been the fact that the students have considered themselves as practically something more than boys, and therefore not under tutors and governors ; but something less than men, and therefore not amenable to the ordinary laws of society. Neither the dormitory nor the students' boarding-house is calculated to better this condition of things, for neither has any influence in developing the sense of manly responsibility in a student. But houses such as I am happy to say this society and its sister societies are to erect on these grounds seem to solve the problem in a far better way. They give excellent accommodations at reasonable prices; they can be arranged in such a manner and governed by such rules as to promote seclusion for study during working-hours; they afford opportunities for the alumni and older students to exercise a good influence upon the younger; they give those provisions for the maintenance of health which can hardly be expected in student barracks, or in the ordinary student boarding-house, and in the long run can be made more economical. But what I prize most of all in a house like this is its educating value ; for such a house tends to take those who live in it out of the category of boys and to place them in the category of men. To use an old English phrase, it gives them " a stake in the country."

President Seelye of Amherst College, in an address on June 28, 1887, states, referring to the Greek-letter fraternities:

The aim of these societies is, I say, improvement in literary culture and in manly character, and this aim is reasonably justified by the results. It is not accidental that the foremost men in college, as a rule, belong to some of these societies. That each society should seek for its membership the best scholars, the best writers and speakers, the best men of a class, shows well where its strength is thought to lie. A student entering one of these societies finds a healthy stimulus in the repute which his fraternity shall share from his successful work. The rivalry of individuals loses much of its narrowness, and almost all of its envy, when the prize which the individual seeks is valued chiefly for its benefit to the fellowship to which he belongs. Doubtless members of these societies often remain narrow-minded and laggard in the race, after all the influence of their society has been expended upon them, but the influence is a broadening and a quickening one notwithstanding. Under its power the self-conceit or a young man is more likely to give way to self-control than otherwise. . . .

To represent all the fraternities as standing on anything like the same high plane as to membership, progress in the past, and prospects for the future would be misleading. My thoughts have naturally turned to the standing, the equipment, the aspirations, or perhaps only the pretty dreams of those fraternities which deserve to be ranked as the leaders in the race — that some day all the colleges of the United States will be veritable and acknowledged student democracies; that the fraternity buildings, though smaller than the college halls, will equal the latter in durability and completeness of appointment; that all the large cities will have graduate clubs, where the college fraternity man can renew the old associations that he cherished when a student.

The leading fraternities are fond of affirming the difference in their standard qualifications for membership. Some venerate high scholarship; others pride themselves on the aristocracy of birth or wealth; still others recognize the claims of a heartier and more democratic spirit. This may be true; and yet in all of them there is enough good-fellowship to attract the cultured and enough culture to



PSI UPSILON LODGE, TRINITY.

improve the sociable. They illustrate a law of nature and a law of man, in the tendency of atoms with affinities to form into groups. Having outgrown weaknesses and prejudices, they may be expected to enjoy a career of prosperity.

John Addison Porter.

[Editors Note - Mr. Porter was a member of Scroll & Key and a booster of the Yale's senior secret societies]



SECRET SOCIETIES AT YALE.

One of the most remarkable features of college life at New Haven—The undergraduates' secret organizations, their fine club houses, their prestige and influence—"Skull and Bones," "Scroll and Key" " Wolf's Head," and others.

By Rupert Hughes.

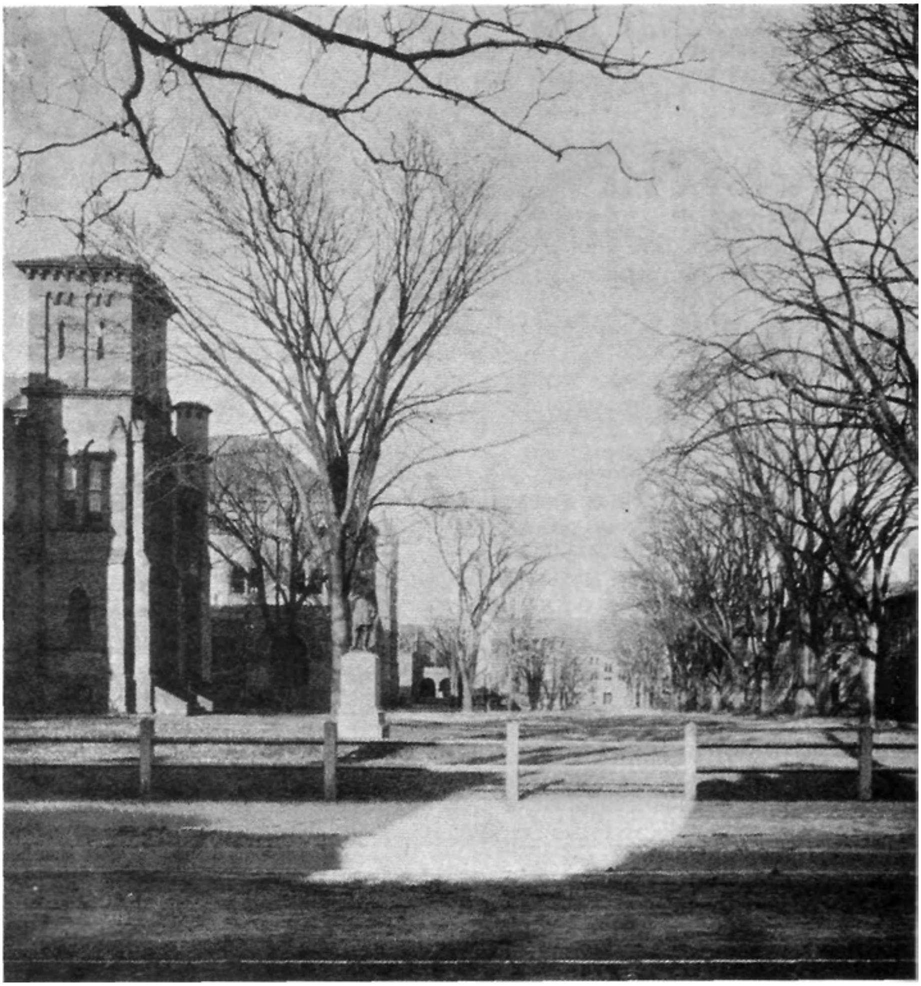
LIFE at Yale is almost devoid of society in the ordinary acceptance of the word. The stern, conservative Puritanism of the New Englanders who make New Haven their home, is inclined to frown on the levity and recklessness of college men, and seldom encourages their attentions to the local Priscillas; while the Yale man is too much wrapped up in the joys of campus life to miss the luxury. The only social life enjoyed by the average undergraduate is that of an occasional spasm like "Prom." week, when the long starved appetite overfeeds on imported delicacies ; for a Yale man never thinks of taking a New Haven girl to a college event if he can, by hook or by crook, manage to bring to town a fair maiden, duly chaperoned, from his own city.

But society life, as the Yale man interprets it, is quite the most important factor of college existence, and should be spelled with a capital "S." It is in the mysterious halls of the secret societies that the student finds his dearest pleasures, and from them it is that the powers that direct the college democracy issue.

The first noticeable feature of the Yale societies is that they are only class societies, and not fraternal organizations to be enjoyed for the three or four years of college life. The one important exception to this, Alpha Delta Phi, only emphasizes the strong class spirit at Yale by the many difficulties against which it has had to contend. And yet, though this fact is undeniable, the society life is, in a sense, similar to that where the fraternity membership extends through the whole course. The same men, in general, clique together and pass almost en masse through the different class societies, as through successive strata, or through different degrees and orders.

For example, a member of Kappa Omicron Alpha (one of the secret societies at the Phillips Andover Academy, and probably the most powerful preparatory school society in the country) is almost certain of an election to one of the two Sophomore societies at Yale. This is an excellent introduction to the Junior societies, and they are but stepping stones to that peak of Yale advancement, a home in one of the Senior societies.

The evolution, or retrogression, of the Yale chapters of various national four year fraternities, like Delta Kappa Epsilon and Psi Upsilon, into mere class societies, presents interesting features

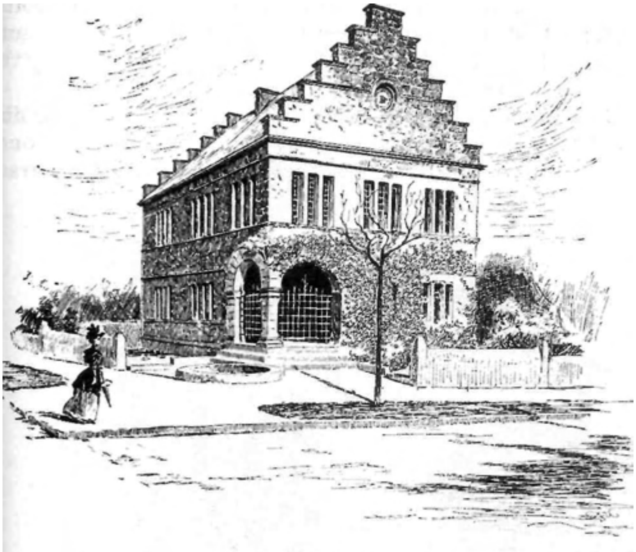


The Yale Campus.

not to be dwelt upon here, further than to note how permanently the class principle is now imbedded in the college tradition and spirit. So firmly imbedded, indeed, is it, that many outside fraternities do not dare attempt an entrance into Yale; and there is a strong sentiment even in Alpha Delta Phi that looks towards turning it also into a class society.

The history of secret societies at Yale contains the obituaries of some fifteen victims to the rule of the survival of the fittest. Among these were several Freshman societies that withered and died under the disapproval of the faculty, which found too much reason for suspicion of any dark organizations among the immature and unassimilated new comers. The last of these to die was the local society, Gamma Nu, which for some time kept up a struggling existence unknown to the faculty, but finally fell apart from internal weakness in 1889. This ended Freshman club life, and it is only natural, to the Yale mind, that the men who are forbidden canes, high hats, and a seat on what is left of the famous fence, should also be denied anything so dignified as a society.

The policy of the faculty, though it does not forbid secret societies in toto, like the Princeton faculty, is, or at



Wolf's Head Society House

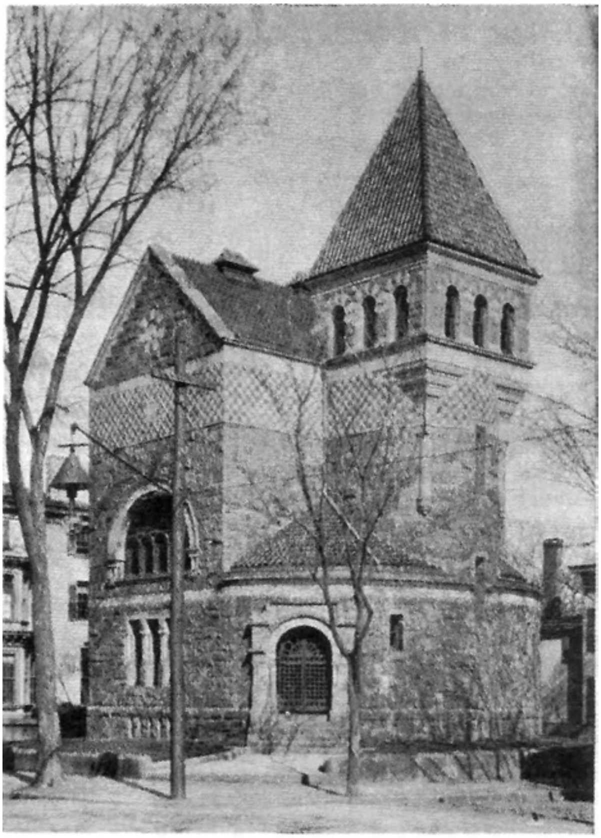
mysteries. The fact that almost any undergraduate can tell you both the names of the members and the location of their society rooms, does not weaken the bond of the members, however, so long as they suppose their secrets inviolated.

The badges of these organizations are worn on the waistcoat, under the coat, and near the left armpit. That of He Boule is an owl with the initials under it, and that of Eta Phi is a mask.

In choosing the

least has been, more or less adverse to Sophomore organizations also. In spite of this, two Sophomore societies maintain a flourishing existence. They were founded respectively in 1875 and 1879, and are called He Boule and Eta Phi.

In some respects these are the most powerful cliques in college, since the high place of society membership in the Yale mind cannot be overestimated, and since initiation into one of these two clubs practically insures admission to those of the Junior and Senior years. The power of He Boule and Eta Phi is mightily strengthened, too, both in the firmness of fraternal ties and in the underground workings of college politics, by their almost absolute secrecy. Even the names of the seventeen members of each, and the places of meeting, are supposed to be dark

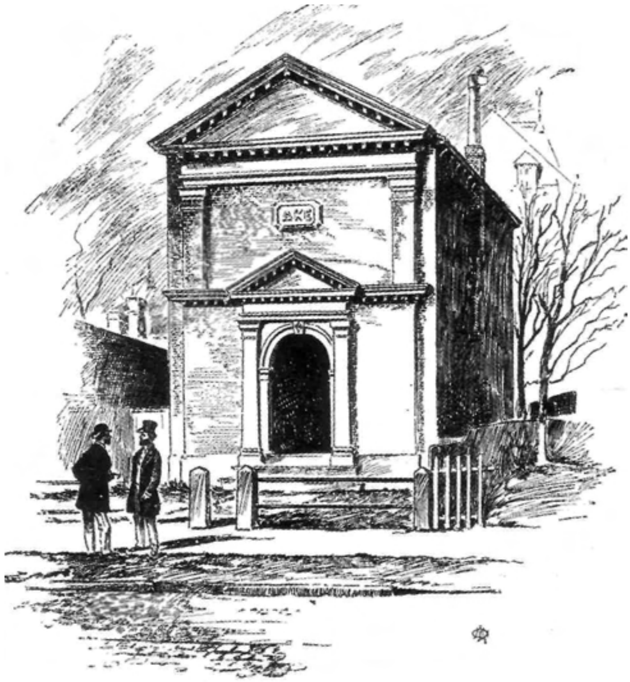


Delta Psi Society House.

members a certain number of popular men are given "hold offs;" that is, intimations that they are likely to receive "bids." But inasmuch as only about forty per cent of these men are actually taken in, and inasmuch as some men receive a "hold off" from each of the societies, many unlucky wights, in deliberating which horn of the dilemma to take, get hold of neither; or in the more picturesque Yalese, "Stacks of fellows, in trying not to chump themselves on either, horse themselves on both."

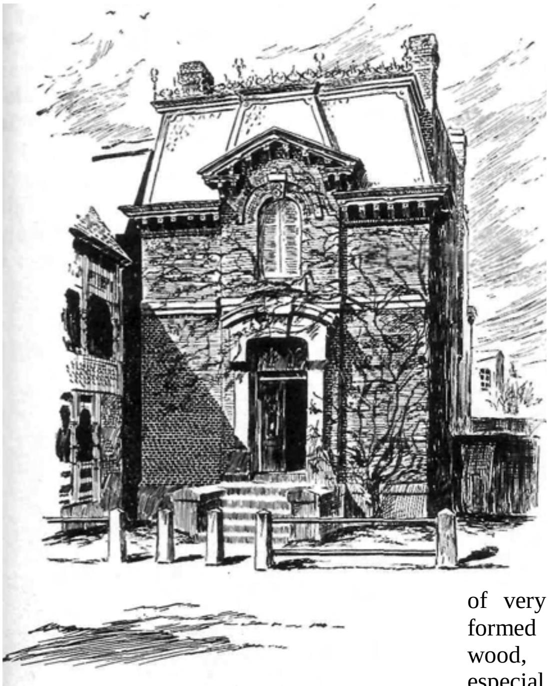
So far as the writer knows, no member of He Boule or Eta Phi has ever failed of admission to one of the two great Junior societies, Delta Kappa Epsilon and Psi Upsilon. Both of these are chapters of great national three year fraternities. The former, commonly called "Deke" at Yale, is a chapter of the fraternity to which the Harvard "Dicky," of rather unenviable fame, originally belonged. Each takes in thirty five new members every year. The number never varies, the outgoing class electing twenty five of the number, and the quota being filled up by the new men themselves.

It is noteworthy that the sharp distinctions and fierce rivalries that once separated these two societies have gradually disappeared, until now they are hardly more than friendly social clubs, the members of which meet and collaborate in the authorship and production of plays, like the burlesque opera, "Robin Hood, Jr.," which was given with immense success last year, and was marked with quite a professional finish of cleverness.



Delta Kappa Epsilon Society House.

The initiations are now nothing more than picturesque, since the lamentable death of Wilkins Rustin, '94, in the spring of 1892. He was blindfolded and instructed to run at his highest speed along an unfrequented street. In his enthusiasm he outstripped the two men in whose charge he was. Misunderstanding a cry of warning from them, he suddenly swerved from his



Psi Upsilon Society House.

direct course and ran into the sharp pole of a wagon, receiving injuries that proved fatal. The keen anxiety and deep grief of his initiators acquitted them of anything more serious than blind folly, but the faculty very wisely forbade all initiation further than the taking of the oath. Indeed, in deference to the storm of indignation throughout the country, they almost decided to wipe out the societies altogether; but, fortunately for the delight of Yale life, this radical step was not taken.

On the night of initiation, which is always the last Friday in May, the two societies march about the campus in hoods and gowns, singing their rival songs as they march. They then retire to their halls, where the formal initiation takes place, and a local burlesque is given as a welcome to the new comers. In order to make a whole night of it, the two societies indulge in a hilarious game of base ball, between daylight and sunrise, those who are not on the nines usually falling asleep in a shed near by.

Perhaps the strongest bond of fellowship in the two Junior societies, besides the conviviality they foster, is the large number of very creditable plays written and performed in their halls, the works of Boltwood, Perkins, and Paine deserving especial mention. The connection of these societies with their national organizations grows weaker and weaker every year, and many advocate its complete dissolution. Perhaps their principal value in the eyes of the students is their service in securing admission to the societies of the Seniors, who retain a limited voice and vote in the Junior clubs. The expenses are not high, being seldom more than seventy five dollars for the year.



Badge of Hé Boulé.

The Psi Upsilon badge shows two clasped hands and a monogram; that of "Deke" is a scroll bearing the word "Yale," and the initials of the society's name.

This is as good a place as any to refer to two societies which are, in a sense, rivals of the two last named, though they are hardly formidable opponents.

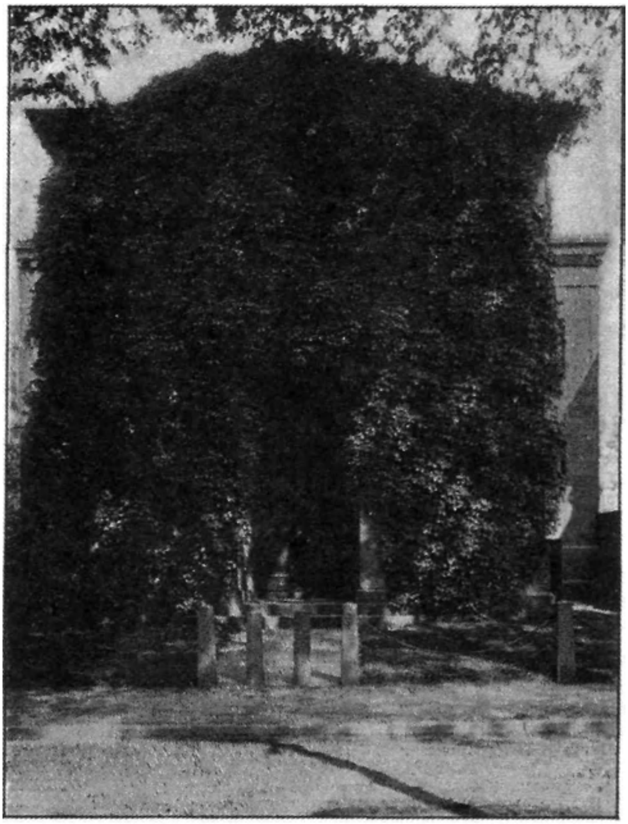


Badge of Delta Kappa Epsilon.

Zeta Psi, commonly known as "Zate," is a two year society which usually takes in fifteen or twenty of the men that fail of admission to Delta Kappa Epsilon and Psi Upsilon. Though Zeta Psi is not held in very high favor at Yale, it has a handsome chapter house, and a number of very good men on its list of members. Its pin is a monogram.

the spirit of the college is against a three year society, and it is hard to get an ambitious student to lose the possibility of a place in the more popular clubs even for a sure membership in Alpha Delta Phi.

Should the latter be turned into a Junior society, as many desire, it would soon be a dangerous rival to Delta Kappa Epsilon and Psi Upsilon. It has a



Skull and Bones Society House.

A more important body is Alpha Delta Phi, a chapter of the great national fraternity of that name. It is a three year society, and leads a somewhat precarious existence, harrowed as it is by its inevitable conflict, first against the power and activity of the Sophomore societies, and later against the dolce far niente of the Juniors. Unlike a member of Zeta Psi, the "Alpha Delt" stands a fair chance of election to the poorest of the three Senior societies and " a shadow of a show" for the two better ones. But

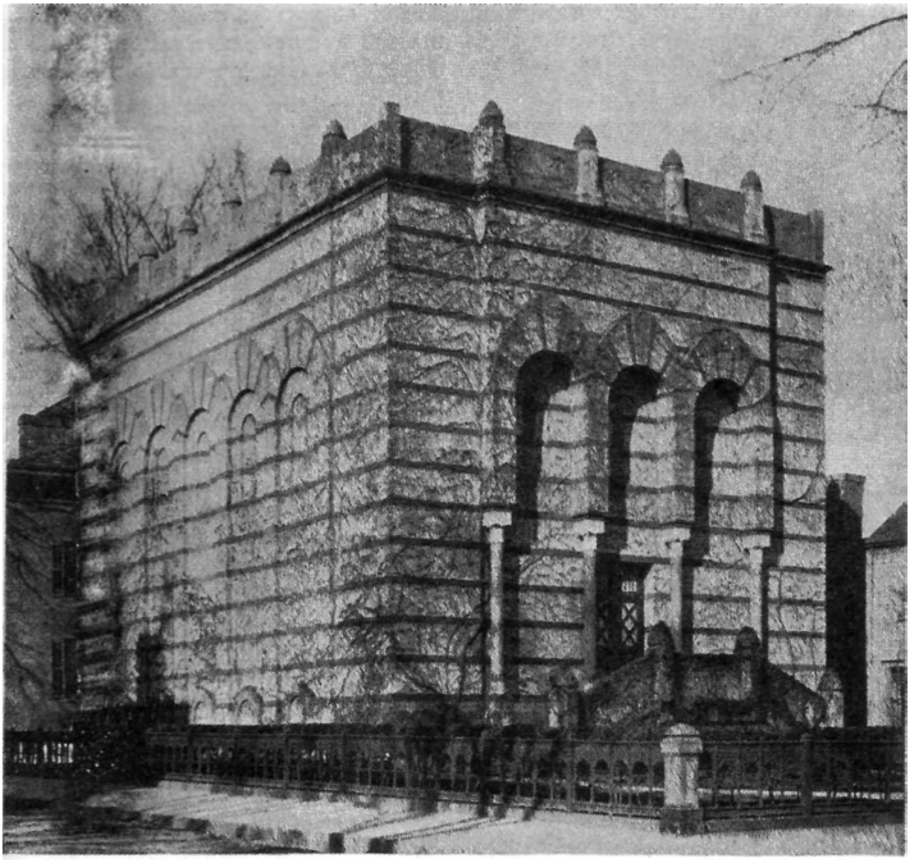
great history, but suffers for lack of a chapter house. Money is now being collected for this purpose, however, and the society has already bought a lot on Hillhouse, the most elegant avenue in New Haven.

Alpha Delta Phi was founded in 1836 but was extinct for many years, and was only reorganized in 1888, the year that saw the birth of Zeta Psi. Psi Upsilon has had a continuous existence since 1838, and Delta Kappa Epsilon since 1844. The badge of Alpha Delta

Phi is a star and crescent, and the membership is about forty.

We have now climbed to that sublime height of the Yale career known as Senior society life. Whatever hardships the student may have endured, whatever disappointments may have embittered his lot, if he can only find a haven in one of the Senior societies, his cup of joy is full. Omitting mention of Phi Beta Kappa, the association of men that have taken honors for scholarship, and Chi Delta Theta, composed of the editors of the Yale Literary Magazine (founded respectively in 1780 and 1821), the social societies are three in number : Skull and Bones, founded in 1832, Scroll and Key 1842, and a newcomer, Wolf's Head, born only eleven years ago.

These societies are all endowed and incorporated, "Bones" being incorporated as the Russell Trust Association, "Keys" as the Kingsley Trust Association, and Wolf's Head as the Phelps Trust Association. They all have graduate organizations, and are quite an expensive luxury.



Scroll and Key Society House.

As "Bones" is the oldest and richest (having one fund of forty thousand dollars), so it is the greatest, and he is not a Yale man that would prefer any scholarship honors or prizes to membership in old "Bonesy." Every year it takes in the fifteen "biggest" men in the incoming Senior class. By this I do not mean that it is a fat men's club, but that it takes the fifteen men who stand head and shoulders above their class for distinction—literary, scholastic, athletic, social, or otherwise. An impression prevails, however, that here, as with the other societies, in many

cases heredity has much to do with the selection, and that the son or younger brother of a former member is often preferred to more capable candidates. But this is stoutly contradicted by Bones men.

The Bones badge consists of a gold skull and cross bones over the number "322," and it is worn on the lower left side of the waistcoat.



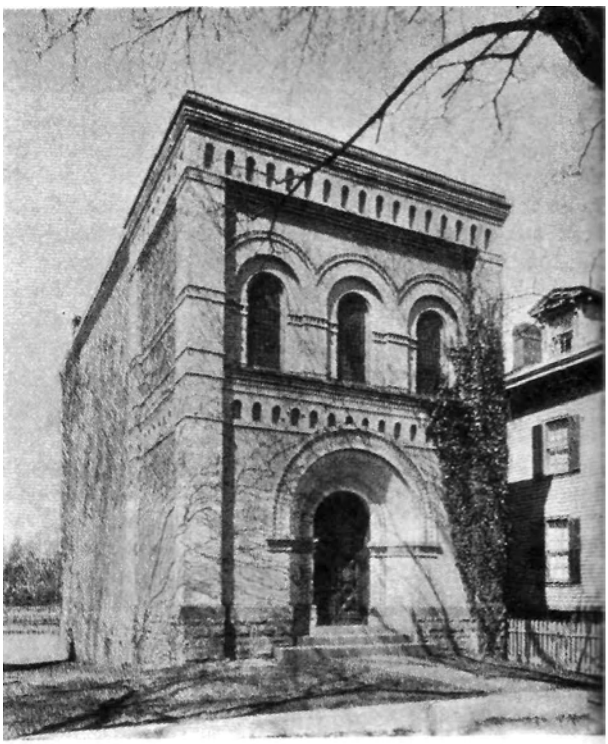
Badge of Psi Epsilon.

"Keys," whose pin is worn on the neck scarf, and is a gold key on a scroll with the letters "C. S. P." and "C. C. I.," is not far behind Bones in prominence. It takes annually the fifteen most convivial and socially prominent men left by Bones. Wolf's Head is much less highly rated, and instances are not wholly unknown wherein students unnoticed by either Bones or Keys have yet refused to join Wolf's Head. Its pin is a golden wolf's head transfixed on a loop, and it has a magnificent chapter house.

The day of election into these societies is perhaps the quaintest feature of Yale life. It is called "tapping time," or "slap day," and falls on the third Thursday in May, at five in the afternoon. Then all the anxious Juniors congregate in front of what is now used as " the fence," and pray that they may be chosen. Soon a solemn Senior issues from one of the society halls and threads the crowd till he finds the man he has been delegated to notify. He deals him a vigorous slap on the back, and says sternly, "Go to your room." Amid wild cheering, the lucky man obeys mutely, followed by his slapper, who says to him, "Will you accept an election to the society known as Skull and Bones?" and goes back in silence to the hall whence he came, while the happy Junior returns to receive the envious congratulations of his friends. About the same time a Keys man. with a Wolf's Head man in his wake, goes through the same evolutions.

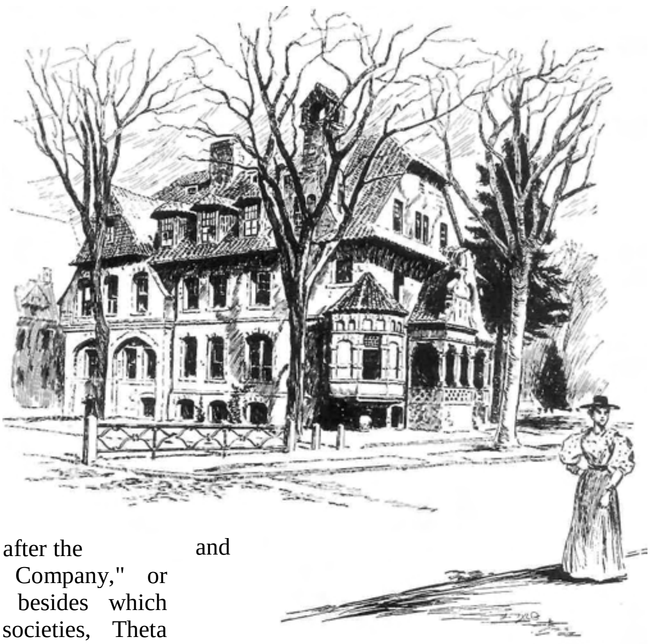
Between "tapping time" and initiation a week elapses During this the slapper and the slapped preserve a sacred mutual silence, except on one occasion, when the new man is notified of the time and place of the awful ordeal, which is consummated in the dark recesses of the mysterious chapter house.

Besides these Academic societies there are many others at Yale. Among those not yet mentioned are Phi Gamma Delta, a very small university chapter of the national fraternity; the University Club,



Berzelius Society House.

which is like any city club; the two Law School societies, Corbey Court and Book and Gavel, and the societies of theSheffield Scientific School. These last are quite as important as the minor Academic societies, and deserve more detailed mention than space permits, notably "Book and Snake," or Sigma Delta Chi, whose club house, "The Cloister," is the handsomest in New Haven; "Berzelius," named after the great chemist; the "Tea Company," or Delta Psi; and Chi Phi, besides which there are three smaller societies, Theta Psi, Theta Delta Chi, and Delta Phi.



The Cloister.

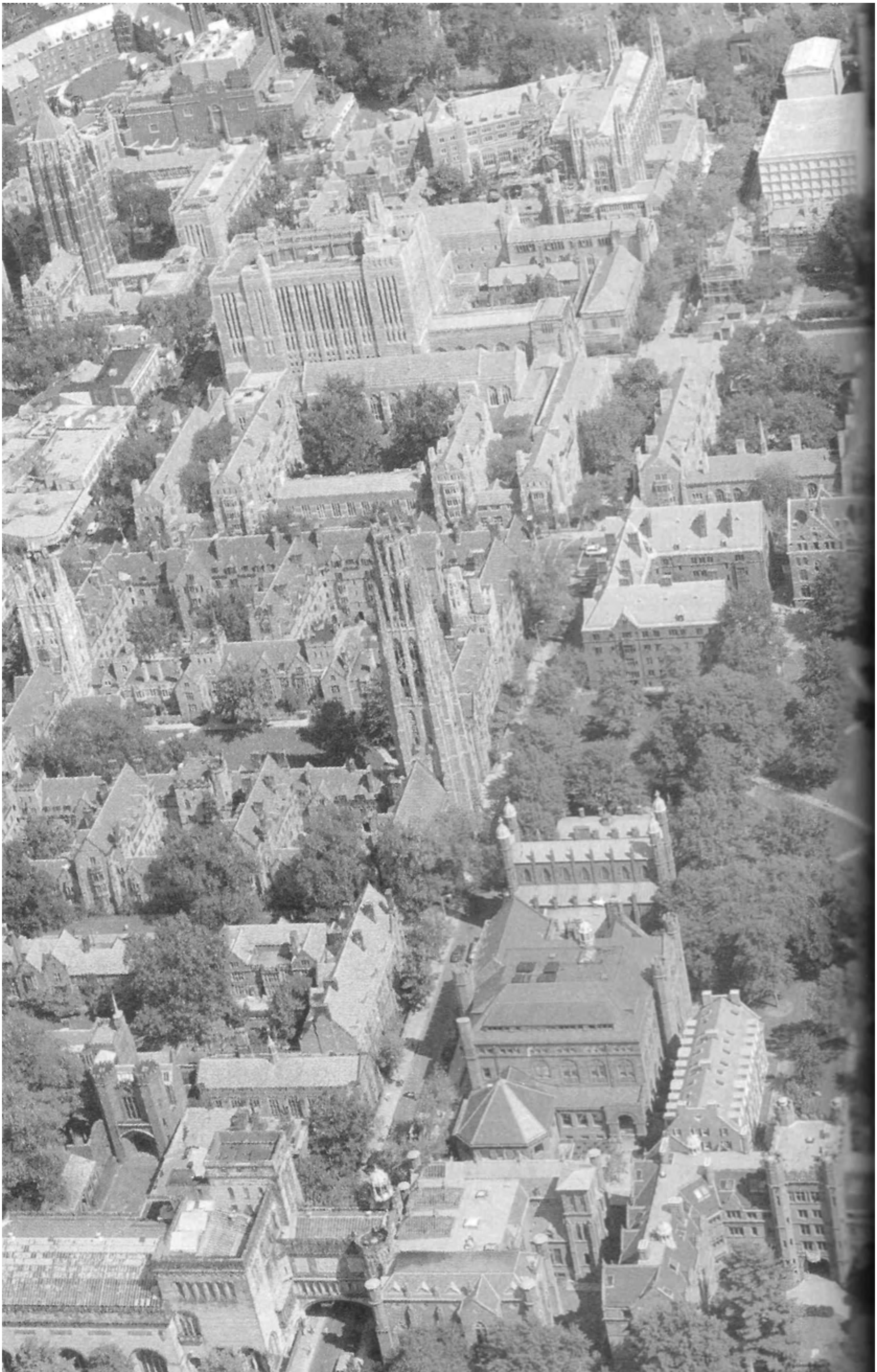
There are many interesting customs in vogue among these secret brotherhoods, such as their habit of returning home from meetings in absolute oblivion of each other and everybody else, walking at opposite sides of the pavement and crossing each other's paths on entering their houses. In the training seasons, too, the athletes are always escorted home from meetings at ten o'clock. The Academic Sophomores meet on Friday nights ; the Juniors, on Tuesdays; the Sheffield men, on Thursdays; and the Seniors, on Thursdays and Saturdays.

Most inexplicable to an outsider is the fact that a Yale man is unwilling to breathe a word about his college society, and seemingly feels insulted at any mention of it. Even the most bewitching young woman is warned not to make any remark about his badge (which, by the way, is supposed never to leave his person, even during a bath, when it is carried in his mouth) for the student will feel compelled to receive your question in absolute silence.

The ethics of the subject cannot be discussed here, but it is noteworthy that the chief arguments against these organizations come from men who have failed of admission to them, and that Yale's greatest alumni have been members of the secret societies.



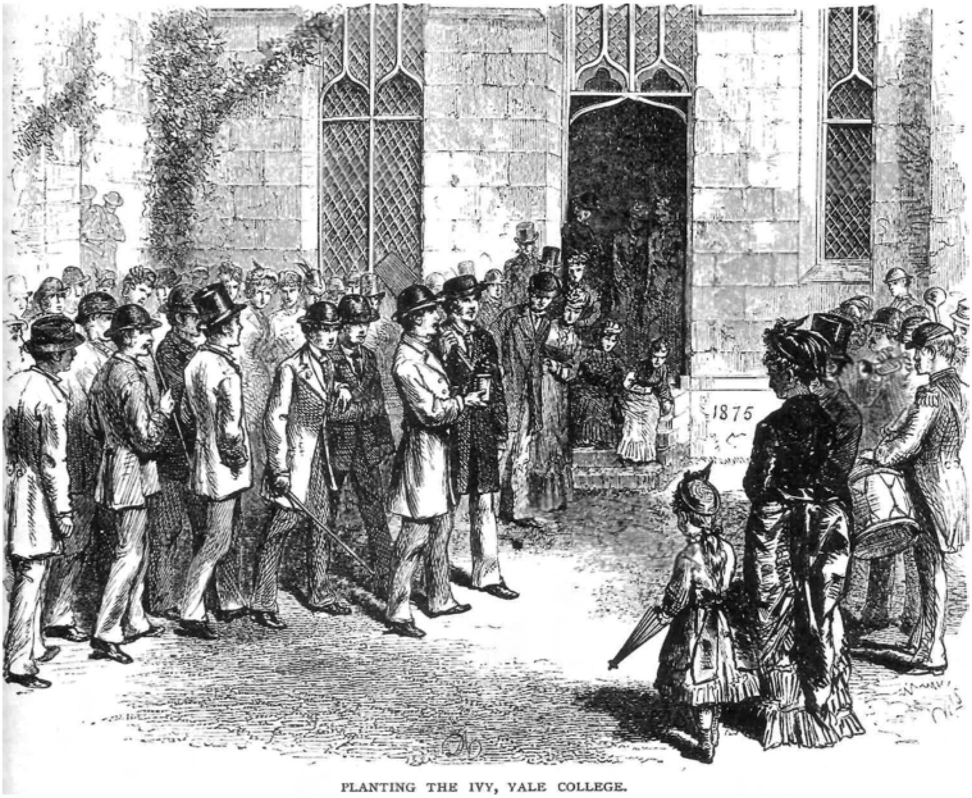
Badges of Berzelius, Book and Snake, and Delta Psi.



““Scribner's Monthly.

Vol. XI. APRIL, 1876. No. 6.

YALE COLLEGE.



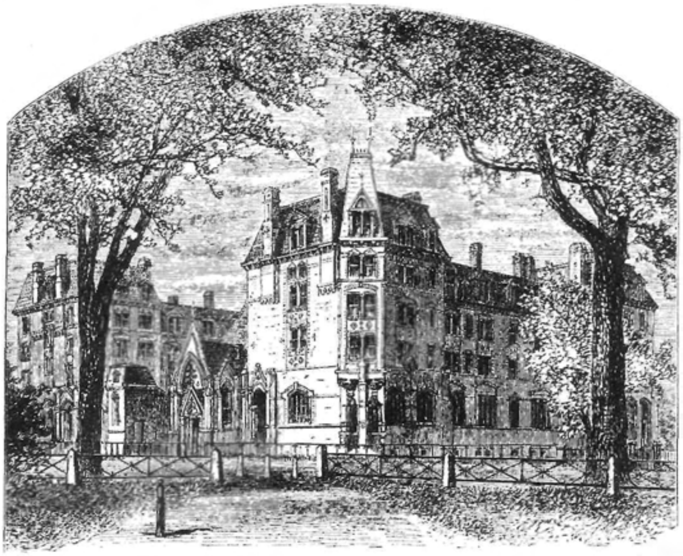
PLANTING THE IVY, YALE COLLEGE.

New Haven, the seat of Yale College, lies in a small alluvial plain on the edge of Long Island Sound. The city is built at the head of a narrow bay four miles long, and its suburbs stretch back across the plain to the foot of a range of trap dikes. The boldest members of this range are the two sheer and naked precipices known as East and West Rock. These are some 370 feet high, and the most striking objects in sight, as one sails up the winding channel of the bay, or enters the city by rail across the trestle-work over the "flat marshes, that look like monster billiard-tables with hay-stacks lying about for balls."

The following somewhat rose-colored picture of the city, is painted by Willis from his recollections of it as an undergraduate in 1827:

"If you were to set a poet to make a town, with carte blanche as to trees, gardens and green blinds, he would probably turn out very much such a place as New Haven. The first thought of the inventor of New Haven was to lay out the streets in parallelograms ; the second was to plant them from suburb to water-side, with the magnificent elms of the country. The result is that, at the end of fifty years, the town is buried in leaves. If it were not for the spires of the churches, a bird flying over on his autumn voyage to the Floridas would never mention

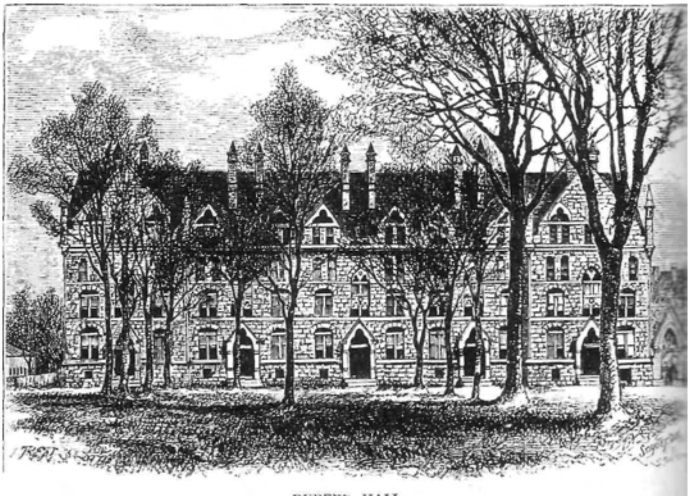
having seen it in his travels. The houses are something between an Italian palace and an English cottage,—built of wood, but, in the dim light of those overshadowing trees, as fair to the eye as marble, with their



THE DIVINITY SCHOOL.

triennial coats of paint; and each stands in the midst of its own encircling grass-plot, half buried in vines and flowers, and facing outward from a cluster of gardens divided by slender palings, and filling up with fruit-trees and summer-houses the square on whose limit it stands. Then, like the vari-colored parallelograms upon a chess-board, green openings are left throughout the town, fringed with triple and interweaving elm rows, the long weeping branches sweeping downward to the grass, and, with their inclosing shadows, keeping moist and cool the road they overhang."

In spite of its growth from a small university town to a city of over 50,000 inhabitants, New Haven keeps its rural look. This is owing partly to its architecture, and partly to its tree-planting traditions, inherited from the times of James Hillhouse, who set out the great elms that now shadow the older streets. The immediate suburbs of New Haven are far from imposing,—acres of flat ground covered with rows of small wooden houses, of a dreary sameness of pattern, with here and there a waste lot intersected by foot-paths, and nibbled by bleating goats that tug restlessly at their tethers. Yet even in these unsightly outskirts, and wherever the hand of the real estate speculator has been at work laying out new " boulevards," there are planted ranks of young elms, the germ of future Temple streets. Hence, from the top of East or West Rock, the straggling town, with its wooden houses and shade trees, looks like an overgrown village. From the upper stories of Divinity Hall in June the tree-tops of the City Green and the College Campus strike on the eye as a sea of billowy verdure, the church steeples and the belfries, clock towers and gables of the University, seeming not so much to emerge therefrom as to be themselves the craft of some fantastic navy sailing on the leaves. The round



DURFEE HALL.

observatory of the Athenaeum serves for the cheese-box turret of a Monitor, and the steep roof-ridge of Durfee, with chimneys for

smoke-pipes, does duty as a hog-backed Merrimac.

The scenery about New Haven is uncommonly rich and varied, tempting constantly to holiday walks and sails, and lending a romantic charm to the memories of undergraduate life. There is an intimate blending of sea-side and inland. Brackish creeks empty and fill their sluices with tide water, at the bases of cliffs miles from the sea. Following a path through woods, you come out suddenly on the borders of a salt marsh, where gulls are flying about. Lying under the trees of an orchard seemingly in the heart of the continent, you lift your eyes and see across the clover-tops the sparkle of the sun on the waters of the Sound, and the sail of a vessel bound for New York. You could put out your hand and touch it, lying under the apple-trees.

New Haven was settled in 1638 by a company of immigrants from London, who bought the land from Momauguin, sachem of the Quinnipiacs, "for 12 coats of English cloth, 12 alchymy spoons, 12 hatchets, 12 hoes, 2 dozen knives, 12 porringers and 4 cases of French knives and scissors." Like other New England towns, it has its romance of colonial history. In 1661 Whalley and Goffe, two of the regicide judges of Charles the First, came to New Haven. Tradition connects their names with a sort of den, formed by two bowlders on the back of West Rock, where they lay hidden while the King's officers were making search for them in the town. The Judges' Cave is the first shrine to which the Freshman makes pilgrimage, and on one of the bowlders some lover of liberty, whose enthusiasm outran his orthography, has cut the inscription: "Oposition to tyrants is obedience to God."*

Long before the close of the 17 th century, the project of a college in the Colony of Connecticut had been mooted. The distance of Harvard College in those days of unrapid transit (mostly on horseback) was felt as a serious evil. But not until the year 1700 did the movement take definite shape. In that year ten of the foremost ministers in the colony, nominated by general consent, assembled at New Haven, and formed themselves into a society for founding and carrying on a collegiate school. Later in the year tradition reports that they again came together at Branford, each bringing a number of books—in all some forty folios—which he laid on the table with the words: " I give these books for founding a college in this colony." So that the library is to be regarded as the corner-stone of the university. In 1701, the society was incorporated by Act of the Colonial Assembly, in consequence of a petition numerously signed, setting forth that "from a sincere regard to, and zeal for, upholding the Protestant religion by a succession of learned and orthodox men, they [the petitioners] had proposed that a collegiate school should be erected in this colony, wherein youth should be instructed in all parts of learning, to qualify them for public employments in church and civil state."



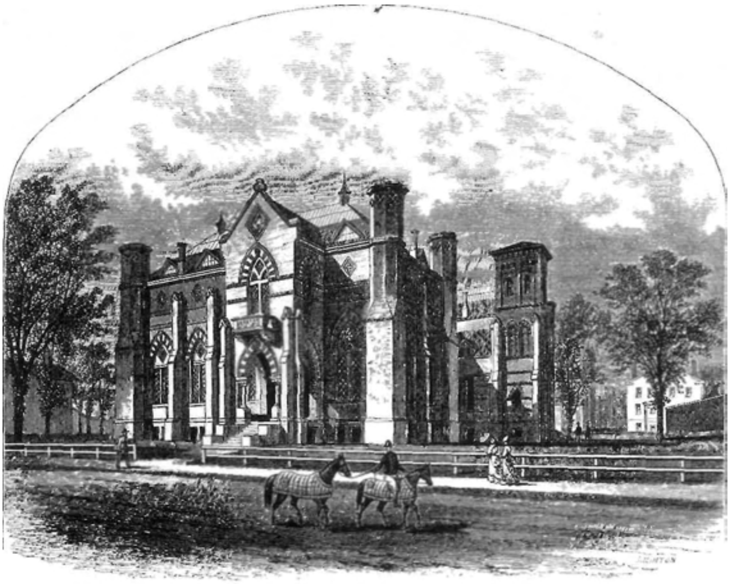
STATUE OF RECTOR PIERSON.

Abraham Pierson, of Killingworth [Kenelworth], was. chosen Rector of the school, and held, office till his death in 1707. In the summer of 1874 a bronze statue of Yale's first president was erected on the college grounds in front of the Art Gallery, and unveiled at Commencement with appropriate ceremonies. The statue was designed by Launt Thompson, and presented to the col-

* For a fuller account of the topography and antiquities of New Haven, see President Dwight's "Statistical Account of New Haven;" and Prof. Dana's " Walks about New Haven," in the " College Couraut" for 1868-9.

lege by Mr. Charles Morgan, of New York. It is not properly a likeness but an ideal—assisted, however, by reference to portraits of members of the Pierson family. The straight figure and aquiline features of the fine old

This first graduate of Yale had already spent three years at Harvard before he removed to Saybrook and became the Senior sophister of the sister university. These modest beginnings recall the affectionate



YALE ART BUILDING.

Puritan scholar have something typical and even prophetic, carrying the mind back to the times when, Teucro duce et auspice Teucro, the students were "weekly caused memoriter to recite the Assembly's Catechism in Latin and Ames's Theological Theses." A memorial of Rector Pierson is also preserved in the library—a square oaken chair of the true antique solidity.

The school was located provisionally at Saybrook. The first student on its rolls was Jacob Hemingway, who took his Bachelor's degree in 1704. He entered college in March, 1702, and continued in his sole person to represent the whole body of undergraduates until September of the same year, when the number was swelled to eight, who were distributed into classes according to their scholarship. At the same time the Faculty received an addition by the appointment of Mr. Daniel Hooker as tutor. The first Commencement was held at Saybrook in 1702, and some honorary degrees conferred ; but there was no proper graduating class until the following year, when the Triennial Catalogue makes the following record:

1703.
*Johannes Hart, A. M..Tutor. *1731.

banter of a Harvard poet about the infant years of his own Alma Mater:

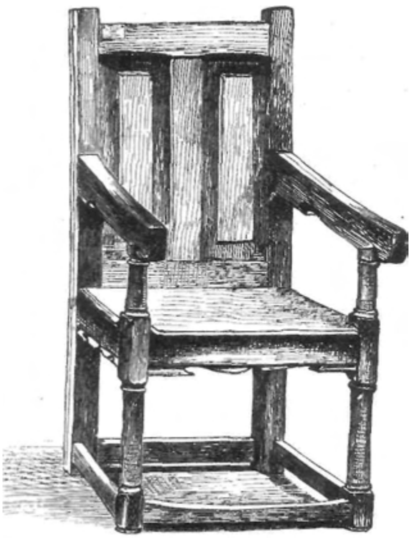
" And who was on the catalogue when college was begun ?
Two nephews of the President and the Professor's son : * * * *
Lord! How the Seniors kicked about the Freshman class of one!"

It should be borne in mind that in 1700 Connecticut had a poor and thinly scattered agricultural population of little more than 15,000.

During its first seventeen years the new college led a wandering life. Rector Pierson lived at Killingworth, and taught his classes there. The Rector who succeeded him resided at Milford with the Seniors, the lower classes being instructed by the tutors at Saybrook. In 1716, many of the students being dissatisfied with Saybrook, seceded to Wethersfield and put themselves under the teaching of Mr. Elisha Williams, who thus became a kind of tutor extraordinary. The few who remained at Saybrook shortly after fled from the small-pox to East Guilford. There was much local jealousy touching the permanent settling of the college; New Haven, Hartford, Saybrook, Wethersfield and Middletown, all making bids for it.

The up-river interest was in the minority in the Corporation, and memorialized the Assembly. But most of the Trustees declaring for New Haven, the college was removed thither in 1717—not, however, without violent opposition. The Governor and Council had to assemble at Saybrook to help the sheriff. The bridges between Saybrook and New Haven were broken down, and the library was a week on the road. The carts in which the latter was carried were attacked, and two hundred and sixty volumes lost or destroyed in the scuffle.

The Commencements at Saybrook had been mostly private. A public Commencement was held at New Haven in 1718. A few recalcitrant members of the graduating class still lingered at Wethersfield, where a rival Commencement took place. But the up-river faction was finally conciliated, and Mr. Elisha Williams was appointed tutor, and afterward, in 1725, Rector. Meanwhile a house for the reception of the college had been built at New Haven, and was dedicated on Commencement Day. It stood in the south-eastern corner of the yard, near" the fence," whose top rail, crowded with singers in the summer evenings, now forms the favorite lounging-place of the undergraduates (see page 768). This building was of wood, three stories high, with steep roof and dor-



RECTOR PIERSON'S CHAIR.

mer windows, and had, besides chambers for the scholars, a hall, library and kitchen. A part of it was standing as late as 1782. About the time of the removal of the college to New Haven, there were received from Gov. Elihu Yale, of London, a large box of books, the portrait (by Sir Godfrey Kneller) and the arms of King George, and € 200 sterling worth of English goods. The portrait is preserved in the Art Gallery, but the coat-of-arms was destroyed at the, time of the Revolution. In acknowledgment of this gift the Trustees " solemnly named" the new building Yale College; "upon which," proceeds the contemporary account," the Hon. Col. Taylor represented Governor Yale in a speech expressing his great satisfaction; which ended, we passed to the church and there the Commencement was carried on. * * * * After which were graduated ten young men, whereupon the Hon. Gov. Saltonstall in a Latin speech congratulated the Trustees in their success and in the comfortable appearance with relation to the school. All which ended, the gentlemen returned to the college hall, where they were entertained with a splendid dinner, and the ladies at the same time were also entertained in the Library. After which they sung the four first verses of the 65th Psalm, and so the day ended."

Elihu Yale, whose name was thus almost accidentally bound up forever with the fortunes of a university whose future greatness he surely could not have foretokened, was born in New Haven in 1648. He was educated in England, and made a fortune in the East Indies, where he was made Governor of Fort St. George, now Madras. "He was a gentleman," says President Clap, "who greatly abounded in good humor and generosity as well as in wealth." A grandson of Gov. Yale presented the college, in 1789, with an original full-length portrait of its distinguished sponsor. From this is taken the picture which figures on the cover of the " Yale Literary Magazine," but the elegiac couplet just beneath it,

"Dum mens grata manet nomen laudesque Yalenses
Cantabunt suboles unanimique patres."

comes from a MS. inscription, under an engraving of Gov. Yale sent to the college at an earlier period. The college is also in possession of a silver snuff-box once belonging to its benefactor, having a tortoise-shell lid with medallion, coat-of-arms, and the motto Praemium virtutis gloria. The following lines, from Yale's epitaph in the church-yard at Wrexham in Wales, are curious, and have been often quoted :

" Born in America, in Europe bred,
In Afric travelled and in Asia wed,
Where long he lived and thrived; at London dead.
Much Good, some Ill he did ; so hope's all's even,
And that his Soul through Mercy's gone to Heaven."

The college had now a local habitation and a name, and was fairly launched upon its course. By the close of the century, the number of students had risen to 130. Instruction continued in the hands of the President and tutors, who varied from one to five. A Professorship of Divinity was founded in 1755; one of Mathematics, Natural Philosophy, and Astronomy, in 1770. An instructor in Hebrew was appointed in 1798. But these chairs were slenderly endowed, and often empty. Sometimes the President performed the duties of a Professor, as well as his own.

A house for the Rector had been built in 1722. A second President's house was built in 1799, and was standing in 1860. In laying the foundations of Farnam Hall, in 1869, a bottle of mulberry wine was dug up from the ruins of the President's cellar, "which, if any have tasted, they have far exceeded the palates of antiquity." In 1752 South Middle College was built, and paid for partly by the proceeds of a lottery, and partly by a grant from the Assembly of the money that came from the sale of a French prize captured by a Connecticut frigate. In acknowledgment of this gift, the building was originally named Connecticut Hall. It was modeled upon "red Massachusetts" at Cambridge, and was described in the dedication ceremonies as cedes hoc nitida et splendida Aula Connecticutensis. It is the oldest college building now remaining. In lower story is partly occupied by the reading-room. In 1763 was completed the Athenaeum, now used for Freshman recitation-rooms, but at first for a chapel, and the upper floor for a library; for the steeple has been substituted a wooden turret, used as an astronomical observatory. In 1793-4 South College was built, the third member of "the



PORTRAIT OF GOVERNOR YALE.

logues. Down to 1767, the names of undergraduates were arranged, not alphabetically, but in order of rank. The first name in the class of 1725 is Gurdon Saltonstall, the



PRESIDENT NOAH PORTER.

Governor's son. Then follow names of sons of clergymen, lawyers, artisans, and tradesmen. "Every student," runs one of the old laws," shall be called by his sir name, except he be the son of a nobleman, or a knight's eldest son." As between the college classes, a strict subordination was enforced, and a somewhat laborious etiquette prevailed between Faculty and students. The Freshmen were almost in the condition of fags in the English public schools. The following statutes from a book of "Freshman Laws" seem incredible, but were gravely meant, and put in practice:

"The Freshmen, as well as other undergraduates, are to be uncovered, and are forbidden to wear their hats (unless in stormy weather) in the front door-yard of the President's or Professor's house, or within ten rods of the person of the President, eight rods of the Professor, and five rods of a tutor."

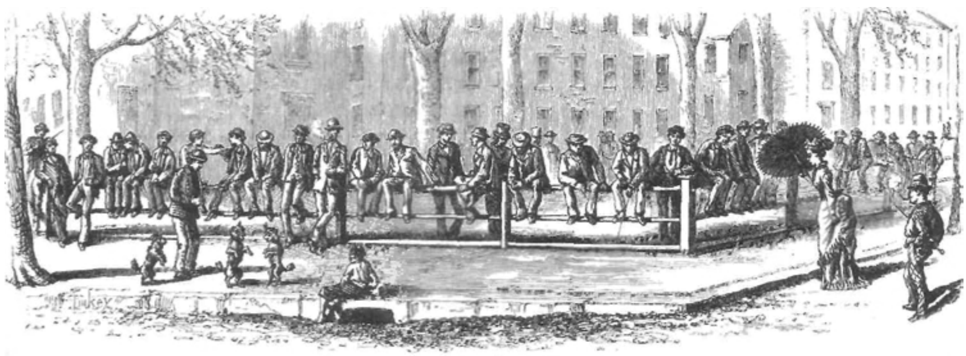
"A Freshman shall not play with any members of an upper class without being asked."

"In case of personal insult, a Junior may call up a Freshman and reprehend him. A Sophomore, in like case, must obtain leave from a Senior, and then he may discipline a Freshman."

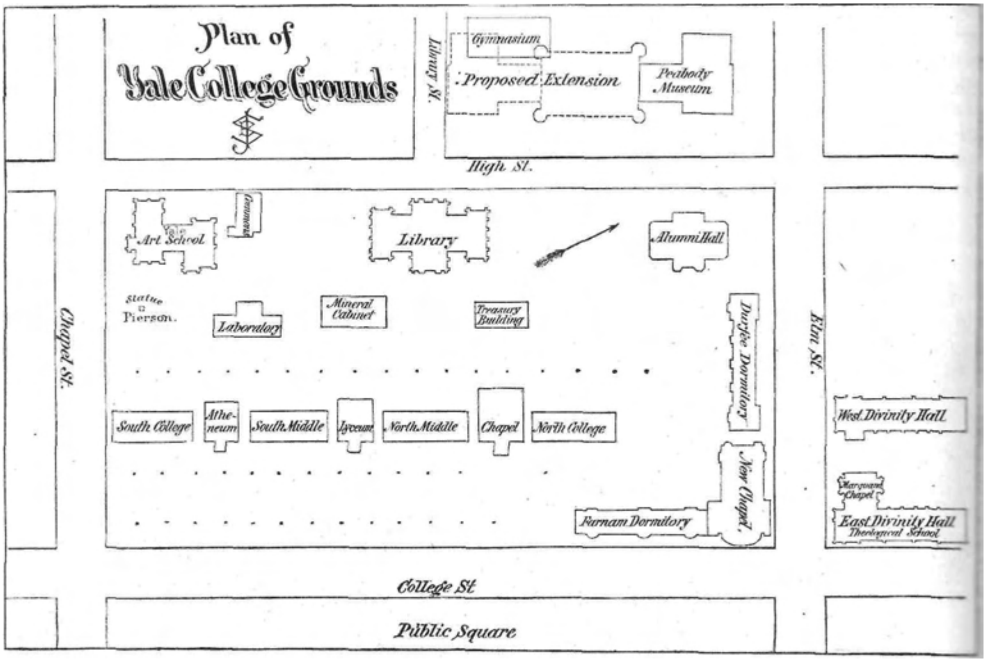
"Freshmen shall not run in college-yard,. or up or down stairs, or call to anyone through a college window."

The Academic costume of cap and gown was worn at Yale in the last century. A curious wood-cut, " View of Yale College," in the library, printed at New Haven in 1786, represents South Middle College and the Athenaeum, with figures of President Stiles, tutors, and scholars, walking in the yard. Some are in cap and gown, others in frock coat, cocked hat, and peruke. Each has a little spot of green to stand on, like the wooden lozenges which support the feet of the dramatis personm in a Noah's Ark. The figure of President Stiles is fearfully and wonderfully made.

The scholars were not allowed to use English in addressing each other, but must talk in Latin. Discipline was maintained chiefly by a system of graded fines. Freshmen and "commencing Sophomores" were sometimes cuffed or boxed on the ear by the President in a solemn and formal manner in chapel; but there seems to have been no



THE COLLEGE FENCE.



instance at Yale of that bodily flogging sometimes administered at Harvard—notably in the case of Thomas Sargent, of painful memory, who was "whipped before the scholars" in 1674. We cannot pause to describe those shadowy functionaries, the Beadle and the Scholar of the House, or do more than allude in passing to the College Butler, a licensed monopolist, who held his buttery in the ground floor front corner room in the south entry of South Middle, wherefrom he dispensed to such as had money or credit "cider, metheglin, strong beer, together with loaf sugar ('saccharum rigidum'), pipes, tobacco, etc," — being, indeed, a sort of ancient and official "Hoad." He it was who furnished the candles which glimmered in the chapel at early prayers in the dark winter mornings. He had charge of the college bell, and a disorderly student was sometimes, with a certain grim humor on the part or the authorities, appointed to the office of " Butler's waiter," and compelled to ring the bell for a week or two.



FRANKLIN'S CLOCK IN THE LIBRARY.

In 1729 arrived in Rhode Island, Dean, afterward Bishop, George Berkeley, with a train of English gentlemen. He came to the province in furtherance of his romantic project of founding a college in Bermuda to christianize the Indians, and be the center of civilization in the New World. The imaginative spirit in which Berkeley undertook this enterprise appears from his fine " Verses on the Prospect of Planting Arts and Learning in America." The closing stanza is familiar, the first line having passed into proverb :

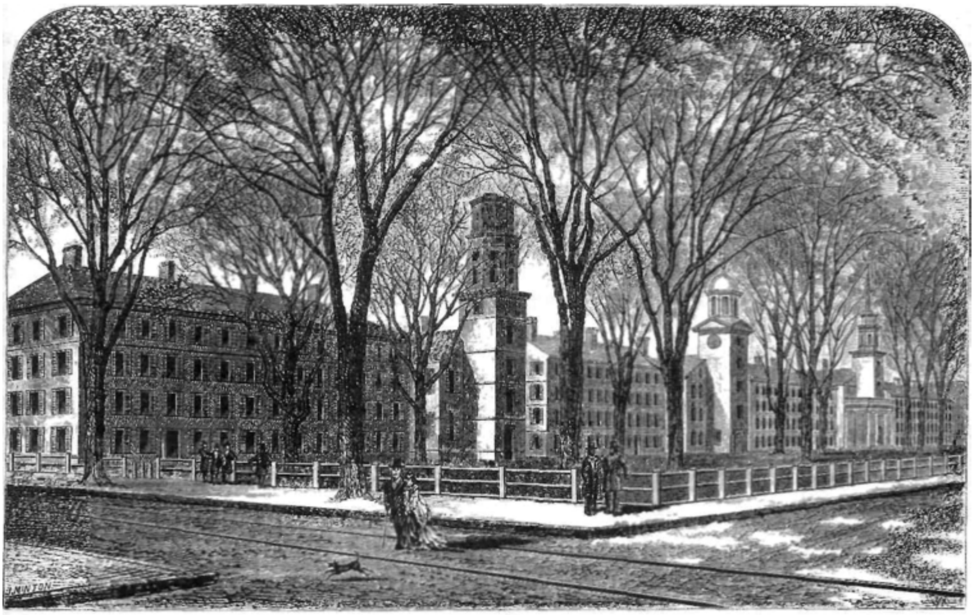
"Westward the course of empire takes its way;
The four first acts already past,
A fifth shall close the drama with the day;
Time's noblest offspring is the last."

In Rhode Island Berkeley sojourned three years, waiting for the £20,000 promised him by the British Ministry toward his Bermuda College. This, of course, never came. Sir Robert Walpole's statesmanship was anything but visionary, and he found more prac-

tical uses for the money at home. In the interior of the island Berkeley built himself a mansion, still standing, which he named Whitehall, in a pleasant valley, neighbor to a hill that commands the land and the ocean with its outlying islands. Here he lived in scholarly retirement, writing his "Minute Philosopher," and the dialogues of "Alciphron."

In 1719 Timothy Cutler had been chosen Rector of Yale College. He is described by President Stiles as "a great Hebrician and Orientalist," "a noble Latin Orator," and a man of "a high, lofty, and despotic mien." "He made a grand, figure as the head of a college. But his head being at length turned with the splendor of Prelacy, and carried away with the fond enterprise of Episcopizing all New England, he, in 1722, turned Churchman, left his Rectorate of Yale College, and was re-ordained by the Bishop of Norwich, and was honored with the Doctorate in Divinity from Oxford and Cambridge. Returning, he settled in Boston, but failed of that influence and eminence which he figured to himself in prospect."

Rector Cutler drew after him a number of ministers, including Mr. Samuel Johnson, a former tutor, and Mr. Daniel Brown, then acting tutor in the college. This apostacy created alarm throughout New England, and the Trustees excused Mr. Cutler from any further service as Rector, and accepted Mr. Brown's resignation of his tutorship. It is honorable to both sides that the new converts never put themselves in hostility to the college. Mr. (afterward Dr.) Johnson in particular continued zealous in its interests. He had accompanied Cutler to England, and received ordination and degrees.* In 1754 he was chosen first President of King's (now Columbia) College. His son was educated at Yale, and became, like his father, President of King's College.



"THE OLD BRICK ROW."

On Berkeley's arrival at Newport, Johnson visited him there, and a friendship was begun which had important results for Yale. The two friends kept up a correspondence, partly on philosophical matters, and Johnson embraced Berkeley's idealism, as did also, though independently, a thinker in some respects greater than Berkeley—Jonathan Edwards, once a pupil of Johnson at Yale. Johnson embodied the Berkeleian system in his "Elementa Philosophica," printed at Philadelphia in 1752 by Benjamin Franklin. Through Johnson, Berkeley became interested in "the college at Newhaven," and in 1732, on his return to England, conveyed to the Trustees his farm of

* He is said to have visited Pope, and brought home cuttings from the Twickenham willow, which he planted at Stratford, Conn.

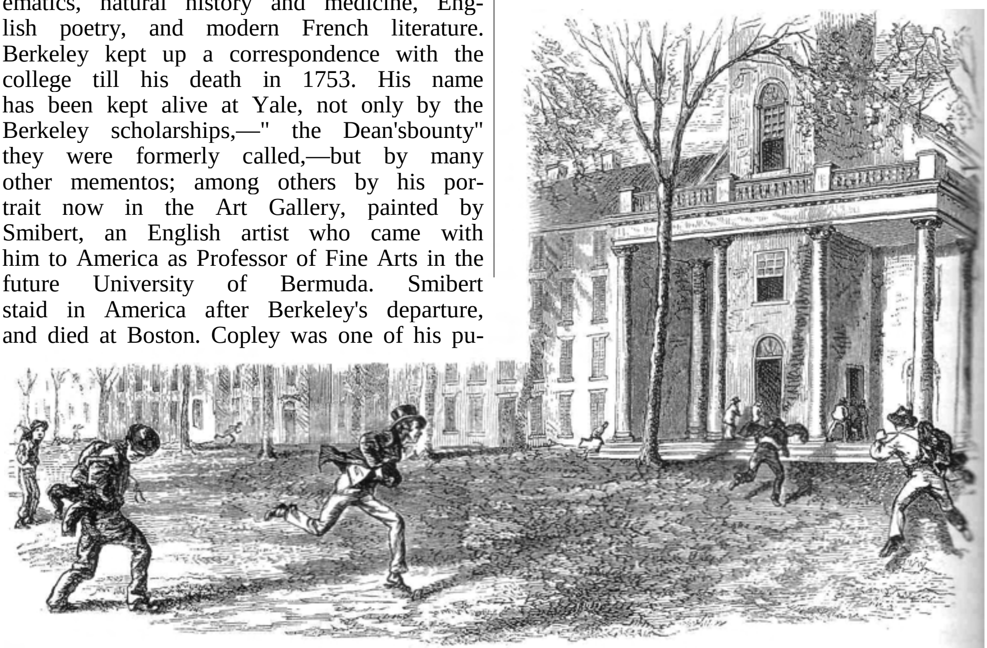
ninety-six acres at Whitehall, the rent to be appropriated to three scholarships, awarded for excellence in Greek and Latin, deter-



FARNAM HALL.

mined by a competitive examination in the presence of the President and the "Senior Episcopal Missionary of the Colony or Province of Connecticut." In 1733 he sent the college nearly 1,000 volumes, valued at € 500—the best collection of books that had ever been brought at one time to America. The collection included the chief works of classical literature and philosophy, the Greek and Latin Fathers, church history, Anglican divinity, modern philosophy, mathematics, natural history and medicine, English poetry, and modern French literature. Berkeley kept up a correspondence with the college till his death in 1753. His name has been kept alive at Yale, not only by the Berkeley scholarships,—" the Dean'sbounty" they were formerly called,—but by many other mementos; among others by his portrait now in the Art Gallery, painted by Smibert, an English artist who came with him to America as Professor of Fine Arts in the future University of Bermuda. Smibert staid in America after Berkeley's departure, and died at Boston. Copley was one of his pupils. The painting shows Berkeley standing by a table, with his hand resting on a volume of Plato, and surrounded by his family. North Middle College, finished in 1803, was at first called Berkeley Hall, but "swell names" have never flourished at Yale. In 1869 a Berkeley Association was started by the Episcopal students in college.

During the long administration of President Clap, from 1739 to 1766, there arose in the colony serious dissatisfaction with the college management. In 1740 the great revival preacher, Whitefield, visited New England, and, raised by his eloquence, a kind of religious inflammation. All sorts of Enthusiasts and Separatists started up to trouble the decorous orthodoxy that had hitherto reigned unbroken in Connecticut. Authority everywhere took ground against the movement, and the heads of the college criticised Whitefield and his followers in a printed document. David Brainerd, then a Junior in college, and afterward a famous missionary among the Indians, a man of fervent and even fanatical piety, said of a



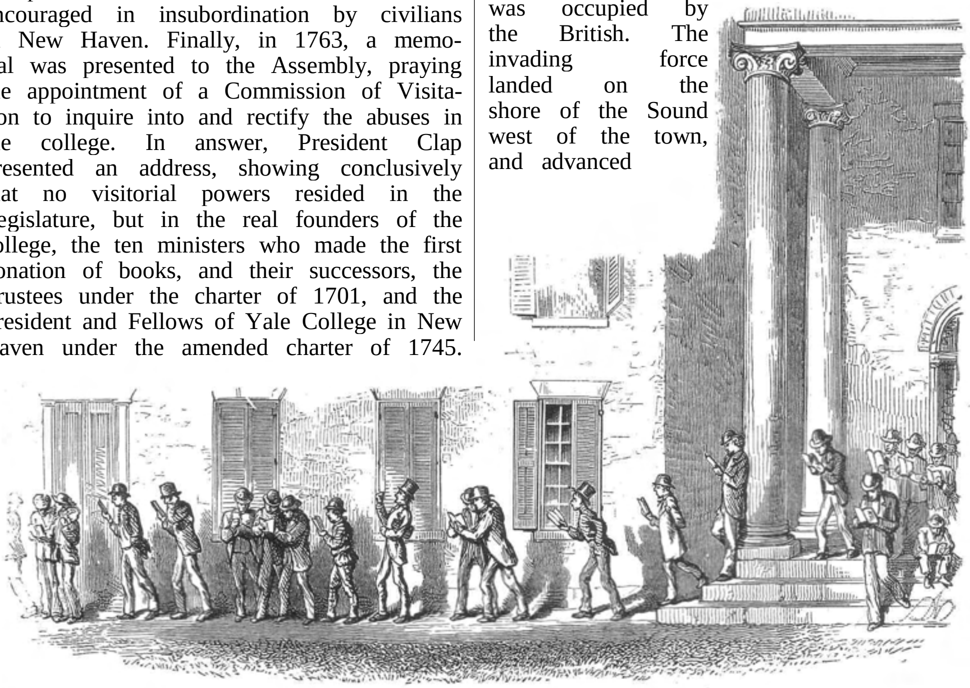
GOING TO PRAYERS IN THE OLDEN TIME.

certain tutor Whittelsey, that "he had no more of the grace of God than that chair." For this offense, and for attending against the rules a Separatist meeting in New Haven, he was expelled from college. This and other harsh measures gave great offense


"HANNIBAL."

to many in the colony. Anonymous pamphlets were directed against the government of the college; its orthodoxy was questioned, and complaints were made of its system of discipline and instruction; the students were encouraged in insubordination by civilians in New Haven. Finally, in 1763, a memorial was presented to the Assembly, praying the appointment of a Commission of Visitation to inquire into and rectify the abuses in the college. In answer, President Clap presented an address, showing conclusively that no visitorial powers resided in the Legislature, but in the real founders of the college, the ten ministers who made the first donation of books, and their successors, the Trustees under the charter of 1701, and the President and Fellows of Yale College in New Haven under the amended charter of 1745. Of the legal ability shown in this argument Chancellor Kent spoke in the highest terms. The Assembly took no action on the memorial. This controversy was of great value to the College, as it established thus early in its history the independence of the corporation from State interference. Nevertheless the college continued for a time widely unpopular, and a fresh grievance was added when, in 1765, two of the tutors who had become infected with Sandemanian principles were forced by the President to resign. President Clap was a man of ability and firmness of will, who devoted himself with untiring-fidelity to the interests of the college. The study of mathematics and natural philosophy especially received impetus from his teaching; but he seems to have been rigid and intolerant.

During the Revolution the college was all but broken up. Owing to the high price of provisions at New Haven, the Freshmen were removed to Farmington, and the Juniors and Sophomores to Glastonbury, the Seniors alone staying at New Haven under Tutor Dwight. No public Commencement was held between 1777 and 1781. It was voted that the college bell might be transported to Glastonbury if the inhabitants would pay the cost of its conveyance. In July, 1779, New Haven was occupied by the British. The invading force landed on the shore of the Sound west of the town, and advanced


COMING FROM PRAYERS.

along the Milford turnpike. Beyond West Riyer they were met by the militia, including anumber of undergraduates. These irregular troops were soon dispersed after a skirmish. Among other citizens, ex-President Daggett had shouldered his fowling-piece and gone forth to battle. He was taken prisoner, put at the head of the British column, and prodded with bayonets into town. Being a portly man, "subject to continual dissolution and thaw," and the day being intensely hot, Dr. Daggett sustained injuries from his forced march at the point of the bayonet, which are believed to have hastened his death. In this skirmish Major Campbell, reputed the handsomest man in the British army, was shot by a farmer from behind a stone wall. He was buried in the fields nearby, and the spot is still marked by a small stone, and sometimes visited by the curious. It is said that the first body of troops reviewed by Washington after his appointment as Commander-in-Chief, was a company of Yale students that he put through the maneuvers on the New Haven green while on his way to take command at Cambridge. By reason of the depreciation and fluctuation of the currency during the Revolution and just after, the salaries of the college officers were paid in terms of beef, pork, wheat, and Indian corn, a medium not so elastic as Continental paper, but seemingly preferred by these ancient bullionists.

One of the most interesting of the early Presidents of the college was Dr. Ezra Stiles, who served from 1777 to 1795. He was the best scholar of his time in New England, and, it is said, would have been elected President of Harvard, but for his being a graduate of another college. He had an eager and credulous curiosity, which led him into a wide range of rather unrelated pursuits. Thus we find him experimenting with an electrical apparatus sent to the college by Dr. Franklin; corresponding with Winthrop about the comet of 1759 ; writing letters of inquiry to the head of the Jesuits' College in Mexico respecting the discoveries of the Catholic Missions in the North-west: to a Greek bishop in Syria asking for an account of the Gentiles beyond the Caspian, "with reference to the remains of the ten tribes;" to Sir William Jones suggesting a search for copies of the Pentateuch among the Black Jews in India. As an antiquarian and Orientalist he was specially famous. He wrote an entertaining but uncritical treatise on King Charles's Judges in America. He pursued his Oriental studies with the help of the learned Rabbi Haigim Isaac Carigal, who had charge of the synagogue at Newport. He was active in the controversy between the colonies and the mother country, and later in projects for the abolition of the slave trade. He pursued a more liberal policy than President Clap, and it was during his administration that the Hon. James Hillhouse, Treasurer of the College,



INTERIOR OF STUDENT'S ROOM.

originated the conciliatory measure by which, in return for a grant from the State, the Governor, Lieutenant-Governor, and six senior Senators were made ex-officio members of the Corporation. South College, built in 1794, was named Union Hall, to commemorate this union of Church and State in the college government.

The successors of Dr. Stiles in the Presidency have been Timothy Dwight (1795-1817); Jeremiah Day (1817-1846)-; Theodore Dwight Woolsey (1846-1871); and Noah Porter, the present head of the College.

At the time of the Revolution there flourished at New Haven a school of Yale poets and patriots, who aided the cause of Independence with sword and pen—Trumbull, Dwight, Humphreys, and Barlow. They wrote immense epics in rhyme; essays in the style of "The Spectator;" satires and epistles after the manner of Pope; epigrams against Tom Paine, Ethan Allen and Thomas Jefferson; and burlesques in imitation of Hudibras. This galaxy of literati, together with three Hartford wits, contributors to "The American Mercury," formed a mutual admiration society and were spoken of as "The Seven Pleiades of Connecticut." Their poems are little read nowadays, but are historically interesting as the beginnings of our national literature, and abundantly filled with the spirit of '76. The two first named, John Trumbull and Timothy Dwight, were chosen tutors in the college in 1771. Their influence served to broaden the course of study by the introduction of the humanities,—Trumbull's first satire, " The Progress of Dullness," being directed in part against the dry and unpractical character of the old logical curriculum. Trumbull's best poem was "M'Fingal," a satirical account of the war, which was very popular in its day. Thirty pirated impressions were hawked about by newsmongers and chapmen, and the classical Marquis de Chastellux wrote from Paris complimenting Trumbull in good critical form for having observed all the rules of burlesque poetry obtaining since the age of Homer. Could Dr. Johnson have said more?

Two or three couplets of " M'Fingal" still circulate as proverbs generally credited to Butler, e. g. :

> "No man e'er felt the halter draw
> With good opinion of the law : "

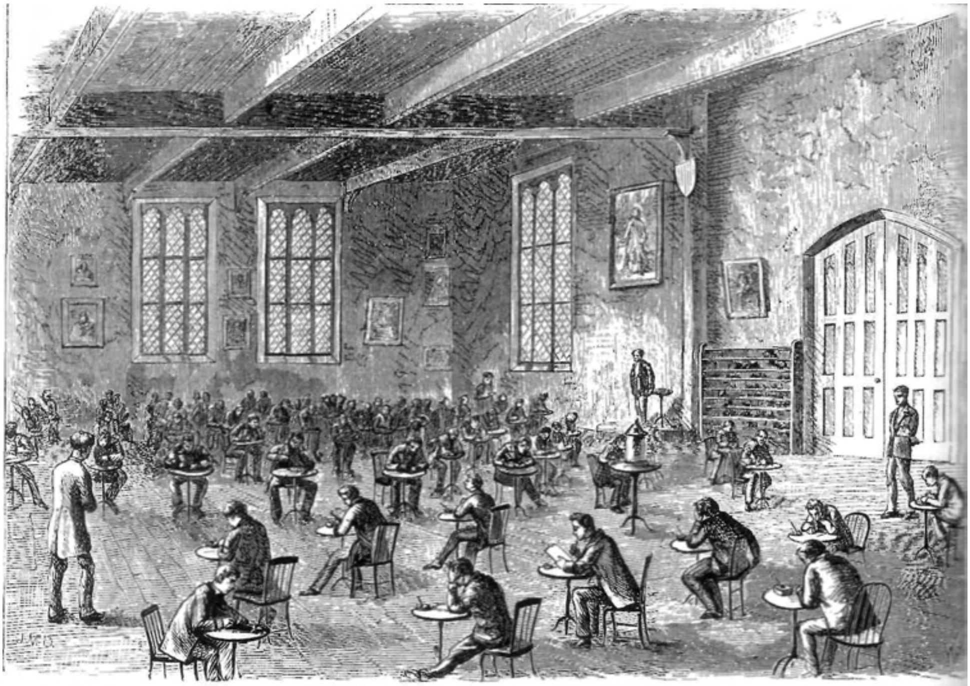
and,

> " But optics sharp it needs, I ween,
> To see what is not to be seen."

Trumbull afterward studied law in John Adams's office at Boston, and finally became Judge of the Superior Court of Connecticut.

Timothy Dwight is less known to posterity as a writer than as the vigorous scholar who, as President of Yale College, impressed his strong personality upon every one of a generation of students. Yet his contributions to literature were by no means valueless. Prominent among these were his "Theology," and his entertaining "Travels in New England and New York," of which latter Southey spoke with respect, though he made game of his poems. Of these, "The Conquest of Canaan," finished at the age of twenty-three, is the longest and most pretentious. This is a scriptural epic in rhymed heroics, which was favorably criticised by Cowper in "The Analytical Review." Trumbull, "in allusion to the number of thunder-storms described in the portion of the poem handed him to read, requested that, when he sent in the remainder, a lightning-rod might be included." Of this epic, with its thunder-storms and Niagaras, its Irads and Selimas, and the rest, one would wish to speak warily as of the manes of the illustrious dead. Peace be with them! Dwight's best poem is, perhaps, his " Greenfield Hill," a rural idyl in the reflective and descriptive vein of Goldsmith. His once famous song, "Columbia," was written during his chaplaincy in the Revolutionary army, and gave voice to the new feeling of American nationality. The psalm included in most collections beginning, "I love Thy kingdom, Lord," was written by Dwight.

The third star in this constellation was Colonel David Humphreys, who was graduated in 1771. He fought in the Revolution, first as staff officer to General Putnam, and afterward as one of Washington's aids, and was presented with a sword by Congress for gallantry at Yorktown. He continued a life-long friend of Washington, and a frequent inmate at Mount Vernon. He was appointed Minister to Spain and introduced into America the breed of Merino sheep. From his woolen factory was furnished the coat in which President Madison took his oath of office. Colonel Humphreys' muse was always patriotic, and, withal, somewhat stately and monotonous. He sung "The Happiness of America," "The Future Glory of the United States," "Love of Country," "The Death of General Washington," and "The Industry of the United States of America." He exchanged poetic epistles with Barlow, "whom Nature formed her



ANNUAL EXAMINATION IN ALUMNI HALL.

loftiest poet," and with Dwight, " that bard sublime, the father of our epic song." His poem, entitled " Address to the Armies of the United States of America," was translated into French by the Marquis de Chastellux. Humphreys was the patron saint and one of the founders of the Brothers in Unity Society, and, as such, his name has come down in college song almost to the present generation of undergraduates. Another Revolutionary hero, Nathan Hale, the martyr spy, was the founder of the rival society, Linonia.

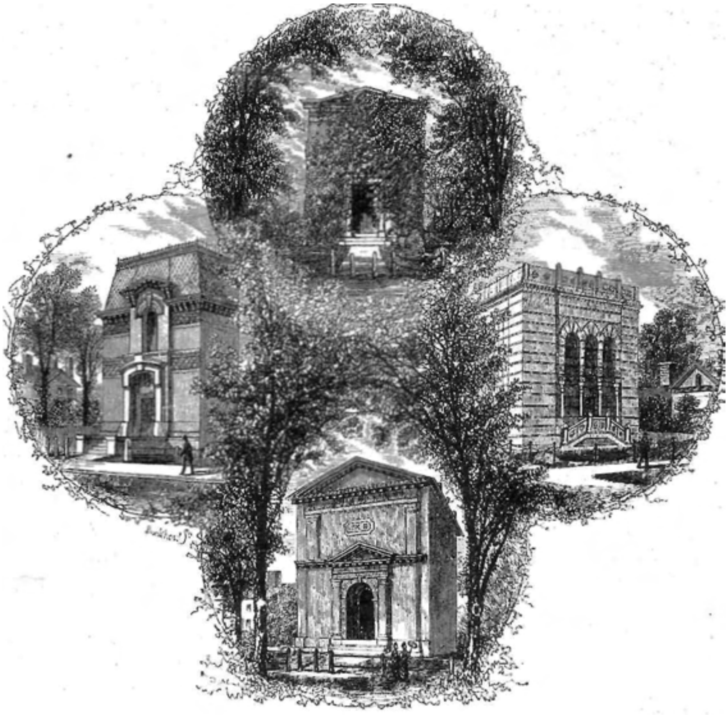
Joel Barlow made his debut as a poet on his Commencement Day, in 1778, by the delivery of a poem on the " Prospect of Peace." Like Dwight, he served as chaplain in the Revolutionary army. When the war was over, this knot of New Haven poets turned their pens into the service of the Federalist party. Barlow settled at Hartford and wrote for the "Mercury," in connection with Trumbull, Humphreys and Dr. Lemuel Hopkins, a series of papers called "The Anarchiad," in favor of a strong Constitution. But later, he strayed to Paris and went after false gods, becoming a convert to French democracy and taking part in the struggles of the Revolution. He attacked Burke in a pamphlet printed at London, and wrote, among other rather wild things, a famous song in praise of the guillotine to the tune of " God Save the King." He made a fortune abroad by speculation, and, returning to America, after an absence of seventeen years, built a residence near Washington, which he called Kalorama. He was sent as Minister to France by Mr. Monroe, and caught his death by exposure while traveling through Poland to get an interview with Napoleon, then engaged on his Russian campaign. Barlow's best poem is "Hasty Pudding," an excellent mock heroic after the manner of Philip's " Cider." The couplet,

> " E'en in thy native regions, how I blush
> To hear the Pennsylvanians call thee mush,"

is familiar, as, indeed, are other passages. But Barlow's chief title to fame in his own time was " The Columbiad," a sort of Fourth of July epic in ten books, splendid with the boom of cannon and the blaze of rockets, with geographical surveys of the continent from "hills of vision," accompanied with remarks by guardian angels and geniuses of America, and ending in a grand holocaust of ancient errors and superstitions. This was published at Philadelphia in 1807, with prints by the best English engravers, and was the costliest book that had ever been issued from an American press. Many

of the pieces of this early school of Connecticut poets were published in a volume of "American Poems," at Litchfield, in 1793. With the opening of the present century, and the accession of President Dwight in 1795, the college entered upon a career of development so rapid and manifold that, from a school attended by scarcely more than one hundred and thirty pupils, and conducted by half a dozen teachers, it has become a university of six separate faculties, numbering some ninety officers of instruction and nearly eleven hundred students, and occupying about thirty buildings, This development has been double: First, an unfolding of the college in itself; Secondly, a throwing off by the parent stem of vigorous shoots in the shape of special' departments and technical schools.

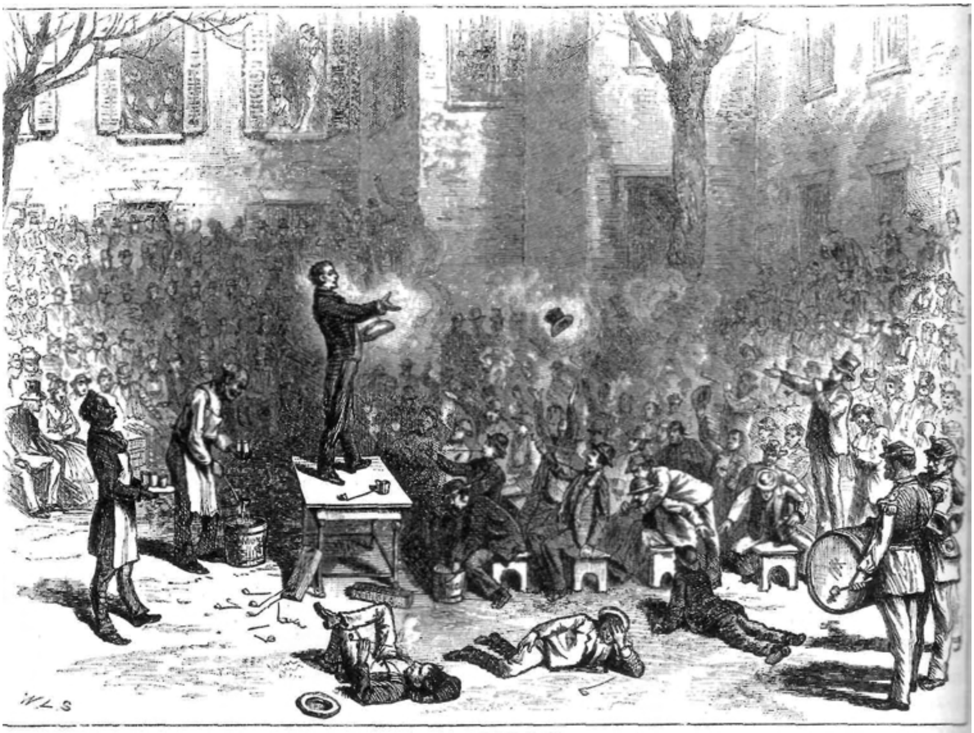
The increase in the number of college buildings may first be mentioned, as the outward and visible sign of this progress. The plan of the first builders was as simple as their architecture—mere accretion in a right line. Hence "the old brick row," comprising, besides the structures already mentioned, the Lyceum, begun in 1800; North College, in 1821; the Old Chapel, in 1824, and Old Divinity, in 1835. The buildings of this row are all standing, except the last, which was pulled down in 1870, to make room for Durfee Hall. The Lyceum is occupied by recitation-rooms. All these buildings are excessively plain, resembling nothing so much as a line of red brick factories. The four dormitories are almost precisely alike. Each is four stories high and has two entries; each entry gives access to sixteen rooms, four on a floor. Though plain in appearance, they furnish comfortable lodgings. Two of them are heated by steam. All have water on the ground floor, and gas in the entries and in some of the rooms.



SOCIETY HALLS.
1. Skull and Bones.
2. Psi Upsilon. 3. Scroll and Keys.
4. Delta Kappa Epsilon.

These buildings are old without being venerable; yet sometimes, in the long summer vacation, when the yard is deserted, their bricky fronts, with the shadows of the elms playing quietly over them, take on a mellow tone of age that appeals to one with a certain pathos for recognition. The rooms in the older colleges have a faint aroma of association. In many, lists of former inmates are kept pasted on the closet doors. The

floors are uneven, the low ceilings are crossed by beams, and there are old-fashioned fire-places in the chimney, now chiefly bricked or boarded up. Altogether, it is not strange that so much sentimental opposition



PRESENTATION DAY.

was developed among the alumni when, a few years since, it was proposed to move the college from its present site.

Behind the main row stand three other buildings irregularly placed—the Laboratory, the Cabinet, and the Trumbull Gallery. The first is a low brick edifice put up in 1782 for a commons hall and kitchen, but used since 1819 for a chemical lecture-room, laboratory, optical chamber, working-rooms, etc. The cabinet is a large building covered with dark stucco, constructed in 1819. The upper story is used as a cabinet of minerals; the lower was occupied by a dining-hall until the abolition of the commons in 1843, but now by recitation-rooms and the " philosophical chamber." The Trumbull Gallery is a mausoleum-like affair erected in 1832, to hold the paintings presented by Colonel John Trumbull, the historical painter of the Revolution. Some of these pieces are widely known by copies, as, " The Signing of the Declaration of Independence" and "The Death of Montgomery." In 1868 the paintings were removed to the new art school, and the upper floor of Trumbull Gallery is now taken up by the rooms of the President and Treasurer of the college. On the lower floor are working-rooms for entomology, popularly known as the " Bug Lab."

The most modern buildings are ranged along the outer edge of the college square, an area of some nine acres, facing inward. They are designed in time to form a continuous quadrangle completely inclosing this square. It is unfortunate that, when this arrangement was decided upon no general plans were drawn for such a quadrangle. As it is, the new colleges, though in some cases individually creditable, are of so many materials and shapes, that it will be impossible to harmonize them architecturally in a close quadrangle. The first of these is the Library, a graceful Gothic building of rough-dressed Portland sandstone, begun in 1842. Here the books, of the college at last found permanent shelter after lodging successively in the upper stories of the Athensum. the Lyceum, and the Chapel. Including the consolidated libraries of the Linonia and Brothers Societies in the north wing, the college owns one hundred and eleven

thousand volumes, exclusive of pamphlets.

Alumni Hall, completed in 1853, is a squat, castellated structure of red sandstone,* built in that order of architecture known to readers of "Cecil Dreeme " and the Bohemian frequenters of "Chrysalis" as mock-Gothic. The lower story is a large hall used for the annual examinations and for Commencement meetings of the Alumni. It is hung around with portraits of college benefactors and distinguished graduates. There are two medieval-looking towers (with wooden battlements), whose corkscrew staircases conduct to the two handsome rooms on the upper floor, once the rival debating halls of Linonia and Brothers, but now used as lecture-rooms.

By far the most elaborate building on the square is the Art School, completed in 1866 at a cost of $200,000 and upward. It is built of smooth-dressed New Jersey sandstone, in the shape of an irregular H, and has one entrance, through a tower, from the college side, and another from Chapel street through a fine porch with columns of polished granite. The floors are of oak and black walnut, and the inside finish of the halls and the handsome staircases of. chestnut. The second story contains two large sky-light galleries, in one of which is hung the Jarves collection of paintings illustrative of the history of Italian art; in the other the Trumbull collection and other paintings belonging to the college, conspicuous among which is Allston's " Jeremiah." The school also owns a well-chosen gallery of casts, collections of photographs, etc. The lower floor is devoted to studios and lecture-rooms.

The only portion of the " quad " at present closely built, is the north-eastern corner, formed by Farnam, Durfee, and the new chapel. Farnam Hall was finished in 1870. It is built of brick and North River blue-stone, is four stories high, and furnishes accommodation for 89 students. The rooms are grouped on three staircases. Durfee Hall, completed in 1871, is perhaps the most thoroughly satisfactory to the eye of all the college buildings. It is of rough-dressed New Jersey sandstone, four stories high, and accommodates 80 lodgers. The rooms are grouped on five staircases. Both of these houses are heated by steam and lighted by gas throughout, and have water on each floor. Filling the space between Farnam and Durfee is the new chapel, not yet finished, a cruciform building with a rounded apse at the eastern, and two towers at the western end of the nave. Like Durfee, it is of New Jersey sandstone with trimmings of the light-colored Ohio sandstone. Two scutcheons on the Elm street side present the coats of arms of the college and the State, with their respective legends : Lux et Veritas and Qui transtulit sustinet. The chapel will seat 1,150 persons.

During the year 1868-9 the question was agitated whether it might' not be well to move the college into the suburbs, on account of the rise in the value of land from the rapid growth of the city. The proposed new site was a lot of fifty acres near the Observatory grounds, on the ridge between East and West Rocks, half a mile north of the Old Hillhouse Place. The plan was given up because of the impossibility of raising money enough to equip the college properly in a fresh location.

President Dwight inaugurated the policy of appointing to permanent professorships young men who had given promise as tutors,



THE LIBRARY.

Among those first appointed were Jeremiah Day, who succeeded Dr. Dwight in the Presidency; Benjamin Silliman and James L. Kingsley. A Professorship of Jurisprudence, the nucleus of a Law- School, was founded in 1801; of Chemistry, Mineralogy, and Geol-

* Much, in fact, like the cock's comb in Chaucer:
" ----- redder than the fine coral,
Embattailed, as it were, a castle wal."

ogyin 18025 of Ancient Languages (Hebrew, Greek and Latin) in 1805; of Rhetoric in 1817. These chairs were afterward divided, and others were added. At present the teaching force of the college proper (or Academical Department) consists of the President, who is also the Professor of Moral Philosophy and Metaphysics; eleven Professors in the following subjects: Natural Philosophy and Astronomy; Geology and Mineralogy; Latin; Mathematics; Greek; Rhetoric and English Literature; History; Chemistry and Molecular Physics; Modern Languages; German; and Political and Social Science; three Assistant Professors in Mathematics, Latin and English Literature; and ten tutors.

The first of the professional schools in operation was the Medical School, organized in 1810 with assistance from the State Medical Society, which retains the right of choosing members of the Examining Board. The Faculty consists of seven Professors and a Demonstrator in Anatomy. Since 1859 the School has occupied a three-story brick building on York street, about two blocks from the college, containing a lecture-room, anatomical museum, dissecting-rooms, offices, etc. The catalogue of 1875 shows an attendance of forty-two students.

In 1822 was organized the Divinity School, developing in time into one of the most prosperous branches of the University. Instruction is in the hands of six permanent Professors and several special lecturers. A popular feature was added to the course of study in 1871, by the endowment of the Lyman Beecher Lectureship on Preaching, which has been held in successive years by several eminent divines. Four volumes of " Yale Lectures on Preaching" have already issued from the press. The Divinity School is quartered in two fine buildings opposite the new Chapel and Durfee. These are known as East and West Divinity Halls, and were built respectively in 1870 and 1874. They are alike in appearance—each five stories high, and furnish jointly rooms for 150 students. The lower floors are devoted to class-rooms, libraries, etc. Connected with East Divinity is the small but elegant Marquand Chapel. The number of students at the Seminary averages 100.

The Law School was started in 1824 and celebrated its semi-centennial in 1874; on which occasion Chief-Justice Waite presided. The Hon. Edwards Pierrepont delivered an oration and ex-President Woolsey an historical address. The School has been



NEW CHAPEL.

located since 1873 in fine apartments, occupying the entire third floor of the new County Court House. Its efficiency has increased greatly within the last decade, and the number of its students has been nearly trebled. On the last catalogue it stood 76 The Law School has four regular Professors and seven or eight lecturers.

The most powerful department of the University, after the Academical, is the Sheffield Scientific School. Although this has had many benefactors, and although its success has been due in great part to the exceptional energy and ability of its Professors, yet it may be regarded as mainly the work of one man, Mr. Joseph E. Sheffield, of New Haven. The School was started in 1847, but led a struggling existence till 1860, when Mr. Sheffield bought the old Medical College at the head of College street and presented it to the School, after having refitted it, added two wings, and furnished it with apparatus. The building has received later additions; among others, two towers for astronomical purposes. It is known as Sheffield Hall. In 1873 the same generous patron built and equipped a second building, North Sheffield Hall, immediately north of the former. Both are occupied by laboratories, collections, drawing rooms, observatories, libraries, lecture and recitation rooms and private rooms for instructors. The large lecture-room in North Sheffield seats 400. The known gifts

of Mr. Sheffield to the School exceed $350,000. But he has given much privately in addition.

The Faculty of the Sheffield School consists of sixteen Professors, and thirteen instructors and assistants. The number of undergraduates is 224. Although the sphere of the school is primarily the Natural Sciences, it is by no means a mere professional or technical institute. It secures a liberal basis for special study by enforcing, in Freshman year, a uniform course in mathematics, physics, chemistry, botany, physical geography, drawing, German, English and political economy. Some knowledge of Latin is required for admission. There is a " select course," embracing linguistics, political economy, and history (under such instructors as Professor William D. Whitney and General Francis A. Walker), English language and literature, German, French, and English composition.


SHEFFIELD HALL.

The Scientific School has, indeed, attained the dimensions of a second and independent college. It is not unlikely that, by an enlargement of its courses in language and history (adding perhaps the classical tongues), the Academic Department in the meanwhile gradually opening elective courses, and increasing its facilities for the teaching of natural science, the two may eventually come to cover nearly the same ground.

Here may be mentioned the Peabody Museum of Natural History, endowed by Mr. George Peabody of London. This is a handsome four-story building, just erected on the corner of Elm and High streets, opposite Alumni Hall. It contains lecture-rooms, offices, and cabinets for collections in zoology, geology, mineralogy, paleontology, and American archeology. The valuable collections of fossils made by the annual Yale expedition in the West, under the leadership of Professor Marsh, will be arranged in the Peabody Museum. The building already erected is merely one wing of a larger structure which will stretch from Elm to Library street.

The Yale School of the Fine Arts is, like the Sheffield School, mainly the creation of a single donor, Mr. Augustus R. Street of New Haven, whose gifts to the college have amounted to $280,000, besides other sums of unknown amount not yet realized. The Faculty of the Art School consists of a Professor of Painting and Design, a Professor of the History of Art, a Professor of Drawing, and an Instructor in Perspective. It has some thirty students, and is open to both sexes.

These various departments, though subject to the general government of the University,—the original President and Fellows of Yale College,—are practically independent in their internal discipline and instruction. The President of the college is ex officio President of each of the schools; but these have also a Dean, Chairman, or Director, who acts as executive officer of his department. All degrees, of course, are conferred by the University.

One of the most encouraging symptoms in the recent development of the University is the establishment of a school for the advanced instruction of graduate students. At present, however, this department has no separate organization, instruction being given by members of the undergraduate Faculties in the intervals of their other work. The annual report by the Executive Committee of the Society of the Alumni, published June 1 st, 1875, says : "There have been this year 29 [graduate] students distributed in the following classes : In History, 13 ; in Political Science, 12; in Sanskrit and General Philology, 9; in English Literature, 7; in Greek, 7 ; in Hebrew, 6; in Mental Science, 4 ; in Mathematics, 3 ; in Latin, 2; in Gothic, 2." This is exclusive of graduate students in Natural Sciences. The number of graduate students now in attendance is 63. The recent establishment of several Fellowships will do much toward stimulating graduate study; but what is most needed is provision

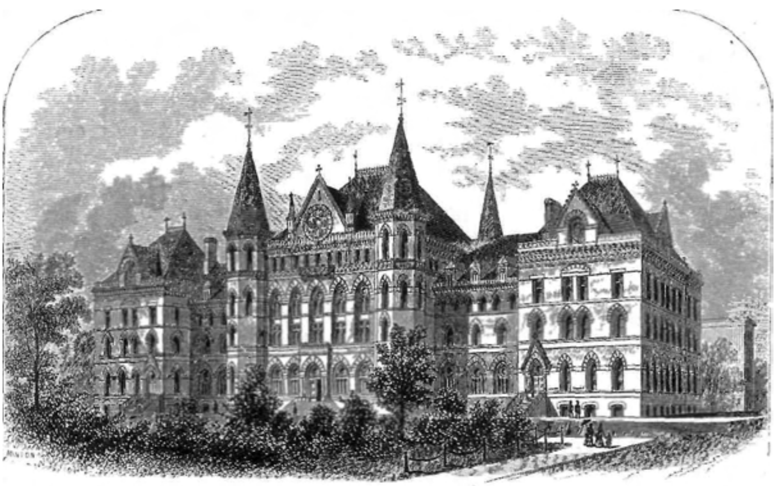
for a number of University Professors who should devote themselves exclusively to this department.

It would be impossible, within the limits of this paper, to mention the many gifts, in the shape of endowment funds, building funds, scholarships, books, money, specimens, apparatus, etc., which have contributed to the rapid advance thus briefly sketched in all departments of the University. It is worthy of note, however, that Yale owes nearly all that she has to private liberality. The gifts of the commonwealth of Connecticut to the college do not, all told, exceed $100,000, if we except $135,000, the product of the sale of public lands granted to the Scientific School as the State Agricultural Institute. The productive property of the University, according to the last Treasury Exhibit, is about $1,500,000. If to this be added the value of the land, and the amount that has been spent in buildings, books, apparatus, etc., the University may be roughly estimated as worth five millions of dollars—a small sum, if we consider what has been accomplished with it. Indeed, the history of the college is a story of unceasing struggle with poverty—almost with bankruptcy; of self-denying effort by its officers, and of a system of small and patient economies on the part of its financial managers.

In addition to the buildings belonging to the separate departments ought perhaps to be mentioned the College Gymnasium, and the building opposite it on Library street, occupied by graduate students ; the elegant new boat-house of the Yale Navy on Mill River, and the halls of the Skull and Bones, Scroll and Keys, Psi Upsilon, and Delta Kappa Epsilon Societies.

About the years 1869-71 appeared what was called "the Young Yale movement," a rather vaguely expressed, though clearly shown, dissatisfaction among the younger graduates with the conservatism of the college government. It was urged especially that there was too large a clerical element in the corporation, and that the Alumni ought to be represented. There was much controversy in and out of print, Dr. Leonard Bacon taking a prominent part on the Old Yale, and Mr. William Walter Phelps on the Young Yale, side. Finally, in accordance with a suggestion of President Woolsey, made as long ago as 1866, the State agreed to relinquish a share of its claim in the government of the college, and the six Senior Senators were replaced by an equal number of gentlemen, chosen, one each year, by the Alumni at their annual Commencement meetings.

In speaking of the influence which the college has had on the intellectual development of the country, a comparison naturally suggests itself between Yale and the sister University at Cambridge. Founded under similar auspices, and for similar purposes, the two have diverged widely in spirit-Cambridge, with the neighboring city of Boston, is widely known, not only as the seat of Harvard College, but as trie center of most that is best in American letters. New Haven can claim no such distinction. There has always been in the training given at Yale a certain severity. Discipline, rather than culture; power, rather than grace;

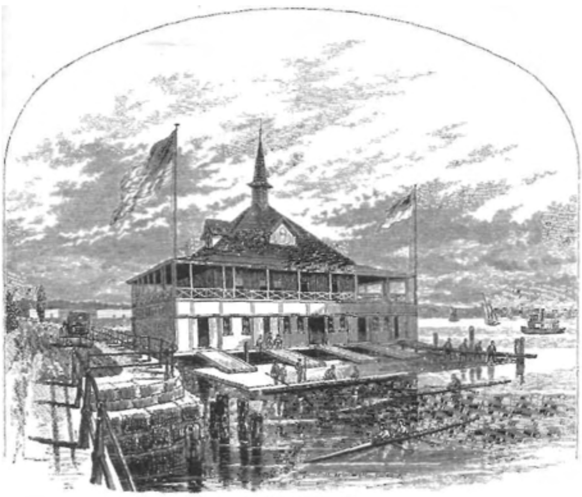


PEABODY MUSEUM.

"light," rather than "sweetness," have been, if not the aim, at least the result of her teachings. Her scholars have been noted for solid and exact learning. Perhaps Dwight and Woolsey on one hand, and Everett and Felton on the other, may be taken as the types of Yale and Harvard Presidents. This difference is owing to many causes. Harvard has had at her back a wealthy and cultivated city. Boston is the chief point on this continent where the electric sparks have been taken off from the current of European thought. Yale, on the contrary, has been situated in a small provincial city, with little " atmosphere " beyond what the college itself might impart to the town. Again, the Unitarian and Transcendental movements in Massachusetts during the first half of this century, whatever may have been their effect on the Church, undoubtedly stimulated literary activity.

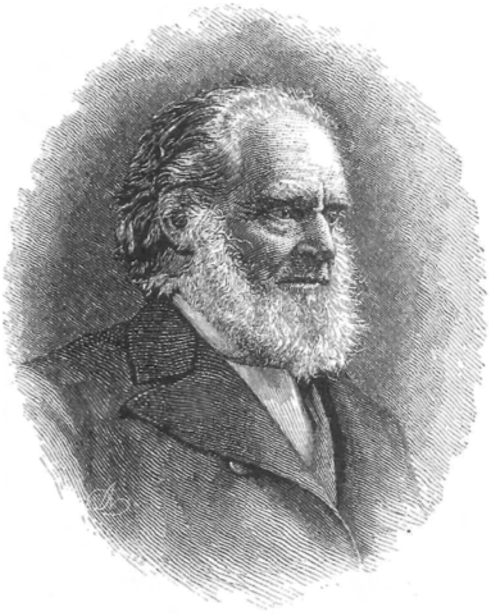
The course of study at the two colleges has been much the same. The influences of place have differed toto ccelo. The imagination and the feelings may be chastened, but they cannot be aroused to original expression by any scheme of study. For this there are needed fresh and joyous impressions from without; a free and even audacious reception and interchange of new thought. These impulses the Massachusetts come-outers of the last generation had and profited by.

Before the recent changes in its system,



YALE BOAT-HOUSE.

Harvard was not very a large and by no means popular college, drawing most of its students from Eastern Massachusetts. Its Alumni settled largely in Boston and neighboring towns, and there thus grew up about the college a cultivated body of its sons, and in time a school of brilliant writers. Of



DR. LEONARD BACON.

Yale the reverse has been true. She has not kept her boys at home. They came from all over the country, largely from New York and the West, and, before the war, from the South; and after graduation they cut loose from Alma Mater's apron-strings, and were scattered more widely than before. This, which has been her weakness, has also been her strength. She has a national character, and her investments are everywhere.

Yale is by no means deficient in distinguished names in poetry, fiction, criticism, and belles-lettres generally, numbering among her graduates of the present century Pierpont, Hillhouse, Cooper,* Percival, Willis, Bushnell, Judd (the author of " Margaret,") Bristed, Mitchell, Winthrop, and Stedman, with others perhaps less famous. But the centrifugal force of New Haven is shown in the fact that of this list only three have resided there since their graduation, and these at different times. There has never been a Yale school of writers since the

* Non-graduate, class of 1806.

Revolutionary "Pleiades" already mentioned.

But in the literature of knowledge, in the professions, in business, politics, and practical life, Yale's record is a proud one. In scholarship she is represented by such names as Webster, Worcester, Woolsey, Hadley, and Whitney; in science and invention by Silliman, Morse, Whitney, Dana, and Chauvenet; in divinity by Edwards, Hopkins, Emmons, Dwight, and Taylor; in the State and at the bar by Grimke, Mason, Kent, Calhoun, and Evarts. The class of 1837, e, g., contributed to the number of prominent



PROFESSOR WEIR'S STUDIO.

men now in public life the names of the Hon. William M. Evarts, Chief-Justice Waite, Attorney-General Pierrepont, and Governor Samuel J. Tilden.

Yale is, in a sense, the daughter of Harvard. Her founders and early Presidents and tutors were of necessity Harvard men. But the younger college has since been far more active in founding and officering new colleges—a work, be it said, which has proved to be of doubtful expediency. Yale may be called, like Virginia, "Mother of Presidents." She has furnished Presidents to Princeton, Columbia, Dartmouth, Williams, Amherst, Trinity, Middlebury, Cornell, and the Universities of Vermont, California, Pennsylvania, and many others. Presidents Barnard of Columbia, White of Cornell, Gilman of the Hopkins University, and Chancellor Stille of the University of Pennsylvania, are all graduates of Yale.

This paper has been devoted mainly to tracing the growth of the university as an educational institution. The social life of the undergraduates falls outside our compass. Much might be written of the old college commons, of the Bully Club, of Town and Gown fights, of Linonia and Brothers and the Secret Societies; of the ceremonies of Presentation Day; of college journalism and college boating, and of many other customs, traditions, and institutions, but they would easily fill a chapter by themselves. Probably at no other American college has so distinctive a social life been developed as at Yale, nor one so rich in humorous and picturesque traits. This life has never been adequately described. In conclusion, it

may be permissible to quote what has elsewhere been written as expressing the hopes and aspirations of "Young Yale."

"We care not that the dawn should throw
Its flush upon our portico;
But rather that our natal star,
Bright Hesper in the twilight far,
Should beckon toward the distant West
Which he—our Berkeley—loved the best;

Whereto, his prophet line did say,
'The course of empire takes its way.'
And in the groves of that young land
A mighty school his wisdom planned,
To teach new knowledge to new men—
Strange sciences undreamed of then.
She comes—had come, unknown, before—
Though not on 'vext Bermoothes' shore;
Yet will she not her prophet fail—
The Old—the New—the same dear Yale."



The article below is from Life magazine April 3,1913. This is not the same Life magazine begun in 1936 by Bonesman Henry Luce. This was one of the last articles about The Order of Skull and Bones in the popular press until Esquire magazine in September 1977



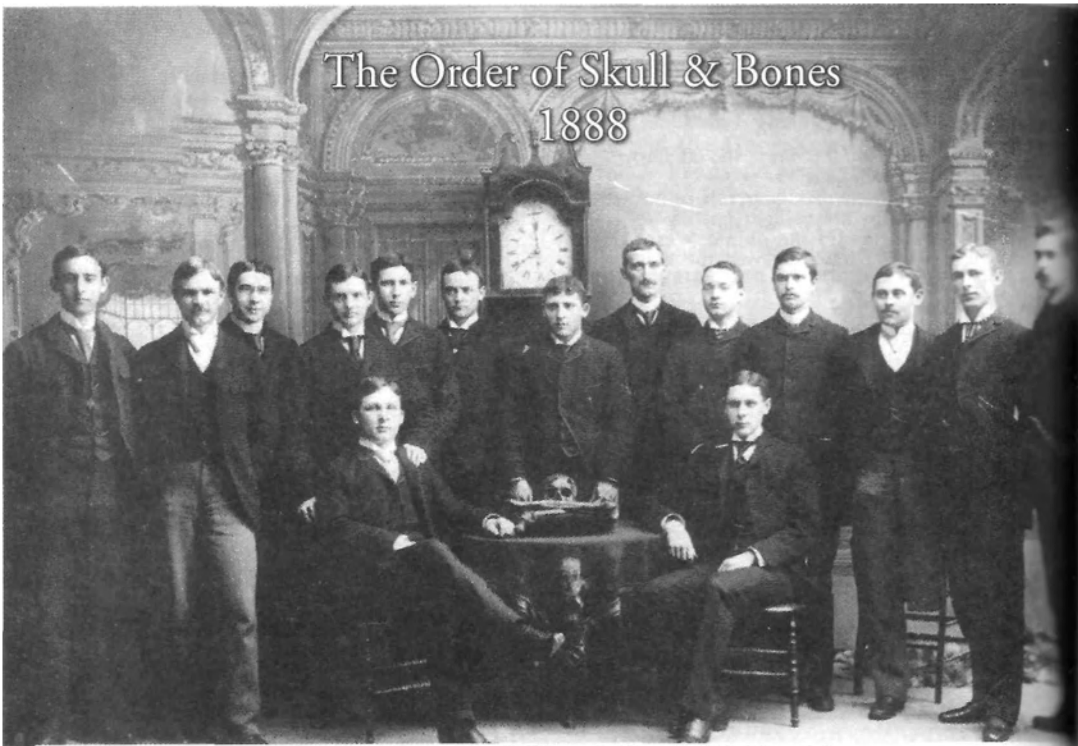
WE read in the papers that the Yale worm has turned and that the whole Sophomore class, except two members, have signed in a book not to be joined to Bones, Keys or Wolf's Head Senior Societies, as now constituted. The said organizations, it seems, must abolish secrecy and get in a new line of consecration, if they are to enjoy the patronage of the present Yale Sophomore class.

This is great news.

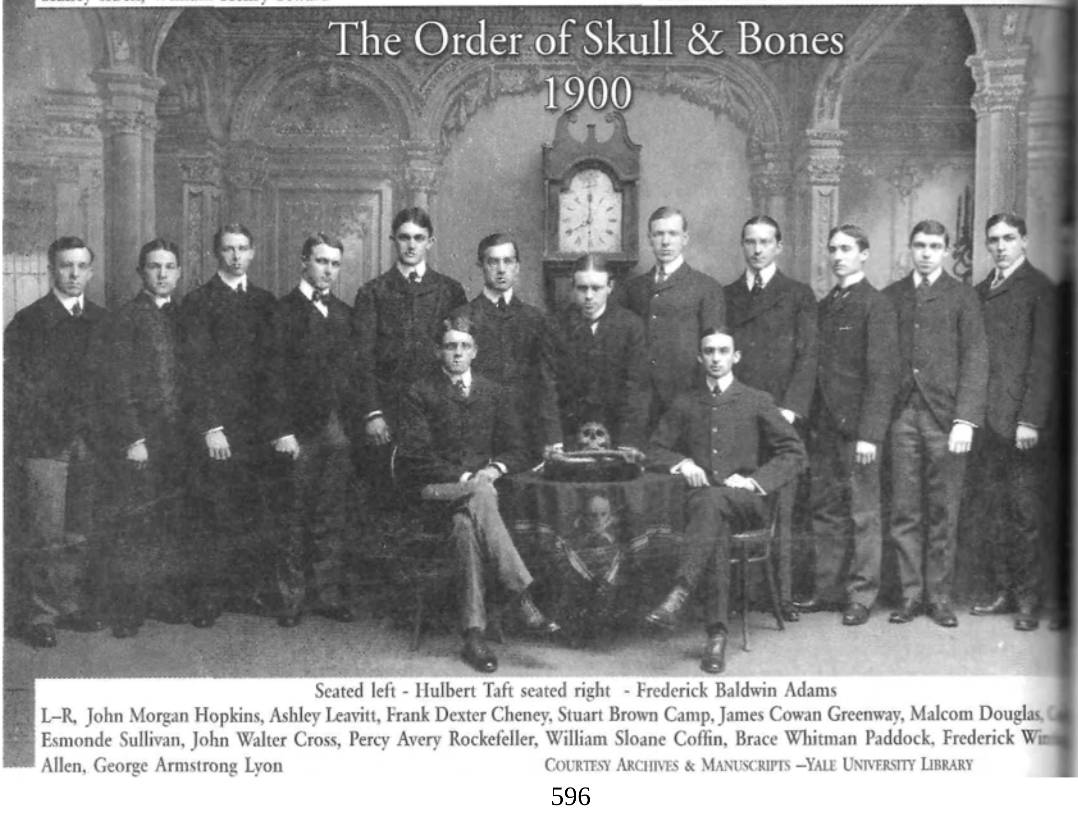
Who would be free themselves must strike the blow. It is much more suitable for the Yale Sophomores to take this action than for the faculty to do it, because a Sophomore can better afford to be foolish than a faculty can. If the little Senior clubs at Yale can be broken of some of their silly habits, and shorn of their importance as arbiters of destinies and standardizes of character, there is no reason why they should not renew their health and live joyful and comparatively innocuous ever after. For the last forty years they have been getting more and more out of date and more and more in the way of what Dr. Wilson calls "The New Freedom." Surely they must know it, and must be glad of a chance to rid themselves of buncombe and an uncomfortable prestige, and shake down into something that will fit into a modern institution.

It is not the fault of their members that they have come to be a nuisance. That is something that has just happened to them, in the march of events, just as it has happened to the trusts and the tariff and the House of Lords. And the revolt of the Sophomores is just a piece of the contemporary unheaval. Everybody who cares for Yale is to be congratulated on it, especially Bones, Keys and Wolf's Head. Now these amusing organizations will be able to modernize themselves, let daylight into their club houses, exhibit the enlightened selfishness which is all that is possible to any club that lives by exclusion and permit themselves some of the exercises of hospitality, from which hitherto they have been debarred.

It is obvious that something happen between their sophomore and senior years, because the societies lived on with their secrets intact - and still act secretly today.



Seated left - George Metcalf Gill seated right - Fredrick Palmer Solley
L–R, Henry Lewis Stimson, David Whipple Morison, James Howard McMillan, Samuel Johnson Walker, Morrison R. Waite, Ri[illegible]
Melancthon Hurd, Amos Alonzo Stagg, Frederic Augustus Stevenson, Harlan Ward Cooley, Irving Fisher, Samuel Sidney Roby, O[illegible]
Sidney Isbell, William Henry Seward COURTESY ARCHIVES & MANUSCRIPTS –YALE UNIVERSITY LI[illegible]



Seated left - Hulbert Taft seated right - Frederick Baldwin Adams
L–R, John Morgan Hopkins, Ashley Leavitt, Frank Dexter Cheney, Stuart Brown Camp, James Cowan Greenway, Malcom Douglas, [illegible]
Esmonde Sullivan, John Walter Cross, Percy Avery Rockefeller, William Sloane Coffin, Brace Whitman Paddock, Frederick Wi[illegible]
Allen, George Armstrong Lyon COURTESY ARCHIVES & MANUSCRIPTS –YALE UNIVERSITY LIBRARY

THE SKELETON CREW

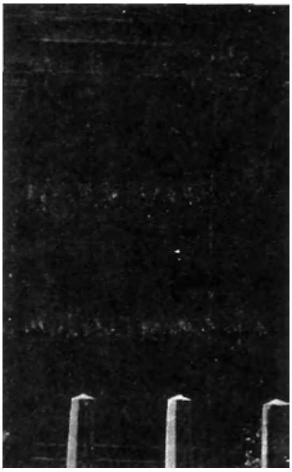
KRIS MILLEGAN
JULY 2003

THIS LIST IS COMPILED from material from the Order of Skull and Bones membership books at Sterling Library, Yale University and other public records. The latest books available are the 1971 Living Members and the 1973 Deceased Members books. The last year the members were published in the Yale Banner is 1969. The Rumpus, a Yale tabloid, has printed some of the members of recent years. There is no known verifiable public source for the members from 1972 on and no available private source for 1986 on. Please inform the publisher of any errors or omissions. Skull & Bones is an increasingly secret secret society and our materials are not, therefore, current. The Period and Decade numbers are peculiar to the Order of Skull & Bones.

[The list is not included in this version, search the web, one such list can be found at http://www.biblebelievers.org.au/bones.htm]

CLIPPINGS FROM THE YALE BANNER

These are the pages from the Yale Banner announcing some of the Bush family members initiation into the Order. The listing of new members by the Banner ceased in 1970 and continues halted through today, making a verified list of members for the years after difficult. The essay in the arty 1968 annual is by Lanny Davis, a presidential counselor for Bill Clinton and a member of one of Yale's seven secret societies



sential part of their program to accumulate as much information about the above-grounds—especially Bones—from year to year and thus keep adding to their file on tomb eccentricities.

But some observers see the future of societies in the flexibility of the underground system—and especially in the unique feature of Vaya or Vale. "At Yale," Professor Argyris says, "the co-ed societies undergo the same kind of experience as the all-male ones. In my view, in fact, they have a richer experience." He concludes that if Yale should go co-ed (in about five years' time) "this will not undermine the society impulse per se; but there will certainly be greater pressure to co-educate the societies."

A senior, currently in one of the co-ed societies, says; "It's fantastic, and you can forget about all that 'missed prestige'. You can get as intimate as you want with your roommates, if that's what you want to do. But talking in that way to girls, and getting to understand what a different thing the female mind is, that's another dimension altogether. Amazing, that's all."

Mr. Reisman would probably agree, He sees "a certain insulation at Yale from which some students are now breaking out." And, he adds, "I hope the place goes co-ed." And so, the argument rages on. There are those who insist that there will always be a need for an all-male society, no matter how much Yale changes. The possibility that Skull and Bones will co-educate in the near future is not strong. And others feel that the question of co-education apart, societies will have to change and adjust to the new spirit of skepticism.

[cropped from page bottom — ed.]

They probably will. Skull and Bones had to change a century of tradition in its tapping procedure merely to remain alive: pre-tapping has now become so prevalent that it is apparent that few "big men" would now turn down a sure election for the possibility of a Bones tap. And the periodic breakins to the society tombs,

Class of 1968

SKULL AND BONES

Roy Leslie Austin
Robert Richards Birge
Christopher Walworth Brown
George Walker Bush
Kenneth Saul Cohen
Rex W. F. Cowdry
Donald Etra
G. Gregory Gallico III
Robert Karl Guthrie
Britton Ward Kolar
Robert Davis Mc Callum, Jr.
Muhammad Ahmad Saleh
Thomas Carlton Schmidt
Donald Arthur Schollander
Brinkley Stimpson Thorne

Class of 1948



SKULL AND BONES

Edward Williamson Andrews, Jr.
Thomas William Ludlow Ashley
Lucius Horatio Biglow, Jr.
George Herbert Walker Bush
John Erwin Caulkins
William Judkins Clark
William James Connelly, Jr.
George Cook, III
Endicott Peabody Davison
David Charles Grimes
Richard Elwood Jenkins
Donald Loyal Leavenworth
Richard Gerstle Mack
Thomas Wilder Moseley
Frank O'Brien, Jr.
Philip O'Brien, Jr.
George Harold Pfau, Jr.
Samuel Sloane Walker, Jr.
Howard Sayre Weaver
Valleau Wilkie, Jr.

FOUNDED
1832

SENIOR SOCIETY

Class of 1917



Alfred Raymond Bellinger
Prescott Sheldon Bush
Henry Sage Fenimore Cooper
Oliver Baty Cunningham
Samuel Sloan Duryee
Edward Roland Noel Harriman
Henry Porter Isham
William Ellery Sedgwick James
Harry William LeGore
Henry Neil Mallon
Albert William Olsen
John Williams Overton
Prank Parsons Shepard, Jr.
Kenneth Farrand Simpson
Knight Woolley



The Supreme Court's reputation was still suffering from its Dred Scott and Legal Tende decisions. This is the Court which nullified the 14th and 15th Amendments as guarante of Negro rights, and commenced the historic process of construing the 14th Amendment' "due process" clause as a bulwark of property. Members: (*seated l. to r.*) Joseph P. Brad ley, Samuel F. Miller, Chief Justice Morrison R. Waite, Stephen J. Field, Stanley Mat thews; (*standing*) William B. Woods, Horace Gray, John M. Harlan, Samuel Blatchford

In 1886, ... in the case of Santa Clara County v. Southern Pacific Railroad Company, the U.S. Supreme Court decided that a private corporation is a person and entitled to the legal rights and protections the Constitutions affords to any person. Because the Constitution makes no mention of corporations, it is a fairly clear case of the Court's taking it upon itself to rewrite the Constitution.

Far more remarkable, however, is that the doctrine of corporate personhood, which subsequently became a cornerstone of corporate law, was introduced into this 1886 decision without argument. According to the official case record, Supreme Court Justice Morrison Remick Waite simply pronounced before the beginning of argument in the case of Santa Clara County v. Southern Pacific Railroad Company that

The court does not wish to hear argument on the question whether the provision in the Fourteenth Amendment to the Constitution, which forbids a State to deny to any person within its jurisdiction the equal protection of the laws, applies to these corporations. We are all of opinion that it does.

The court reporter duly entered into the summary record of the Court's findings that

The defendant Corporations are persons within the intent of the clause in section 1 of the Fourteen Amendment to the Constitution of the United States, which forbids a State to deny to any person within its jurisdiction the equal protection of the laws.

Thus it was that a two-sentence assertion by a single judge elevated corporations to the status of persons under the law, prepared the way for the rise of global corporate rule, and thereby changed the course of history. The doctrine of corporate personhood creates an interesting legal contradiction. The corporation is owned by its shareholders and is therefore their property. If it is also a legal person, then it is a person owned by others and thus exists in a condition of slavery — a status explicitly forbidden by the Thirteenth Amendment to the Constitution. So is a corporation a person illegally held in servitude by its shareholders? Or is it a person who enjoys the rights of personhood that take precedence over the presumed ownership rights of its shareholders? So far as I have been able to determine, this contradiction has not been directly addressed by the courts.

from David Korten's The Post-Corporate World, Life After Capitalism

RTA, INCORPORATED — A SHELL GAME

KRIS MILLEGAN
JULY 2003

THE OFFICIAL NAME FOR THE ORDER OF SKULL AND BONES is RTA, Incorporated. Daniel Coit Gilman first incorporated the Order of Skull & Bones in 1856 as the Russell Trust Association. The name was changed in 1961 to RTA, Incorporated.

In November 1983, the members voted positively on an Amending Certificate. The proper papers filed in December increased the Board of Directors from six to eight members and the President was given more power among other changes.

Whether this was at all in reaction to the release of Antony Sutton's first Bones book, An Introduction to the Order, isn't known. What is interesting about the amendment is the voting record presented. There is just enough information in the documents, to satisfy the legal filing requirements, so one cannot form a definite answer about all of the group's rules for voting, but it is interesting that they list as the members required for a quorum as 35 with 71 as being "Present in Person or by Proxy and Entitled to vote." The vote required for adoption is stated as 48. Now that is the two-thirds of 71 and in RTA's Certificate of Incorporation of 1961, Section 8 (Which the amendment of 1983 negates.) it states that "any action may be taken only after a two-thirds majority vote of members." But then it goes on to state, "the vote of majority of the voting power of members shall be sufficient." This suggests that if 15 get together eight votes wins.

So who all gets to vote and what does it take to get things done in the organization? In section 5 it states, "[t]he Corporation shall have members, all of whom shall be of the same class. All persons who are at the date hereof members of the Russell Trust Association,... are members of the corporation, together with such

other persons who are undergraduate students at Yale University ... who may be elected from time to time pursuant to the by-laws of the corporation." We do not have copies of RTA's bylaws so we do not know what the "voting power of the members" consists of and if every Bones member has voting rights in RTA, Incorporated or what. But we do find it interesting that an amendment change was accomplished by such small numbers. In the September 27, 1991, the New Haven Register reported "almost 700 of the club's approximately 800 surviving members narrowly voted to admit women."

SHOULD THE ORDER GET A TAX FREE RIDE ON IT'S FOUR MILLION DOLLAR NEST EGG?

The question of their taxes is also very interesting. RTA Incorporated tax statements are available online at www.guidestar.com and at www.fleshing outskullandbones.com. If you can look at these documents, you will find the tax forms are quite revealing in what they say ... and do not say. There are required questions, boxes, and blanks to fill in that they just leave empty or write "not available." The most blatant and egregious action is their use of the tax code to pay no taxes on their investment earnings of sometimes over $400,000 a year and that members may take their donations to Bones as deductions off of their personal income tax liabilities.

RTA Incorporated is a non-profit 501 (c) 3 corporation carrying no tax burden at all. It does all this, while spending yearly $4,000 to $10,000 renting their private island for "[r]ental of facility for educational programs," and $50,000 a year on "[conferences, conventions, and meetings," plus another $40,000 to $60,0000 thousand a year in occupancy expenses. The Order has also been spending money on renovations and improvements, spending over a quarter of a million dollars in 1998. Did they add a women's locker room to their fabled underground swimming pool or just fancy his and hers coffins?

The only charitable donations listed in their tax returns are in the years 1999 and 2000. A $5,000 donation, each of those years, to the Yale Scholarship Fund. The majority of all the expenses are declared in the tax form's Program Service Expenses column as "Educational Programs." There is no discussion of achievements, no number of clients served, nothing but "Educational Programs." The Order of Skull & Bones skirts both the spirit and letter of the law by claiming to be an educational support organization for Yale University. The 1961 Certificate of Incorporation papers give some window dressing and cover some of the 501 (c)3 requirements but the activities of the group do not seem to be educational but fraternal and secret. How can a secret society, which does not divulge its purpose, history or even its members be considered an educational non-profit? Maybe in some of their lawyers' minds the organization is defined as an alumni organization. Or are they claiming to come under Yale Universities educational tax umbrella because RTA, Incorporated gives whatever assets it has left after obligations if

Bones dies to Yale? At best, what they are doing a tap-dance on the Federal Tax code for the society's gain and shame.

Historically and in reality, The Order of Skull & Bones is a fraternal organization and should be classified as a 501(c)(10) organization that should be paying taxes on the Order's investment income. A lawyer friend of mine said that the Order's tax returns, are, "skillfully prepared to look bland and innocuous." At least from the listing of the officers and board members gathered from the RTA Incorporated state corporate and federal tax records have allowed us to at least fill in some of the holes in the membership lists "dark" years.

There is no publicly held listing of members after 1972 or privately proffered list of "Bonespersons" after 1985. The only semi-confirmed list after that is 2000 when the Rumpus, at Yale printed a copy of the Bones printed materials. We cannot be 100% about it though, considering Rumpus's known irrelevancies and tabloid predilections. We have not seen the original and with today's digital methods, one could be created. Over fifteen years of members are unknown. What influence these 20 and 30-somethings are having on our current affairs is unknown.

Another item gleaned from the tax returns is that contributions have gone from $164,000 in 1997 to $45,00 in 2000. Whether the drop in contributions is part of some dissension or just a reflection of the economy is as are many things about the Order ... in the dark. I have been told in several phone conversation with one researcher, who claims to have interviewed the 1967 member of Bones who tapped George W Bush, of a war going on in Bones. That there are some members who are switching monetary support from Bush to Kerry. Whether this is for real or just Hegelian flim-flam of a Bonesian Wizard of Oz ploy is yet to be seen.

THE RUSSEL TRUST ASSOCIATION'S AND RTA INCORPORATED'S OFFICIAL FILINGS submitted to the Connecticut's Secretary of State's office are presented in following pages. These are all the papers registered with the Secretary of State's office for the two groups except for the yearly reports which, — as shown in the state records — begin after the name change in 1961. The earliest and latest available of these yearly reports are presented.

STATE OF CONNECTICUT

OFFICE OF THE SECRETARY OF THE STATE

I, the Connecticut Secretary of the State, and keeper of the seal thereof, and of the original record of the Acts and Resolutions of the General Assembly of said State, DO HEREBY CERTIFY, that I have compared the annexed copy of AN ACT INCORPORATING THE RUSSELL TRUST ASSOCIATION with the original record of the same now remaining in this office, and have found said copy to be a correct and complete transcript thereof.

And I further Certify, that said original is a public record of the State of Connecticut, now remaining in this office.

rib

In Testimony Whereof, I have hereunto set my hand and affixed the Great Seal of the State of Connecticut, at Hartford, this 28th day of March, 2001

Secretary of the State

INCORPORATING RUSSELL TRUST ASSOCIATION.

PASSED 1856

Resolved by this Assembly, That William H. Russell, John S. Beach, Henry B. Harrison, Daniel C. Gilman, Henry T. Blake and Henry D. White, and all such other persons as may he from time to time associated with them, together with their successors, be and they are hereby constituted a body corporate and politic, by the name of "The Russell Trust Association, for the purpose of the intellectual and moral improvement of its members, and for that only, and by that name shall have perpetual succession and be capable in law to purchase and receive, hold and convey real and personal estate, to an amount not exceeding at any time fifteen thousand dollars, to sue and be sued, defend and be defended in all courts and places whatsoever, may have a common seal and may change and alter the same at pleasure; may elect such officers as they may find necessary and convenient, and make and carry into effect such by-laws as they may deem necessary, not repugnant to the laws of this state and of the United States.

SEC. 2. The first meeting of the corporation hereby established shall be holden at New Haven, on the last "Wednesday in July, A. D. 1856.

SEC. S. This act may be altered, amended or repealed at the pleasure of the general assembly.

[Vol. IV, 201.]

Amending the Charter of the Russell Trust Association.

Resolved by this Assembly, That the charter of the Russell Trust Association be, and the same is hereby, so amended that said association shall be capable in law to purchase and receive, hold and convey real and personal estate to an amount not exceeding, at any one time, three hundred and fifty thousand dollars: *provided, always,* that this resolution may be altered, amended or repealed, at the pleasure of the general assembly.

Approved, July 5th, 1870.

[House Joint Resolution No. 65.]

[121.]

CONFIRMING THE BY-LAWS OF THE RUSSELL TRUST ASSOCIATION.

Resolved by this Assembly: That the meeting of the Russell Trust Association, held on the fifth day of November, 1885, is hereby validated as a lawful and valid meeting of said corporation, and its proceedings are hereby validated and confirmed, and the by-laws then adopted by said meeting are hereby validated and confirmed as the duly established by-laws of said corporation; *provided,* that such proceedings and by-laws be not inconsistent with the laws of this state or the United States.

Approved, March 24, 1887.

432
Sp. No. 559

SPECIAL ACTS

[Jan.,

[Substitute for Senate Bill No. 214.]

[559.]

AN ACT AMENDING THE CHARTER OF THE RUSSELL TRUST ASSOCIATION.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

SECTION 1. The charter of The Russell Trust Association, incorporated by a resolution approved in 1856, is amended so that said association shall be capable in law to purchase and receive, hold, convey and transfer real and personal estate to an amount not exceeding, at any time, seven hundred thousand dollars.

SEC. 2. This act shall take effect upon its acceptance by a majority of the members of said association at a meeting warned and held for that purpose within one year after its passage. An attested copy of such acceptance shall be filed with the secretary of the state.

Approved, July 9, 1943.

VOL. 16

THE RUSSELL TRUST ASSOCIATION

343 Certificate of Acceptance of Amendment to Charter

THIS IS TO CERTIFY That at a meeting of the members of The Russell Trust Association legally warned and held for the purpose at New Haven, Connecticut, on the 12th day of November, 1943, the Act amending the charter of said corporation passed at the January Session of the General Assembly, 1943, was accepted by a unanimous vote of the members present (the members present being more than a majority of the members of said corporation), of which the following is a copy:

> RESOLVED: That the Act amending the charter of The Russell Trust Association passed by the General Assembly of the State of Connecticut at its January 1943 session and approved by the Governor of the State of Connecticut on July 9, 1943, be and it is hereby accepted.

Dated at New Haven, Connecticut, this 12th day of November, 1943.

ATTEST:

(CORPORATE SEAL)

Morris Hadley
President

Alfred R. Bellinger
Secretary

STATE OF CONNECTICUT)
: ss. New Haven, November 12, 1943
COUNTY OF NEW HAVEN)

Personally appeared Morris Hadley, President, and Alfred R. Bellinger, Secretary, of The Russell Trust Association, signers of the foregoing certificate and made oath to the truth of the same, before me,

(SEAL)

Huntington T. Day
Notary Public

RECEIVED AND FILED
JAN 6 1944

CERTIFICATE OF INCORPORATION

of

RTA INCORPORATED

We, the incorporators, certify that we hereby associate ourselves as a body politic and corporate, under the Nonstock Corporation Act of the State of Connecticut.

1. The name of the corporation is RTA INCORPORATED.

2. The name of the town in Connecticut in which the corporation is to be located is the Town of New Haven.

3. The nature of the activities to be conducted or the purposes to be promoted or carried out by the corporation are as follows:

The corporation is formed for exclusively educational purposes, including the intellectual and moral improvement of its members and the support of education at Yale University, New Haven, Connecticut. For these purposes the corporation shall have all the powers of a corporation formed under the Nonstock Corporation Act of the State of Connecticut except as limited by this Certificate of Incorporation.

4. No part of the corporation's income is distributable to its members, directors, officers, employees or any private shareholders or individual, and the corporation shall not have or issue shares of stock or pay dividends. The corporation is not organized and shall never be maintained or conducted for the pecuniary profit of its members, directors, officers or employees,

but is organized and shall be operated exclusively for educational purposes, and no member, director, officer or employee of the corporation shall at any time receive or be entitled to receive any pecuniary profit from the operation of the corporation except reasonable compensation for services actually rendered to the corporation in effecting one or more of its purposes. No part of the activities of the corporation shall consist of carrying on propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in by the publishing of or distributing of statements or otherwise, any political campaign on behalf of any candidate for public office. In the event of the dissolution of the corporation, or the termination of its corporate existence, no part of the property or assets of the corporation shall inure to the benefit of any member, director, officer or employee of the corporation or of any private shareholder or individual, but, after the payment of all lawful claims against the corporation, the same shall be paid to Yale University, New Haven, Connecticut, to be by it used for its general educational purposes. Nothing herein shall prevent the transfer of the property and assets of the corporation to another nonstock, nonprofit corporation formed for exclusively educational purposes if it has in its Certificate of Incorporation a provision for the benefit of Yale University substantially the same as that hereinbefore stated.

5. The corporation shall have members, all of whom shall be of the same class. All persons who are at the date

hereof members of The Russell Trust Association, a corporation organized and existing pursuant to special acts of the General Assembly of the State of Connecticut (Volume IV, Page 1201; Volume VI, Page 850; and Volume 24, Page 432) are members of the corporation, together with such other persons who are undergraduate students at Yale University, New Haven, Connecticut and who may be elected from time to time pursuant to the by-laws of the corporation.

6. The activities, property and affairs of the corporation shall be managed by a Board of Directors consisting of six members, two of whom shall be elected by vote of a majority of members present and voting in person or by proxy at each annual meeting of the members to serve for terms of three years and until their successors are elected and qualified. No person shall be eligible for election to two successive terms.

7. The election of directors and any other action to be voted upon by the members may be conducted and voted upon by mail if the Board of Directors so votes, and in such case a copy of the resolutions to be voted upon together with a form of written ballot and a duly addressed return envelope shall be mailed postage prepaid to each member at least twenty days before the date fixed by the Board of Directors for the closing of the polls. Nothing in this Certificate of Incorporation shall require the Board of Directors to provide for voting by mail or to furnish proxy forms for any meeting.

8. Wherever it is provided in part VII, relating to fundamental changes, or Part VIII, relating to dissolution and winding up, of the Connecticut Nonstock Corporation Act, that any action may be taken only after a two-thirds vote of members, the vote of a majority of the voting power of members shall be sufficient.

9. The duration of the corporation shall be unlimited.

Dated at New Haven, Connecticut this 17th day of February, 1961

Henry B. Van Sinderen
John W. Hincks
Howard S. Weaver
H. P. Baldwin Terry
Sidney Lovett
[illegible]

STATE OF CONNECTICUT)
: ss. New Haven, February 17, 1961
COUNTY OF NEW HAVEN)

Then and there personally appeared - - - - - - - - - - - -, Henry B. Van Sinderen, John W. Hincks, Howard S. Weaver, H. P. Baldwin Terry, and Sidney Lovett, and made oath to the truth of the foregoing certificate by them signed, before me.

John E. Ecklund
Notary Public

RTA INCORPORATED

CERTIFICATE AMENDING
THE CERTIFICATE OF INCORPORATION
BY ACTION OF THE BOARD OF DIRECTORS
AND MEMBERS

1. The name of the corporation is RTA INCORPORATED.

2. The Certificate of Incorporation is amended only by the following resolutions of the Board of Directors and of the Members:

A. RESOLVED that Section 6 of the Certificate of Incorporation of the corporation is amended to read as follows:

"6. The activities, property and affairs of the corporation shall be managed by a Board of Directors chosen from the membership and numbering eight (or nine if the term of the president would have otherwise expired), two of whom shall be elected by vote of a majority of members present and voting in person or by proxy at each annual meeting of the members to serve for terms of four years and until their successors are elected and qualified. No person shall be eligible for election to two successive terms. Nevertheless, the president shall be entitled to continue as a director, with full authority, regardless of the expiration of the term as director for which he was originally elected and regardless of the sequence of his election by the directors as president and the election by the members of his successor on the board of directors. In such case, when he shall no longer be president, he shall cease to be a director, and no vacancy in the board shall result therefrom."

B. RESOLVED that Section 8 of the Certificate of Incorporation is deleted in its entirety.

3. The above resolutions were adopted by the Board of Directors and by the Members of the Corporation.

Vote of the Members:

Number of Members Required for Quorum:	35
Number of Members Present in Person or by Proxy and Entitled to Vote:	71
Total Voting Power of such Members Entitled to Vote (there being no classes of membership for purposes of voting)	
Vote Required for Adoption:	48
Vote Favoring Adoption:	71

Dated at New Haven, Connecticut, this 18th day of November, 1983.

We hereby declare, under the penalties of perjury, that the statements made in the foregoing certificate are true.

John W. Hincks
President

Coit R. Liles
Secretary

FILED
STATE OF CONNECTICUT
DEC - 1 1983
SECRETARY OF THE STATE
By ______ Time ______

Rec + cc sent 12-21-83

Rec+lcc to: done 12/6/83
Robinson, Robinson + Cole
799 Main ST
Hfd, CT. 06103
ATTn: John W. Hincks

ORGANIZATION AND FIRST
BIENNIAL REPORT OF
RTA INCORPORATED

1. The name of the corporation is RTA INCORPORATED.

2. The date of the corporation's organization meeting was June 15, 1961.

3. The date of this report is June 15, 1961.

4. The principal office of the corporation is 258 Durfee Hall, Yale University, New Haven, Connecticut.

5. The names and respective residence addresses of the directors and officers of the corporation are:

DIRECTORS

Name	Residence Address
Arthur E. Palmer, Jr.	1155 Park Avenue New York 28, New York
John S. Hincks	81 Ardmore Road West Hartford, Connecticut
Sidney Lovett	31 Lincoln Street New Haven, Conneotlout
Howard 3. Weaver	266 Livingston Street New Haven, Conneotlout
Charles S. Oage	35 Hillhouse Avenue New Haven, Conneotlout
Zeph Stewart	Adams House Harvard University Cambridge, Massachusetts

OFFICERS

Name		Residence Address
Sidney Lovett	President	31 Lincoln Street New Haven, Conneotlout
Howard S. Weaver	Secretary	266 Livingston Street New Haven, Conneotlout
George H. Walker, Jr.	Treasurer	Dlngletown Road Greenwich, Conneotlout
Ralph W. Halsey, Jr.	Asst. Treasurer	Seymour Road Woodbridge, Conneotlout

6. Under the penalties of perjury, I declare that the statements made in this report are true.

Signed at New Haven ~~27th~~ **this** 27th **day of February, 1962, as of June 15, 1961.**

Howard S. Weaver

Howard S. Weaver
Secretary

CONNECTICUT SECRETARY O
Document Revie
30 Trinity Stre
P.O. Box 15047u
Hartford, CT 06115-0470

FILING #0001719970 PG 01 OF 04 VOL B-00125
FILED 04/16/1997 08:30 AM PAGE 01926
SECRETARY OF THE STATE
CONNECTICUT SECRETARY OF THE STATE

Report Due: FEBRUARY, 1997.

1. Name of Corp: RTA INCORPORATED

2. Business ID: 0059060

3. Report due in the month of: FEBRUARY, 1997.

4. This corporation is DOMESTIC/NON-STOCK. Fee is $25.00.

Corporate Name: RTA INCORPORATED

Mailing Address: WIGGIN & DANA
ONE CENTURY TOWER
NEW HAVEN,CT 06508

Changes: ______

5. Principal Office Address: (in CT only)
64 HIGH ST
NEW HAVEN,CT 06510

Changes: ______

6. Executive Office Address: (Foreign Corps Only) ______

7. Principal Office in State of Formation: (Foreign Corps Only) ______

8. Attached hereto are the officers and directors of the corporation with their business and residence addresses.

9. Date: 3 / 25 / 97
Mo Da Yr

10. Signature: Coit R. Liles

Print Signatory Name: COIT R. LILES

Print Capacity: ASSISTANT SECRETARY

Report Officers/Di
Business ID : 005[illegible]

FILING #0001719970 PG 02 OF 04 VOL B-00125
FILED 04/16/1997 08:30 AM PAGE 01927
SECRETARY OF THE STATE
CONNECTICUT SECRETARY OF THE STATE

1. Full Legal Name: DAVID GEORGE BALL
Title(s): PRESIDENT
Residence Addr: 6760 TOWNE LANE RD
MCLEAN,VA 22101
Business Addr: WILLIAMS, MULLENS, CHRISTIAN & DOBBINS
1575 EYE ST, NW
WASHINGTON,DC 20005
Res Changes: ________
Bus Changes: ________

2. Full Legal Name: DAVID GEORGE BALL
Title(s): DIRECTOR
Residence Addr: 6760 TOWNE LANE RD
MCLEAN,VA 22101
Business Addr: WILLIAMS, MULLENS, CHRISTIAN & DOBBINS
1575 EYE ST, NW
WASHINGTON,DC 20005
Res Changes: ________
Bus Changes: ________

3. Full Legal Name: SIDNEY LOVETT
Title(s): SECRETARY
Residence Addr: COXBORO RD
HOLDERNESS,NH 03245
Business Addr: NONE
Res Changes: ________
Bus Changes: ________

4. Full Legal Name: HENRY POMEROY DAVISON II
Title(s): TREASURER
Residence Addr: 315 EAST 68TH ST, APT. 2S
NEW YORK,NY 10021
Business Addr: MORGAN GUARANTY TRUST COMPANY
9 WEST 57TH ST
NEW YORK,NY 10019
Res Changes: ________
Bus Changes: ________

Report Officers/Directors
Business ID : 005

FILING #0001719970 PG 03 OF 04 VOL B-00125
FILED 04/16/1997 08:30 AM PAGE 01928
SECRETARY OF THE STATE
CONNECTICUT SECRETARY OF THE STATE

5. Full Legal Name: COIT REDFEARN LILES
Title(s): ASSISTANT SECRETARY
Residence Addr: 40 BATTER TERRACE, APT. 24
NEW HAVEN,CT 06511
Business Addr: 64 HIGH ST
NEW HAVEN,CT 06510
Res Changes: ________
Bus Changes: ________

6. Full Legal Name: COIT REDFEARN LILES
Title(s): ASSISTANT TREASURER
Residence Addr: 40 BATTER TERRACE, APT. 24
NEW HAVEN,CT 06511
Business Addr: 64 HIGH ST
NEW HAVEN,CT 06510
Res Changes: ________
Bus Changes: ________

FILING #0001719970 PG 04 OF 04 VOL B-00125
FILED 04/16/1997 08:30 AM PAGE 01929
SECRETARY OF THE STATE
CONNECTICUT SECRETARY OF THE STATE

Annual Report - continuation

RTA Incorporated
business id: 0059060

7. Full Legal Name:	JAMES ERNEST HOWARD
Title:	DIRECTOR
Residence:	19 HARVARD STREET CHARLESTOWN, MA 02129
Business:	90 CANAL STREET BOSTON, MA 02114
8. Full Legal Name:	PAUL CHRISTOPHER LAMBERT
Title:	DIRECTOR
Residence:	1088 PARK AVENUE, APT. 3A NEW YORK, NY 10128
Business:	200 PARK AVENUE NEW YORK, NY 10166
9. Full Legal Name:	WILLIAM HENRY WRIGHT, II
Title:	DIRECTOR
Residence:	993 PARK AVENUE, APT. 9B NEW YORK, NY 10028
Business:	1585 BROADWAY NEW YORK, NY 10036
10. Full Legal Name:	CATHERINE MOIRA SHARKEY
Title:	DIRECTOR
Residence:	494 WHITNEY AVENUE, APT 1B NEW HAVEN, CT 06511
Business:	NONE
11. Full Legal Name:	JOSEPH CARRERE FOX
Title:	DIRECTOR
Residence:	5475 PALISADE AVENUE BRONX, NY 10471
Business:	237 PARK AVENUE, 21ST FLOOR NEW YORK, NY 10017
12. Full Legal Name:	JONATHAN BUSH
Title:	DIRECTOR
Residence:	2 SUTTON PLACE SOUTH, APT 18D NEW YORK, NY 10022
Business:	55 WHITNEY AVENUE NEW HAVEN, CT 06510
13. Full Legal Name:	PAUL WHYTE
Title.	DIRECTOR
Residence:	28 NASHUA STREET, APT. 5 SOMERVILLE, MA 02145
Business:	NONE
14. Full Legal Name:	DENNIS PATRICK LYNCH
Title:	DIRECTOR
Residence:	NORTH ROHALLION DRIVE RUMFORD, NJ 07760
Bueiness:	520 MADISON AVENUE NEW YORK, NY 10022
15. Full Legal Name:	KEITH WALTON
Title:	DIRECTOR
Residence:	400 WEST 119TH STREET, APT. J NEW YORK, NY 10027
Business:	535 WEST 116TH STREET NEW YORK, NY 10027

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The Best Enemy Money Can Buy



Antony C. Sutton

THE BEST ENEMY MONEY CAN BUY

By
Antony C. Sutton

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Foreword by
Gary North, Ph.D.

*****

Dedicated to the memory of those who died in Korea and Vietnam – victims of our own technology and greed.

This business of lending blood money is one of the most thoroughly sordid, cold blooded, and criminal that was ever carried on, to any considerable extent, amongst human beings. It is like lending money to slave traders, or to common robbers and pirates, to be repaid out of their plunder. And the man who loans money to governments, so called, for the purpose of enabling the latter to rob, enslave and murder their people, are among the greatest villains that the world has ever seen.

LYSANDER SPOONER, No Treason (Boston, 1870)

*****

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Foreword

by Gary North

In December of 1979, the Soviet Union launched a lightning-fast military offensive against the backward nation of Afghanistan. It was after this invasion that President Jimmy Carter admitted publicly that it had taught him more about the intentions of the Soviets than everything he had ever learned. Never again would he kiss the cheeks of Premier Brezhnev before the television cameras of the West. The Democrat-controlled Senate even refused to ratify his SALT II treaty. (By the way, President Reagan has been honoring its terms unofficially, and he already has ordered the destruction of several Poseidon submarines, including the U.S.S. **Sam Rayburn,** the dismantling of which began in November of 1985,[1] and which cost a staggering $21 million for the destruction of that one ship.[2] The Nathan Hale and the **Andrew Jackson** are scheduled for destruction in 1986.[3] To comply with SALT II, we will have to destroy an additional 2,500 Poseidon submarine warheads. "Good faith," American diplomatic officials argue. ("Good grief," you may be thinking.)

The invasion of Afghanistan was a landmark shift in Soviet military tactics. Departing from half a century of slow, plodding, "smother the enemy with raw power" tactics, the Soviet military leadership adopted the lightning strike. Overnight, the Soviets had captured the Kabul airfield and had surrounded the capital city with tanks.[4]

Tanks? In an overnight invasion? How did 30-ton Soviet tanks roll from the Soviet border to the interior city of Kabul in one day? What about the rugged Afghan terrain?

The answer is simple: there are two highways from the Soviet Union to Kabul, including one which is 647 miles long. Their bridges can support tanks. Do you think that Afghan peasants built these roads for yak-drawn carts? Do you think that Afghan peasants built these roads at all? No, you built them.

In 1966, reports on this huge construction project began to appear in obscure U.S. magainzes. The project was completed the following year. It was part of Lyndon Johnson's Great Society. Soviet and U.S.' engineers worked side by side, spending U.S. foreign aid money and Soviet money, to get the highways built. One strip of road, 67 miles long, north through the Salang Pass to the U.S.S.R., cost $42 million, or $643,000 per mile. John W. Millers, the leader of the United National survey team in Afghanistan, commented at the time that it was the most expensive bit of road he had ever seen. The Soviets trained and used 8,000 Afghans to build it.[5]

If there were any justice in this world of international foreign aid, the Soviet tanks should have rolled by signs that read: "U.S. Highway Tax Dollars at Work."

Nice guys, the Soviets. They just wanted to help a technologically backward nation. Nice guys, American foreign aid officials. They also just wanted to help a technologically

backward nation... the Soviet Union.

Seven Decades of Deals

The story you are about to read is true. The names have not been changed, so as not to protect the guilty.

In the mid-1970's, the original version of this book led to the destruction of Antony Sutton's career as a salaried academic researcher with the prestigious (and therefore, not quite ideologically tough enough) Hoover Institution on War, Revolution and Peace. That was a high price for Sutton to pay, but not nearly so high as the price you and I are going to be asked to pay because of the activities that this book describes in painstaking detail.

Lenin is supposed to have made the following observation:

> "If we were to announce today that we intend to hang all capitalists tomorrow, they would trip over each other trying to sell us the rope."

I don't think he ever said it. However, someone who really understood Lenin, Communism, and capitalist ethics said it. This book shows how accurate an observation it is.

Antony Sutton is not about to offer the following evidence in his own academic self-defense, so I will. Perhaps the best-informed American scholar in the field of Soviet history and overall strategy is Prof. Richard Pipes of Harvard University. In 1984, his chilling book appeared, *Survival Is Not Enough: Soviet Realities and America's Future* (Simon & Schuster). His book tells at least part of the story of the Soviet Union's reliance on Western technology, including the infamous Kama River truck plant, which was built by the Pullman-Swindell company of Pittsburgh, Pennsylvania, a subsidiary of M. W. Kellogg Co. Prof. Pipes remarks that the bulk of the Soviet merchant marine, the largest in the world, was built in foreign shipyards. He even tells the story (related in greater detail in this book) of the Bryant Chucking Grinder Company of Springfield, Vermont, which sold the Soviet Union the ball-bearing machines that alone made possible the targeting mechanism of Soviet MIRV'ed ballistic missiles. And in footnote 29 on page 290, he reveals the following:

> In his three-volume detailed account of Soviet purchases of Western equipment and technology . . . [Antony] Sutton comes to conclusions that are uncomfortable for many businessmen and economists. For this reason his work tends to be either dismissed out of hand as "extreme" or, more often, simply ignored.

Prof. Pipes knows how the academic game is played. The game cost Sutton his academic career. But the academic game is very small potatoes compared to the historic "game" of world conquest by the Soviet empire. We are dealing with a messianic State which intends to impose its will on every nation' on earth — a goal which Soviet leaders have repeated constantly since they captured Russia in their nearly bloodless coup in October of 1917.

Sutton identifies the deaf mute blindmen who sell the Soviets the equipment they need for world conquest. But at least these deaf mute blindmen get something out of it: money. Not

"soft currency" Soviet rubles, either; they get U.S. dollars from the Soviets, who in turn get long-term loans that are guaranteed by U.S. taxpayers. Their motivation is fairly easy to understand. But what do the academic drones get out of it? What do they get for their systematic suppression of the historical facts, and their callous treatment in book reviews of works such as Sutton's monumental three-volume set, *Western Technology and Soviet Economic Development?* What was in it, for example, for C. H. Feinstein of Clare College, Cambridge Unversity, who reviewed Sutton's first volume, covering 1917-1930? He could not honestly fault Sutton's basic scholarship, nor did he try:

> . . . he has examined a vast amount of information, much of it previously unknown to scholars, regarding the trading contacts and contracts between the U.S.S.R and the West, notably Germany and the United States. The primary sources were the fascinating and extraordinarily detailed files of the U.S. State Department and the archives of the German Foreign Ministry, and these were supplemented by a wide-ranging and multilingual selection of books and journals.

He even wrote that "Sutton's prodigious researches (and this is apparently only the first of three projected volumes) have provided students of Soviet economic development with a detailed survey of the way in which 'Western' technology was transferred to the Soviet Union, and for this we are indebted to him." But having admitted this —thereby preserving the surface appearance of professional integrity —Feinstein then lowered the academic boom:

> Unfortunately, his attempt to go beyond this, and to assess the significance of this transfer and of the concessions policy, is unsatisfactory and overstates the extent and impact of the concessions as well as their importance for Soviet economic development .... the defects of Sutton's approach . . . a similar lack of understanding... Sutton exaggerates... He further indulges his fondness for exaggeration ....[6]

You get the basic thrust of the review. "Facts are fine; we are all scholars here." But even the mildest sort of first-stage conclusions concerning the importance and significance of such facts are anathema, for the facts show that the Soviet economy should have this sign over it: "Made in the West." Sutton's subsequent two volumes were never reviewed in this specialized academic journal — the journal, above all other U.S. scholarly journals, in which it would have been most appropriate to include reviews of scholarly books on Soviet economic history. The information blackout had begun, and it was augmented by the publisher's own blackout beginning in 1973, a blackout discussed in this book.

Less than three years after Feinstein's review was published, Bryant Chucking Grinder Co. sold the Soviets the ball-bearing grinders that subsequently placed the West at the mercy of the Soviet tyrants. At last, they possessed the technology which makes possible a relatively low-risk first-strike by Soviet missiles against our missiles and "defenses."[7] Until Bryant supplied the technology, the Soviets couldn't build such offensive weapons, which is why they had lobbied from 1961 until 1972 to get the U.S. government's authorization to buy the units. Within a few years after delivery, they had the missiles installed. Then they invaded Afghanistan. So much for Sutton's "exaggerations."

This book is not really designed to be read word for word. It is a kind of lawyer's brief,

filled with facts that none of us will remember in detail. But if the facts were not included, the book's thesis would be too far-fetched to accept. He therefore includes pages and pages of dull, dreary details — details that lead to an inescapable conclusion: that the West has been betrayed by its major corporate leaders, with the full compliance of its national political leaders.

From this time forward, you can say in confidence to anyone: "The United States financed the economic and military development of the Soviet Union. Without this aid, financed by U.S. taxpayers, there would be no significant Soviet military threat, for there would be no Soviet economy to support the Soviet military machine, let alone sophisticated military equipment." Should your listener scoff, you need only to hand him a copy of this book. it will stuff his mouth with footnotes.

It probably will not change the scoffer's mind, however. Minds are seldom changed with facts, certainly not college-trained minds. Facts did not change Prof. Feinstein's mind, after all. The book will only shut up the scoffer when in your presence. But even that is worth a lot these days.

From this day forward, you should never take seriously any State Department official (and certainly not the Secretary of State) who announces to the press that this nation is now, and has always been, engaged in a worldwide struggle against Communism and Soviet aggression. Once in a while, Secretaries of State feel pressured to give such speeches. They are nonsense. They are puffery for the folks out in middle America.

You may note for future reference my observation that Secretaries of Commerce never feel this pressure to make anti-Communist speeches. They, unlike Secretaries of State, speak directly for American corporate interests. They know where their bread is buttered, and more important, who controls the knife.

When it comes to trading with the enemy, multinational corporate leaders act in terms of the political philosophy of the legendary George Washington Plunkett of Tammany Hall: "I seen my opportunities, and I took 'em." Plunkett was defending "honest graft"; our modern grafters have raised the stakes considerably. They are talking about bi-partisan treason.

Footnotes:

[1]*Washington Times* (Dec. 24, 1985).

[2]Howard Phillips, *Washington Dateline* (Dec. 1985), p. 6.

[3]*Washington Post* (Nov. 27, 1985).

[4]Edward Luttwak, *The Grand Strategy of the Soviet* Union (New York: St. Martin's Press, 1983), ch. 1.

[5]"Rugged Afghan Road Jobs Fill Gaps in Trans-Asian Network," *Engineering ews-Record* (Nov. 3, 1966).

[6]Review of Antony Sutton, *Western Technology and Soviet Economic Development, 1917-1930* (Stanford: Hoover Institution on War, Revolution and Peace, Stanford University, 1965), in *The Journal of Economic History*, XXIX (December 1969), pp. 816-18.

[7]Actually, the United States has no defenses. W. hat we have is an arsenal of retaliatory offensive weapons aimed at Soviet cities, not at Soviet military targets. This is the infamous strategy of Mutually Assured Destruction (MAD) which was implemented by former Secretary of Defense (!!!) Robert Strange McNamara. If Soviet missiles were to take out the bulk of our land-based missiles in a first strike, we would have little choice but to surrender, since our submarine-launched missiles are too weak and too inaccurate to destroy hardened Soviet missile silos, and the Soviets could threaten a second wave of missiles against our cities if we were to attempt to retaliate. On our present position of military inferiority, see Quentin Crommelin, Jr. and David S. Sullivan, *Soviet Military Supremacy* (Washington, D.C.: The Citizens' Foundation, 1985). This book was a project of USC's Defense and Strategic Studies Program.

BACK

Author's Preface

Back in 1973 this author published *National Suicide: Military Aid to the Soviet* Union, itself a sequel to a three volume academic study, *Western Technology and Soviet Economic Development*, published by the Hoover Institution, Stanford University. These four books are detailed verifiable catalogs of Western technology used and in use by the Soviet Union, acquired by gift, purchase, illegal diversion or theft.

Taken together, these four volumes constitute an extraordinary commentary on a basic weakness in the Soviet system and an equally extraordinary weakness in Western policy making. The Soviets are heavily dependent on Western technology and innovation not only in their civilian industries, but also in their military programs.

Technology is, of course, the life blood of modern economic development: technology is the difference between the Third World and the advanced 21st century development epitomised by Silicon Valley in California.

Regrettably, most economists are not qualified to explore the role of technology in economic development. Technology is assumed as a "given," whereas it is in fact a dynamic factor, the most dynamic factor many would argue, in modern economic development. Similarly, State Department planners, essentially political scientists, are not at home with technology — sufficiently so that in 1963 State issued papers to the effect that the Soviets had only self-generated technology. Even today State and Commerce appear barely conversant with the extent of Soviet "reverse engineering." Fortunately, Department of Defense is more attuned to technology and among all government departments is **alone** aware of the magnitude of the problem to be described in *The Best Enemy Money Can Buy*.

The deaf mute blindmen — to quote from Lenin — are those multinational businessmen who see no further than the bottom line of the current contract. Unfortunately, these internationalist operators have disproportionate influence in Washington. Consequently, arguments based on the flimsiest of evidence and the most absurd logic that fly in the face of all we know about the Soviets are able not only to be heard in Washington, but even form the basis of our policy.

An inevitable conclusion from the evidence in this book is that we have totally ignored a policy that would enable us to neutralize Soviet global ambitions while simultaneously reducing the defense budget and the tax load on American citizens. Whether we like it or not, technology is a political tool in today's world. And if we want to survive in the face of Soviet ambitions, we will have to use this weapon sooner or later. At the moment the combined efforts of the deaf mute blindmen have been successful. Only an informed, aroused electorate has sufficient potential power to counter their suicidal ambitions.

Antony C. Sutton,
California, January 1986.

BACK

CHAPTER I

America's Deaf Mute Blindmen

> "To attribute to others the identical sentiments that guide oneself is never to understand others." — Gustav Le Bon

Over the past several decades, quietly, without media attention, many Americans in diverse fields of activity have been pressured into silence, and failing silence, have been removed from their positions or excommunicated from a chosen profession. These men range from historians in Department of State, top level officials in Department of Commerce, engineers working for IBM, to academics in America's leading universities.

In each case threats and pressures which led to censorship, firing, and excommunication track back to the deaf mute blindmen, and their associates in political Washington.

Who are the deaf mute blindmen?

The Russian revolutionary Vladimir Ilych (Ulyanov) Lenin coined the phrase, and whatever we think of Lenin's revolutionary philosophy, we cannot deny his genius in the analysis of capitalists and their motivations. Here is Lenin on the "deaf mute blindmen."

> The Capitalists of the world and their governments, in pursuit of conquest of the Soviet market, will close their eyes to the indicated higher reality and thus will turn into **deaf mute** blindmen. They will extend credits, which will strengthen for us the Communist Party in their countries and giving us the materials and technology we lack, they will restore our military industry, indispensable for our future victorious attacks **on our suppliers.** In other words, they will labor for the preparation for their own suicide.[1]

The Suppressed Higher Reality

What is this "higher reality" that Lenin identifies? It is simply that the Soviet system cannot generate sufficient innovation and technology to become a world power, yet Soviet global ambitions demand that its socialist system challenge and surpass the capitalist systems of the West. Lenin deduced just before he died in 1923 that Soviet communism had an Achilles heel, a fatal defect. In a remarkable about-face Lenin then introduced the New Economic Policy, a return to limited free enterprise and a prelude to a long-lasting cooperation with Western capitalists — the deaf mute blindmen. This policy was repeated by Communist China in the early 1980s.

It is knowledge of this "higher reality" that has been ruthlessly suppressed by successive Administrations under political pressure from internationalist businessmen. The State Department, for example, has a disgraceful record of attempting to black out information

and present a false picture of historical events. Under John Foster Dulles, Dr. G. Bernard Noble, a Rhodes scholar and an enemy of any attempt to change the Establishment's party-line, was promoted to take charge of the Historical Office at State Department. Two historians, Dr. Donald Dozer and Dr. Bryton Barron, who protested the official policy of distorting information and suppressing historical documents, were railroaded out of the State Department. Dr. Barron, in his book, *Inside the State Department,*[2] specifically charged the State Department with responsibility for the exportation of military technology to the Soviet Union, and listed four examples of highly strategic tools whose export to the USSR was urged by officials of the State Department.

> 1. Boring mills for manufacture of tanks, artillery, aircraft, and the atomic reactors used in submarines.
>
> 2. Vertical boring mills for manufacture of jet engines.
>
> 3. Dynamic balance machines used to balance shafts on engines for jet airplanes and guided missiles.
>
> 4. External cylindrical grinding machines which a Defense Department expert testified were essential in making engine parts, guided missiles, and radar.

Bryton Barron concludes:

> It should be evident that we cannot trust the present personnel of the Department to apply our agreements in the nation's interest any more than we can trust it to give us the full facts about our treaties and other international commitments.

Breathtakingly inaccurate are the only words that can describe State Department claims regarding our military assistance to the Soviet Union. The general State Department line is that the Soviets have a self-developed technology, that trade is always peaceful, that we have controls on the export of strategic goods, and that there is no conceivable relationship between our export to the Soviet Union and Soviet armaments production·

An example will make the point. Here is a statement by Ambassador Trezise to the Senate:

> **Ambassador Trezise:** We, I think, are sometimes guilty, Senator, of a degree of false and unwarranted pride in our industrial and technological might, a kind of arrogance, if you will · . . we are ahead of the Soviet Union in many areas of industry and technology. But a nation that can accomplish the scientific and technological feats the Soviet Union has accomplished in recent years is clearly not a primitive, mudhut economy .... It is a big, vigorous, strong, and highly capable national entity, and its performance in the space field and in other fields has given us every indication that Soviet engineers, technicians, scientists, are in the forefront of the scientists, engineers, technicians of the world.
>
> **Senator Muskie:** So that the urge towards increased trade with Eastern European countries has not resulted in a weakening of the restrictions related to strategic goods?

> Ambassador Trezise: I think that is an accurate statement, Senator.

Now we have, we think, quite an effective system of handling items which are in the military area or so closely related thereto that they become strategic items by everybody's agreement.

In fact, at the very time Trezise was making the above soothing statement, critical shipments of strategic materials and equipment were going forward to the Soviet Union. The so-called Export Control laws were a leaky sieve due to outright inefficiency in Departments of State and Commerce.

Censorship has enabled politically appointed officials and the permanent Washington bureaucracy to make such unbelievably inaccurate statements without fear of challenge in Congress or by the American public.

The State Department files are crammed with information concerning U.S. technical and economic assistance to the Soviet Union. The author of this book required three substantial volumes (see Bibliography) just to summarize this assistance for the years 1917-1970. Yet former Secretary of State Dean Rusk, presumably acting on the advice of State Department researchers, stated in 1961, "It would seem clear that the Soviet Union derives only the most marginal help in its economic development from the amount of U.S. goods it receives." A statement flatly contradictory to the massive evidence available in departmental files.

In 1968 Nicholas de B. Katzenbach, Assistant Secretary of State, made a statement that was similarly inconsistent with observable fact, and displayed a fundamental lack of common-sense reasoning:

> We should have no illusions. If we do not sell peaceful goods to the nations of Eastern Europe, others will. If we erect barriers to our trade with Eastern Europe, we will lose the trade and Eastern Europe will buy elsewhere. But we will not make any easier our task of stopping aggression in Vietnam nor in building security for the United States.[3]

In fact, aggression in South Vietnam would have been impossible without U.S. assistance to the Soviet Union. Much of the key "European" technology cited derives from U.S. subsidiaries.

Jack N. Behrman, former Deputy Assistant Secretary for International Affairs at the Department of Commerce, repeated the same theme on behalf of the Commerce Department:

> This is the old problem of economic dependency. However, I do not believe that Russia would in fact permit herself to become dependent upon imported sources of strategic goods. Rather she would import amounts additional to her strategic needs, thereby relieving the pressure on her economy by not risking dependence.[4]

In fact, Jack Behrman to the contrary notwithstanding, Soviet Russia is the most dependent large nation in modern history, for wheat as well as technology.

Here's another statement from former Secretary of Commerce Maurice H. Stans:

> **Q**: Is there danger of this country's helping the Russians build a war potential that might be turned against the interests of the free world?
>
> **A**: Under the circumstances, we might be very foolish not to accept business which could create jobs in the United States, when refusing to sell to the Soviet Union would in no way deter their progress.[5]

Suppression of Information

Information suppression concerning Soviet relations with the United States may be found in all administrations, Democrat and Republican, from President Wilson to President Reagan. For example, on November 28, 1917, just a few weeks after the Petrograd and Moscow Bolsheviks had overthrown the democratic and constitutional government of Russia, "Colonel" House (then in Paris) intervened on behalf of the Bolsheviks and cabled President Wilson and the Secretary of State in the "Special Green" cipher of the State Department as follows:

> There has been cabled over and published here [Paris] statements made by American papers to the effect that Russia should be treated as an enemy. It is exceedingly important that such criticisms should be suppressed...[6]

Suppression of information critical of the Soviet Union and our military assistance to the Soviets may be traced in the State Department files from this 1917 House cable down to the present day, when export licenses issued for admittedly military equipment exports to the USSR are not available for public information. In fact, Soviet sources must be used to trace the impact of some American technology on Soviet military development. The Soviet Register of Shipping, for example, publishes the technical specifications of main engines in Russian vessels (including country of manufacture): this information is not available from U.S. official sources. In November 1971, *Krasnaya Zvezda* published an article with specific reference to the contribution of the basic Soviet industrial structure to the Soviet military power — a contribution that representatives of the U.S. Executive Branch have explicitly denied to the public and to Congress.

Even today U.S. assistance to the Soviet military-industrial complex and its weapons systems cannot be documented from open U.S. sources alone because export license memoranda are classified data. Unless the technical nature of our shipments to the USSR is known, it is impossible to determine their contribution to the Soviet military complex. The national security argument is not acceptable as a defense for classification because the Soviets know what they are buying. So does the United States government. So do U.S. firms. So do the deaf mute blindmen. The group left out in the cold is the American taxpayer-voter.

From time to time bills have been introduced in Congress to make export-license information freely available. These bills have never received Administration support. Nonavailability of current information means that decisions affecting all Americans are made by a relatively few government officials without impartial outside scrutiny, and under political pressure from internationlist businessmen. In many cases these decisions would not

be sustained if subjected to public examination and criticism. It is argued by policy-makers that decisions affecting national security and international relations cannot be made in a goldfish bowl. The obvious answer to this is the history of the past seventy years: we have had one catastrophic international problem after another — and in the light of history, the outcome would have been far less costly if the decisions **had** been made in a goldfish bowl.

For instance, little more than a decade after House's appeal to Wilson, Senator Smoot inquired of the State Department about the possible military end-uses of an aluminum powder plant to be erected in the Soviet Union by W. Hahn, an American engineer. State Department files contain a recently declassified document which states why no reply was ever given to Senator Smoot:

> No reply was made to Senator Smoot by the Department as the Secretary did not desire to indicate that the Department had no objection to the rendering by Mr. Hahn of technical assistance to the Soviet authorities in the production of aluminum powder, in view of the possibility of its use as war material, and preferred to take no position at the time in regard to the matter.[7]

Congressional action in the Freedom on Information Act and administrative claims of speedy declassification have not changed this basic situation. Major significant documents covering the history of the past seventy years are buried, and they will remain buried until an outraged public opinion puts some pressure on Congress.

Congress has on the other hand investigated and subsequently published several reports on the export of strategic materials to the Soviet Union. One such instance, called "a life and death matter" by Congress, concerned the proposed shipment of ball bearing machines to the USSR.[8] The Bryant Chucking Grinder Company accepted a Soviet order for thirty-five Centalign-B machines for processing miniature ball bearings. All such precision ball bearings in the United States, used by the Department of Defense for missile guidance systems, were processed on seventy-two Bryant Centalign Model-B machines.

In 1961 the Department of Commerce **approved** export of thirty-five such machines to the USSR, which would have given the Soviets capability about equal to 50 percent of the U.S. capability.

The Soviets had no equipment for such mass production processing, and neither the USSR nor any European manufacturer could manufacture such equipment. A Department of Commerce statement that there were other manufacturers was shown to be inaccurate. Commerce proposed to give the Soviet Union an ability to use its higher-thrust rockets with much greater accuracy and so pull ahead of the United States. Subsequently, a congressional investigation yielded accurate information not otherwise available to independent nongovernment researchers and the general public.

Congressional investigations have also unearthed extraordinary "errors" of judgment by high officials. For example, in 1961 a dispute arose in U.S. government circles over the "Transfermatic Case" — a proposal to ship to the USSR two transfer lines (with a total value of $4.3 million) for the production of truck engines.

In a statement dated February 23, 1961, the Department of Defense went on record against shipment of the transfer lines on the grounds that "the technology contained in these

Transfermatic machines produced in the United States is the most advanced in the world," and that "so far as this department knows, the USSR has not installed this type of machinery. The receipt of this equipment by the USSR will contribute to the Soviet military and economic warfare potential." This argument was arbitrarily overturned by the incoming Secretary of Defense Robert McNamara. Secretary McNamara did not allow for the known fact that most Soviet military trucks came from two American-built plants even then receiving equipment from the United States. The Transfermatic machines approved by McNamara had clear and obvious military uses — as the Department of Defense had previously argued. Yet McNamara allowed them to go forward.

Yet another calculated deception of the American public can be traced to the Johnson Administration. In 1966 the U.S. Department of State produced a beautiful, extravagantly illustrated brochure of American hand tools. This was printed in Russian, for distribution in Russia, with a preface — in Russian — by Lyndon Johnson. Requests to the State Department for a copy of this brochure went unanswered. The book is not listed in official catalogues of government publications. It is not available or even known to the general public. No printer's name appears on the back cover. The publisher is not listed. The author obtained a copy from Russia. Here is the preface:

> *Hand Tools — USA*[9]
>
> Welcome to the "Hand Tools — USA" exhibit — the eighth consecutive exhibit arranged for citizens of the Soviet Union.
>
> At this exhibit you will see samples of various hand tools currently manufactured in the United States — tools that facilitate manual work and make it possible to produce better-quality industrial goods at a much lower cost.
>
> Since the very early days of the history of our country, Americans of all ages have worked with hand tools. In industry and at home, in factories and on farms, in workshops and schools, the hand tool has become indispensable in our lives.
>
> Some of these tools have retained their original simplicity of design; others have acquired entirely new forms and are now used to perform new functions.
>
> We sincerely hope that this exhibit will lead to a better understanding of the American people and their way of life.

/s/ Lyndon B. Johnson

Why all the secrecy? Imagine the public reaction in 1966, when the Soviets were supplying the North Viets with weapons to kill Americans (over 5,000 were killed that year), if it had become known that the State Department had published lavish booklets in Russian for free distribution in Russia at taxpayers' expense.

However, the point at issue is not the wisdom of publication, but the wisdom of concealment. The public is not told because the public might protest. In other words, the

public cannot be trusted to see things in the same light as the policymakers, and the policymakers are unwilling to defend their positions.

Further, what would have been the domestic political consequences if it had been known that a U.S. President had signed a document in Russian, lavishly produced at the taxpayers' expense for free distribution in Russia, while Russian weapons were killing Americans in Vietnam with assistance from our own deaf mute blindmen? The citizen-taxpayer does not share the expensive illusions of the Washington elite., The political reaction by the taxpayer, and his few supporters in Congress, would have been harsh and very much to the point.

The Deaf Mute Blindmen

The key party interested in concealment of information about our export to the Soviet Union is, of course, the American firms and individuals prominently associated with such exports, i.e., the deaf mute blindmen themselves.

In general, the American public has a basic right to know what is being shipped and who is shipping it, if the Soviets are using the material against us. The public also has a right to know about the personal interests of presidential appointees and previous employment with firms prominent in trade with the USSR.

Until recently, the firms involved could publicly claim ignorance of the use to which the Soviets put imported Western technology. It is not a good claim, but it was made. From the 1970's on, ignorance of end-use is not a valid claim. The evidence is clear, overwhelming, and readily available: the Soviets have used American technology to kill Americans and their allies.

The claim that publication of license information would give undue advantage to competitors is not the kind of argument that an honest businessman would make. It is only necessary to publish certain basic elementary information: date, name of firm, amount, destination in the USSR, and a brief statement of the technical aspects. Every industry has a "grapevine" and potential business in an industry is always common knowledge.

In any event, suppose there **was** adverse comment about a particular sale to the Soviets? Is this a bad thing? If our policies are indeed viable, why fear public opinion? Or are certain sectors of our society to be immune from public criticism?

Soviet dependency on our technology, and their use of this technology for military purposes, could have been known to Congress on a continuing basis in the 1950s and 1960s if export license information had been freely available. The problem was suspected, but the compilation of the proof had to wait several decades until the evidence became available from Soviet sources. In the meantime, Administration and business spokesmen were able to make absurd statements to Congress without fear of challenge. In general, only **those who had already made up their minds that Soviet trade was desirable had access to license information.** These were the deaf mute blindmen only able to see their own conception of events and blind to the fact that we had contributed to construction of Soviet military power.

In 1968, for example, the Gleason Company of Rochester, New York shipped equipment to the Gorki automobile plant in Russia, a plant previously built by the Ford Motor Company. The information about shipment did not come from 'the censored licenses but from foreign press sources. Knowledge of license application for any equipment to be used to Gorki would have elicited vigorous protests to Congress. Why? Because the Gorki plant produces a wide range of military vehicles and equipment. Many of the trucks used on the Ho Chi Minh trail were GAZ vehicles from Gorki. The rocket-launchers used against Israel are mounted on GAZ-69 chassis made at Gorki. They have Ford-type engines made at Gorki.

Thus, a screen of censorship vigorously supported by multinational businessmen has withheld knowledge of a secret shift in direction of U.S. foreign policy. This shift can be summarized as follows:

> 1. Our long-run technical assistance to the Soviet Union has built a first-order military threat to our very existence.
>
> 2. Our lengthy history of technical assistance to the Soviet military structure was known to successive administrations, but has only recently (1982) been admitted to Congress or to the American public.
>
> 3. Current military assistance is also known, but is admitted only on a case-by-case basis when information to formulate a question can be obtained from nongovernment sources.
>
> 4. As a general rule, detailed data on export licenses, which are required to establish the **continuing** and long-run dependence of the Soviet military-industrial complex on the United States, have been made available to Congress only by special request, and have been denied completely to the American public at large.

In brief, all presidential administrations, from that of Woodrow Wilson to that of Ronald Reagan, have followed a bipartisan foreign policy of building up the Soviet Union. This policy is censored. It is a policy of suicide.

Persistent pressure from nongovernmental researchers and knowledgeable individuals has today forced the Administration to at least publicly acknowledge the nature of the problem but still do very little about it. For instance, in an interview on March 8, 1982, William Casey, Director of the Central Intelligence Agency, made the following revealing statement:

> We have determined that the Soviet strategic advances depend on Western technology to a far greater degree than anybody ever dreamed of. It just doesn't make any sense for us to spend additional billions of dollars to protect ourselves against the capabilities that the Soviets have developed largely by virtue of having pretty much of a free ride on our research and development.
>
> They use every method you can imagine — purchase, legal and illegal; theft; bribery; espionage; scientific exchange; study of trade press, and invoking the Freedom of Information Act — to get this information.
>
> We found that scientific exchange is a big hole. We send scholars or young

> people to the Soviet Union to study Pushkin poetry; they send a 45-year-old man out of their KGB or defense establishment to exactly the schools and the professors who are working on sensitive technologies.
>
> The KGB has developed a large, independent, specialized organization which does nothing but work on getting access to Western science and technology. They have been recruiting about 100 young scientists and engineers a year for the last 15 years. They roam the world looking for technology to pick up.
>
> Back in Moscow there are 400 or 500 assessing what they might need and where they might get it — doing their targeting and then assessing what they get. It's a very sophisticated and farflung operation.[10]

Unfortunately, Mr. Casey, who pleads surprise at the discovery, is still concealing the whole story. This author (not alone) made this known to Department of Defense **over 15 years ago**, with a request for information to develop the full nature of the problem. This exchange of letters is reproduced as Appendix A. Nothing was done in 1971. In the past 15 years there has been a superficial change — the Reagan Administration is now willing to admit the **existence** of the problem. It has not yet been willing to face the policy challenge. Until the deaf mute blindmen are neutralized, our assistance for Soviet strategic advances will continue.

Footnotes:

[1]Quoted in Joseph Finder, *Red Carpet* (Holt, Rinehart and Winston, New York, 1984), p. 8

[2]Bryton Barron, *Inside the State Department* (New York: Comet Press, 1956).

[3]House of Representatives, *To Amend the Export-Import Bank Act of 1945* (Washington, DC, 1968), p. 64.

[4]Ibid.

[5]*U.S. News & World Report*, December 20, 1971.

[6]See Antony Sutton, *Wall Street and the Bolshevik Revolution* {New York: Arlington House, 1974).

[7]U.S. State Dept. Decimal File, 861.659-Du Pont de Nemours & Co/5.

[8]U.S. Senate, Committee on the Judiciary, *Proposed Shipment of Ball Bearing Machines to the U.S.S.R.* (Washington, 1961).

[9]Author's translation from Russian of brochure for "Hand Tools -- USA"

exhibit.

[10]United States Senate, *Transfer of United States High Technology to the Soviet* Union *and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 55.

BACK

CHAPTER II

American Trucks in Korea and Vietnam —
For the Other Side

> If we do not develop our automobile industry, we are threatened with the heaviest losses, if not defeats, in a future war.   Pravda, July 20, 1927

At the end of World War II the U.S. government appointed an interagency committee to consider the future of the German automobile industry and its war-making potential. This committee concluded that **any** motor vehicle industry in **any** country is an important factor in that country's war potential.

More than half U.S. tanks, almost all armored and half-track vehicles and one-third of guns over 33 millimeter were manufactured in U.S. civilian motor vehicle plants.

Consequently, the committee unanimously recommended:

> 1. **Any** vehicle industry is a major force for war.
>
> 2. German automotive manufacturing should be prohibited because it was a war industry.
>
> 3. Numerous military products can be made by the automobile industry, including aerial torpedoes, aircraft cannon, aircraft instruments, aircraft engines, aircraft engines parts, aircraft ignition testers, aircraft machine guns, aircraft propeller subassemblies, aircraft propellers, aircraft servicing and testing equipment, aircraft struts, airframes, and so on. A total of 300 items of military equipment was listed.

A comparison of the recommendations from this committee with subsequent administrative recommendations and policies for the export of automobile-manufacturing plants to the Soviet Union demonstrates extraordinary inconsistencies. **If automobile-manufacturing capacity has "warlike" potential for Germany and the United States, then it also has "warlike" potential for the Soviet Union.** But the recommendations for post-war Germany and the Soviet Union are totally divergent. Some of the same Washington bureaucrats (for example, Charles R. Weaver of the Department of Commerce) participated in making **both** decisions.

In brief, any automobile or tractor plant can be used to produce tanks, armored cars, military trucks, other military vehicles and equipment. A major conclusion reached by a U.S. interagency committee formed to study the war-making potential of the U.S. and German automotive industries was that a motor vehicle industry has enormous military potential.

"The Committee recognized without dissent that [Germany's] motor vehicle industry was an

important factor in her waging of war during World War II."

On the basis of its findings, the committee recommended that the manufacture of complete automobiles in Germany be prohibited, that the manufacture of certain parts and subassemblies be "specifically prohibited," and that Germany "should not be permitted to retain in her possession any types of vehicles or particular military application, such as track-laying vehicles, multi-axle vehicles, etc."

The committee further listed more than 300 "war products manufactured by the automotive industry."

These conclusions have been ignored for the Soviet automobile industry, even while the Soviets themselves officially stated their intention to use foreign automobile technology for military vehicles **as early as 1927**. V. V. Ossinsky, a top planner, wrote a series of articles for *Pravda* (July 20, 21 and 22, 1927) with the following warning:

> If in a future war we use the Russian peasant cart against the American or European automobile, the result to say the least will be disproportionately heavy losses, the inevitable consequences of technical weakness. This is certainly not industrialized defense.

The Soviet military-civilian vehicle manufacturing industry, as subsequently developed, produces a limited range of utilitarian trucks and automobiles in a few large plants designed, built by, and almost entirely equipped with Western, primarily American, technical assistance and machinery. These motor vehicle plants mostly manufacture their own components and ship these to assembly plants elsewhere in the Soviet Union.

There is a high degree of integration between Russian military and civilian vehicle models. Military and civilian vehicles have interchangeable parts and Soviet policy is to maximize unification of military and civilian designs to assist model change-over in case of war.

This unification of military and civilian automobile design has been described by the Soviet economist A. N. Lagovskiy:

> The fewer design changes between the old and the new type of product, the easier and more rapidly the enterprise will shift to new production. If, for example, chassis, motors, and other parts of a motor vehicle of a civilian model are used for a military motor vehicle, or course, the shift to the mass production of the military motor vehicle will occur considerably faster and more easily than if the design of all the main parts were different.

Lagovskiy notes that Soviet "civilian" agricultural tractors and motor vehicles can be used directly as military vehicles without major conversion. Soviet tractors (direct copies of Caterpillar models) were used as artillery tractors in World War II and Korea. General G. I. Pokrovski makes a similar argument about the U.S. 106-millimeter recoilless weapon mounted on a Willys jeep and comments that "even relatively powerful recoilless artillery systems can, at the present time, be mounted on a light automobile without reducing the number of men accomodated."[11]

Almost all — possibly 95 percent — of Soviet military vehicles are produced in very large

plants designed by American engineers in the 1930s through the 1970s.

The Soviet Military Truck Industry

Soviet civilian and military trucks are produced in the same plants and have extensive interchangeability of parts and components. For example, the ZIL-131 was the main 31/2-ton 6x6 Soviet military truck used in Vietnam and Afghanistan and is produced also in a civilian 4 x 2 version as the ZIL-130. Over 60 percent of the parts in the ZIL-131 military truck are common to the ZIL-130 civilian truck.

All Soviet truck technology and a large part of Soviet truck-manufacturing equipment has come from the West, mainly from the United States. While some elementary transfers-lines and individual machines for vehicle production are made in the Soviet Union, these are copies of Western machines and always obsolete in design.

Many major American companies have been prominent in building up the Soviet truck industry. The Ford Motor Company, the A. J. Brandt Company, the Austin Company, General Electric, Swindell-Dressier, and others supplied the technical assistance, design work, and equipment of the original giant plants.

This Soviet military-civilian truck industry originally comprised two main groups of plants, plus five newer giant plants. The first group used models, technical assistance, and parts and components from the Ford-built Gorki automobile plant (GAZ is the model designation). The second group of production plants used models, parts, and components from the A. J. Brandt-rebuilt ZIL plant in Moscow (Zavod imeni Likhachev, formerly the AMO and later the Stalin plant). Consequently this plant was called the BBH-ZIL plant after the three companies involved in its reconstruction and expansion in the 1930s: A. J. Brandt, Budd, and Hamilton Foundry.

There is a fundamental difference between the Ford and Brandt companies. Brandt had only one contract in the USSR, to rebuild the old AMO plant in 1929. AMO in 1930 had a production of 30,000 trucks per year, compared to the Gorki plant, designed from scratch by Ford for an output of 140,000 vehicles per year. Ford is still interested in Russian business. Brandt is not interested and has not been since 1930.

The Ford-Gorki group of assembly plants includes the plants at Ulyanovsk (model designation UAZ), Odessa (model designation OAZ), and Pavlovo (model designation PAZ). The BBH-ZIL group includes the truck plants at Mytischiy (MMZ model designation), Miass (or URAL Zis), Dnepropetrovsk (model designation DAZ), Kutaisi (KAZ model), and Lvov (LAZ model). Besides these main groups there are also five independent plants. The Minsk truck plant (MAZ) was built with German assistance. The Hercules-Yaroslavl truck plant (YaAz) was built by the Hercules Motor Company. The MZMA plant in Moscow, which manufactures small automobiles, was also built by Ford Motor Company.

In the late 1960s came the so-called Fiat-Togliatti auto plant. Three-quarters of this equipment came from the United States. Then in 1972 the U.S. government issued $1 billion in licenses to export equipment and technical assistance for the Kama truck plant. Planned as the largest truck plant in the world, it covers 36 square miles and produces more

heavy trucks, including military trucks, than the output of *all* U.S. heavy truck manufacturers combined. (Togliatti and Kama are described in Chapter Three below.)

This comprises the complete Soviet vehicle manufacturing industry **— all built with Western, primarily American, technical assistance and technology.** Military models are produced in these plants utilizing the same components as the civilian models. The two main vehicle production centers, Gorki and ZIL, manufacture more than two-thirds of all Soviet civilian vehicles (excluding the new Togliatti and Kama plants) and almost all current military vehicles.

The Ford Gorki "Automobile" Plant

In May 1929 the Soviets signed an agreement with the Ford Motor Company of Detroit. The Soviets agreed to purchase $13 million worth of automobiles and parts and Ford agreed to give technical assistance until 1938 to construct an integrated automobile-manufacturing plant at Nizhni-Novgorod. Construction was completed in 1933 by the Austin Company for production of the Ford Model-A passenger car and light truck. Today this plant is known as Gorki. With its original equipment supplemented by imports and domestic copies of imported equipment, Gorki produces the GAZ range of automobiles, trucks, and military vehicles. All Soviet vehicles with the model prefix GAZ (**Gorki Avtomobilnyi Zavod)** are from Gorki, and models with prefixes UAX, OdAZ, and PAZ are made from Gorki components.

In 1930 Gorki produced the Ford Model-A (known as GAZ-A) and the Ford light truck (called GAZ-AA). Both these Ford models were **immediately adopted for military use**. By the late 1930s production at Gorki was 80,000-90,000 "Russian Ford" vehicles per year.

The engine production facilities at Gorki were designed under a technical assistance agreement with the Brown Lipe Gear Company for gear-cutting technology and Timken-Detroit Axle Company for rear and front axles.

Furthermore, U.S. equipment has been shipped in substantial quantifies to Gorki and subsidiary plants since the 1930s — indeed some shipments were made from the United States in 1968 during the Vietnamese War.

As soon as Ford's engineers left Gorki in 1930 the Soviets began production of military vehicles. The Soviet BA armored car of the 1930s was the GAZ-A (Ford Model-A) chassis, intended for passenger cars, but converted to an armored car with the addition of a DT machine gun. The BA was followed by the BA-10 — the Ford Model-A truck chassis with a mount containing either a 37-millimeter gun or a 12.7-millimeter heavy machine gun. A Red Army staff car was also based on the Ford Model-A in the pre-war period.

During World War II Gorki produced the GAZ-60 — a hybrid half-track personnel carrier that combined the GAZ-63 chassis. In the late 1940s the plant switched to production of an amphibious carrier — The GAZ-46. This was a standard GAZ-69 chassis with a U.S. quarter-ton amphibious body.

In the mid-1950s Gorki produced the GAZ-47 armored amphibious cargo carrier with space for nine men. Its engine was the GAZ-61, a 74-horsepower Ford-type 6-cylinder in-line

gasoline engine — the basic Gorki engine.

In the 1960s and 1970s production continued with an improved version of the BAZ-47 armored cargo carrier, using a GAZ-53 V-8 type engine developing 115 horsepower.

In brief, the Ford-Gorki plant has a continuous history of production of armored cars and wheeled vehicles for Soviet army use: those used against the United States in Korea and Vietnam.

In addition to armored cars, the Ford-Gorki factory manufactures a range of truck-mounted weapons. This series began in the early thirties with a 76.2-millimeter field howitzer mounted on the Ford-GAZ Model-A truck. Two similar weapons from Gorki before World War II were a twin 25-millimeter antiaircraft machine gun and a quad 7.62-millimeter Maxim antiaircraft machine gun — also mounted on the Ford-GAZ truck chassis.

During World War II Gorki produced several rocket-launchers mounted on trucks. First the 12-rail, 300-millimeter launcher; then, from 1944 onwards, the M-8, M-13, and M-31 rocket-launchers mounted on GAZo63 trucks. (The GAZ-63 is an obvious direct copy of the U.S. Army's 21/2-ton truck.) Also during World War II Gorki produced the GAZ-203, 85-horsepower engine for the SU-76 self-propelled gun produced at Uralmashzavod. (Uralmash was designed and equipped by American and German companies.)

After World War II Gorki production of rocket-launchers continued with the BM-31, which had twelve 300-millimeter tubes mounted on a GAZ-63 truck chassis. In the late 1950s another model was produced with twelve 140-millimeter tubes on a GAZ-63 truck chassis. In the 1960s yet another model with eight 140-millimeter tube was produced on a GAZ-63 chassis.

Finally, in 1964 Gorki produced the first Soviet wire-guided missile antitank system. This consisted of four rocket-launchers mounted on a GAZ-69 chassis. These weapons turned up in Israel in the late 1960s. The GAZ-69 chassis produced at Gorki is also widely used in the Soviet Army as a command vehicle and scout car. Soviet airborne troops use it as a tow for the 57-millimeter antitank gun and the 14.5-millimeter double-barrelled antiaircraft gun. Other Gorki vehicles used by the Soviet military include the GAZ-69 truck, used for towing the 107-millimeter recoilless rifle (RP-107), the GAZ-46, or Soviet jeep, and the GAZ-54, a 1 1/2-ton military cargo truck.

In brief, the Gorki plant, built by the Ford Motor Company the Austin Company and modernized by numerous other U.S. companies under the policy of "peaceful trade," is **today** a major producer of Soviet army vehicles and weapons carriers.

The A. J. Brandt-ZIL Plant

A technical assistance agreement was concluded in 1929 with the Arthur J. Brandt Company of Detroit for *the* reorganization and expansion of the tsarist AMO truck plant, previously equipped in 1917 with *new* U.S. equipment. Design work for this expansion was handled in Brandt's Detroit office and plant and American engineers were sent to Russia.

The AMO plant was again expanded in 1936 by *the* Budd Company and Hamilton Foundry

and its name was *changed* to ZIS (now ZIL). During World War II the original equipment was removed to establish the URALS plant and *the* ZIS plant was re-established with Lend-Lease equipment.

The first armored *vehicle* produced at AMO was an adaptation of the civilian ZIL-6 truck produced after the Brandt reorganization in 1930. This vehicle was converted into a mount for several self-propelled weapons, including the single 76.2-millimeter antiaircraft gun and the 76.2-millimeter antitank gun.

In World War II the ZIL-6 was adapted for the 85-millimeter antitank and antiaircraft guns, quadruple 7.62 Maxims, and several self-propelled rocket-launchers, including the M-8 36-rail, 80-millimeter, and the Katyusha model M-13/A 16-rail, 130-millimeter rocket-launcher.

In the immediate postwar period the ZIL-150 truck chassis was used as a mount for the model M-13 rocket-launcher and the ZIL-151 truck was used as a mount for the M-31 rocket-launcher. In addition, the ZIL-151 truck was used as a prime mover for the 82-millimeter gun.

In 1953 the ZIL-151 truck was adapted for several other weapons, including the BM-24, 240-millimeter, 12-tube rocket-launcher; the RM-131-millimeter, 32-tube rocket-launcher; the BM-14, 140-millimeter, 16-tube rocket-launcher, and the 200-millimeter, 4-tube rocket-launcher.

In the 1960s the ZIL-157 truck became a mount for the GOA-SA-2 antiaircraft missile, and a prime mover for another rocket system.

The ZIL plant has also produced unarmored cargo and troop vehicles for the Soviet Army. In 1932 the ZIL-33 was developed; an unarmored half-track used as a troop carrier. In 1936 the ZIL-6 was developed as a half-track and during World War II the ZIL-42 was developed as a 21/2-ton tracked weapons carrier. In the postwar period the ZIL-151 truck chassis was adapted for the BTR-152 armored troop carrier. In the 1950s the ZIL-485 was developed; a replica of the American DUKW mounted on a ZIL-151 truck, and followed by an improved DUKW mounted on a ZIL-157 truck.

From 1954 onwards new versions of the BTR-152 were added, based on the ZIL-157 truck. In the 1960s a new BTR-60 (8 x 8) amphibious personnel carrier was developed with a ZIL-375 gasoline engine.

Other ZIL vehicles are also used for military purposes. For example the ZIL-111 is used as a radar and computer truck for antiaircraft systems and as a tow for the M-38 short 122-millimeter howitzer The ZIL-111 is copied from Studebaker 6 x 6 trucks supplied under Lend-Lease.

There is a great deal of interchangeability between the military and civilian versions of the ZIL family of vehicles. For example, an article in *Ordnance* states:

> In the 1940s the ZIL-151, a 21/2-ton 6 x 6 was the work horse of the Soviet Army. It was replaced in the 1950s by the ZIL-157, an apparent product improved version. In the 1960s, however, this vehicle class requirement was

met by the ZIL-131, a 31/2-ton 6 x 6 vehicle, essentially a military design. It is of interest to note that a civilian version was marketed as the ZIL-130 in a 4 x 2 configuration. Over 60 percent of the components in the military version are common to the civilian vehicle.

Thus the ZIL plant, originally designed and rebuilt under the supervision of the A. J. Brandt Company of Detroit in 1930 and equipped by other American companies, was again expanded by Budd and Hamilton Foundry in 19;36. Rebuilt with Lend-Lease equipment and periodically updated with late model imports, ZIL has had a long and continuous history of producing Soviet military cargo trucks and weapons carriers.

On April 19, 1972, the U.S. Navy photographed a Russian freighter bound for Haiphong with a full load of military cargo, including a deck load of ZIL-130 cargo trucks and ZIL-555 dump trucks (Human *Events,* May 13, 1972). Thus the "peaceful trade" of the 1930s, the 1940s, the 1950s, 1960s and the 1970s was used to kill Americans in Vietnam, and commit genocide in Afghanistan.

The original 1930 equipment was removed from ZIL in 1944 and used to build the Miass plant. It was replaced by Lend-Lease equipment, was supplemented by equipment imports in the 1950s, 1960s and 1970s.

The Urals plant at Miass (known as Urals ZIS or ZIL) was built in 1944 and largely tooled with equipment evacauted form the Moscow ZIL plant. The Urals Miass plant started production with the Urals-5 light truck, utilizing an engine with the specifications of the 1920 Fordson (original Ford Motor Company equipment supplied in the late 1920s was used, supplemented by Lend-Lease equipment). The Urals plant today produces weapons models: for example, a prime mover for guns, including the long-range 130-millimeter cannon, and two versions — tracked and wheeled — of a 12-ton prime mover.

Possibly there may have been doubt as to Soviet end-use of truck plants back in the 20s and ;30s, but the above information certainly was known to Washington at least by the mid 1960s when this author's first volume was published. The next chapter presents official Washington's suicidal reaction to this information, under pressure from the deaf mute blindmen.

Footnotes:

*The report is *Study by Interagency Committee on the Treatment of the German Automotive Industry the Standpoint of National Security* (Washington, D.C.: Foreign Economic *Administration*, July 14, 1945), Report T.I.D.C. No. 12.

[11]G. I. Pokrovski, *Science and Technology in Contemporary War* (New York: Frederick A. Praeger, 1959), p. 122.

BACK

CHAPTER III

The Deaf Mutes Supply Trucks for Afghan Genocide

> "The (American) businessmen who built the Soviet Kama River truck plant should be shot as traitors." — Avraham Shifrin, former Soviet Defense Ministry official

Although the military output from Gorki and ZIL was well known to U.S. intelligence and therefore to successive administrations, American aid for construction of even large military truck plants was approved in the 1960s and 1970s.

Under intense political pressure from the deaf mute blindmen, U.S. politicians, particularly in the Johnson and Nixon administrations under the prodding of Henry Kissinger (a long-time employee of the Rockefeller family), allowed the Togliatti (Volgograd) and Kama River plants to be built.

The Volgograd automobile plant, built between 1968 and 1971, has a capacity of 600,000 vehicles per year, three times more than the Ford-built Gorki plant, which up to 1968 had been the largest auto plant in the USSR.

Although Volgograd is described in Western literature as the "Togliatti plant" or the "Fiat-Soviet auto plant," and does indeed produce a version of the Fiat-124 sedan, the core of the technology is American. Three-quarters of the equipment, including the key transfer lines and automatics, came from the United States. It is truly extraordinary that a plant with known military potential could have been equipped from the United States in the middle of the Vietnamese War, a war in which the North Vietnamese received 80 percent of their supplies from the Soviet Union.

The construction contract, awarded to Fiat S.p.A., a firm closely associated with Chase Manhattan Bank, included an engineering fee of $65 million. The agreement between Fiat and the Soviet government included:

> The supply of drawing and engineering data for two automobile models, substantially similar to the Fiat types of current production, but with the modifications required by the particular climatic and road conditions of the country; the supply of a complete manufacturing plant project, with the definition of the machine tools, toolings, control apparatus, etc.; the supply of the necessary know-how, personnel training, plant start-up assistance, and other similar services.

All key machine tools and transfer lines came from the United States. While the tooling and fixtures were designed by Fiat, over $50 million worth of the key special equipment came from U.S. suppliers. This included:

1. Foundry machines and heat-treating equipment, mainly flask and core

molding machines to produce cast iron and aluminum parts and continuous heat-treating furnaces.

2. Transfer lines for engine parts, including four lines for pistons, lathes, and grinding machines for engine crank-shafts, and boring and honing machines for cylinder linings and shaft housings.

3. Transfer lines and machines for other components, including transfer lines for machining of differential carriers and housing, automatic lathes, machine tools for production of gears, transmission sliding sleeves, splined shafts, and hubs.

4. Machines for body parts, including body panel presses, sheet straighteners, parts for painting installations, and upholstery processing equipment.

5. Materials-handling, maintenance, and inspection equipment consisting of overhead twin-rail Webb-type conveyors, assembly and storage lines, special tool 'sharpeners for automatic machines, and inspection devices.

Some equipment was on the U.S. Export Control and Co-Corn lists as strategic, but this proved no setback to the Johnson Administration: the restrictions were arbitrarily abandoned. Leading U.S. machine-tool firms participated in supplying the equipment: TRW, Inc. of Cleveland supplied steering linkages; U.S. Industries, Inc. supplied a "major portion" of the presses; Gleason Works of Rochester, New York (well known as a Gorki supplier) supplied gear-cutting and heat-treating equipment; New Britain Machine Company supplied automatic lathes. Other equipment was supplied by U.S. subsidiary companies in Europe and some came directly from European firms (for example, Hawker-Siddeley Dynamics of the United Kingdom supplied six industrial robots). In all, approximately 75 percent of the production equipment came from the United States and some 25 percent from Italy and other countries in Europe, including U.S. subsidiary companies.

In 1930, when Henry Ford undertook to build the Gorki plant, contemporary Western press releases extolled the peaceful nature of the Ford automobile, even though *Pravda* had openly stated that the Ford automobile was wanted for military purposes. Notwithstanding naive Western press releases, Gorki military vehicles were later used to help kill Americans in Korea and Vietnam.

In 1968 Dean Rusk and Wait Rostow once again extolled the peaceful nature of the automobile, specifically in reference to the Volgograd plant. Unfortunately for the credibility of Dean Rusk and Wait Rostow, there exists a proven **military** vehicle with an engine of the same capacity as the one produced at the Volgograd plant. Moreover, we have the Gorki and ZIL experience. Further, the U.S. government's own committees have stated in writing and at detailed length that **any** motor vehicle plant has war potential. Even further, both Rusk and Rostow made explicit statements to Congress denying that Volgograd had military potential.

It must be noted that these Executive Branch statements were made in the face of clear and known evidence to the contrary. In other words, the statements can only be considered as deliberate falsehoods to mislead Congress and the American public.

It was argued by Washington politicians that a U.S. jeep engine is more powerful than the engine built at Togliatti. The engine is indeed about two-thirds as powerful as the jeep engine, but a proven vehicle of excellent capabilities utilizing a 1,500 cc. 4-cylinder Opel engine developing 36 horsepower: this same engine later powered the Moskvitch-401 and the Moskvitch-402 (Moskva) military cross-country 4-wheel drive version of the 401, produced at the MZMA in Moscow.

In brief, there already existed a tested and usable military vehicle capable of transporting men or adaptable for weapons use and powered by a !,500 *cc.* engine, the same size as the engine supplied for Togliatti. Therefore statements by U.S. officials to the effect that the Togliatti plant has no military capabilities are erroneous.

Military possibilities for such a small engine include use in a special-purpose small military vehicle (like the American jeep), or as a propulsive unit in a specially designed vehicle for carrying either personnel or weapons. Soviet strategy is currently toward supply of wars of "national liberation." The Togliatti vehicle is an excellent replacement for the bicycle used in Vietnam. The GAZ-46 is the Soviet version of the U.S. jeep, and we know that such a vehicle figures in Soviet strategic thinking.

The War Potential of the Kama Truck Plant

Up to 1968 American construction of Soviet military truck plants was presented as "peaceful trade." In the late 1960s Soviet planners decided to build the largest truck factory in the world. This plant, spread over 36 square miles situated on the Kama River, has an annual output of 100,000 multi-axle 10-ton trucks, trailers, and *off-the-road* vehicles. It was evident from the outset, given absence of Soviet technology in the automotive industry, that the design, engineering work, and key equipment for such a facility would have to come from *the* United States.

In 1972, under President Nixon and National Security Adviser Henry Kissinger, the pretense of *"peaceful* trade" was abandoned and the Department of Commerce admitted *(Human Events*, Dec. 1971) that the proposed Kama plant had military potential. Not only that, but according to a department spokesman, the military capability was taken into account when the export licenses were issued for Kama.

The following American firms received major contracts to supply production equipment for the gigantic Kama heavy truck plant:

> Glidden Machine & Tool, Inc., North Tonawanda, New York — Milling machines and other machine tools.
>
> Gulf and Western Industries, Inc., New York, N.Y. — A contract for $20 million of equipment.
>
> Holcroft & Co., Kovinia, Michigan — Several contracts for heat treatment furnaces for metal parts.
>
> Honeywell, Inc., Minneaspolis, Minnesota — Installation of automated production lines and production control equipment.

Landis Manufacturing Co., Ferndale, Michigan — Production equipment for crankshafts and other machine tools.

National Engineering Company, Chicago Illinois — Equipment for the manufacutre of castings.

Swindell-Dresser Company (a subsidy of Pullman Incorporated), Pittsburgh, Pennsylvania — Design of a foundry and equipment for the foundry, including heat treatment furnaces and sine;ting equipment under several contracts ($14 million).

Warner & Swazey Co., Cleveland, Ohio — Production equipment for crankshafts and other machine tools.

Combustion Engineering: molding machines ($30 million). Ingersoll Milling Machine Company: milling machines.

E. W. Bliss Company

Who were the government officials responsible for this transfer of known military technology? The concept originally came from National Security Adviser Henry Kissinger, who reportedly sold President Nixon on the idea that giving military technology to the Soviets would temper their global territorial ambitions. How Henry arrived at this gigantic non sequitur is not known. Sufficient to state that he aroused considerable concern over his motivations. Not least that Henry had been a paid family employee of the Rockefellers since 1958 and has served as International Advisory Committee Chairman of the Chase Manhattan Bank, a Rockefeller concern.

The U.S.-Soviet trade accords including Kama and other projects were signed by George Pratt Shultz, later to become Secretary of State in the Reagan Administration and long known as a proponent of more aid and trade to the Soviets. Shultz is former President of Bechtel Corporation, a multi-national contractor and engineering firm.

American taxpayers underwrote Kama financing through the Export-Import Bank. The head of Export-Import Bank at that time was William J. Casey, a former associate of Armand Hammer and now (1985) Director of the Central Intelligence Agency. Financing was arranged by Chase Manhattan Bank, whose then Chairman was David Rockefeller. Chase is the former employer of Paul Volcker, now Chairman of the Federal Reserve Bank. Today, William Casey denies knowledge of the military applications (see page 195), although this was emphatically pointed out to official Washington 15 years ago.

We cite these names to demonstrate the tight interlocking hold proponents of miltiary aid to the Soviet Union maintain on top policy making government positions.

On the other hand, critics of selling U.S. military technology have been ruthlessly silenced and suppressed.

Critics of Kama Silenced and Suppressed

For two decades rumors have surfaced that critics of aid to the Soviet Union have been silenced. Back in the 1930s General Electric warned its employees in the Soviet Union not to discuss their work in the USSR under penalty of dismissal.

In the 1950s and 1960s IBM fired engineers who publicly opposed sale of IBM computers to the USSR.

Let's detail two cases for the record; obviously this topic requires Congressional investigation. At some point the American public needs to know who has suppressed this information, and to give these peri sons an opportunity to defend their actions in public.

The most publicized case is that of Lawrence J. Brady, now Assistant Secretary of Commerce for Trade Administration. Ten years ago Brady was a strong critic of exporting the Kama River truck technology. In his own words (in 1982 before a Senate Investigating Committee) is Brady's view on Kama River.

> **Mr. Brady**: Mr. Chairman, it is a privilege for me to be here again. I have testified before this subcommittee previously. As a matter of fact, it is 3 years ago this month that I testified over on the House side before the House Armed Services Committee in which I disagreed with the political appointees of the Carter administration and indicated that the technology which we were licensing to the Soviet Union, specifically for the Kama River plant, was being diverted to the Soviet military. It is 10 years ago this month that the President of the United States inaugurated the era of detente with a trip to Moscow.
>
> A central component of that historic trip was the hope that greatly expanded trade ties between the East and the West would lead to mutual cooperation and understanding.
>
> Obviously, those hopes have not taken place. In that 10-year period, as we in the administration have indicated in the last year, we have been exploited both legally and illegally by the Soviet Union and Eastern Europe. This technology which has helped the Soviet immensely in their military industrial infrastruture. Again, 3 years ago, I personally disclosed the failures of the Commerce Department in the licensing process, referring to it, as I said in my testimony, as a shambles.[12]

Brady went on to note that his reward for surfacing vital information was criticism and suppression.

> **Chairman Roth** [presiding]: Thank you, Mr. Brady. Mr. Brady, the members of the subcommittee are, of course, aware of your personal commitment to this important area, but | believe it is important that the record reflect fully your position on the specific question of export technology and particularly reference the efforts some years ago to help the Soviet Union construct some trucking facilities.

Would you, for the purposes of the record, explain your role in this matter?

> **Mr. Brady:** Mr. Chairman, about 3 years ago, the Export Administration Act

> was up for review for extension. As part of that review, the House Armed Services Committee decided that it was going to hold hearings on that extension, in addition to the committee of appropriate jurisdiction, namely the Foreign Affairs Committee on the House side.

There were some statements being made on both sides in Congress that were not totally consistent with the facts. We had intelligence information that trucks were being produced at the Kama River plant for the Soviet military and, in fact, being distributed to Eastern Europe for use in East European endeavors.

An administration witness was asked about that and denied it. I was asked about it and confirmed it. And, as a result of that, I was labeled a whistleblower and eventually left the Department of Commerce. In point of fact, that was the tip of the iceberg. There had been apparently intelligence through the 1970s, particularly the latter half of the seventies, indicating that there was substantial diversion taking place (and) . . . for some reason the intelligence just didn't get to the top. So that was my role. I eventually had to leave Government for it.[13]

However, Mr. Brady was unaware of a similar and much earlier story of suppression in the Kama case which paralleled his own.

In the years 1960-1974 this writer authored a three volume series, Western *Technology and Soviet Economic Development,* published between 1968 and 197:3 by the Hoover Institution, Stanford University, where the author was Research Fellow. This series cataloged the origins of Soviet technology from 1917 down to the early 1970s. The series excluded the military aspects of technical transfers. However, the work **totally** contradicted U.S. Government public statements. For example, in 1963 State Department claimed in its public pronouncements that all Soviet technology was indigenous, a clear misunderstanding or dismissal of the facts.

By the early 1970s it was clear to this author that a significant part of Soviet military capability also came from the West, even though this assessment was also refuted by U.S. government analysts. Quietly, without government or private funding, this author researched and wrote *National Suicide: Military Aid to the Soviet Union.* The manuscript was accepted by Arlington House. Both author and publisher maintained absolute silence about the existence of the manuscript until publication date.

When news of publication reached Stanford, there was immediate reaction — a hostile reaction. A series of meetings was called by Hoover

> Institution Director W. Glenn Campbell. Campbell's objectives were:
>
> 1) to withdraw the book from publication,
>
> 2) failing that, to disassociate Hoover Institution from the book and the author.

Campbell initially claimed that *National Suicide* was a plagiarism of the author's works published by Hoover. This was shown to be nonsense. In any event an author can hardly plagiarize himself. The objective, of course, was to persuade author and publisher to withhold publication. Both the author and Arlington House refused to withdraw the book

and continued with publication. The book was published and sold over 50,000 copies.

After the unsuccessful attempt at suppression Glenn Campbell arbitrarily removed the title Research Fellow from the author and removed both his name and that of his secretary from the personnel roll of the Hoover Institution. This effectively disassociated Hoover Institution from the book and its contents. The author became a non-person. Two years later the author voluntarily left Hoover Institution and assumed a private role unconnected with any research foundation or organization. These events happened some years before Mr. Brady of Commerce took his own personal stand and suffered a similar fate.

By a strange quirk of fate, Glenn Campbell is today Chairman of Mr. Reagan's Intelligence Oversight Committee.

Who were the Deaf Mute Blindmen at Kama River?

Clearly, the Nixon Administration at the highest levels produced more than a normal number of deaf mutes — those officials who knew the story of our assistance to the Soviets but for their own reasons were willing to push forward a policy that could only work to the long run advantage of the United States. It is paradoxical that an Administration that was noisy in its public anti-communist stance, and quick to point out the human cost of the Soviet system, was also an Administration that gave a gigantic boost to Soviet military truck capacity.

Possibly campaign contributions had something to do with it. Multina-tionals listed below as prime contractors on Kama River were also major political contributors. However, the significant link never explored by Congress is that Henry Kissinger, the key promoter of the Kama River truck plant at the policy level, was a former and long-time employee of the Rockefeller family — and the Rockefellers are the largest single shareholders in Chase Manhattan Bank (David was then Chairman of the Board) and **Chase was the lead financier for Kama River**. This is more than the much criticised "revolving door." It is close to an arm's length relationship, i.e., the use of public policy for private ends.

Here are the corporations with major contracts at Kama River, listed with the name and address of the Chairman of the Board in 1972.

GULF & WESTERN INDUSTRIES, INC.
1 Gulf and Western Plaza, New York NY 10023
Tel. (212) 333-7000
Chairman of the Board: Charles G. Bluhdorn
Note: Charles Bluhdorn is also a Trustee of Freedoms Foundations
at Valley Forge and Chairman of Paramount Pictures Corp.

E. W. BLISS CO. (a subsidiary of Gulf & Western)
217 Second Street NW, Canton, Ohio 44702
Tel. (216) 453-7701
Chairman of the Board: Carl E. Anderson
Note: Carl E. Anderson is also Chairman of the American-Israel
Chamber of Commerce & Industry

COMBUSTION ENGINEERING, INC.
277 Park Avenue, New York, NY 10017
Tel. (212) 826-7100
Chairman of the Board: Arthur J. Santry, Jr.

HOLCROFT AND COMPANY
12062 Market Street, Livonia, Mich. 48150
Tel. (313) 261-8410
Chairman of the Board: John A. McMann

HONEYWELL, INC.
2701 4th Avenue S., Minneapolis, Minn. 55408
Tel. (612) 332-5200
Chairman of the Board: James H. Binger

INGERSOLL MILLING MACHINE COMPANY
707 Fulton Street, Rockford, ILL 61101
Tel. (815) 963-6461
Chairman of the Board: Robert M. Gaylord

NATIONAL ENGINEERING CO.
20 N. Wacker Drive, Chicago, ILL 60606
Tel. (312) 782-6140
Chairman of the Board: Bruce L. Simpson

PULLMAN, INC.
200 S. Michigan Ave., Chicago, ILL 60604
Tel. (312) 939-4262
Chairman of the Board: W. Irving Osborne, Jr.

SWINDELL-DRESSLER CO. (Division of Pullman, Inc.)
441 Smithfield Street, Pittsburgh, PA 15222
Tel. (412) 391-4800
Chairman of the Board: Donald J. Morfee

WARNER & SWAZEY
11000 Cedar Avenue, Cleveland, Ohio 44106
Tel. (216) 431-6014
Chairman of the Board: James C. Hodge

CHASE MANHATTAN BANK
Chairman of the Board: David Rockefeller

Footnotes:

[12]United States Senate, *Transfer of United States High Technology to the Soviet* Union *and Soviet Bloc Nations,* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 263.

[13]Ibid., pp. 267-8.

BACK

CHAPTER IV

Soviets Buy into the 21st Century

> In most fields of technical research, development and production which I am familiar with in the Soviet Union, the overwhelming majority of resources are invested in military applications. as a matter of fact the Soviet industrial capacity is so overburdened with military production that the Soviets could not make a civilian or commercial application of certain high technology products even if they wanted to. — Former Soviet engineer, Joseph Arkov before U.S. Senate, May 4, 1982

Every generation or so in the past two hundred years Western technology has generated a fundamental innovation that changes the whole course of society and the economy. The industrial revolution of the late 18th and 19th centuries was based on canals and iron. Railroads were a fundamental innovation of the first third of the 19th century. In the late 19th century the Bessemer process enabled mass production of cheap steel. The internal combustion engine in the 1900s began another revolution. Atomic energy in the 1940s started the atomic age.

In the 1970s the semi-conductor was first mass produced in California. The economy of the 21st century will evolve around the silicon chip, i.e., the integrated circuit memory chip and semi-conductor components.

No country large or small will make any progress in the late 20th century without an ability to manufacture integrated circuits and associated devices. These are the core of the new industrial revolution, both civilian and military, and essentially the same device is used for both military and civilian end uses. A silicon chip is a silicon chip, except that military quality requirements may be more strict than civilian ones.

This electronic revolution originated in Santa Clara Valley, California in the 1950s and roughly centers around Stanford University.

Stanford is also in many ways at the core of the debate over transfer of our military technology to the Soviet Union. Congressman Ed Zschau (Rep. Menlo Park) represents the Silicon Valley area and is a strong proponent of more aid to the Soviets. On the other hand, also in Silicon Valley, this author's six books critical of our technological transfers to the Soviets originated, and three were published at the Hoover Institution, Stanford University (See Bibliography for titles).

Silicon Valley gets its name from the essential element silicon used in integrated circuits. An essential component of integrated circuits is the semi-conductor usually made of silicon and linked to other components such as transistors into a single circuit. By 1971 an entire computer could be produced on a single chip, in itself probably the most significant industrial breakthrough since the discovery that steel could be manufactured on a large scale from iron.

The semi-conductor revolution began in the Silicon Valley and was a challenge to the socialist world to duplicate. This they could not do. Every single Soviet weapon system has semi-conductor technology which originated in California and which has been bought, stolen or acquired from the United States.

Early Soviet Electronic Acquisitions

Back in 1929 *Pravda* commented that without the automobile the Soviet Army would be helpless in any future war. Western multinationals Ford Motor Company, Hercules Gear, IBM and others helped USSR bridge the gap of the 1920s. Identical aid can be found for electronics.

In August 1971 *the* U.S. Department of Defense paid $2 million to Hamilton Watch Company for precision watchmaking equipment. Watchmaking equipment is used in fabricating bomb and artillery shell fuses, aircraft timing gear, pinions, and similar military components. Most Soviet watch-manufacturing equipment has been supplied from *the* United States and Switzerland; in some cases *the* Soviets use copies of these foreign machines.

In 1929 *the* old Miemza *concession* factory, formerly a tsarist plant, received *the* complete equipment of the Ansonia Clock Company of New York, purchased for $500,000. This became *the* Second State Watch Factory in Moscow, brought into production by American and German engineers, and adapted to military products.

In 1920 the complete Deuber-Hampton Company plant at Canton, *Ohio*, was transferred to *the* Soviet Union, and brought into production by forty American technicians. Up to 1930 all watch components used in *the* Soviet Union had been imported from the United States and Switzerland. This new U.S.-origin manufacturing capability made possible *the* production of fuses and precision gears for military purposes; during World War II it was supplemented by Lend-Lease supplies and machinery.

After World War II Soviet advances in military instrumentation were based on U.S. and British devices, although the German contribution was heavy in *the* 1950s. About 65 percent of the production facilities removed from Germany were for the manufacture of power and lighting equipment, telephone, telegraph, and communications equipment, and cable and wire. The remainder consisted of German plants to manufacture radio tubes and radios, and military electronics facilities for such items as secret teleprinters and anti-aircraft equipment.

Many German wartime military electronic developments were made at the Reichpost Forschungsinstitut (whose director later went to the USSR) and these developments were absorbed by the Soviets, including television, infrared devices, radar, electrical coatings, acoustical fuses, and similar equipment. But although 80 percent of the German electrical and military electronics industries were removed, the Soviets did not acquire modern computer, control instrumentation, or electronic technologies from Germany: these they acquired from the U.S.

Bridging the Semi-conductor Gap

Taking semi-conductors as an example, three stages can be identified in the transfer process. The Soviets were able to import or manufacture small laboratory quantities of semi-conductors from an early date. What they could **not** do, as in many other technologies, was mass produce components with high quality characteristics. This situation is described by Dr. Lara Baker, a Soviet computer expert, before Congress:

> The Soviet system in preproduction can manage to produce a few of almost any product they want, provided they are willing to devote the resources to it. The best example of this would be the Soviet 'civilian' space program, in which they managed to put people in orbit before the United States did, but at a high cost.
>
> In the area of serial production, that is, the day to day production of large quantities of a product, the differences between the two systems become most obvious. Serial production is the Achilles heel of the Soviet bloc. Especially in high technology areas, the big problem the Soviets have is quality assurance they count products, not quality products. This is the area where the Soviets exhibit weakness and need the most help.[14]

The first phase for the Soviets was to **Identify** the technology needed, in this case a semi-conductor plant, to bridge the chasm between the 19th century and the 21st century.

The second phase was to obtain the **equipment** to establish a manufacturing plant.

The third phase was to bring this plant into production and make the best use of its output in an economy where developmental engineering resources do not exist in depth and military objectives have absolute priority.

We shall demonstrate in Chapter Five how the Soviets achieved the first of these tasks — with the help of the Control Data Corporation, Mr. William Norris, Chairman. The second phase was achieved through an illegal espionage network, the Bruchhausen network. The third phase is today in progress, although the phases one and two are already in place in the Soviet military complex.

The emphasis in this critical transfer of semi-conductor technology was not reverse engineering as, for example, the Soviet Agatha computer is reverse engineered from the Apple II computer, but use of U.S. manufacturing techniques and equipment to bridge a gigantic gap in Soviet engineering capabilities. The Soviet system does not generate the wealth of technology common in the West. It cannot choose the most efficient among numerous methods of achieving a technical objective because the Marxist system lacks the abundant fruits of an enterprise system. The emphasis in semi-conductors is transfer of a complete manufacturing technology to produce high quality products for known military end uses WHICH COULD NOT HAVE BEEN ACHIEVED BY THE SOVIETS THEMSELVES, WITHOUT FUNDAMENTAL CHANGES IN THEIR SYSTEM.

In brief, in electronics the key is not copying Western technology as for example the Caterpillar tractor was duplicated by the millions, but to transfer specialized production equipment to mass produce critical components.

This assertion has been fully supported by expert witnesses before Congressional committees. For example, the following statement was made in 1952 to the Senate by Dr.

Stephen D. Bryen, Deputy Assistant Secretary of Defense, International Economics, Trade and Security Policy.

> **Senator Nunn:** Dr. Bryen, you made reference in your testimony to the effort by the Soviets to build and equip a semiconductor plant using equivalent know-how from the United States.
>
> Could the Soviets have built and equipped such a plant in the late 1970s and early 1950s without U.S. machinery, equipment and know-how?
>
> **Dr. Bryen:** My answer is they could not. That doesn't mean that equipment necessarily came from this country. It could have been transferred from Europe or elsewhere. In fact, it could have been transferred from another country that bought that equipment — it could have been on the secondary market. There is a secondary market in this sort of machinery. These are terribly difficult things to trace.
>
> What we know in the first instance is that a lot had to be U.S. equipment, that the system was full of holes, it was porous, it was easy for them to get it and they got it.
>
> The microelectronics area has enabled the Soviets to upgrade their military equipment.[15]

And a similar comment from a former Russian engineer, Joseph Arkov, again in Senate testimony.

> By using — not copying — the American high technology products, they move closer to their goal of technical self-sufficiency. Whether they will ever become self-sufficient in high technology is a debatable point. My own view is that this course of action gives them quick gains, but over the long run, it will result in their being permanently behind the United States, forever having to rely on American products to manufacture their own.
>
> However, being behind us in technology is a relative condition. The Soviets can make progress in a technical sense and, at the same time, trail the United States, but by their standards, they will have achieved much. Their accomplishments will have been made with limited cost to them because the basic research and development will have been paid for by the Americans.
>
> To repeat, then, the Soviet strategy in obtaining American high technology products includes efforts to copy and duplicate, but the Soviets' primary objective is to obtain machinery which they can use in the manufacture of their own high technology equipment.
>
> This distinction — the difference between copying of technology and the use of it — is an important one because it provides the United States with a key insight into which products the Soviets are the most anxious to obtain. It also can influence American policymakers in deciding which products the United States can afford to sell the Soviet Union, and which components should not be

sold to them.

Soviet strategy in using American products can be seen in the following illustration. Let us say, for example, that the Soviets have 100 plants involved in producing components for use in space flight. Each of the plants could use a certain kind of American computer. But they cannot obtain 100 computers; that is, one for each plant. Instead, they are able to obtain three or four American computers of the desired type. They use the computers as best they can in those three or four plants where they can do the most good. They are not inclined to use them as non-producing models to be studied in a laboratory for the purpose of copying.

Moreover, if the American product obtained in another transaction — if, for example, the product is a sophisticated oven used in the heating of microchips — then they are even less interested in copying or imitating. They will use the oven to produce microchips. There is no civilian use for equipment used to manufacture integrated circuits or semi-conductors.[16]

How the Deaf Mute Blindmen Helped the Soviets into the 21st Century

With these insights into Soviet technological acquisition strategy we can identify the stages by which the Soviets acquired semi-conductor technology. Chronologically these are:

DATE	EVENT
1951	Semi-conductor developed in Santa Clara Valley, California. From this point on Soviets import chips and then manufacture on a laboratory scale.
1971	"Computer in a chip" development. Soviets still unable to mass produce even primitive semi-conductor devices.
1973	Control Data Corporation (CDC) agrees to supply Soviets with a wide range of scientific and engineering information including construction and design of a large fast computer (75 to 100 million instructions per second is fast even in 1985) and manufacturing techniques for semi-conductors and associated technologies (See Chapter Five).
1977-80	Soviets acquire technology for a semi-conductor plant through the Bruchhausen network and Continental Trading Corp. (CTC). The CDC agreement gives Soviets sufficient information to set up a purchasing and espionage program. CDC told the Soviets what they needed to buy.
1981-82	Commerce Department lax in enforcing export control regulations. U.S. Customs Service makes

	determined efforts to stop export of semi-conductor manufacturing equipment.
1985	Soviets establish plant for semi-conductor mass production. Soviet military equipment based on this new output.
1986	U.S. taxpayer continues to support a defense budget of over $300 billion a year. Without these transfers Soviet military could not have been computerised and U.S. defense budget reduced.

The Bruchhausen Network

The second phase of the acquisition of semi-conductor mass production technology was the Bruchhausen network.

This network comprised a syndicate of 20 or so "front" electronics companies established by Werner J. Bruchhausen, age 34, a West German national. The key component was a group of companies with the initials CTC (Continental Trading Corporation), managed by Anatoli Maluta, a Russian-born naturalized U.S. citizen. A Congressional subcommittee devoted considerable time and resources to reconstruction of the activities of the CTC-Maluta operation.

This network of companies, controlled from West Germany, gave the Soviets the technology for a major leap forward in modernizing military electronics capability. Dr. Lara H. Baker, Jr., who had personal knowledge of the CTC-Maluta case, was one of the subcommittee's sources in reconstructing the network. Other sources included the Departments of Commerce and Justice and the U.S. Customs Service.

Using Werner Bruchhausen's companies and accomplices in Western Europe as freight forwarders and transshipment points, Maluta sent more than $10 million of American-made high technology equipment to the Soviet Union from 1977 to 1980. the machinery was used to equip a Soviet plant for the manufacture and testing of semiconductors. The equipment went from California to Western Europe to the USSR.

To Dr. Baker, the CTC-Maluta case proved a point: that the Soviets know precisely what U.S. technology they want, and leave little to chance. Dr. Baker explained:

> Of particular interest to me in the (CTC-Maluta) case is the information it gives us about Soviet intentions. We delude ourselves if we think the Soviets enter the black market in search of strategic components in a helter-skelter style, buying up dual-use commodities without rhyme or reason.
>
> The truth of the matter is that the Soviets and their surrogates buy nothing they don't have specific, well defined needs for. They know exactly what they want — right down to the model number — and what they want is part of a carefully crafted design.

The carefully crafted design in this instance was a semi-conductor manufacturing plant, an essential part of the Soviet need to close the technological gap between themselves and the U.S. in the integrated circuit/microcomputer industry. We shall see in Chapter Five how Control Data Corporation provided the key basic information on **what** to acquire.

Dr. Baker, who testified in the 1981 successful prosecution of Maluta and his associate, Sabina Dorn Tittel, studied 400 separate air waybills and other shipping documents used by the CTC network. The conclusion was inescapable that the Soviets were equipping a semi-conductor plant. Soviet use of components of U.S. origin demonstrated their determination to make the facility as efficient and modern as any in the world:

> …(the Soviets) have purchased clandestinely all the hardware they need for equipping a good integrated circuit production plant. They showed no interest in purchasing production equipment that was not state of the art. They showed very good taste.

Stressing the point that, through the CTC-Maluta combine, the Soviets bought everything needed for a semi-conductor manfacturing plant, Dr. Baker testified to the Senate that among the equipment bought in the period 1977 through 1980 were saws for cutting silicon crystals, equipment for making masks for integrated circuit production, plotters to draw the circuits, basic computer-aided design systems for integrated circuit design, diffusion ovens for circuit production ion-implantation systems for circuit production, photo-lithographic systems for integrated circuit production, scribers for separating integrated circuits on wafers, testers for testing integrated circuits on wafers, bonding equipment for bonding connecting leads to integrated circuits, and packaging equipment for packaging the circuits.

Dr. Baker added:

> High quality integrated circuits are the basis of modern military electronics. Integrated circuits form the basis for military systems which are more flexible, more capable and more reliable than systems using discrete electronic components. The production tooling and equipment obtained by the Soviets (from the CTC-Maluta network) will significantly improve the Soviets' capability to produce such circuits.

Further support for the assertion that the Soviets relied on American technology to equip their semi-conductor plant came from John D. Marshall, a chemist and specialist in facilities that manufacture semiconductors.

Marshall owns a high technology business in Silicon Valley and testified to Congress that in the winter of 1975 he made two trips to the Soviet Union. Led by a West German named Richard Mueller to believe that the Soviets wanted to retain his consultative services in connection with their plans to manufacture electronic watches, Marshall learned on the second trip to Moscow that what was actually wanted was expertise to equip a semi-conductor plant. Marshall told the subcommittee:

> On the second trip, we met several Soviets who purported to be technical people. They were not very well trained and were not familiar with sophisticated technological thinking. But it was apparent to me by the questions they asked and the subjects they discussed that the Soviets had built a semi-

> conductor manfuacturing and assembly plant and they were anxious to equip it.
>
> They wanted American semi-conductor manufacturing equipment and they had detailed literature on the precise kind of equipment they wanted. They also wanted me to obtain for them certain semi-conductor components.
>
> It was clear to me that Mueller had deceived me as to the Soviets' intentions, that it was not merely electronic watches the Soviets wanted to manufacture.

Marshall realized that to cooperate further with the Soviets would be illegal. He refused to meet further with the Soviets and left Moscow.

As he returned to the United States, Marshall recalled conversations he had overheard that at the time had not made.sense to him on the way to Moscow. Marshall and Mueller had stopped in Hamburg where Mueller introduced him to a Canadian, also providing technical assistance to the Soviets, that his mission was to show them how to make integrated circuits and to use equipment now on the way.

In Moscow, Marshall said, he met a woman who spoke English with a German accent who planned to ship certain American-made photolithography materials to the Soviet Union via East Berlin. Photolithography materials are critical in semi-conductor manufacture.

In West Germany, Marshall was introduced to Volker Nast, identified by Mueller as his partner. Nast was involved in illegal diversions of the U.S. technology to the Soviet Union.

The significance of 1975 as the year the Soviets expressed their desire for American-made semi-conductor equipment has been explained by Marshall. In 1975 the U.S. was preeminent in the field of semi-conductor technology. Marshall said:

> It is my view that the Soviets had built their manufacturing plant, or plants, to specifications for American-made equipment — for the manufacture, assembly and testing of integrated circuits. Now that the facilities were constructed, they were, in the winter of 1975, confronted with the next step, which was to equip the facilities.

According to Marshall, the Soviets' primary interest in 1975 was the manufacture and assembly phases of semi-conductor production. By 1977, he said, the Soviets needed to stock the facility with test equipment, and software development equipment.

Dr. Lara Baker, in his testimony before Congress, agreed with Marshall. In the 1978-79 time frame the CTC-Maluta syndicate purchased production equipment. In the 1979-1980 period, the CTC-Maluta network bought semi-conductor test equipment. Said Baker, "Marshall's testimony is quite consistent with my information."

U.S. Customs Service investigations confirmed not only the Bruchhausen network but subsidiary networks operating in cooperation with the Soviets for illegal purchase of semi-conductor manufacturing equipment.

Information about the Soviets' efforts to build a semi-conductor industry — and, in so doing, make a major leap forward in military electronics — was given to a Senate

subcommittee by Charles L. McLeod, a Special Agent with the U.S. Customs Service. McLeod said the same Richar Mueller who had brought John Marshall to Moscow had been active in several other schemes.

In fact, McLeod said, Mueller was an operative in a syndicate whose mission was to export by illegal means semi-conductor manufacturing equipment from the United States to the Soviet Union. Other operatives in the network included Volker Nast, Luther Heidecke, Peter Gessner and Frederick Linnhoff, all West Germans. In the U.S., their associates included Robert C. Johnson, Gerald R. Starek and Carl E. Storey, officers in high technology firms.

McLeod, of the San Francisco office of U.S. Customs, investigating technology diversions originating in nearby Santa Clara County, said inquiries into two Silicon Valley electronics firms — II Industries and Kaspar Electronics — led to the conclusion that the Soviets were trying in the mid-1970s to "construct a semi-conductor manufacturing facility by using U.S. technology and equipment." A loosely knit organization of electronics producers and brokers in West Germany and Northern California assisted the Soviets.

The first diversion of semi-conductor manufacturing equipment occurred in 1974. McLeod said participants in the diversion included Luther Heidecke, a representative of Honeywell/West Germany, AG, and Peter Gessner, the European sales representative for Applied Materials, a Northern California firm which produced semi-conductor manufacturing equipment. Gessner had other jobs as well, serving as the European salesman for II Industries and Kaspar Electronics. In addition, Gessner was employed by Richard Mueller.

Processing orders through Honeywell/West Germany for the purchase of semiconductor manufacturing equipment, Heidecke arranged for the export of II Industries and Kaspar Electronics machinery to West Germany and ultimately to the Soviet Union. Heidecke's activities came to the attention of the West German authorities, who prosecuted him for giving the Soviets national security information.

McLeod described a second diversion. A Mays Landing, New Jersey export firm known as Semi-Con, formed by a West German Richard Mueller and managed by a former intelligence agent, shipped semiconductor manufacturing equipment to the Soviet Union. The equipment was from II Industries and Kaspar Electronics.

The identification of the Bruchhausen network does not reflect favorably upon the operating efficiency of the Commerce Department's Office of Export Control and specifically its Compliance Division. (As the situation existed in 1980, it may possibly have improved since that time.)

The existence of the CTC network of companies was first brought to the attention of the U.S. government in 1977 and 1978 when two anonymous letters were received at the American Consulate in Dusseldorf, Germany. The State Department translated the letters into English and referred them to the Compliance Division in Commerce. The letters were received by the Compliance Division in 1978 and no effort was made to investigate the allegations.

After receipt of the letters, two U.S. producers of dual-use technology also reported to the

Commerce Department that they were suspicious of the CTC companies. Again no Commerce action.

A Commerce Department special agent did interview CTC's principal executive in Los Angeles, the naturalized Russian-born American citizen Anatoli Maluta, also known as Tony Maluta and Tony Metz. Maluta told the special agent from Compliance that he did not know anything about export controls, or the need to have validated export licenses to ship certain controlled commodities. However, Maluta said, because of the agent's interest, he would cancel the suspicious order.

There was no further investigation of the CTC network until a second letter arrived at Compliance Division from another high-technology producer, also suspicious about the CTC companies.

Early in 1980, a second Compliance Division agent, Robert Rice, was assigned to the case and conducted a comprehensive preliminary inquiry. Rice, the most senior agent in the Division, found considerable information indicating widespread violations of export controls. The evidence went to the Office of the U.S. Attorney in Los Angeles in March 1980. A major inquiry was begun by the U.S. Attorney's office, under the direction of Assistant U.S. Attorney Theodore W. Wu and the U.S. Customs Services. Customs ultimately assigned about 15 agents to the case in California, Texas, New York, and Western Europe. Compliance Division Special Agent Rice was the only Commerce Department representative assigned to the case on a regular basis.

Indictments were brought against Bruchhausen and Dietmar Ulrichshofer, both of whom remained in Europe out of reach, and two Los Angeles associates — Maluta and Sabina Dorn Tittel. Maluta and Tittel were convicted.

The CTC case demonstrated technology diversions of about $10 million and is considered by law enforcement and national security specialists one of the most important export control cases ever brought to trial. The inquiry showed that:

First, the Compliance Division did not move quickly to establish the value of the anonymous letters.

Second, the Compliance Division did not connect the anonymous letters to the allegations reported by two U.S. manufacturers.

Third, when Compliance Division Agent Rice turned over the results of his inquiry to Assistant U.S. Attorney Wu in Los Angeles, it was apparent to Wu that considerable expenditures of resources would be needed. Trained investigators would be required to conduct interviews, evaluate shipping documents, surveil suspected violators, and carry out other aspects of a traditional law enforcement full-scale field investigation.

Commerce's contribution to that effort was Agent Rice, a competent investigator in whom Wu had confidence. But he needed more than one agent, and enlisted assistance of the Customs Service. Later assistance was provided by trained criminal investigators from the IRS.

Fourth, at an early point in the inquiry it was necessary to seize shipments. Commerce had

neither the authority nor the manpower to seize shipments. Customs did.

Fifth, at another point in the inquiry it was necessary to search the premises of CTC companies and certain of employees in the United States and Europe. The Compliance Division had insufficient resources to implement simultaneous search warrants. The Compliance Division had no law enforcement capabilities in Western Europe to work with German customs to coordinate searches abroad. Customs executed the warrants in the United States and, through its agreements with West German customs, arranged for the execution of warrants in Germany.

Sixth, to substitute sand for one of CTC's shipments to Moscow, a sizable expenditure of funds was needed. The Compliance Division balked at the shipment substitution strategy and refused to pay the cost of recrating the sand and airfreight. Customs officials approved of the substitution and agreed to pay the cost.

Seventh, extensive overseas coordination, in addition to the search warrants, was called for with West German Customs and other overseas law enforcement contacts.

Eighth, extensive surveillance was necessary. Armed Customs agents and armed Internal Revenue Service criminal investigators and an unarmed Compliance Division Special Agent Rice provided this work.

Two suspects under surveillance had firearms in the back seat of their. car. The firearms were not used. But it was an important law enforcement advantage for the agents on surveillance to be armed as well.

Ninth, experienced supervisors with law enforcement background and training were needed to direct the inquiry in the field. The Office of the U.S. Attorney for the Central District of California, working with supervisorial personnel in the Customs Service, provided the needed direction. Contact with supervisorial personnel in the Compliance Division, who remained in Washington, was made on the telephone and the persons who worked on the case in California did not consider such communication to be satisfactory.

Tenth, when the appropriate time came to apprehend Anatoli Maluta and Sabina Dorn Tittle, IRS agents made the arrests. Customs agents, like the IRS criminal investigators, are authorized to make arrests. Even had the Compliance Division dispatched sufficient numbers of agents to assist in the inquiry, they could not have arrested the suspects.

The Type of Equipment Shipped to the USSR

The Bruchhausen network was extremely efficient at obtaining the type of equipment needed by the Soviets for their semiconductor plant.

Here is a summary as reported to a Congressional Committee by an American computer expert.

> **Senator Nunn:** Were you familiar with the nature of the equipment that was being shipped for the Soviets?

Mr. Marshall: Yes, I was.

Senator Nunn: What was it to have been used for in your opinion?

Mr. Marshall: It would have been used for the production of the integrated circuits. It was part of the photolithography process used to make integrated circuits.

Senator Nunn: What about the military applications?

Mr. Marshall: The circuits certainly have military application; the equipment has no military application.

Senator Nunn: This is primarily industrial?

Mr. Marshall: For production circuits used to print the patterns, the microscopic patterns on the silicon —

Senator Nunn: Does that mean once they produce these they would have been using it for commercial purposes?

Mr. Marshall: Commercial or military.

Senator Nunn: Or military?

Mr. Marshall: Yes.

Senator Nunn: Members of the minority staff showed you a list of equipment that has been illegally exported to the Soviets over the period 1976 to 1980; is that correct?

Mr. Marshall: Yes.

Senator Nunn: These illegal exports were valued at about $10 million. Have you looked at that list?

Mr. Marshall: I have seen the list, yes.

Senator Nunn: What type of equipment was this and how would it have been used. in your opinion?

Mr. Marshall: Most of the equipment there really broke down into two categories. One category was mainly test equipment, for testing integrated circuits. Another area was software development.

Examination of Continental Technology Corporation invoices demonstrates the high technology specialized nature of the equipment shipped by the Bruchhausen network. Here are sample summaries based on CTC invoices:

CTC Invoice Number: 1017

Manufacturer: Fairchild Instrument Corporation

The commodities on this invoice are spare parts and extensions for the Fairchild Xincom test systems referred to on CTC Invoice number 8051, among others. As such they continue and enhance the capabilities of the microprocessor test system previously referred to.

The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 8071

Manufacturer: Fairchild Instrument Corporation

The commodity on this invoice is a test system for the production testing of integrated circuits. This test system is necessary and critical for the test of civilian or military microcircuits. This is an area in which the destination country falls far behind the United States in capability, and the test system is applicable to integrated circuits for military applications. Single board computers/microcomputer systems are used in most advanced weapons systems throughout the free world, particularly in missile and aircraft systems. Their use provides a significant increase in effectiveness with an equally significant reduction in weight and power consumption.

These products would exceed the state of the art of equipment being manufactured in the destination country, as of the time of shipment. The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 1091

Manufacturer: Fairchild Instrument Company

The commodity on this invoice is a test system for the production testing of integrated circuits. This test system is necessary and critical for the test of civilian or military microcircuits. This is an area in which the destination country falls far behind the United States in capability and the test system is applicable to integrated circuits for military applications. Single board computers/microcomputer systems are used in most advanced weapons systems throughout the free world, particularly in missile

and aircraft systems. Their use provides a significant increase in effectiveness with an equally significant reduction in weight and power consumption.

These products would exceed the state of the art of equipment being manufactured in the destination country, as of the time of shipment. The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 1040

Manufacturer: Fairchild Instrument Corporation

The commodity on this invoice is a test system for the production testing of integrated circuits. This test system is necessary and critical for the test of civilian or military microcircuits. This is an area in which the destination country falls far behind the United States in capability, and the test system is applicable to integrated circuits for military applications. Single board computers/microcomputer systems are used in most advanced weapons systems throughout the free world, particularly in missile and aircraft systems. Their use provides a significant increase in effectiveness with an equally significant reduction in weight and power consumption.

These products would exceed the state of the art of equipment being manufactured in the destination country, as of the time of shipment. The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 21 073

Manufacturer: California Computer Products Incorporated

The commodity on this invoice is a complete off-line high-precision flat bed plotter system. The plotter involved, the CALCOMP-748 plotter, is precise enough and big enough to directly draw the masks needed for integrated circuit production. For that reason the plotter associated equipment is embargoed. The integrated circuits produced with masks drawn on this plotter can be used for civilian or military applications and as such are embargoed.

The products exceed the state of the art of new designs in the

destination country, as of the time of shipment.

CTC Invoice Number: 21 074

Manufacturer: California Computer Products Incorporated

The commodities on this invoice are accessories for the high precision plotter referred to on CTC Invoice number 21 073. As such they are embargoed for that application. These particular pieces of equipment are within the state of the art of the country of destination, however, they could not be shipped as part of the plotter system.

CTC Invoice Number: 21 075

Manufacturer: California Computer Products Incorporated

The commodities on this invoice are spare parts for the plotter referred to on CTC Invoice number 21 073. As such they would be embargoed because of the direct military application of the plotter. The parts themselves may be embargoed because they contain embargoed technology. These products would exceed the state of the art of equipment being manufactured in the destination country as of the time of shipment.

CTC Invoice Number: 22 004

Manufacturer: Tektronics Incorporated

The commodity on this invoice is an extremely high speed (350 megahertz) oscilloscope with direct military applications in nuclear weapons testing, in high speed signal processing systems, and in other high speed electronic applications. This product exceeds the state of the art of equipment being manufactured in the destination country as of the time of the shipment.

The product matches the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 1188

Manufacturer: Tektronics Incorporated

The commodities on this invoice are accessories for the high speed oscilloscope referred to on CTC Invoice 22 004. As such they are embargoed. These products exceed the state of the art of equipment being manufactured in the destination country as of the time of shipment. The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 1003

Manufacturer: Data General Corporation

The commodity on this invoice is a complete Data General Eclipse S/230 digital computer with substantial peripheral and input/output communication equipment. This general purpose computer could be licensed if a license were applied for and certain characteristics of the computer were deleted. As a general purpose computer it is applicable to many civilian and military applications. This particular configuration seems applicable to the control and monitoring of the manufacture of integrated circuits.

The products also exceed the state of the art of new designs in the destination country, as of the time of shipment.

CTC Invoice Number: 21089

Manufacturer: Data General Corporation

So confident are the Soviets that our strategic goods embargo is a leaky sieve that they not only import illegal military end use equipment, but ship it back to the West for **repair**, presumably secure in the belief that it can be reimported.

One example that was intercepted occurred in July 1977 when California Technology Corporation placed a purchase order with a U.S. manufacturer for $66,000 in components for sophisticated electronic machinery with direct military application. All components ordered were Munitions List items and cannot be legally exported without approval from the U.S. Department of State. Yet CTC received the equipment and in September 1977, under the name Interroga International Components and Sales Organization, CTC exported the components to West Germany.

Three years later one of the components was in need of repair. It was sent to the manfuacturer's plant for work. On June 16 and 23, 1981, in West Germany, Stephen Dodge

of Customs, Robert Rice of Commerce, and Theodore W. Wu, Assistant U.S. Attorney in Los Angeles, received information that the machinery had been sold originally to Mashpriborintorg of Moscow, and the Russians had sent the disabled component back to ADT of Dusseldorf for repair.

A telex from CTC executives in Dusseldorf to Anatoli Maluta in Los Angeles, dated February 27, 1980, was seized by U.S. Customs agents. The telex said the component would be returned to the U.S. for repair. A "friend" would receive the repaired equipment and then turn it over to Maluta for re-export.

Now let's turn to the question of how the Soviets know **what** to order for their semiconductor plant. The invoices reproduced above suggest the Soviets knew precisely what production equipment they wanted to build a semiconductor plant. The question is how did they find out the model numbers, specifications and the rest?

Footnotes:

[14]United States Senate, *Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p.

[15]United States Senate, *Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 259.

[16]United States Senate, *Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 29.

BACK

CHAPTER V

Computers - Deception by Control Data Corporation

> "We have offered to the Socialist countries only standard commercial computers and these offerings have been in full compliance with the export control and administrative directives of the Department of Commerce." — William C. Norris, Chairman Control Data Corporation

To make any progress in developing weapons systems the Soviets must utilize modern high-speed computers. The computers and the necessary computer technology, both hardware and software, have come from the West, almost exclusively from the United States.

At the end of the 1950s the United States had about 5,000 computers in use, while the Soviet Union had only about 120. These Soviet computers, as reported by well-qualified observers, were technically well behind those of the West and barely out of the first-generation stage even as late as the 1960s.

In the late fifties the Soviets produced about thirty to forty BESM-type computers for research and development work on atomic energy and rockets and missiles. In general, the BESM type has most of the features typical of early U.S. computers. The original version had 7,000 tubes; the later version had 3,000 tubes and germanium diodes.

The only Soviet computer in continuous production in the 1960s was the URAL-I, followed by the URAL-II and URAL-IV modifications of the original model. The URAL-I has an average speed of 100 operations per second, compared to 2,500 operations per second on U.S. World War II machines and 15,000 operations per second for large U.S. machines of the 1950s, and 1-10 million operations per second common in the early 1970s. Occupying 40 square meters of floor space, URAL-I contains 800 tubes and 3,000 germanium diodes; its storage units include a magnetic drum of 1,024 cells and a magnetic tape of up to 40,000 cells — considerably less than U.S. machines of the 1960s. URAL-II and URAL-IV incorporate slightly improved characteristics. The URAL series is based on U.S. technology.

Production methods for both the URAL and the BESM computers were the same as American methods.

Until the mid-1960s **direct** import of computers from the United States was heavily restricted by export control regulations. In 1965 only $5,000 worth of electronic computers and parts were shipped from the United States to the Soviet Union, and only $2,000 worth in 1966. This changed in 1967. Computer exports increased to $1,079,000 and a higher rate of export of U.S. electronic computers to the USSR has been maintained to the present time under constant lobbying pressure from U.S. businessmen and their trade associations.

The precise amount and nature of U.S. computer sales to the Soviet Union since World War

II is censored, but it is known that after World War II, IBM sales to the Communist world came "almost entirely from [IBM's] Western European plants," partly because of U.S. export control restrictions and partly because U.S. equipment operates on 60 cycles, whereas Russian and European equipment operates on 50 cycles.

American computer sales as opposed to Soviet theft may be traced from 1959 with sale of a Model-802 National-Elliott sold by Elliott Automation, Ltd., of the United Kingdom. (Elliott Automation is a subsidiary of General Electric in the United States.) Towards the end of the sixties Soviet purchases of computers were stepped up, and by late i969 it was estimated that Western computer sales to all of Communist Europe, including the USSR, were running at $40 million annually, in great part from European subsidiaries of American companies. In 1964-65 Elliott Automation delia ;red five Model-503 computers to the USSR, including one for installation in the Moscow Academy of Sciences. Other General Electric made in Europe machines, for example, a Model-400 made in France by Compagnie des Machines Bull, were also sold to the USSR.

Olivetti-General Electric of Milan, Italy has been a major supplier of GE computers in the USSR. In I967 the Olivetti firm delivered $2.4 million worth of data-processing equipment systems to the USSR in addition to Model-400 and Model-115 machines.

In sum, General Electric from 1959 onwards sold to the Soviet Union through its European subsidiaries a range of its medium-capacity computers.

Of perhaps even greater significance for the 1960 era were sales by English Electric, which include third-generation microcircuit computers utilizing Radio Corporation of America technology. In 1967 English Electric sold to the USSR its System Four machine with microcircuits; this machine incorporates RCA patent and was similar to the RCA Spectra-70 series.

The largest single supplier of computers to the USSR has been International Computers and Tabulation, Ltd. of the United Kingdom, which also licenses RCA technology, and by 1970 had supplied at least twenty-seven of the thirty-three large computers then in Russia. In November I969, for example, five of the firm's 1900-series computers (valued at $12 million) went to the USSR. These large high-speed units with integrated circuits were, without question, considerably in advance of anything the Soviets were able to manufacture. Such machines were certainly capable of solving military and space problems. Indeed, a computer cannot distinguish between civilian and military problems.

In 1971 the USSR and East European family of general purpose computers known as the RYAD series was announced. These are based substantially on IBM 360 and 370 computers illegally diverted into the USSR. This had an important effect of making available to them a tremendous library of computer software that was RYAD compatible.

Dr. Baker has commented on the current RYAD position:

> In the area of available manpower, one of the serious problems afflicting the Soviet economy is the lack of qualified, highly trained, technical people in the areas of computers and microelectronics. One cause of this is the lack of enough computing and electronic equipment to train the next generation of scientists and engineers. They simply don't have enough equipment to allow

> students sufficient 'hands-on' practice at an early stage in their education. The Soviets are trying to alleviate this problem by producing large, for them, numbers of RYAD computers — copies of the U.S. IBM System 360's and 370's.[17]

Soviet Agatha - American Apple II

In mid 1983 the Soviets introduced their first personal computer —the AGATHA (a rather curious name for a Russian product).

Produced at Zelenograd, outside Moscow, the Agatha was reversed engineered from the APPLE II. Specifications are similar to the APPLE and the components are either Soviet produced from reverse engineered U.S. components or imported and bought openly or clandestinely in Europe or Japan.

Officials at the Academy of Pedagogical Sciences have admitted that the APPLE II served as a "prototype" for the Soviet Agatha.

In 1985 COCOM set up some new rules for microcomputers and made it legal to export without license low powered 8-bit computers. Such a machine sells in the West for $100 to $500.

The response was a flood of computer manufacturers attempting to make elaborate sales pitches to the multimillion Soviet microcomputer market. If history is any judge, the Soviets will buy a few thousand and then attempt to reverse engineer and produce in the Soviet Union. Presumably the microcomputers, although low powered, could have military applications and indeed this was openly admitted by a major computer manufacturer *(New York Times*, February 8, 1985):

"We have no illusions. Some of these are headed for the military."

Military End Use

Confirmation of military end use comes from unimpeachable sources — Soviet engineers who have worked on copying or reverse engineering in the Soviet Union and later defected to the West. These engineers have testified before Congress and provide firsthand evidence of Soviet military use of our technology. Here is a statement from Joseph Arkov, who graduated from a Soviet engineering school in 1970 and who now resides in the United States. Arkov worked in Soviet research installations.

> If, for example, a new American computer has been obtained by the Soviets, they will make a military application of it rather than a civilian application,"[18] and
>
> In my work in the second research installation I had the assignment of copying Western and Japanese high technology.

Arkov makes the interesting point that the Soviets are now so far behind technologically

that they can no longer just reverse engineer as previously — they must import even the technology to manufacture high technology:

> They do not have the human resources or the fine tuned equipment required to produce the high technology machinery they try to copy. Once they know what makes a given piece of machinery work, they find that they do not have the technical know-how and equipment to produce the product themselves. That is why they want Western high technology machines that will enable them to produce the products. And the Western products they desire the most are those produced in the United States. That is why they want American high technology machines with which they can produce the components for high technology products.

Under Senate questioning Arkov confirmed that the major application of our high technology is for military end uses.

> **Mr. Arkov:** Well, the task of copying Western technology . . . part of their assignment was for military. Is that the question?
>
> **Senator Rudman:** Yes, let me just follow that up. You spoke in your prepared statement about the use of sophisticated American computers in various Soviet military operations, and also about the use of semiconductor technology. There are those in this country who feel that had we not transferred that technology legally to the Soviet Union — we sold them certain semiconductor technology and certain sophisticated computer technology in the late sixties and early seventies — the Soviets would not have achieved the advantages in missilery which they have made in terms of the enormous throw weight and precision of their guidance systems. Do you agree with that assessment? Do you think that the sale of those semiconductors and those computers has given them a tremendous step forward in their technology in the defense area from your background and your knowledge?
>
> **Mr. Arkov:** Yes, I think so. I can't tell exactly. It's hard to estimate the degree of advantage they got. But they gained there, using American computers and American semiconductors.19

Control Data Deception

The 1973 Control Data Corporation technical assistance agreement with the Soviet Union enabled the Soviets to complete phase one of their semiconductor manufacturing plant (see Chapter Four).

Highly significant is a comparison of Control Data Corporation's public argument to the media and Congress with this 1973 agreement and its totally one-sided presentation of the national security argument.

One can only conclude that some CDC statements are deliberate untruths. We make this statement by comparing Control Data public statements, particularly those of Chairman William Norris, with internal documents and agreements with the Soviet Union. These

documents are confidential, but copies are in our possession.

On December 19, 1973 William Norris wrote Congressman Richard T. Hanna concerning public criticism of the CDC proposal to export advanced Cyber computers to the USSR.

We extract some statements from the letter (reproduced in full as Appendix C) and compare it to extracts from CDC internal documents reproduced on pages 61-67. For example,

> **Norris:** We have offered the Socialist countries only standard commercial computers and these offerings have been in full compliance with the export control and administrative directives of the Department of Commerce.

Comment: Reference to the 1973 Protocol of Intent between CDC and the USSR marked CONFIDENTIAL and reproduced here tells a vastly different story.

> **Norris:** Many persons including some of the witnesses before your Committee mistake the offering for sale of old or even current state of the art hardware for transfer of advanced technology. This is not unusual because in many cases it is difficult for those who are not technically well informed to distinguish advanced computer technology.

Comment: Norris is comparing apples and oranges. What is "old" or "current" in the United States is far beyond "state of the art" in the Soviet Union. When Norris was offering a million operations per second CYBER computer to the Soviets, the run-of-the-mill Soviet technology was in the order of several thousands of operations per second, and that was on copies of imported equipment.

If multinational businessmen like William Norris were honestly mistaken in their information or somewhat shaky in their logic, then perhaps they could be forgiven. After all, to err is human.

Unfortunately, evidence proves beyond doubt that at least some of these deaf mute businessmen have deceived both Congress and the American public in an unseemly haste to make a buck.

We have documentary evidence in the case of Control Data Corporation and its Chairman, William Norris.

In the following pages we print a series of letters from Control Data Corporation to a concerned member of the public and contracts betweeen CDC and the Soviet Union:

> * Exhibit A
> Letter from American Council for World Freedom to its supporters identifying William Norris and CDC as exporters of valuable military technology to the Soviets.
>
> * Exhibit B
> Reply from William Norris, "Dear Yellow Card Sender," dated May 5, 1978.
> Note in particular the paragraph, "While we did sign an agreement for

technological cooperation with the Soviet Union, we have **not** transferred any computer technology to them."

* Exhibit C
Full text of cooperation agreement cited by William Norris in Exhibit B.

* Exhibit D
"Letter (Protocol) of Intent" not mentioned by William Norris in Exhibit B, but which includes precise details of technology to be transferred, in distinct contrast to the Norris claim, "We have **not** transferred any computer technology to them."

Most importantly, it will be seen that Control Data Corporation transferred a vast range of information and technology to the Soviets, not only on computers but on manufacturing.

Publisher's Note: At this point the original manuscript contained actual photo copies of documents. Due to the quality of the copies, the documents were also reset in full and placed in Appendix D of the original manuscript.

Due to the difficulty of reproducing the documents in an efficient manner, we will refer anyone wishing to read the documents to Appendix D.

The Deceptive World View of Control Data Corporation

William Norris, Chairman of Control Data, has a lively correspondence with Americans anxious to learn his rationale for supporting the Soviet Union.

We quote below an extract from a letter written by William Norris to an inquirer:

> You also made reference [wrote Norris] in your letter to Russia's first democratic government that was overthrown by the communists. You are incorrect on this point. There never has been any democracy in Russia — as a matter of fact, the Russian standard of living today is higher than it was under the tsars. Further, you don't find a great deal of unhappiness in the Soviet Union over living conditions and the communist regime for two reasons — (1) they have never know [sic] what democracy is, and (2) life is better than it used to be.
>
> Here are the errors in the above Norris paragraph:
>
> - "There has never been any democracy in Russia."
>
>   Incorrect. The Kerensky government from March to November, 1917

was freely elected and overthrown by the Bolsheviks (with the aid of Western businessmen such as William Norris).

- "You don't find a great deal of unhappiness in the Soviet Union over living conditions."

  Incorrect. Mr. Norris should look out the window of his Moscow office at the uniform drab blocks of apartments. How many families live in one room? How often do several families live in one apartment? How about the hours spent in food lines, and the limited choice of consumer goods in a guns-before-butter economy? Just how many individual Russians has Mr. Norris freely spoken with? Not those of the "nomenklatura," but average Russians in the street. We venture to guess none at all.

- "... standard of living today is higher than under the tsars."

  Take one item — wheat. In 1906 Russia was the world's largest wheat exporter and the world's largest wheat producer. The climate is the same today as in 1906, yet is used as a forlorn excuse for Soviet pitiful wheat production. In fact, 80% of Russian bread today is made from **imported** wheat, the home-grown is only fit for cattle feed. Without Western wheat, Russia today would starve. Is that a truly higher standard of living? Anyway, Russians today don't compare their standards to those of tsarist times but to the Western world.

William Norris only sees what he wants to see, hears what he wants to hear, and presumably speaks from these limited impressions of the world.

In conclusion, we can thank Mr. Norris and Control Data Corporation that Soviet military has been able to break into the electronics based warfare of the late 20th and early 21st century.

CDC fulfilled phase one of the Soviet program for acquisition of Western semiconductor technology and mass production facilities.

Footnotes:

[17]United States Senate, *Transfer of United States High Technology to the Soviet* Union *and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 61.

[18]United States Senate, *Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations* Hearings before the Permanent Subcommittee on Investigations, 97th Congress Second Session, May 1982, Washington, D.C., p. 27 19 Ibid.

CHAPTER VI

Soviets in the Air

> Before we got the (U.S.) guidance systems we could hardly find Washington with our missiles. Afterwards we could find the White House.
>
> Without U.S. help the Soviet military system would collapse in 1½ years.
>
> — Avraham Shifrin, former Soviet Defense Ministry official

Signal rockets were used in the Russian Tsarist Army as early as 1717. Present Russian theoretical work in rockets, beginning in 1903, stems from K. E. Tsiolkovskii, who investigated atmospheric resistance, rocket motion, and similar problems. This Tsarist work was continued in the Soviet Union during the twenties and thirties. In I928 pioneer Tsiolkovskii suggested that the value of his contribution had been in theoretical calculations. Nothing had been achieved in practical rocket engineering.

Then in 1936, V. F. Glushke designed and built a prototype rocket engine, the ORM-65. This rocket used nitric acid and kerosene as propellants. The Soviets then developed the ZhRD R-3395, an aircraft jato rocket using nitric acid and aniline as a propellant. Du Pont provided technical assistance and equipment for the construction of large nitric acid plants. During World War II, Soviet rockets used "Russian cordite," which was 56.5 percent nitrocellulose. The nitrocellulose was manufactured under a technical-assistance agreement made in 1930 with the Hercules Powder Company of the United States.

Finally, under Lend-Lease, 3,000 rocket-launchers and large quantities of propellants were shipped from the United States to the USSR.

German Assistance for Soviet Rockets

A major boost to Soviet ambitions in rocketry came from Germany at the end of World War II. Facilities transferred to the USSR included the rocket testing stations of Blizna and Peenemunde, captured intact and removed to the USSR; the extensive production facilities for the V-1 and V-2 at Nordhausen and Prague; the records of reliability tests on some 6,000 German V-2; and 6,000 German technicians (not the top theoretical men), most of whom were not released from Russia until the late 1950s.

The German rocket program was in an advanced state of development in 1945. About 32,050 V-1 "Flying bomb" weapons had been produced in the Volkswagen plant at Fallersleben and in the underground Central Works at Nordhausen. In addition, 6,900 V-2 rockets had been produced — 6,400 at the underground Mittelwerke at Nordhausen and 500 at Peenemunde. Rocket fuel facilities had been developed in the Soviet Zone: liquid oxygen plants at Schmeidebach in Thuringia and at Nordhausen, and a hydrogan peroxide plant at Peenemunde.

The Germans undertook two and one-half years of experimental work and statistical flight and reliability evaluation on the V-2 before the end of the war. There were 264 developmental launchings at Peenemunde alone.

Mittelwerke at Nordhausen was visited in June 1946 by U.S. Strategic Bombing Survey teams who reported that the enormous underground plant could manufacture V-1s and V-2s as well as Junkers-87 bombers. V-2 rockets were manufactured in twenty-seven underground tunnels. The plant was well equipped with machine tools and with "a very well set up assembly line for the rocket power unit." Its output at the end of the war was about 400 V-2s per month, and its potential output was projected at 900-1,000 per month.

When the Soviets occupied part of the American Zone in July 1945 under arrangement with General (later President) Eisenhower, the Nordhausen plant was removed completely to the USSR.

The United States and Britain never did gain access to German rocket-testing sites in Poland. The Sanders Mission reached the Blizna test station, after considerable delays in Moscow, only to find that its equipment had been removed "in such a methodical way as to suggest strongly to the mission's leader that the evacuation was made with a view to the equipment being reerected elsewhere." The Sanders Mission accumulated 1.5 tons of rocket parts. Unfortunately, when the mission reached home it found that the rocket parts had been intercepted by the Soviets. Rocket specimens so carefully crated in Blizna for shipment to London and the United States were last seen in Moscow. The crates arrived at the Air Ministry in London, but contained several tons of "old and highly familiar aircraft parts when they were opened." The Blizna rocket specimens had vanished.

Many German rocket technicians went or were taken to the Soviet Union. The most senior was Helmut Groettrup, who had been an aide to the director of electronics at Peenemunde. Two hundred other former Peenemunde technicians are reported to have been transferred. Among those were Waldemar Wolf, chief of ballistics for Krupp; engineer Peter Lertes; and Hans Hock, an Austrian specialist in computers. Most of these persons went in the October 22-23 round-up of ninety-two trainloads comprising 6,000 German specialists and 20,000 members of their families. Askania technicians, specialists in rocket-tracking devices, and electronics people from Lorenz, Siemens, and Telefunken were among the deportees, as were experts from the Walter Rakententriebwerke in Prague.

Asher Lee sums up the transfer of German rocket technology:

> The whole range of Luftwaffe and German Army radio-guided missiles and equipment fell into Russian hands. There were the two Henschel radar-guided bombs, the Hs-293 and the larger FX-1400 . . the U.S.S.R. also acquired samples of German antiaircraft radio-guided missiles like the X-4, the Hs-298 air-to-air projectile with a range of about a mile and a half, the Rheintochter which was fitted with a radar proximity fuse, and the very promising Schmetterling which even in 1945 had an operational ceiling of over 45,000 feet and a planned radius of action of about twenty miles. It could be ground- or air-launched and was one of the most advanced of the German small-calibre radio-guided defensive rockets; of these various projectiles the Henschel-293 bomb and the defensive Schmetterling and Hs-298 [the V-3] are undergoing development at Omsk and Irkutsk . . . [and later at] factories near Riga, Leningrad, Kiev, Khaborovsk, Voronezh, and elsewhere.

Other plants produced improved radars based on the Wurzberg system; the airborne Lichenstein and Naxos systems were reported in large-scale production in the 1950s.

The Soviets froze rocket design in the late 1950s on developments based on German ideas. The German technical specialists were sent home. By 1959 the Soviets landed a rocket on the moon.

Sputnik, Lunik and the Soyuz Programs

From the German V-2 rockets, associated German production facilities, and the all-important German reliability tests, stem the contemporary Soviet ICBM and space rockets.

In the 1960s there were four types of large liquid rockets in the Soviet Union: the Soviet version of the V-2, the R-10 (a 77,000 pound thrust scale-up of the German V-2), the R-14 (a scaled up V-2 with 220,000 pound thrust), and a modification known as R-14A (based on the R-14). The R-14 was designed and developed by a joint German-Rusian team. The Germans were sent home in the late 1950s.

The Soviets did not until fairly recently use single boosters — they use dusters of rockets strapped onto a central core. The strap-ons were the scaled-up and modified German V-2. Thus, for example, **Sputnik I** and **Sputnik II** had a first stage of two R-14A units, a second stage of two R-14A units, and a third stage of a single R-10 (the German V-2 produced in the Soviet Union). **Lunik** was a similar cluster of six rocket units. The **Vostok** and **Polyot** series are clusters of six units. The planetary rockets, **Cosmos** series and **Soyuz** family are seven-unit clusters. An excellent photograph of one of these cluster vehicles is to be found in Leonid Vladimirov's book, The Russian Space Bluff.[20]

In the mid-sixties, any foolhardy person who insisted that the United States would be first on the moon because the Russians were technologically backward was dismissed as a dimwitted neanderthal. But at least two skilled observers with firsthand access to the Soviet program made a detailed case, one in 1958 and one in 1969. Lloyd Mallan wrote *Russia and the Big Red Lie* in 1958, after an almost unrestricted 14,000 mile trip through Russia to visit thirty-eight Soviet scientists. He took 6,000 photographs. It was Mallan who first drew attention to the Soviet practice of illustrating space-program press releases with photographs from the American trade and scientific press. The Remington Rand Univac computer was used in the fifties to illustrate an article in *Red Star* on the Soviet computer program — the captions were translated into Russian. In 1969, *Tass* issued a photograph for use in American newspapers purporting to show a Russian space station at the time when one Soviet space ship was in orbit and another en route. The *Tass* photograph was reproduced from *Scientific American* (Feb. 1962) and was identical to an advertisement in Sperry Gyroscope Company of Great Neck, New York. Sperry commented, "Apparently it is the same as the ad we ran."

This author personally remembers an incident from the early 1960s which illustrates the extraordinary success of Soviet propaganda in molding the U.S. concept of Russian technology. After giving a short speech to a Los Angeles audience on technological transfers to the Soviets, a member of the audience asked a sensible question: "Who will be first on the moon, the U.S. or the Soviets?"

The answer as closely as can be recalled was to the effect that the Soviets did not have the technology to be first on the moon, and by themselves could not make it in this century.

The response from the audience was an instantaneous and loud laugh — how ridiculous was the general audience response, "everyone knows" the Soviets are far ahead of the United States in space.

In fact, the Soviets could not even have achieved their Soyuz program without U.S. help. The docking mechanism is a direct copy of the U.S. docking mechanism.

Unfortunately, NASA and U.S. planners have a conflict of interest. If they publish what they know about the backwardness and dependency of the Soviet space program, it reduces the urgency in our program. This urgency is vital to get Congressional funds. Without transfers of technology the U.S. is in effect racing with itself, not a very appealing argument to place before Congress.

Why Did the Soviets Embark on a Space Program?

From an economic viewpoint, a Soviet space program makes no sense at all: such a program only makes sense from a geopolitical viewpoint.

In 1957, the year of **Sputnik**, the Soviet Union had fewer telephones than Japan (3.3 million in the USSR versus 3.7 million in Japan). On a per-hundred population basis, the Soviet Union could provide only 3.58 telephones compared to 49.8 in the United States. Even Spain provided 9.6 telephones per 100 of population, or three times more than the Soviet Union.

In automobiles, the Soviet Union was even less affluent. In 1964 the Soviet Union had a stock of 919,000 automobiles, all produced in Western-built plants, only slightly more than Argentina (800,000) and far less than Japan (1.6 million) and the United States (71.9 million).

Even today the Soviet Union is so backward in automobile technology that is has to go to Italy and the United States for automobile and truck technology.

Although **we** in the West might see this technical backwardness as a natural reason for **not** going into space, the Soviets saw it as a compelling reason to embark on a space program.

A "technical extravaganza" was necessary to demonstrate Soviet "technical superiority" to the world and maintain the myth of self-generated Soviet military might.

The Soviet economic problem in the mid-1950s was acute. The Soviet economy had shown good rates of growth, but this was due to the impetus given by Lend-Lease equipment and by war reparations. There were no signs of technical viability. Numerous industries were decades out of date with no indigenous progress on the horizon. The only solution was a massive program of acquiring complete plants and up-to-date technology in the West. Beginning in the late 1950s and continuing through to the 1980s, this program had to be disguised because of obvious military implications. One facet of the disguise was the space

program. The usual stock of reasons for backwardness had run dry (the Civil War, the Revolution, intervention, warmongering capitalists) — even the damage done by the Nazis could only be spread so far. So two new elements made their appearance:

> 1. A space program — to get the Western world looking upwards and outwards, literally away from the Soviet Union and its internal problems.
>
> 2. Concurrent articles and press releases in the West on Soviet technical "achievements," spotted particularly in Western trade journals and more naive newspapers, such as the *New York Times.*

Around the same time in the '60s and '70s, the West (or rather the United States and Germany) resurrected Edwin Gay's 1918 proposal to mellow the Bolsheviks, and this proposal now became "bridges for peace" to provide a rational explanation for the massive transfers of Western technology that were required to fulfill Soviet programs. The United States appears, in historical perspective, to have been almost desperate in its attempts to help the Soviets in space. Of course, if the Soviets did not succeed in space, there could be no "competing" American space program and many politicians, bureaucrats, and politically oriented scientists were determined — for their own good reasons — that there had to be a major American space effort. There also had to be U.S. assistance for the Soviet space program.

In the ten years between December 1959 and December 1969, the United States made eighteen approaches to the USSR for space "cooperations."

In December 1959, NASA Administrator R. Keith Glennan offered assistance in tracking Soviet manned flights. On March 7, 1962 President Kennedy proposed an exchange of information from tracking and data-acquisition stations, and on September 20, 1963 President Kennery proposed joint exploration of the moon, an offer later repeated by President Johnson. On December 8, 1964 the administration proposed an exchange of teams to visit deep-space tracking and data-acquisition facilities. On May 3, 1965 NASA suggested joint communications tests via the Soviet **Molnlya I**. On August 25, 1965 NASA asked the Soviet Academy of Sciences to send a representative to the **Gemini VI** launch, and on November 16, NASA inquired about joint **Molnlya I** communications tests. Four U.S. offers were made in 1966; in January NASA inquired about Venus probes; on March 24, and May 23 Administrator James Webb suggested that the Soviets propose subjects for discussion; and in September Ambassador Arthur Goldberg again raised the question of tracking coverage by the United States for Soviet missiles.

Soviet Aircraft Development

In 1913 in St. Petersburg, Igor Sikorsky (who later founded the Sikorsky Aircraft Company in America) designed the "Russki-Vityazyi." Weighing 5 tons with a load of seven passengers, this four-engined plane established a contemporary endurance record of 1 hour and 54 minutes aloft. By 1917 a fleet of seventy-five IM ("Ilya Mourometz") four-engined bombers, based on the original 1913 model, were in service — several decades before the American four-engined bomber fleets of World War II. So tsarist Russia produced and successfully flew the world's first four-engined bomber, a quarter of a century before the United States developed one. This early bomber had a wing span of over 100 feet, or only

21 inches less than that of the World War II Boeing B-17 Flying Fortress.

Obviously there was nothing wrong with indigenous Russian aeronautical talent half a century ago. While Russians have a natural affinity and geographic impulse towards aeronautics, the Soviets have only kept up with the West by reverse engineering, prolific "borrowing" and importation of technology and manufacturing equipment. Russian dependency on Western aeronautical design and production equipment and techniques goes back to the early 1920s.

At that time, soon after the Bolshevik Revolution, the Russian aircraft industry depended heavily on foreign aircraft and engine imports. There was considerable Soviet design activity, but this work was not converted into usable aircraft technology. Consequently, in the early 1930s the Soviet stock of military planes was almost completely foreign: 260 fighters comprising 160 De Havilland Type 9a (from Great Britain) and 100 Heinkel HD-43 fighters (from Germany); 80 Avre 504-K training biplanes (from Great Britain) and some Moraine-Saulnier monoplanes (from France); 52 R-3 biplanes (Russian TsAGI design); 20 R-6 reconnaissance planes (Russian TsAGI design); 242 I-4 Jupiter-engine,planes (from Great Britain); 80 Ju-30 and ANT-6 (Junkers design); 20 ANT-6 bomber seaplanes (Russian design; 18 Avro-504L seaplanes (from Great Britain); 40 Savoia S-62 scouting flying boats (from Italy); 150 Heinkel HD-55 scouting flying boats (from Germany); 46 MR-4 (Savoia S-62 license) flying boats (from Italy); 12 TBI (Russian TsAGI design); and 43 Ju-30 naval bombers (from Germany).

From about 1932 onward, and particularly after 1936, there was extensive acquisition of Western aeronautical advances, which were then integrated with the developments of the 1920s. Fortuitously for the Soviet Union, this much-needed acquisition coincided with a period of increased competition among Western aircraft manufacturers. In many cases, military aircraft were designed in the West on Soviet account and the heavy, slow, underpowered Russian designs of the early 1930s were replaced by efficient Western designs.

By 1937 the Soviet government was convinced that the American method of building aircraft was the best for Russian conditions, as the American system of manufacture could more easily be adapted to mass production than any of the European systems. The United States thus became the main source of Soviet aircraft technology, particularly as a builder of new Soviet aircraft plants. Between 1932 and I940 more than twenty American companies supplied either aircraft, accessories, or technical assistance for complete planes and aircraft manufacturing plants. Technical assistance agreements were made for Vultee attack bombers, the Consolidated Catalina, the Martin Ocean flying boat and Martin bombers, Republic and Sikorsky amphibians, Seversky amphibians and heavy bombers, Douglas DC-2 and DC-3 transports, the Douglas flying boat, and other aircraft. Kilmarx has well summarized this acquisition:

> The objectives of the Soviet Union were more straightforward than its methods. By monitoring aeronautical progress and taking advantage of commercial practices and lax security standards in the West, the Russians sought to acquire advanced equipment, designs, and processes on a selective basis. Emphasis was placed on the legitimate procurement of aircraft, engines (including superchargers), propellers, navigational equipment, and armament; specifications and performance data; design, production and test information and methods; machine tools, jigs and dies; semi-fabricates and critical raw

> materials. Licenses were obtained to manufacture certain modern military aircraft and engines in the U.S.S.R. At the same time, a number of Soviet scientists and engineers were educated at the best technical institutes in the West. Soviet techniques also included assigning purchasing missions abroad, placing inspectors and trainees in foreign factories, and contracting for the services of foreign engineers, technicians and consultants in Soviet plants.[21]

In 1937 the Soviet Union possessed the world's first commercial plane able to fly the Atlantic Ocean nonstop, with a payload of 7,500 pounds. Known as the Martin Ocean Transport, Model-156, with four 1,000 horsepower Wright Cyclone engines, it was built by the Glenn L. Martin Company of Baltimore. Model-156 cost the Soviet Union $1 million. Although capable of being flown directly to the Soviet Union, it was flown only to New York, then was dismantled and shipped to the USSR by boat.

Also in 1937 the Martin Company agreed to design a Soviet bomber. Loy Henderson, the U.S. charge in Moscow, reported:

> …since January 1, 1937, the Embassy granted visas to fourteen Soviet engineers and specialists who are proceeding to Baltimore to the Glenn L. Martin factory. This information would appear to be significant in view of the statements that the Martin Company is to design and develop a new type of large plane for the Soviet air force instead of selling somewhat obsolete models which may have been released for export by the American military authorities. . .[22]

In May 1937 the New York Times reported a $780,000 Soviet contract with Seversky Aircraft Corporation involving construction of, and manufacturing rights for, Seversky amphibians, which then held the amphibian world speed record of 230.4 miles per hour. Under a technical-assistance agreement, Seversky Aircraft provided assistance for manufacture of these planes in the Soviet Union at the rate of ten per day.

Alexander P. de Seversky, president of the company, then informed the State Department that the Soviets had contracted to purchase from the company a large number of bombing planes of a new type to be designed by him. After being informed that a license would be granted if the planes involved no military secrets, Seversky suggested that the War and Navy Departments might object to its exportation "merely" on the ground that the new bomber would be superior to any bombing plane then in existence. Seversky indicated that he intended to address his request for an export license to the State Department, "in hope that the Department might expedite action in this."

The first domestic flying boats under the Soviets were constructed at Leningrad and Taganrog. In 1932, Plant No. 23 in Leningrad produced 18 Avro 504-L seaplanes and 40 Savoia S-62 scouting flying boats, the latter under a license from the Societa Idrovolanti Alta Italia of Milan —an outstanding designer of high-performance flying boats. Also in 1932, Taganrog Plant No. 31 produced 196 flying boats: 150 scouting HD-55s and 46 MR-5s, both built under license from Heinkel. The Soviets also acquired a license from the Macchi Company of Italy to produce the MBR series of Russian flying boats.

Then in 1937 came an agreement with the Consolidated Aircraft Company of San Diego for technical assistance for Catalina flying boats under supervision of Etienne Dormoy. With

the Catalina flying boat we once again see the extraordinary ability of the Soviets to acquire anything they set their hearts on. The very **first** commercial Consolidated PBY ("Catalina") off the assembly, line in San Diego was sold to the American Museum of Natural History — which promptly transferred it to the Soviets.[23] This is not the first time the American Museum of Natural History turns up in the Soviet files. In 1919 a shipload of Soviet propaganda was seized — en route to the United States and addressed to the American Museum of Natural History.[24]

Also in 1937-38, the Vultee Aircraft Division of Aviation Manufacturing Corporation of Downey, California built a fighter aircraft plant for the Soviets in Moscow.

Equally as important, the Soviets acquired rights to build the famous Douglas DC-3, probably the most successful transport plane in the history of aviation. Donald Douglas produced his first DC-3 in March1935 and within one year the Soviets decided this was to be the basic transport plane for the USSR. A technical-assistance agreement with the Douglas Aircraft Company was signed on July 15, 1936 for three years. Within thirty days of contract signature, Douglas delivered the blueprint materials required to fulfill the assistance contract.

In October 1937 the Soviet aircraft industry placed a $1.15 million order with Douglas for additional parts, tools, assemblies, and materials. The order included one complete DC-3 in subassembly and another in "first-stage" production. In addition, aluminum extrusions were ordered for another fifty aircraft, together with two complete sets of raw materials and twenty-five sets of finishing materials ranging from ash trays to zippers. Construction facilities, ordered at the same time, included one complete set of 6,485 templates, a set of 350 lead and zinc drop hammer dies, three sets of hydraulic mechanisms, all the necessary wood and plaster patterns, drill and assembly fixtures, a complete set of drop-hammer stamps, hydraulic-press parts, two crowning machines, and a set of 125 special tools. Later, another six complete transports were purch

CHAPTER VII

The Deaf Mutes and the Soviet Missile Threat

> "As for businessmen, I could persuade a capitalist on Friday to bankroll a revolution on Saturday that will bring him a profit on Sunday even though he will be executed on Monday."
>
> — Saul Alinsky, Chicago professional activist

The United States and the Western world today face a truly awesome threat from Soviet missiles. This threat would not exist if President Richard Nixon and National Security Adviser Henry Kissinger had heeded warnings in 1970 from its own Department of Defense and outside experts that the Soviets were lagging in missile production technology and required specific technologies from the West to MIRV their fourth generation ICBMs.

MIRV capability is the ability to deploy a number of warheads from the same missile, thus vastly increasing throw weight. Soviet third generation missiles did not have this capability. As stated by a Department of Defense report: "... it was not until the fourth generation that the technology became available to the Soviets allowing greater throw weight and greatly improved accuracy so that high yield MIRVs could be carried by operational missiles"

The phrase "became available" is a subtle way for DOD to state what has been concealed from the public: that the U.S. made the technology available (as we shall show below). The fourth generation ICBMs are the SS-17, the SS-18 and the SS-19, which today have the capability to destroy most of our 1,000 U.S. Minuteman missiles now operational with only a portion of their warheads.

American Accelerometers for Soviet Missiles

Let's go back to the start of our help for the Soviet missile program.

Accelerometers are small but vital instruments used in missiles and aircraft to measure gravitational pull. In 1965-68 the Soviets displayed an extracurricular interest in American accelerometers, and a Soviet United Nations diplomat was forced to hurriedly leave the United States before being picked up for espionage involving acquisitions of U.S. accelerometers.

Testimony of Leonard I. Epstein, vice president of Trans-American Machinery and Equipment Corporation of New Jersey, to the House Un-American Activities Committee detailed Soviet interest in this American technology. Mr. Epstein related to the committee how he met Vadim Isakov, a Russian employee of UNICEF (United Nations International Children's Emergency Fund) on July 15, 1965, and how Isakov later visited Epstein's plant in New Jersey with a list of four items for purchase, including "an accelerorneter made by American Bosch Arma Corporation or similar company. The accelerometer is an intricate

device which measures the pull of gravity on any vehicle such as a missile or space-orbiting device. The device costs about $6,000." Mr. Epstein, under instructions from the FBI, met several times with Isakov to "find out what he wanted."

In October 1965, "Isakov began to push for delivery on the ac-celerorneter. [Epstein] surmised that the urgency had something to do with the fact that the Soviets had smashed three vehicles onto the surface of the moon." Although Epstein was able to stall for "quite some time" on various grounds, Isakov later became "quite anxious to obtain an accelerometer." When Epstein pleaded export problems, Isakov suggested he would use the Soviet diplomatic pouch.

Eighteen months later, in August 1967, another Russian, intensively interested in accelerometers, turned up in the United States, this time under the auspices of the State Department Academic Exchange Program. From August 1967 to June 1968, Anatoliy K. Kochev of the Kalinin Polytechnical Institute of Leningrad was at Catholic University in the United States working on "construction methods of equipment to measure small accelerations and displacement," that is, the manufacture of accelerorneters.

Is there any connection between Isakov's unsuccessful espionage attempts to purchase accelerometers and Kochev's "academic" work on accelerometer manufacture in the United States, courtesy of the State Department? There are indeed obsolete accelerometers and sophisticated accelerometers. The Soviets know the difference. They know how to make the obsolete versions, but do not have the technical ability to make more sophisticated instruments. The trick is in the manufacturing process — that is, in knowing how to build into the instrument the sensitivity necessary to measure small gravitational pulls quickly and accurately. **It is the manufacturing technique that was important to the Soviets — much more important than a boatful of purchased accelerometers.**

Why did Kochev come to the United States in 19677 The State Department reports the title of his project as "construction methods of equipment to measure small accelerations." Ten months would be sufficient time for a competent engineer to determine the most modern methods in this field, and given the rather careless manner in which advanced accelerometers have found their way into used electronic equipment stores, it is unlikely that Kochev had major problems in adding to his knowledge of the state of the art.

Why did the State Department make an agreement in 1966 to allow a Soviet engineer into the United States to study the **manufacture** of accelerometers only a few months after another Soviet national had been foiled by the FBI in attempting to **purchase** an accelerometer? We have no answer for that.

American Ball Bearings for Missile Guidance System

In the late 1960s Soviet missiles were extremely inaccurate. According to Abraham Shifrin, a former Defense Ministry official, they could hardly find the United States, let alone a specific target. By the late 1970s their accuracy was so improved that Soviets could guarantee a high proportion of hits on a target as small as the White House.

The technological roadblock was mass production of miniaturised precision ball bearings for guidance systems.

In the early 1960s Soviets attempted to buy U.S. technology for mass production of miniaturised precision bearings. The technology was denied. However, in 1972 the necessary grinders were sold by Bryant Chucking Grinder Company and its products are today used in Soviet guided missile systems and gyroscopes. Specifically, the Soviets were then able to MIRY their missiles and increase their accuracy.

This is how the tragedy came about.

Ball bearings are an integral part of weapons systems, there is no substitute. The entire ball bearing production capability of the Soviet Union is of Western origin — utilizing equipment from the United States, Sweden, Germany, and Italy. This transfer has been fully documented elsewhere by this author (see Bibliography). All Soviet tanks and military vehicles run on bearings manufactured on Western equipment or copies of Western equipment. All Soviet missiles and related systems including guidance systems have bearings manufactured on Western equipment or Soviet duplicates of this equipment.

One firm in particular, the Bryant Chucking Grinder Company of Springfield, Vermont, has been an outstanding supplier of ball bearing processing equipment to the Soviets. In 1931 Bryant shipped 32.2 percent of its output to the USSR. In 1934, 55.3 percent of its output went to Russia. There were no luther shipments until 1938, when the Soviets again bought one-quarter of Bryant's annual output. Major shipments were also made under Lend-Lease. Soviet dependence on the West for ball bearings technology peaked after the years 1959-61, when the Soviets required a capability for mass production, rather than laboratory or batch production, of miniature precision ball bearings for weapons systems. The only company in the world that could supply the required machine for a key operation in processing the races for precision bearings (the Centalign-B) was the Bryant Chucking Grinder Company. The Soviet Union had no such mass production capability. Its miniature ball bearings in 1951 were either imported or made in small lots on Italian and other imported equipment.

In 1960 there were sixty-six Centalign-B machines in the United States. Twenty-five of these machines were operated by the Miniature Precision Bearing Company, Inc., the largest manufacturer of precision ball bearings, and 85 percent of Miniature Precision's output went to military applications. In 1960 the USSR entered an order with Bryant Chucking for forty-five similar machines. Bryant consulted the Department of Commerce. When the department indicated its willingness to grant a license, Bryant accepted the order.

The Commerce Department's argument for granting a license turned on the following points: (1) the process achieved by the Centalign was only a single process among several required for ball bearing production, (2) the machine could be bought elsewhere, and (3) the Russians were already able to make ball bearings.

The Department of Defense entered a strong objection to the export of the machines on the following grounds:

> In the specific case of the granting of the export license for high-frequency grinders manufactured by Bryant Chucking Grinder after receiving the request for DOD's opinion from the Department of Commerce, it was determined that all of the machines of this type currently available in the United States were being utilized for the production of bearings utilized in strategic components for military end items. It was also determined from information that was

> available to us that the Soviets did not produce a machine of this type or one that would be comparable in enabling the production of miniature ball bearings of the tolerances and precision required. A further consideration was whether machines of comparable capacity and size can be made available from Western Europe. In this connection, our investigation revealed that none was in production that would meet the specifications that had been established by the Russians for these machines. In the light of these considerations it was our opinion that the license should not be granted.

The Inter-Departmental Advisory Committee on Export Control, which includes members from the Commerce and State Departments as well as the CIA, overruled the Department of Defense opinion, and "a decision was made to approve the granting of the license." The Department of Defense made further protests, demanding proof that either the USSR or Western Europe was capable of producing such machines. No such proof was forthcoming.

The following is a summary of the objections of the Department of Defense representative:

> (a) I expressed dissatisfaction and suggested that the Department of Defense not concur in the initial request of the Department of Commerce.
>
> (b) The official member of the Department of Defense in this connection concurred and, at a series of meetings of the Advisory Committee on Export Control, spoke against the proposal that an export license be granted.
>
> (c) The Deputy Assistant Secretary of Defense Supply and Logistics, after reviewing some of the circumstances, requested that I do whatever was possible to stop the shipment of these machines.
>
> (d) A letter was transmitted from the Office of the Secretary of Defense to the Secretary of Commerce, approximately November 1, 1960, saying it [sic] spoke to the Department of Defense and requesting a further review.
>
> (e) At two meetings where the matter was reviewed, the Department of Defense maintained nonconcurrence in the shipment of the equipment.

As of this writing I am still convinced that it would be a tragic mistake to ship this equipment.

The reference to a "tragic mistake" refers to the known fact at that time that miniature precision ball bearings are essential for missiles. Granting the license would give the USSR a miniature ball bearing production capability equal to two-thirds that of the United States.

In 1961 a Senate subcommittee investigated the grant of this license to Bryant. Its final report stated:

> The Senate Subcommittee on Internal Security has undertaken its investigation of this matter not in any desire to find scapegoats, but because **we felt that the larger issue involved in the Bryant case was, potentially, of life-or-death importance to America and the free world.** We are now convinced, for reasons that are set forth below, that the decision to grant the license was a

> grave error.[26]

The testimony of Horace Gilbert to the Senate summarizes the position on the Centalign machines;

> Mr. Chairman, I am Horace D. Gilbert, of Keene, N.H., and I am president of Miniature Precision Bearings, Inc., and I would like to express my appreciation for having an opportunity to be here with you and come particularly at this time, when I know that everyone is so busy, and at such short notice. As the name implies, my company produces miniature ball bearings of precision quality, 85 percent of which are used in the national defense effort. All but 1 percent of our sales are within the United States, and most of these bearings are produced by machines manufactured by Bryant Chucking Grinder Co., of Springfield, Vt.
>
> Our company owns about 25 of these machines out of the 66 which, I believe, presently exist in the United States. This machine was developed over a long period of years, and much of the know-how, Mr. Chairman, in the latest model, was contributed by our company.
>
> Several months ago Russia ordered 45 of these machines from Bryant, and the Department of Commerce has granted an export license.
>
> I was very much disturbed when I learned of this, and I and Mr. Patterson over there — whom I will further identify as one of the developers of this machine — we have attempted to demonstrate to the Department of Commerce the tragedy of these machines being sold to Russia.
>
> Unfortunately, we have not met with success, and I would like to assure you, Mr. Chairman, that if these machines are sold, it means absolutely no commercial or financial difference to us as a company or to me as an individual.
>
> I have no fear as far as Russia selling in our markets is concerned, and our company does not do any significant amount of bearing business in their markets. I am here because I think that this is folly which would undermine our defenses.
>
> The Department of Commerce has attempted to justify its decision with four or five arguments, none of which, in our opinion, appears to be valid, and I would like to touch on these.
>
> First, they say these machines could be purchased in Europe, and consequently, Bryant might as well benefit by their sale here.
>
> I am thoroughly familiar with the machines which are in production in Europe. Part of my

CHAPTER VIII

The Soviets at Sea

> "Within weeks many of you will be looking across just hundreds of feet of water at some of the most modern technology ever invented in America. Unfortunately, it is on Soviet ships."
>
> — Secretary of the Navy John Lehman, May 25, 1983, to graduating class at Annapolis (reported in U.S. Naval Institute Proceedings, August 1983, pp. 73-4)

Only one Soviet battleship was built before World War II — the **Tretii International** ("Third International"), laid down on July 15, 1939 in the Leningrad yards. The guns, turrets, armor, and boilers for this 35,000 ton battleship were purchased in the United States and Germany. The ship was completed in the late 1940s. Other prewar Soviet battleships — the **Marat, Kommuna,** and **Oktyabrskyaya Revolutsla —** were reconditioned and refitted ex-tsarist vessels. Attempts to build three battleships of the Italian **Vittorio Veneto** class were abandoned.

Three aircraft carriers were under construction at the end of the 1930s. The **Stalin** (formerly the tsarist **Admiral Kornilov**), a 9,000-ton ship built in 1914, redesigned in 1929, and completed in 1939 as an aircraft carrier. Two other carriers of 12,000 tons each were built "on the basis of American blueprints" — the **Krasnoye Znamye** and the **Voroshilov**, laid down at Leningrad in 1939 and 1940.

World War II Soviet cruisers were refitted tsarist-era vessels, including the **Krasni Kavkaz** (formerly the **Admiral Lazarov**, built in 1916 at Kinoleav), the **Profintern** (formerly the **Svetlana**, built in 1915 at Reval [now Tallinn] and refitted in 1937), and the **Chevonagy Ukraina** (formerly the **Admiral Nakhimov**, built in 1915). The first Soviet attempt at cruiser construction was the **Kirov** class of 8,000 tons. Three ships were laid down in 1934-35 with Tosi engines manufactured in Italy and built to Italian plans at Putilovets (the **Kirov** and **Maxim Gorki**) and at Nikoleav (the **Kulbyshev**) under the technical direction of Sansaldo, an Italian firm.

There were three groups of Soviet destroyers before World War II. First, fourteen tsarist vessels — four in the **Petrovski** class (built in 1917-18), nine in the **Uritski** class (built in 1914-15), and one ex-**Novik** (built in 1911). Second, some new classes of destroyers were built under the Soviets to French and Italian designs. Between 1935 and 1939, fifteen destroyers of 2,900 tons each, based on French drawings, were built as the **Leningrad** class: six in the Leningrad yards, eight on the Black Sea, and one at Vladivostok. The first units, supervised by French engineers, were similar to French vessels.

The third category encompassed the **Stemitelnie** class, the largest Soviet destroyer class of the 1930s. Between 1936 and 1939, thirty-five of these 1,800-ton ships were built under

Italian supervision, mainly in Leningrad and the Black Sea yards, utilizing an Italian Odero-Terni-Orlando design and British machinery. Their engines were Tosi (Italy) 50,000-shaft-horsepower geared turbines. In addition, the **Tashkent**, another Odero-Terni-Orlando design, was built in Italy — the only Soviet surface warship built abroad in the 1930s.

In January 1939 the American firm of Gibbs and Cox, naval architects, designed two destroyers and a 45,000-ton battleship for the Soviet Union in the United States.

From 1939 to 1941 the Soviets received German military assistance. The Nazis sent the partly finished cruiser Lutzow, laid down at Bremen in 1937, and in May 1941 "construction of the cruiser 'L' in Leningrad was proceeding according to plan." In the Leningrad yards German technicians took over construction and repair of Soviet ships. This cooperation lasted for eighteen months, from late 1939 until May 1941.

All told, in 1941 the Soviet fleet comprised 3 battleships, 8 cruisers, 85 destroyers and torpedo boats, 24 minelayers, 75 minesweepers, 300 motor torpedo boats and gunboats, and 250 submarines. Most were built in the West or to Western designs.

U.S. Lend-Lease added 491 ships to this total: 46 110-foot submarine chasers and 59 65-foot submarine chasers, 221 torpedo boats (24 of them from the United Kingdom), 77 minesweepers, 28 frigates, 52 small landing craft, 2 large landing craft from the United Kingdom, and 6 cargo barges. In addition to combat vessels, Lend-Lease transferred merchant ships and marine engines.

In terms of tonnage, Lend-Lease probably doubled the size of the Soviet Navy. Only a small number of these naval ships have been returned, although the Lend-Lease master agreement required the return of all vessels.

Since World War II, assistance to the Soviet naval construction program has taken two forms: export of shipbuilding equipment and shipyard cranes from European countries and the United States, and use of plans and designs obtained from the United States and NATO through espionage. For example, the sophisticated equipment of the U.S.S. **Pueblo**, transferred by the North Koreans to the USSR, was at least fifteen years ahead of anything the Soviets had in the late 1960s. In other words, the **Pueblo** capture took the Soviets in one leap from postwar German and Lend-Lease technical developments to the most modern of U.S. technology.

Current Soviet acquisitions of naval equipment are highly significant and evidence of failure by the West to maintain a realistic defense posture.

The Soviets have concentrated their acquisitions in areas related to aircraft carriers, deep sea diving capabilities, sensor systems for antisub-marine warfare and navigation, and ship maintenance facilities. In the maintenance area, two huge floating drydocks purchased from Japan, supposedly for civilian use, have been diverted to military use. Drydocks are critical for both routine and fast repair of ships damaged in warfare. In 1978, when the Soviets took possession of one of the drydocks, they diverted it to the Pacific Naval Fleet. The other was sent to the Northern Fleet in 1981.

These drydocks are so large that they can carry several naval ships. More importantly, they are the only drydock facilities in either of the two major Soviet fleet areas — Northern or

Pacific — capable of servicing the new Kiev-class V/STOL aircraft carriers. Soviet advanced submarines carrying ballistic missiles, Soviet Kiev aircraft carriers, and Soviet destroyers were among the first ships repaired in these drydocks. The drydocks are so large that no Soviet shipyard is capable of accommodating their construction without major facility modifications, associate capital expenditures, and interruption of present weapons programs. Their importance will be even more pronounced when the Soviets construct the still larger carriers (for high-performance aircraft) projected for the 1990s. The Soviets have acquired Western aircraft carrier catapult equipment and documentation for this larger carrier; catapult technology, though relatively common in the West, is outside Soviet experience and capabilities.

In the 1980s, the USSR has contracted for or purchased foreign-built oceanographic survey ships equipped with some of the most modern Western-manufactured equipment. In place of U.S. equipment that was embargoed, other Western equipment has been installed on the ships. This modernization of the world's largest oceanographic fleet with Western technology will support the development of Soviet weapon systems programs and antisubmarine systems used against the West.

Ship and submarine construction requires sheet steel, steel plate, and steel sections. Armor-plate is produced by rolling high-alloy steel, which is then heat-treated to develop its ballistic properties. Multiple layers are used for armor protection. Therefore, assistance to the Soviet iron and steel industry — which is significant and continuing — is also assistance to Soviet ship-construction programs.

A U.S. government agency report has asserted that "any shipyard capable of building a merchant ship hull is equally capable of building a combatant ship of the same length." The report also states that merchant ships can be designed for conversion into naval ships, and that in any event the facilities required to build a steel merchant ship are exactly the same as the facilities required to build a steel warship. The main differences are the armament and the varying specifications for engines and other equipment. Almost 70 percent of the present Soviet merchant fleet has been built outside the Soviet Union. This has released Soviet shipyards and materials for Soviet naval construction. All diesel engines in Soviet ships use a technology originating outside the Soviet Union.

The Soviets provided 80 percent of the supplies for the North during the war in Vietnam. Most of these supplies were transported by merchant ship. The ocean-going capacity required to supply the North Vietnamese on this scale and so keep them in the war was dependent upon ships previously built outside the USSR. The same process can be identified in Central America and Africa. While the supply of maritime technology has been formally forbidden by Congress, grossly inefficient administration of the export control laws has allowed the Soviets to acquire a massive military transportation capacity.

Origins of the Soviet Merchant Marine

There are two extraordinary facts about the gigantic strategic Soviet merchant marine:

First: over two-thirds of its ship tonnage has been built outside the Soviet Union. The remaining one-third was built in Soviet yards and to a great extent with shipbuilding equipment from the West, particularly Finland and NATO allies, Great Britain and

Germany.

Second: four-fifths of the main marine diesel engines used to propel the vessels of the Soviet merchant marine were actually built in the West. In other words, only one-fifth of the main diesel engines were built in the USSR. Moreover, even this startling statistic does not reflect the full nature of Soviet dependence on foreign marine diesel technology because **all of the main engines manufactured in the USSR are built to foreign designs.** The full scope of the dependence of Soviet marine-diesel technology on foreign assistance is shown in Table 8-1.

The manufacture of marine diesels in the Soviet Union has received considerable foreign technical assistance. Technical-assistance agreements were made with both M.A.N. and Sulzer in the 1920s, and the Soviet Union has continued since that time to receive M.A.N. (Maschinenfabrik Augsburg-Nurnberg) and Sulzer technology, in addition to assistance agreements with Burmeister & Wain of Denmark and Skoda of Czechoslovakia.

An important basic agreement was signed in early 1959 in Copenhagen by Niels Munck, managing director of Burmeiste

CHAPTER IX

The Leaky Pipeline Embargo[27]

> "It seems beyond doubt now that the pattern of Soviet-Cuban-East German intervention constitutes a single apparatus with a serious purpose. It merits a serious American response."
>
> — Wall Street Journal, December 29, 1980

Siberia is a vast store house of oil and gas reserves. In the 1970s the Soviets brought off an almost unbelievable deal to develop these reserves.

A known Soviet objective in economic warfare is to make Western Europe dependent on the Soviet Union. Such dependence will severely reduce European options in case of war with the Soviet Union. The Soviets designed a massive pipeline project large enough to change the entire Siberian infrastructure to channel these Siberian natural gas reserves to gas deficient Europe, thus making Europe dependent on a vital energy resource. At the same time the Soviets convinced the Western deaf mute blindmen to finance this $22 billion deal and so finance their own destruction — just as Lenin predicted.

The Siberian gas deal, known as "Russia No. 6" to the financing bankers, is a 2,800 miles gas export pipeline from the Urengoy gas field in Siberia to Uzhgorod on the Czech-Soviet border, where it feeds into the West European gas pipeline network. Daily throughput is 2.8 billion cubic feet.

Initially, even the U.S. State Department (October 1982) objected to the deal on the following grounds:

> • Russia No. 6 would make Europe 20%-30% dependent on Russian gas, thus crossing "the threshold of prudent dependence on the USSR,"
>
> • the financing offered by Western bankers "amounts to a subsidy of Soviet economic development,"
>
> • resulting hard currency earnings from sale of the gas will "have a strategic impact by allowing the USSR to continue to import Western goods and high technology equipment, alleviating serious domestic resource constraints."[28]

In the late summer of 1981, the Soviet Union contracted with U.S., French, West German, and Italian engineering firms for equipment for the Siberian pipeline. The Soviets required each European country to make available substantial export financing to be eligible for pipeline contracts. Financing offers by the European export credit agencies were for subsidized interest rates, in most cases under 8%, at a time when interest rates ranged from

11% to more than 20%. Using credit, the Soviets purchased power turbines, gas compressors, and monitoring, firefighting, and control equipment. Large diameter pipe was purchased and financed as part of bulk orders of Western steel pipe regularly imported by the Soviets.

In late 1981 and early 1982, long-term gas supply contracts based on the new pipeline were signed between the Soviet Union and gas distribution companies in West Germany, France, Austria, Switzerland, and later Italy. The new contracts significantly increased West European dependence on the Soviet Union for natural gas, in some cases pushing it above 30% (see Table 9-1). Such a level of dependence on Siberian gas is unwise because:

- gas is a fuel particularly hard to replace at short notice because of the way it is transported and stored;

- gas is used in the politically sensitive residential and commercial sectors of Europe.

By the end of the present decade and after equipment credits are paid off, expanded gas exports will earn the USSR $8-$10 billion annually in hard currency. This will be a most important source of hard currency for the Soviets, offsetting an expected decline in crude oil export earnings.

Table 9-1

Gas Supply Sources for Major European Consumers

Federal Republic of Germany	1980	1990
Domestic	30.1%	22.3 %
Netherlands	36.6	15.7
Soviet Union	17.5	25.0
Norway	15.7	22.3
Middle East	—	7.8
Africa	—	6.5

France	1980	1990
Domestic	27.5%	8.0%
Netherlands	37.6	8.0
Algeria	7.8	23.0
Soviet Union	13.3	32.0

Norway	9.1	12.0
W. Germany	4.0	—
W. Africa	—	16.0

Italy	1980	1990
Domestic	46.8%	17.0%
Netherlands	24.3	13.6
Algeria	—	27.2
Soviet Union	23.7	35.2
Libya	4.9	5.6

Source: *Financial Times* (London)

Working Both Sides of the Street

Financing of the Siberian gas pipeline is an excellent example of the two-faced nature of the deaf mute blindmen. In great part those who financed this vast expansion in Soviet ability to wage global war at Western taxpayers' expense are also prime military contractors for Western governments.

General Electric supplies guidance systems for Polaris and Poseidon missiles and jet engines for U.S. military aircraft, while at the same time supplied equipment for Soviet military end uses — on credit at preferential terms that could not be obtained by an individual U.S. taxpayer. In brief, because the U.S. government guarantees these Soviet orders, General Electric is in a position to have the U.S. taxpayer subsidize its contracts in the Soviet Union while the same taxpayer is shelling out for the U.S. Defense budget.

Here are the U.S. prime contractors on "Russia No. 6," with a brief notation of their U.S. government defense contracts:

Military Contracts with United States Government	Contracts with Soviet Military End Use (In addition to "Russia No. 6")
General Electric Company Total 1980 sales: $18,654 million; military sales: $2,202 million (No. 5 in USA)	**General Electric Company** 1981 — Romania ($142 rail.) Steam turbine generating equip-ment for nuclear power station. 1980 — USSR ($40 mil.) Sub-contract for computers and electri-

• Produces jet engines for military
aircraft including F-4 Phantom, F-5 Freedom fighter and F-18 Hornet. plant.
• Guidance system for Polaris and Poseidon missiles.

cal equipment for electrical steel

General Electric Company
• Data processing systems.
• Components for nuclear weapons.

General Electric Company
1979 — Hungary
Licensed production of polypropylene film, also technology for condenser manufacture.
1979 — Yugoslavia
Know-how for manufacture of polyethylene cable.
1978 — Poland ($12 rail.)
Equipment for hot strip steel mill.
1976 — USSE ($90 million)
Hot gas rotating components.

Exxon Corporation
Total 1980 sales: $63,896 million
Military sales: $479 million (No. 29 in USA)

Exxon Corporation
Participation, through holdings in Ruhrgas and Gasunie, in the distribution of Soviet gas in Europe.
1978 — Poland
Additives for and formulation of high quality lubricating oils.
1977 — USSR
Scientific and technical cooperation, exchange of petrochemicals, information and research cooperation in developing additives to lubricating oils, resins, solvents and semi-finished chemical products over 5 years.

Royal Dutch/Shell Group
Total 1980 sale: $225,090 million
• Sales to U.S. DoD were $225 million in 1980, ranking it No. 52.

Royal Dutch/Shell Group
1979 — Hungary
5-year cooperation in various field including marketing.
In 1978, Shell business with Hungary included $5 million in buy-back products.
1979 — Romania
Subsidiary General Atomic to supply Triga nuclear reactor for research center.
1978 — Bulgaria
Licensing of process for liquid plant protectant.

1978 — China
Licensing of process for $250 million methanol plant.
1976 — Poland
Licensing of process for ethylene oxide plant.

Ente Nazlonale Idrocarburi (ENI) (U.S. Subsidiary is Agip)
Total 1980 sales: $27,186 million
• Subsidiary Agip had $223 million of business with U.S. DoD in 1989, ranking it 53rd among U.S.defense contractors.

Ente Nazlonale IdrocarburI (ENI)
1981 — GDR
5-year cooperation agreement with Chemiaranlagen Export-Import.
1981 — China
Joint agreement for research and development of Chinese petrochemicals and synthesized polymers.

ENI (U.S. Subsidiary is Aglp)

ENI (U.S. Subsidiary is Agip)
1981 — Romania
Framework agreement for complete production program of turbines, compressors, pumps, valves, etc.
1981 — Hungary ($3 million)
Supply and licensing of 30,000 tpa methyl terbutyl ether (MTBE) plant.
1980 — GDR ($90 million)
Snamprogetti: construction of highly advanced plant to recover lead from batteries.
1979 — China ($50 million)
Subsidiary Nouvo Pignone: joint production of centrifuge compressors.
1978 — Hungary ($80 mil.)
Supply of gas compressor station.
1976 — Poland
Subsidiary Haldor Topse: licensing of process for two ammonia plants.
1975 — USSE ($200 million)
Supply of three urea plants.

Foreign Companies with Significant Department of Defense Contracts

Rediffusion Ltd. (UK)

Rediffusion Ltd. (UK)

(Controlled by British Electric Traction Co. Ltd.)
• One of the top 10 suppliers of electronic equipment to UK military.
• R & D work for U.S. DoD (1977, $2.3 million); communications, data processing and flight simulation systems.

1981- USSR
Supply and videotext systems and terminals for gas pipeline.
1979 — Czechoslovakia
($1.5 million) Supply of data transmission system and equipment.
1979 — Poland ($1 million)
Supply of data processing system and computers.
1978 — Czechoslovakia
($1.2 million) Supply of two computer systems.
1977 — USSR
Supply of computer system.
1977 — Czechoslovakia
($1 million) Supply of six data entry systems.
1977 — Poland ($1 million)
Supply of EDP computer equipment.

Thomson Group
Total 1981 sales: $8,656 million
• Variety of military electronics equipment including contracts on full range of Matra missiles such as
Crotale, Martel, Otomot, and on MBB Kormoran antiship missiles.
• Surface radars, avionics, military data processing from Brandt Armaments Division.

Thomson Group
1979 — USSR ($100 million)
Supply of computerized telephone exchange system.
1979 — USSR
Construction of printed circuit plant at Minsk.
1979 — USSR
Data processing for nuclear plants.
1976 — Romania
Supply of air traffic control system.
1978 — Bulgaria
Agreement on electronics developments.

Rolls-Royce
Total 1980 sales: $2,926 million; military sales: $250 million (No. 4
in UK)
• Propulsion systems for Bloodhound and Sea Dart missiles.
• Jet and turbine engines for military craft such as Harrier V/STOL
fighter.
• With Turbomeca (France):

Adour engines for Jaguar strike plane.

• With Detroit Dies

CHAPTER X

DMBs Supply Nerve Gas Plants

"The USSR is highly dependent on Western chemical technology.

— Central Intelligence Agency

Chemical technology is an all-important prerequisite for modern warfare. Explosives require chemical technology and, for example, under wartime circumstances fertilizer plants can be quickly converted to manufacture of explosives. Many nerve gases require chemical technologies similar to those used for production of agricultural insecticides. This interrelationship between chemical technology and warfare is well known in Washington, yet the Soviets have traditionally been allowed access to the latest of Western chemical technology under so-called cooperation agreements, through "turn-key" plants which have been used for military end uses.

A Central Intelligence Agency assessment report[30] made in the late 1970s concluded that the "USSR is highly dependent on Western chemical technology." At that time the CIA estimated that Western equipped plants accounted for the following proportions of Soviet chemical production:

40 percent of complex fertilizers
60 percent of polyethylene
75-80 percent of polyester fiber
85 percent of ammonia production

The CIA report did not, however, report on another critical fact: that Soviet plants producing these and other chemicals use almost entirely technology copied or reverse engineered from Western equipment. There is no indigenous Soviet chemical technology.

State Department Concurs in Explosives Manufacture

Import of U.S. chemical technology for military purposes goes back to the 1920s and has always received State Department support.

A 1929 agreement stipulated that the Soviets could use Du Pont processes for the oxidation of ammonia to manufacture 50-65 percent nitric acid. Du Pont agreed "to place at the disposal of Chemstroi sufficient data, information and facts with respect to the design, construction and operation of such plants as will enable Chemstroi to design, construct and operate ammonia oxidation plants."

Later in 1932, negotiations were concluded between Du Pont and the Soviets for construction of a gigantic nitric acid plant with a capacity of 1,000 tons per day. This

approximates 350,000 tons annually. Twenty-five years later, in 1957, the largest Du Pont-process nitric acid plant in the United States, at Hopewell, had an annual capacity of 425,000 tons. Under the 1929 earlier contract, Du Pont also supplied technical assistance to the USSR for a period of five years. The firm inquired of the State Department whether this plant of "excessively large capacity" would meet with objections from the U.S. government: "While we have no knowledge of the purpose of the proposed plant, yet the excessively large capacity contemplated leads us to believe that the purpose may be a military one."[31]

The State Department position is summarized in a memorandum of April 6, 1932, which reviewed export of military materials to the Soviet Union and concluded that the department would have no objection to construction of such a large nitric acid plant.[32]

The Soviets bought from Du Pont its ammonia oxidation and nitric acid technologies. Du Pont had expended over $27 million developing these processes. In requesting advice from the State Department, Du Pont argued that the process was neither secret nor covered by patents, that the end-use of nitric acid is the manufacture of fertilizer, that if Du Pont did not supply the process, it could be bought elsewhere, and that several plants had already been erected in the USSR by Casale and Nitrogen Engineering of New York.

The letter from Du Pont to Henry L. Stimson of the State Department with reference to the proposed contract (dated April 20, 1929) states in part, "It is true of course that nitric acid is used in the manufacture of munitions." Du Pont then claimed, "It is impossible to distinguish between chemicals used for strictly commercial purposes and chemicals used for strictly munitions purposes." And as justification for its proposal, the firm said, "We submit that the contemplated contract will in no way give assistance for the manufacture of munitions which cannot easily be acquired elsewhere by the Soviets."

Further, the company argued, there was nothing exclusive about the Du Pont process. The copy of the agreement in the State Department files indicates that the Soviet union

> [wishes] to use in Russia the Du Pont process for the oxidation of ammonia and [Du Pont] to place at its disposal sufficient data with respect to the design, construction and general information as to permit the satisfactory operation of such plants... the Company shall serve the Russian Corporation in an advisory capacity and furnish upon request services of engineers and chemists so as to accomplish the purpose of the contract.

By the late 1930s a Nitrogen Engineering-designed complex at Berezniki employed 25,000 workers and manufactured thermite, powder, and nitroglycerin.

In the late 1950s and 1960s, the Soviets lagged in all areas of chemical production outside the basic chemical technology absorbed in the 1930s and 1940s. This lag had major military implications and since 1958 has inspired a massive purchasing campagin in the West. In the three years 1959-61 alone, the Soviet Union purchased at least fifty complete chemical plants or equipment for such plants from non-Soviet sources. The American trade journal *Chemical Week* commented, with perhaps more accuracy than it realized, that the Soviet Union "behaves as if it had no chemical industry at all." Not only was Soviet industry producing little beyond basic heavy chemicals, but of greater consequence, it did not have the technical means of achieving substantial technical modernization and expansion in a product range essential for a modern military state.

Western firms supplied designs and specifications, process technology, engineering capability, equipment, and startup and training programs. These contracts were package deals that provided more than the typical Western "turn-key" contract. Such contracts are unusual in the West (except perhaps in underdeveloped areas lacking elementary skills and facilities) but were very attractive and highly profitable to Western firms.

Many of the chemical plants built in the 1960 and 1970s programs had direct military applications. In 1964 a British company — Power Gas Corporation, Ltd. — built a $14 million plant for the manufacture of acetic acid in the USSR. In 1973 Lurnmus Engineering built another vast acetic acid plant with Monsanto technology and U.S. Export-Import bank loans.

Hygrotherm Engineering, Ltd. of London contracted to supply an automatic heating and cooling plant (with heat generators, circulating pumps, and control equipment) and other equipment for use in the manufacture of synthetic resisn. A plant was supplied for the production of synthetic glycerin, which is used in explosives manufacture. Other plants were for the production of ethyl urea, synthetic fatty acids, sodium tripolyphosphate, carbon black, and germanium. All these products have military end-uses.

Sulfuric acid, the most important of inorganic acids and industrial chemicals, is required in large quantities for explosives manufacture. Production of sulfuric acid in Russia increased from 121,000 tons in 1913 to just under 3,000,000 tons in 1953, 4,804,000 tons in 1958, and 8,518,000 tons in 1965.

The Soviets have always utilized basic Western processes for the manufacture of their supply of sulfuric acid and have reverse engineered the equipment in their own machine-building plants. A recent Russian paper on sulfuric-acid manufacture indicates that in the mid-1960s, 63 percent of sulfuric-acid production was carried out according to a standardized version of one Western process. The remainder was produced by a "Soviet process" (utilizing fluidized bed roaster, electric precipator, towers, and contact apparatus) similar to the contact processes in use in the West. In 1965 Nordac, Ltd. of the United Kingdom sold a sulfuric-acid concentration plant with a capacity of 24 tons per day of 78 percent sulfuric acid to update Soviet sulfuric acid technology.

Up to 1960 Russian output of fertilizers was mostly in the form of low-quality straight fertilizers. There was no production of the concentrated and mixed fertilizers that are used in the West. Fertilizer plants are easily converted to explosives plants. Part of the fertilizer expansion program of the 1960s was the purchase from the Joy Manufacturing Company of Pittsburgh of $10 million worth of equipment for potash mining. Congressman Lipscomb protested the issue of a license for this sale *(Congressional Record*, Aug. 28, 1963). While Lipscomb pointed out that potash can be used for manufacture of explosives, Forrest D. Hockersmith, of the Office of Export Control in the Department of Commerce, replied, "Our decision to license was heavily weighed by the fact that potassium fertilizer can best be characterized as 'peaceful goods'" (Aug. 21, 1963). Hockersmith did not, of course, deny that potash had an explosives end-use.

A cluster of ten gigantic fertilizer plants for the Soviets was arranged by the Occidental Petroleum Corporation (Armand Hammer's company) and built by Woodall-Duckham Construction Company, Ltd., and Newton Chambers & Company, Ltd., of the United Kingdom. Other fertilizer plants were built by Mitsui of Japan and Montecatini of Italy. Ammonium nitrate, an ingredient in fertilizer manufacture, also has an alternate use in

explosives manufacture. It is used, for example, in 60/40 Amatol in the explosive warheads of the T-7A rockets.

Armand Hammer of Occidental Petroleum is, of course, Moscow's favored deaf mute capitalist, possibly vying with David Rockefeller for the honor. However, Armand has a personal relationship with the Soviets that could never be achieved by anyone with David's Ivy League background. One fact never reported in U.S. newspaper biographies of Armand Hammer is that his father, Julius Hammer, was fo

CHAPTER XI

Chevron-Gulf Keeps Marxist Angola Afloat

> "Now, in spite of the increasingly advantageous position of UNITA, and the imminent collapse of the illegitimate, pro-Soviet government, elements within the State Department are doing their best to salvage the (communist) MPLA, and to prevent the forces for democratic government from winning in Angola."
>
> — Senator Steve Symms, May 14, 1985

In distant, obscure Angola, on the southwest coast of Africa, the alliance between capitalists and communists has matured into its most open blatant form. Possibly the reported export of ballbearing machines to Russia to produce bearings for Soviet missiles may leave some readers with an uneasy feeling, but also with a vague need to come to grips more concretely with the alliance. In Angola the most skeptical reader can see the alliance working on a daily basis.

Angola, a one time Portuguese colony, was "liberated" ten years ago by the MPLA (Popular Movement for the Liberation of Angola), a Marxist organization in alliance with Angolian nationalist groups. The MPLA was not elected and has never held elections. MPLA seized power and has been kept in power by 36,000 Cubans and about 1,200 Soviet military personnel. The Cubans and the Soviets are in Angola for the same reason Angolan Marxists will not allow free elections: because Marxism does not represent the people of Angola.

The United States has been inhibited from encouraging democratic, freely-elected forces by groups within the U.S. State Department and the so-called Clark Amendment (repealed in 1985), sponsored by former Senator Clark, which forbade the U.S. from assisting any group that might challenge the Angolan Marxists.

Yet the Soviets in Angola are challenged as they have never been challenged before; for the first time in 60 years a Marxist regime is in danger of overthrow by internal democratic forces. Angolan guerrillas, known as UNITA (National Union for the Total Liberation of Angola) have taken over one-third of Angola, about 250,000 square miles, and control most of the countryside, particularly in the south.

UNITA is an unusual organization. It is not American-backed. In fact, it is American corporations and the U.S. State Department that have stopped a UNITA victory. UNITA is unusual also in that it believes in free enterprise, free and secret elections, private property, and decentralization of political power. UNITA is led by Jonas Savimbi, aged 51, a ferocious-looking gentleman reminiscent of television's "Mr. T." Savimbi is a European educated black intellectual who believes in individual freedom.

Against Savimbi and UNITA we find the Soviet Union, Cuban forces, the U.S. State Department, American multinationals, and until recently, the U.S. Congress. Some years

ago the Senate passed the Clark Amendment, sponsored by Senator Clark, which in effect prevented U.S. aid to this torch of freedom in southern Africa.

The muddled, confused thinking of the United States is well illustrated by a statement made by former U.S. Ambassador to United Nations Donald McHenry, to the effect that the U.S. should not be surprised that the Soviets are aiding Angolan Marxists: "That the Soviets are present to assist the Angolans and to assist the Namibians... is no different from the presence of the United States in El Salvador and U.S. assistance to E1 Salvador."

The point, of course, that McHenry avoids is that the Soviet objective, more than clearly demonstrated in the past 60 years, is a totalitarian controlled society without individual freedom.

The Soviets have indeed assisted Marxist Angola. As far back as 1981 Soviet military officers up to the rank of Colonel were killed and captured in Angola. Soviet Air Force personnel have been captured in Angola (see Now, January 16, 1981.)

The real oddity in Angola is that the single most important factor preventing a free open society is an American multinational corporation. As succinctly stated by Congressman William L. Dickinson (July 1985), "These Cuban troops are protecting American oil interests and they are preventing UNITA from overrunning the MPLA."

In northeast Angola is the Cabinda oil complex owned by Gulf Oil Corporation (since March 1984, part of Chevron Oil of California). CABINDA PROVIDES AT LEAST 80 PERCENT OF MARXIST ANGOLA'S FOREIGN EXCHANGE. The balance comes from diamond concessions operated by Anglo-American Corporation. Soviet and Cuban assistance is paid for from these foreign exchange earnings.

When we look closely at Chevron Gulf, we find that no less than a former U.S. Secretary of Defense, David Packard, has been in a position to thwart Gulf backing for Soviet Angola — yet did nothing.

Gulf Oil Corporation owns Cabinda, and Gulf itself was taken over by Chevron in March 1984. Thus, we have two sets of directors to look at, the original Gulf Oil directors who for a decade allowed the Gulf Cabinda operation to finance Marxist Angola, and the Chevron directors who had the opportunity to change corporate policy towards subsidy of Marxist warfare.

The directors of the former Gulf Oil Corporation were:

Jerry McAfee	Robert Dickey, III
H.H. Hammer	Julian Goodman
R.H. Dean	Sister Jane Scully
J.H. Higgins	Edwin Singer
J.P. Gordon	E.B. Walker, III
J.E. Lee	J.M. Walton

E.I. Colodny

Of these the most vocal in support of Marxism was James E. Lee, former Chairman and

Chief Executive officer of Gulf and now a director of Chevron. Lee was strong in support of Marxist Angola, even claiming to the wall Street *Journal* that the Neto regime was "stable" and "easy to work with." (see cartoon opposite title page.)

In March 1984 Gulf was taken over by Chevron in the largest corporate merger in U.S. history. A few Gulf directors joined the Chevron board and Chevron-Gulf continued to operate Gulf Cabinda, protected by Cuban and Soviet troops, continued to provide most of Angola's foreign exchange and with the Angolan government, planned new joint ventures to expand corporate usefulness to the unelected Marxist government. That Chevron-Gulf should be protected by Cuban troops with Soviet air cover and a Soviet air defense network doesn't seem to embarrass these Chevron directors at all, **even though some are directors of major U.S. defense contractors:**

> **Samuel H. Armacost** (45), Pres., Dir. & Chief Exec. Off. of Bank of America NT&SA.
>
> **Donald L. Bower** (61), Vice-Chmn. of Bd. of Co.; Dir., Crocker National Corp., Crocker National Bank.
>
> **R. Hal Dean** (68), Dir., Ralston Purina Co., Gulf Corp., Mercantile Trust Co., Mercantile Bancorporation, General American Life Insurance Co., LaBarge, Inc.
>
> **Kenneth T. Derr** (48), Vice-Pres. of Co.; Pres. & Chief Exec. Off., Chevron U.S.A., Inc.
>
> **Lawrence W. Funkhouser** (63), Vice-Pres., Explor. and Prod., of Co.
>
> **John R. Grey** (62), Pres. of Co.; Dir., Bank of American NT&SA and BankAmerica Corp.
>
> **Kenneth** E. Hill (69), consultant to Blyth Eastman Paine Webber, Inc.
>
> **Carla Anderson** Hills (51), partner, law firm of Latham, Watkins & Hills; Dir., International Business Machines Corp., The Signal Companies, Inc., Corning Glass Works.
>
> **George** M. Keller (61), Chmn. of Bd. & Chief Exec. Off. of Co.; Dir., First Interstate Bank of Calif., First Interstate Bancorp.
>
> **Charles** W. Kitto (63), Vice-Pres., Logistics and Trading, of Go.
>
> **James E. Lee** (63), Vice-Chmn, of Co.; Chmn., Pres. & Chief Exec. Off., Gulf Corp. & Gulf Oil Corp., Dir., Joy Manufacturing Co., Pittsburgh National Bank, PNC Financial Corp., Gulf Canada Ltd., the American Petroleum Institute and West Penn Hospital.
>
> **W**. **Jones McQuinn** (61), Vice-Pres., Foreign, of Co.
>
> **Charles** M. Pigott (55), Pres., Dir. and Chief Exec. Off., PACCAR Inc.; Dir,.

The Boeing Co.

Charles B. Renfrew (56), Vice-Pres., Legal Affairs of Co.

George H. Weyerhaeuser (58), Pres. and Dir. Weyerhaeuser Co.; Dir., The Boeing Co., SAFECO Corp.

John A. Young (52), Pres., Dir. & Chief Exec. Off., Hewlett-Packard Co., Dir., Wells Fargo Bank and SRI International.

At the same annual meeting that approved the Chevron takeover of Gulf and so lent Chevron support to Marxist Angola, a Chevron director resigned. This was David Packard, Chairman of Hewlett-Packard and a former Secretary of Defense. There is no record that Packard protested either Gulf support of Marxism or objected that Chevron should not join the band of American corporations who have aided world revolution. We doubt that Packard resigned on grounds of principle, because Packard was an Overseer of the Hoover Institution and Chairman of its Financial Committee back in the early 1970s when Hoover Institution Director W. Glenn Campbell attempted to put pressure on this author to stop publication of the earlier version of this book, *National Suicide: Military Aid to the Soviet Union.*

Another interesting facet to this story of Soviet-multinational cooperation is in the amount of federal taxes paid by these giant firms. In 1976 Gulf had a federal tax rate of 2%. In 1984 Gulf claimed a tax refund, even while showing a profit of $313 million. Gulf 1984 tax rate was **minus** 8.3% (with a refund of $26 million). So in the same year that Gulf contributed most of Marxist Angola's foreign exchange and paid Angolan taxes, it demanded $26 million refund from U.S. taxpayers. If payment of taxes is a measure of patriotism, then Gulf Oil allegiance is more than clear.

Identification of the Deaf Mute Blindmen

The severity of our charges in the Chevron-Gulf case suggest that we be doubly careful in identification of the deaf mute blindmen. Not all directors of multinational corporations fit the description. Some in fact decidely do n

CHAPTER XII

Tanks

> "In the building of bridges toward peaceful engagement nothing, of course, should be done which would threaten our national security."
>
> — William Blackie,
> Chairman,
> Caterpillar Tractor Company

Production facilities for tanks and armored cars combine features required in automobile and truck production with those required for locomotive and tractor production. Consequently, agricultural tractor, locomotive and automotive plants can be — and are — used to produce tanks, although mass production of tanks requires equipment changes and new machine installations.

Such civilian-to-military plant conversions for tank and armored-car production have been successfully undertaken in automobile and locomotive plants in many countries. In the United States the Ford Motor Company, Cadillac, and Chrysler have mass-produced tanks. In Italy the Fiat Company and in France the Renault Company, Citroen, and other automobile manufacturers have produced tanks. In England the Vauxhall Motor Company was a tank producer in World War II. Among locomotive manufacturers both Baldwin Locomotive and American Locomotive in the United States produced tanks in World War II. Tractor plants have been successfully converted to tank production — for example, Massey Harris in the United States and all Caterpillar tractor plants in the Soviet Union.

A tractor plant is well suited to tank and self-propelled gun production. The tractor plants at Stalingrad, Kharkov, and Chelyabinsk, erected with almost complete American assistance and equipment, and the Kirov plant in Leningrad, reconstructed by Ford, were used from the start to produce Soviet tanks, armored cars, and self-propelled guns. The enthusiasm with which this tank and armored-vehicle program was pursued, and the diversion of the best Russian engineers and material priorities to military purposes, have been responsible for at least part of the current Soviet problem of lagging tractor production and periodic famines.

Since 1931, up to a half of the productive capacity of these "tractor" plants has been used for tank and armored-car production.[34]

In both the State Department and the German Oberkommando files, there are reports confirming the **planned** adaptability of Soviet general-equipment plants for war use — that is, the plants were originally planned for war use. For example, "The heavy industry plants are fitted with special attachments and equipment held in reserve which in a few hours will convert the plants into munitions factories."[35]

Tank assembly, like the production of automobiles, trucks, and tractors, is normally straight-line with components fed into the main assembly operation from subassembly lines. The components required for tanks are usually peculiar to such weapons. Tank power-plants and tank power-trains are not normally used in commercial-type vehicles in the West. However, in the Soviet Union commercial engines have been used in tank installations by combining two power plants in one tank, for example, the SU-76 self-propelled gun with two standard Dodge automobile engines, or by adapting aircraft engines.[36]

Machinery and machine tools for tank production are similar to those used in the production of heavy equipment, with additional special-purpose tools. Transfer machines required for automotive-type engines, large boring mills, large planers, radial drills, and heavy welding equipment are also utilized.

Consequently, any automobile, truck, locomotive or tractor production plant with straight-line assembly operations can be converted to the mass production of tanks by the addition of certain specialized equipment and by utilizing components and subassemblies made elsewhere for the specific tank vehicle to be assembled.

Soviet tractor plants were established in the early I930s with major U.S. technical and equipment assistance. The Stalingrad tractor plant was completely built in the United States, shipped to Stalingrad, and then installed in prefabricated steel buildings also purchased in the United States. This unit, together with the Kharkov and Chelyabinsk plants and the rebuilt Kirov plant in Leningrad, comprised the Soviet tractor industry at that time, and a considerable part of the Soviet tank industry as well. During the war, equipment from Kharkov was evacuated and installed behind the Urals to form the Altai tractor plant, which opened in 1943.

Three postwar tractor plants were in operation by 1950: the Valdimir plant opened in 1944, the Lipetsk plant in 1947, the Minsk plant and the Kharkov assembly plant in I950. This was the basic structure of the Soviet tractor industry in the 1960s and 1970s.

These plants produced tractors with a heavy emphasis on crawler (caterpillar-tread) models rather than the rubber-tired tractors more commonly used in the United States. The 1959 USDA technical delegation estimated that 50 percent of the current output was in crawler models, as contrasted to only 4 percent in the United States. The military implications of this product mix is obvious from Table 12-1.

Table 12-1
Soviet Tank Models Produced in Tractor Plants

Tank Model Number	Tractor-Tank Plant:	Where Tanks were used:
T-26 (8-ton) A, B, C versions	Ordzhonikidze (Kharkov)	Spanish Civil War Manchuria Finland
T-37 (3-ton)	Stalingrad Chelyabinsk	Russo-Finnish War World War II

T-32 (34-ton)	Kirov works (Leningrad)	Russo-Finnish War World War II
BT (12-ton)	Chelyabinsk	Spanish Civil War Russo-Finnish War
BT-28 (16-ton)	Chelyabinsk	Tusso-Finnish War
PT-76	Volograd (Stalingrad)	Indo-Pakistan War Vietnam

The Development of Soviet Tank Design

Before World War II Soviet tanks derived from American, British, and, to a lesser extent, French and Italian designs. Little German design influence can be traced in the period before 1939. During the 1920s and 1930s the Soviets acquired prototypes from all tank-producing countries and based development of Soviet tanks upon these foreign models. The Soviet tank stock in 1932 is shown in Table 12-2.

From this stock of Western models, together with technical-assistance agreements with foreign firms and the continuing purchase of foreign prototypes, the Soviets developed a formidable tank force for World War II.

The Carden-Lloyd (the predecessor of the British Brengun carrier of World War II) was a 1.69-ton machine-gun carrier first produced by Vickers-Armstrong, Ltd., in 1929. The Mark-VI model sold to the Soviets had a Ford Model-T 4-cylinder 22.5-horsepower water-cooled engine and a Ford planetary transmission. This became the Soviet T-27 light reconnaissance tank produced at the Bolshevik plant in Leningrad.

The Ordzhonikidze Tractor Plant at Kharkov started work on the T-26, based on the British Vickers-Armstrong 6-tonner at about the same time. There were three versions — A, B and C — of which B and C became the standard Soviet models produced until 1941. Similarly, the Soviet T-37 and T-38 amphibious vehicles were based on the Carden-Lloyd Amphibian, known as the Model-A4 E 11 in the British Army.

Table 12-2
Soviet Tank Stock in 1932

20 Cardem-Lloyd Mark-VI	Vickers-Armstrong Ltd. (U.K.)
1 Fist Type-3000	Fiat (Italy)
20 Renault	Renault (France)
16 "Russian-Renaults"	Made in France, modified in USSR
70 light tanks	Vickers 6-ton, Alternate-A (U.K.)
40 Vickers Mark-11	Vickers-Armstrong Ltd. (U.K.)

2 Christie M-1931	U.S. Wheel Track Layer Corp. (U.S.A.)
8 Medium Mark-A	Vickers-Armstrong Ltd. (U.K.)

Sources: R.E. Jones et al., *The Fighting Tanks Since 1916* (Washington, DC: National Service Publishing Co., 1933), p. 173.

R.M. Ogorkiewicz, "Soviet Tanks," in B.H. Liddell Hart, ed., *The Red Army* (New York: Harcourt, Brace and Co., 1956).

Walter Christie, a well-known American inventor with numerous automotive and tank inventions to his credit, developed the Christie tank — the basis of World War II American tanks. Numerous Soviet versions of Christie tanks and armored vehicles were produced in the late 1920s and 1930s. Two chassis of the Christie M-1931 model medium tank (MB) were purchased by the Soviet Union in 1932 from the U.S. Wheel Track Layer Corporation. After further development work this became not only the Soviet T-32 (the basic Soviet tank of World War II), but also several other development models in the USSR: first the BT (12 tons), followed by the BT-5 and the BT-28 produced at Chelyabinsk.

The Soviet T-34 and the American M-3, both based on the Christie, had the same 12-cylinder aero engine, a V-type Liberty of 338 horsepower. Ogorkiewicz comments on the Christie model series as follows:

> The power-weight ratio was actually higher than could be efficiently used, but the Russians copied it all and confined their development largely to armament, which increased from a 37-millimeter gun on the original models of 1931, to 45-millimeter guns on BT-5 of 1935, and eventually to short 76.2-millimeter guns on some of the final models of the series.

Both the Soviet T-28 medium 29-ton tank and the T-35 45-ton heavy tank resembled British models — the A-6 medium tank and the A-1 Vickers Independent, respectively. Imported French Renault designs also contributed to Russian tank knowledge. During the 1933 entente between France and the Soviet Union, the Renault Company delivered $11 million worth of "small fast tanks and artillery tractors" to the Soviet Union and supplied experts from the Schneider works and Panhard Levasseur, skilled in the armored-car and tank field.

The Famous T-34 Medium Tank

The Soviet T-34 and the modified T-34/85 were first introduced in World War II and used extensively against Americans in the Korean War. The model was later used in the Hungarian revolt and in "wars of liberation" to the present day. The T-34 is an excellent design and a formidable weapon. It emphasizes the ability of the Soviets to design weapons while still dependent on the West for production facilities and basic technical advances.

In 1931 the Russians bought two Christie tanks from the U.S. Wheel Track Layer

Corporation in the United States. The Russians copied these, built Christie tanks, and then incorporated the Christie suspension system into the T-34. The first Russian Christies had the same engines as the U.S. Christie — a Liberty 12-cylinder V-type of 338 horsepower with forced-water cooling. In the 1920s the Chase National Bank of New York (now Chase Manhattan) attempted to arrange illegal export of large quantities of these Liberty engines to the Soviet Union at the price of $2,000 each.

In any event, the T-34 incorporated the Christie suspension from the United States, but generally used a 500-horsepower V-type diesel developed from the German B.M.W. diesel engine. The T-34/85 was the T-34 with significantly increased firepower. Ball bearings on the T-34 and T-34/85 were manufactured on Swedish equipment.

The welding work on the T-34 was at first immensely crude, but as *The Welding Engineer* (Dec. 1952) pointed out: "The T-34 was designed with one idea in mind — to provide firepower. Any humanitarian considerations, like protection of the crew, are purely secondary."

The original T-34s were built from several million tons of armor-plate imported from the United States. In July 1934 Henry Disston & Sons, Inc. requested War Department permission to accede to a Soviet request, "in training their technicians to make tank armorplate of the same quality as they now make for this Government" (Russia 400.114, War Office).

The T-34 was followed by the improved T-44 and then by the T-54, with the basic T-44 chassis and using Christie-system torsion-bar suspension. This was the standard Soviet tank until recently; it was used in the Hungarian revolt in 1956, in South Vietnam in 1972, and still in use in most Warsaw Pact countries.

The Red Army has always used diesel engines in its medium and heavy tanks. This tank-engine series is the V-2 and V-12 water-cooled, rated to 550 brake horsepower (bhp) at 2,150 revolutions per minute (rpm). According to Ogorkiewicz, the original Russian water-cooled V-12 engine was a successful diesel adaptation of contemporary aero-engine designs. Used on all Soviet medium and heavy tanks up to World War II, it was a large 2,860 cubic-inch engine, based on a German B.M.W. aircraft design, and developed about 500 bhp. Soviet em-ephasis on diesels has continued since World War II, while other Soviet armored vehicles have used automobile gasoline engines. The T-70 light tank uses two GAZ-202 70-horsepower engines from the Ford-Gorki plant. The SU-76 self-propelled gun also used two engines of the same Ford type geared together.

CHAPTER XIII

Why the DMBs Aid Soviet Ambitions

> "One of the reasons that Americans are often confused about the Soviet Union is that Soviet manipulation of diplomats, who senselessly limit their contacts, and Sovietologists, who depend on the Soviet authorities for their visas, has given rise to a conventional wisdom about the 'reasonableness' of the Soviet Union that bears no relationship to reality."
>
> — (David Satter, *Wall Street Journal,* October 22, 1985)

The deaf mute blindmen have an outstanding quality — an ability to have policy makers listen to and implement an irrational policy based on fantasy and zero evidence, with no relationship to empirical reality.

The public plea of internationlist businessmen is that trade brings peace. This is usually phrased along the following lines. This example is from Maurice Stans, friend of Richard Nixon, former Secretary of Commerce, and Wall Street investment banker: "History has shown that where there is increasing trade between countries... there is a tendency toward increasing understanding."

Unfortunately for Maurice Stans' credibility, no historian or politician has ever produced **evidence** that trade necessarily and automatically leads to increased understanding. The statement has no empirical justification at all. It sounds good, that's all.

Why not? Because no such evidence exists. While it is true that peace encourages trade, this does not mean that trade encourages peace. In fact, trade has often enabled aggressive countries to go to war —witness the aviation gasoline and steel scrap shipments to Japan and Standard Oil's agreements on hydrogenation patents with I.G. Farben of Germany prior to World War II.

The blunt truth is that trade with the Soviet Union from 1917 to the present has built the Free World an enemy of the first order. Moreover, the technological component of this continuing trade enables the Soviet Union to pursue its programs of world conquest. It costs the American taxpayer $300 billion a year to counter this Soviet threat.

Obviously, claims that increasing trade is accompanied by increasing understanding are false. A more accurate characterization in the Soviet case appears to be that increasing trade is accompanied by increasing conflict (i.e., misunderstanding), because the Kremlin is encouraged to believe that capitalists are behaving as Lenin predicted they would behave. The concept of "peaceful trade" with Communist countries assumes some positive causal link between trade and peace. It is a false assumption.

The overlooked link is the relationship between trade and casualties, and is contained in one

word: **technology.**

From the Soviet viewpoint, the benefit of U.S.-Soviet trade is the acquisition from the United States of the technology required for building and maintaining the Soviet power base. This subsidized technology is the basis of the Soviet military structure, as is proved by the Soviets' own statements. The armaments produced by Russia's American-subsidized military-industrial complex are used to promote Soviet global expansion.

There are four logical steps in this process:[41]

1. Trade between the United States and the USSR (with its key technological component).

2. Consequent buildup of the Soviet military-industrial complex.

3. Use of the U.S.-subsidized Soviet military-industrial complex to provide inputs for Soviet armaments production.

4. Use of these armanents against the United States and its allies.

This is the "trade-technology-armaments-war" cycle. It suggests that "peaceful trade" promoted by successive administrations should be entitled "war trade."

If any of the links in this cycle can be broken (or shown to be false), the argument collapses. However, no link is demonstrably false. Indeed, there is evidence that the trade-casualties link is stronger than even the most pessimistic have envisaged.

We trade freely with European nations because these nations have no deceitful intent to use the technological component of this trade against the United States. Nor has the United States any hostile intent towards these European countries. Free trade is vital and necessary, and both sides benefit from its advantages. However, gains from free trade utlimately depend on **intent**. Where countries are potentially hostile and make hostile use of imported technology, the gains from free trade must be modified by the hostile intent of the trading partner. In other words, "peaceful trade" is only peaceful if Soviet intent is peaceful.

Why isn't this information and logic made available to the public? Then at least the DMB would have official opposition to their spurious arguments. For some reason or another the Washington bureaucracy in State and Commerce has by and large, with some exceptions, taken a position inconsistent with its own files.

The Bureaucrats' View of "Peaceful Trade"

The State and Commerce Departments have consistently rejected the argument that "peaceful trade" can assist Soviet military objectives. For example, a 1969 State Department leaflet asserts (under the heading "US exports do not help Hanoi"):

> Over two-thirds of our exports to the Soviet Union and East Europe are foodstuffs and raw materials for consumption within their economies. There is no evidence that our exports of such goods to these countries release resources

> for manufacturing war materials for North Vietnam.[42]

What is wrong with this statement?

The Soviet Union needs — and receives — U.S. technology, not "foodstuffs and raw materials." The bureaucracy may claim U.S. wheat does not go to Vietnam and Cuba, but it avoids the crucial point that export of our wheat to the Soviets released Soviet wheat for export to Hanoi. No economist will deny that our technical transfers release Soviet domestic resources for armaments production. The State Department assertion is therefore a compound of distortion and ignorance.

These unsubstantiated distortions are given to Congress as verifiable truth. For example, Edwin M. Martin, Assistant Secretary of State for Economic Affairs, made the following statement to Congress in 1961: "I don't think there is convincing evidence that the net advantage to the Soviet Union of the continuation of trade is a major factor — or a particularly significant factor in the rate of their overall economic development in the long term."[43] This is an untrue statement.

There is also confusion concerning the Soviet practice of copying. For example, the following exchange took place before a congressional committee in 1961.

> **Mr. Lipscomb:** Does the Department of Commerce feel that Russia has developed a great deal of their agricultural equipment from prototypes obtained both legally and illegally from the United States?
>
> **Mr. Behrman:** No sir, I don't think that the evidence we have indicates that the equipment that they themselves produce copies — that they produce copies of equipment which we have supplied.[44]

Again, a wildly untrue statement.

Even well-informed members of Congress have taken positions directly opposed to the evidence. Senator Jacob Javits of New York commented: "Trade with the West as a general matter must necessarily be a marginal factor in the performance and potentialities of the Soviet economy."[45]

There exist, presumably unknown to Senator Javits and the others quoted above, three volumes of detailed evidence that totally refutes these statements.[46]

A popular book in the 1930s was *You Can't Do Business with Hitler!* The moral and national-security arguments in this book apparently apply only to Hitler's brand of totalitarianism. There is extraordinary inconsistency in the treatment of Hitlerian totalitarianism and Soviet totalitarianism. Indeed, there is some direct evidence and a great deal of indirect evidence that the policymakers in Washington do not view the Soviet Union as a totalitarian power at all.

At the end of World War II, the conclusion of an interagency committee on German industry, with members from the State and Commerce Departments, was as follows:

> The Committee is unanimously of the opinion that the major force for war represented in a motor vehicle industry is its availability as a major machine shop aggregation, under able management and engineering, which can be turned, by conversion, to production of an extremely wide variety of military products. Its role as a producer of combat and military transport vehicles ranks second in significance.[47]

Yet **today** State and Commerce argue that the export of equipment for a motor vehicle industry is "peaceful trade" — **even when milltary vehicles produced by previously exported technology are photographed in Vietnam, Cuba, Afghanistan, Angola and Nicaragua.** Obviously, no amount of hard evidence can shake these people from their illusions. The policymakers are locked onto a brand of totalitarianism which, to them, is morally and strategically acceptable.

U.S. assistance to the Marxist brand of totalitarianism is not limited to the Soviet Union. In 1971, for example, the State Department attempted to help Allende, the Marxist president of Chile, to purchase aircraft and paratroop equipment in the United States *(Indianapolis News*, July 1971). Three months later Allende attempted to impose complete Marxist control in Chile. Once again the State Department wants to help a Marxist clique to impose its rule on an unwilling population.

The assertion that we should exchange our technology for Soviet raw materials will not stand penetrating analysis. Soviet raw materials only become competitive to our enormous low-grade domestic reserves if their extraction is subsidized by U.S. loans and guarantees — to the disadvantage of the American taxpayer. From the national security viewpoint, the "exchange" is absurd. Once our technology is passed to the Soviet Union it cannot be reclaimed, it becomes an integral part of their military industrial operations. But Russian raw material supplies, developed with our assistance, can be cut off any time the Soviets wish. In other words, once again our policymakers exchange something for nothing and charge it to the American taxpayer and citizen.

Useless Pinpricks as Policy

In early May 1985, President Reagan embargoed U.S. trade with Nicaragua. This followed what a State Department official described as a "disturbing pattern of behavior" on the part of Nicaragua. But the White House missed a point — and an opportunity.

Nicaragua and its "disturbing behavior" is a mere incident in a vast ever-expanding global game. Moreover, the Nicaraguan embargo has loopholes that make it virtually ineffective. For example, foreign affiliates of U.S. firms are not embargoed. In brief, if the invoice is on foreign subsidiary, that's legal. And don't think American firms won't scramble for the loophole.

The **global** problem is not pinprick Nicaragua — it is the unholy alliance of the multinationals and the Soviet Union.

Follow these logica: steps:

- The Sandanista revolution only survives because of Marxist suppression and

Soviet logistical backing.

- The Soviets survive and have become militarily awesome because the West has a sixty-year-old policy of technical, economic, financial and even political subsidy of the Soviet Union.

- The multinationals are the mainspring for technical and economic subsidy, from Kama River to the latest CDC computers. And they are more than willing to bend the truth to make a buck.

- Our political establishment, as exemplified in the Council on Foreign Relations, is the mainspring behind political subsidy of the Soviet Union, as exemplified in the Yalta agreement, National Security Memorandum No. 68 and so-called "detente."

Under this system the Soviet Union is never held fully accountable for its international acts. For example:

- The Soviets illegally occupy the long independent countries of Latvia, Lithuania and Estonia.

- The Soviet Union has occupied the long independent nation of Afghanistan.

- Soviet troops are based in Poland, Hungary, Rumania and Czechoslovakia.

- Soviet troops are active in Cuba, Angola, and a dozen other hot spots around the world including Nicaragua.

This adds up to global aggression. Yet the political establishment and its Congressional allies told us that peaceful coexistence and detente with the Soviets would bring peace.

The American public has never been told by any Administration the Soviet definition of "peaceful coexistence." That detente in the Soviet interpretation includes the RIGHT to continue so-called wars of liberation and to further encroach upon the Western world. Western governments have persisted in the illusion of detente as peace, knowing full well that the Marxist interpretation of peaceful coexistence is aggression, that peace is indeed war.

It is this official inaction that has encouraged the deaf mute blindmen to further Soviet ambitions for their own personal gain.

Multinational Businessmen and the Politics of Greed

Who benefits from technological transfers to the Soviet Union? Basically two groups: the Soviets themselves and the comparative handful of companies, almost all multinationals, who set up and profit from Soviet contracts.

Soviet business is profitable. Some American companies have been sucking in this profit since the Bolshevik Revolution of 1917. Chase National was involved in illegal exports to

the Soviet Union in the early 1920s, while Chase Manhattan was the lead financing bank for the Kama River project. Caterpillar Tractor was involved in the First Five Year Plan in 1930, and still involved in the Siberian pipeline "Russia No. 6" project in the 1980s.

The hundreds of examples cited here are not accidents. Many individual congressmen and persons outside government have attempted to stop the export of military goods to the Soviet Union in the face of business pressures. Samuel Gompers tried in the 1920s. U.S. Navy of-ricers risked court-martial in the 1930s in their effort to stop President Franklin D. Roosevelt from approving the sale of military equipment to the Soviets. The Senate investigated the "machine tools" case in 1945-46 when Commerce officials tried to send tank-gun milling equipment to the Soviet Union. Warnings were raised in the 1950s by Congressman Lipscomb and others about the results of building up Soviet military strength. In the 1960s individual American firms and engineers protested against the export of ball bearings processing equipment which could **only** be used to process bearings for Soviet missile-guidance systems. In the 1980s Department of Defense has raised a clear warning.

Are we to believe that Mr. Nicholaas Leyds, general manager of Bryant Chucking Grinder Company of Springfield, Vermont, did not **know** that his grinding machines are used to process the races for ball bearings in missile-guidance systems? When Bryant has sold the same machine to the U.S. government for the same purpose?

Or that the Hammer family does not know the results of its seventy year association with the USSR? In 1919 Dr. Julius Hammer was a member of the Executive Committee of the Communist party of the United States and in 1985 Armand Hammer (his son and early business partner) is described as America's "No. 1 Capitalist."

It is not an accident. The deaf mute blindmen have always known the exact end-uses of the exported equipment. They have been brazen enough to persist in building up the Soviet military-industrial complex while pleading "civilizing the Bolsheviks" (1918) and "peaceful trade" (1985).

Above all there are several disturbing aspects to this whole business of selling our technology to the Soviets. First, multinational banks and business groups have their own people in all administrations pushing for their self-interested profitable projects. Second, the more prominent of these businessmen (Armand Hammer and David Rockefeller come to mind) deal directly with the Soviet Union almost as independent fiefdoms.

The business and personal relationships of Henry Kissinger and the Rockefeller family, for instance, are too close for administrative objectivity. Neither has Henry Kissinger been on the receiving end of a bullet, he doesn't have to pay the price for his policies. **Indeed, in most cases policymakers have never undertaken any occupation where the cost of a wrong decision fell upon their own shoulders - and that may be one of the major problems.**

The following extract is from the conclusion of Kissinger's book *Nuclear Weapons and Foreign Policy* (p. 431):

> A statesman must act as if his inspirations *were* already experience, as if his aspirations *were* truth. He must bridge the gap *between* society's experience and his vision, *between* its tradition and its future.

Note the words "act as if." Act "as if" fantasy *were* reality is the clear implication. Act "as if" objectives *(whatever* they may be) are always moral.

In other words, anything is real if you wish it to be, and anything is moral if you want it to be. Is it then accidental that Kissinger's devastating detente policy was only beneficial to his proteges? (For example, the Rockefeller controlled Chase Manhattan Bank).

Then the amoral two-facedness of many DMBs has been commented on by several observers:

> At times it seemed that the business world preferred to ignore the policy makers in Washington. One prominent member of the council [The U.S.-U.S.S.R. Trade and Economic Council] remembers meeting after Nixon's resignation with four other industrialists, several admirals, and a member of the Joint Chiefs of Staff late in 1974. One admiral bewailed the military disadvantages U.S. forces suffered because of certain technology transfers. The next day, the same industrialist attended a private dinner in New York given by a major investment banking house. The guest of honor was Dzhermen Gvishiani, the Soviet official whose specialty was buying high technology in the West. One after another, the thirty other businessmen at the dinner rose to boast about the last big transaction they had made with Gvishiani. 'The dichotomy between the luncheon in Washington and the dinner in New York was just astounding,' the businessman recalled. 'These guys were bragging as if they had just sold a ton of frankfurters.'[48]

This atmosphere of "bragging as if they had just sold a ton of frankfurters" has been officially encouraged because until very recently, no official in any Administration has stood up in public and castigated the deaf mute blindmen. In recent years Secretary of Defense Casper Weinberger and Assistant Secretary of Defense Richard Perle have to some extent changed the nature of the public debate — but State and Commerce still drag their feet.

Motivated by the lure of profit and in the absence of official chastisement, the deaf mute blindmen have run the show where trade with the Soviets is concerned.

Through the Export-Import Bank they have received official, less than market loaves, subsidised by the taxpayer, for projects with military potential. Ex-Im provided $153 million for Kama River, $180 million for Occidental's string of chemical plants — at half the prime rate. When this latter venture was approved, William J. Casey was Chairman of Export Import Bank even while publicly today Casey disclaims knowledge of our build-up of the USSR.

Other businessmen have appeared before Congress and made statements inconsistent with the bulk of the evidence. For example, we know that the Soviets have successfully reverse-engineered thousands of U.S. processes. Yet one businessman appeared before Congress and denied the usefulness of the process:

> **Senator Nunn:** You say reversing engineering is very difficult and time consuming even if they have the equipment itself, and all the plans and specifications?

> **Mr. Bell:** To put it in production. That is true. You can get a lot of valuable information off of it. But to put that equipment into production, even if you had what I said, they do not have the components. That is the key to the whole thing. The best system engineer in the world, that is what we do in system engineering, is only as good as the elements he has to work with. They do not have the components in the Soviet Union.[49]

Again Charles Lecht, former President of Advanced Computer Techniques Corp., tried to advance the line that the only Soviet interest was curiosity rather than technological need:

> Primarily I have come to the conclusion that the concept that the Soviets want U.S. technology because they can't make it themselves or they can't buy it themselves is a fallacious one. I have concluded that the Soviet technology establishment — in the country which produces more scientific literature than any other country in the world — is capable of producing what it wants. I have thus concluded that the Soviets have been looking for U.S. technology primarily because they want to find out how our military materiel work, our missiles, our aircraft, our radar, our sonar, and the like.[50]

In brief, the bottom line is greed and the greed has been allowed to reign supreme because official Washington has openly encouraged technological transfers.

Footnotes:

[41]Steps 1 and 2 have been fully demonstrated in the author's three-volume study, *Western Technology and Soviet Economic Development.* See Bibliography.

[42]U.S. Dept. of State, Public Information Series P-310-369 (Washington, DC, 1969).

[43]Edwin M. Martin, Assistant Secretary of State for Economic Affairs, before the House Select Committee on Export Control, Dec. 8, 1961.

[44]U.S. House of Representatives, Select Committee on Export Control. Investigation and Study of the Administration, Operation and Enforcement of the Export Control Act of 1949, and Related Acts (H.R. 403), 87th Cong., 1st sess., Oct. 25, 26, and 30, and Dec. 5, 6, 7 and 8, 1961, p. 403.

[45]Congressional Record, Senate, Vol. 122, pt. 9 (89th Congress, 2nd session), May 24, 1966, p. 11233.

[46]Antony C. Sutton, *Western Technology and Soviet Economic Development* (See Bibliography).

[47]Foreign Economic Administration, *Study by Interagency Committee on the*

Treatment of the German Automotive Industry from the Standpoint o.f International Security (Washington, DC, 1945).

[48]joseph Finder, *op. cit.*

[49]United States Senate, *Transfer of United States High Technology to the Soviet Union and Soviet Bloc Nations*, Hearings before the Permanent Subcommittee on Investigations, 97th Congress, Second Session, May 1982, Washington, DC, p. 49.

[50]1bid., p. 230.

BACK

CONCLUSIONS

Treason

> "Technology cannot be kept from the Soviets by endless paperwork requirements. Americans who ship crucial weapons and documents to them are criminals: criminals are glad to sign papers."
>
> — George Gilder, New *York Times*

Are these businessmen, the deaf mute blindmen internationalists, also guilty of treason? It is interesting to initially look at this question from the viewpoint of the other side, the Soviet side. Avraham Shifrin, a former Soviet Defense official, has a blunt conclusion. Shifrin calls the transfers treason and "they (the businessmen) should be shot" (page 21).

To take another example from the other side, the Marxist rebels in El Salvador, the Faranbundo Marti National Liberation Front, receive aid from the Soviet Union. At the same time they claim that our aid to the elected Salvadoran Government makes our military advisors in El Salvador legitimate targets for assassination, i.e., the U.S. is an enemy just by virtue of economic subsidy. In brief, the other side interprets aid, even with no technological component, as equivalent to treason.

In the original version of this book, *National Suicide: Military Aid to the Soviet Union*, published in 1974, we declined to term subsidy to the Soviets as treason because the vital element of **intent** was missing. This conclusion was phrased as follows:

> Do the actions described in this book [i.e. *National Suicide]* constitute "adhering" to these enemies, "giving them Aid and Comfort"?
>
> The actions do not legally constitute treason. The Constitution defines the term strictly, for the intention of the framers, with good reason, was to deny Congress the right to interpret treason too freely. Moreover, the body of relevant case law is not substantial. The Cramer and Haupt cases after World War I suggest that both intent to commit treason and overt treasonable acts are required, in addition to thorough proof. While the actions described here could be interpreted as giving immediate "Aid and Comfort" to the Soviet Union, there is no specific evidence of intent, and in-. tent is a vital requirement. Idiocy, inefficiency, intellectual myopia, and so on, do not suggest intent (p. 240).

We need to pose the question again, given the accumulating evidence of the last 11 years. Does this sequence of events and actions fall within the meaning of treason? Specifically, does military aid to the Soviet Union constitute "adhering to their enemies, giving them Aid and Comfort"? as defined in Article III, Section 3 of the Constitution of the United States.[51]

Are the Soviets Enemies?

The Soviets have always been explicit about their intentions — so was Hitler in Mein *Kampf.*

Objective truth has no place in Communist morality, by their own statements. Any statement that will advance the cause of world communism is regarded as truthful, acceptable, and perfectly normal. As far back as 1919, Zinoviev put it well in a statement that applies to the Viet Cong and the Sandanistas as much as to the revolutionary Bolsheviks:

> We are willing to sign an unfavorable peace. It would only mean we should put no trust whatever in the piece of paper we should sign. We should use the breathing space so obtained in order to gather our strength.[52]

This immoral dogma — moral only in Marxist ideology — was emphasized by Joseph Stalin:

> Words must have no relations to actions — otherwise what kind of diplomacy is it? Words are one thing, actions another. Good words are a mask for concealment of bad deeds. Sincere diplomacy is no more possible than dry water or wooden iron.[53]
>
> In 1955 the staff of the U.S. Senate Committee on the Judiciary examined the Soviet historical record and, not unexpectedly in the light of the foregoing statements, came to the following conclusion:
>
> The staff studied **nearly a thousand treaties** and agreements ... both bilateral and multilateral, which the Soviets have entered into not only with the United States, but with countries all over the world. The staff found that in the 38 short years since the Soviet Union came into existence, its Government had broken its word to virtually every country to which it ever gave a signed promise. It signed treaties of nonaggression with neighboring states and then absorbed those states. It signed promises to refrain from revolutionary activity inside the countries with which it sought "friendship" and then cynically broke those promises. It was violating the first agreement it ever signed with the United States at the very moment the Soviet envoy, Litvinov, was putting his signature to that agreement, and it is still violating the same agreement in 1955. It broke the promises it made to the Western nations during previous meetings "at the summit" in Teheran and Yalta. It broke lend-lease agreements offered to it by the United States in order to keep Stalin from surrendering to the Nazis. It violated the charter of the United Nations. It keeps no international promises at all unless doing so is clearly advantageous to the Soviet Union.
>
> [We] seriously doubt whether during the whole history of civilization any great nation has ever made as perfidious a record as this in so short a time.[54]

More recently in the 1970s and 1980s the Soviets have broken the SALT treaties and used the era of detente to develop an awe-inspiring weapons arsenal.

Consequently, the history of Soviet foreign relations from 1917 to the present suggests, for those who can interpret history, two conclusions: 1. The Soviets will not keep their word in any foreign agreement. 2. Their intent is self-admittedly aggressive, with world conquest as the ultimate goal.

The 1970s era of detente was a sham. Increased U.S.-Soviet trade, allegedly designed to lower tensions, was entirely contrary to historical observation and rational deduction. Mikhail Suslov, longtime Russian Communist Party theoretician, stated in 1972 that the U.S.-Soviet detente was temporary and that, so far as the Soviet Union is concerned, merely an interlude to gain strength for the next stage of the battle against "imperialist aggression." Suslov in 1972 repeated and reinforced Zinoviev's 1919 statement; there is no change of heart or direction.

The Soviet Record of Aggression

A review of the human cost of Soviet double-dealing emphasizes not only the risk we run by attempts to mellow Soviet statism, but the extreme seriousness of the actions of the deaf mute blindmen.

In every year since the Bolshevik Revolution the Soviets have murdered their own citizens for political reasons: that is, for alleged or real opposition to the Soviet state. The AFL-CIO has mapped Soviet forced labor camps. Moreover, in every year since 1917 the Soviets have attacked other countries or interfered massively in their internal affairs.[55]

The human cost of the Bolshevik Revolution and the ensuing civil war in Russia has been estimated at 7 million Russians. Between 1930 and 1950 more than 20 million Russians died in forced labor camps. Khrushchev personally supervised the massacre of more than 10,000 Ukrainians at Vinnitsa.

Soviet agents were in Spain before the Spanish Civil War of 1936 and unquestionably had some role in starting it (cost: 275,000 killed).

The supply of Soviet armaments to the Spanish Republic is known from material in the records of the German military attache at Ankara, Turkey.[56] Soviet arms shipments began in September 1936. Soviet intelligence agents, operating in Spain before the war broke out, were under General Ulansky, who was also responsible for logistics. In addition to supplies, the Soviets sent 920 military "advisers": 70 air force of-ricers, 100 other officers (as early as September 1936), and 750 enlisted men. From September 1936 to March 1938 about 110 shiploads of Russian military supplies left Odessa en route to Spain, almost all from plants built by the deaf mute blindmen. Foreshadowing the situation when the USSR supplied Cuba and North Vietnam, only thirty-two of these ships were under the Soviet flag — and most of these Soviet-flag vessels were foreign-built. These 110 vessels carried the following armaments to Spain from the new Western-built Soviet plants:

Tanks and armored cars 731
Planes (mostly fighter aircraft) 242
Guns 707
Antiaircraft Guns 27
Trucks 1,386

What was the U.S. technical component of these arms?

The tanks sent to Spain in 1936 were based on British Vickers or U.S. Christie designs. Soviet aviation technology was mainly American (except for French Potez and Italian seaplane designs). The guns were Krupp, but the trucks were Ford, Hercules, and Brandt — all from plants built by American firms just five years previously.

After this, in 1937, Stalin's Red Army purge killed 30,000 — the cream of the Soviet military.

Two years later, in 1939, Russia attacked Finland. Cost: 273,000 Finns and Russians killed. In 1939 or 1940, the Soviets murdered 30,000 Polish officers at Katyn.

Persecution of Russians and the peoples of Eastern Europe continued after World War II, assisted by the British-American Operation Keelhaul.

In 1946 the Ukrainians tried unsuccessfully to fight for in

Appendix A:

Exchange of Letters with Department of Defense, 1971

These letters contradict the statement made by William J. Casey, Director of Central Intelligence Agency, that in 1985 the Administration had only "recently" learned of the impact of our technology on the Soviet armaments industry. Washington was alerted 15 years ago.

September 15, 1971

Dr. N.F. Wikner
Special Assistant for Threat Assessment
Director of Defense Research and Engineering
Department of Defense
The Pentagon
Washington D.C. 20301

Dear Dr. Wikner:

I am in receipt of a letter from the office of the Director of Defense Research and Engineering (signed Eberhardt Rechtin) in regard to an inquiry made by me to the Secretary concerning technical information for a projected book WESTERN TECHNOLOGY AND THE SOVIET ARMAMENTS INDUSTRY.

In response to this letter, which suggests that I should contact you, I enclose:

a. a list of the information desired

b. a very approximate and preliminary outline of the structure of the book.

I shall, of course be more than happy to clarify any points that may arise in consideration of my request.

With best wishes,

Very sincerely,

Antony C. Sutton

Research Fellow

Details of Information Requested
The information required is as follows:

a) Detailed technical and engineering data on Soviet weapons systems from 1945 to date, in the form of technical handbooks or reports (maintenance or servicing handbooks are adequate but less valuable). In Russian or English with diagrammatic layouts, cutaways, technical specifications of materials used and metallurgical analyses.

These are needed for the production models in each weapons series from 1945 to date. For example, MEDIUM TANKS: data is needed on the T 34, T 54 and T 62; but data is *not* needed on development models, such as T 44 or variants of main production models such as T 34/76B (a turret variant of the main production model T 34).

The weapons spectrum for which this range of data is required are the production models of: tanks (heavy, medium and light), armored cars, self propelled guns, trucks and tractors, guns of all types (from tank guns down to hand guns), ammunition, planes, naval craft, rocket launchers, missiles. In other words the standard models in the broad weapons spectrum.

I am not interested in the more esoteric weapons under development (such as lasers), or weapons developed and abandoned, but only those systems which constitute (or have historically constituted) the *main* threat to the Free World.

b) A detailed listing of the inputs required to manufacture each of the above Soviet weapons including if possible the chemical or physical specifications of material inputs, quantities of inputs per weapon, and model numbers and types of equipment.

Categories (a) and (b) are required in order to determine how Soviet weapons are manufactured and what material inputs are used.

c) Reports or raw data on the use by the Soviets of Western technology in weapons systems and general military production Equipment rosters of Soviet armament plants, i.e. their machinery inventories, (these will identify use of Western machines).

d) Reports or raw data on Soviet manufacture of propellants, explosives, military clothing and instrumentation and computers; the process used, outputs, names of plants.

For example: I would like to know the types of explosives produced by the Soviets and either the chemical anlysis or sufficient information to determine an approximate analysis. I am not interested in the military aspects i.e. the explosive force or characteristics of the explosion, only *what* is being produced and how it is being produced.

e) Material on the conversion of a civilian industrial base to a military base; the U.S. experience in World War II and Korea; the problems of conversion, time required, adaptability of a civilian plant to military output.

f) Details of the important Export Control cases (both under the Export Control Act and CoCom in Paris) where DOD has argued against export of technology or equipment items to the Soviet Union or to other countries where there was a possibility of transfer to the USSR. These would include for example, the Transfermatic Case of 1961 and the Ball Bearings case of about the same date. From the mid 1950's down to the present time.

g) Equipment lists (by model number, not necessarily quantities) of North Viet and Viet Cong forces.

In general I am not interested in the quantitative aspects (i.e. how many they have of a particular weapon) nor in military characteristics (i.e. ballistic properties, operating characteristics etc.).

On the other hand I am interested in qualitative aspects, particularly knowing how weapons are produced and the material and equipment inputs used to produce these weapons. Whether the weapons and materials produced are militarily or economically efficient is of little concern for this study.

February 18, 1972

Dr. N.F. Wikner
Special Assistant for Threat Assessment
Director of Defense Research and Engineering
Washington D.C. 20301

Dear Dr. Wikner:

This refers to my letter of September 15, 1971 concerning my request for technical information on *the* transfer of technology to *the* Soviet Union.

My understanding is that *the* Department has a suitable data base and that according to Mr. Eberhardt Rechtin's letter of September 9: *"there* is a systematic and continuous effort to declassify all pertinent information."

Accordingly I submitted *with* my letter a detailed statement of *the* information desired.

In *the* absence of any reply or acknowledgement from the Department in the elapsed five months, would it now be accurate for me to assume that there is no desire to pursue the question further?

Sincerely,
Antony C. Sutton

BACK

Appendix B:

Testimony of the Author Before Subcommittee VII of the Platform Committee of the Republican Party at Miami Beach, Florida, August 15, 1972, at 2:30 P.M.

This appendix contains the testimony presented by the author before the Republican Party National Security Subcommittee at the 1972 Miami Beach convention. The author's appearance was made under the auspices of the American Conservative Union; the chairman of the subcommittee was Senator John Tower of Texas.

Edith Kermit Roosevelt subsequently used this testimony for her syndicated column in such newspapers as the *Union Leader* (Manchester, N.H.). Both major wire services received copies from the American Conservative Union; they were not distributed. Congressman John G. Schmitz then arranged for duplicate copies to be hand-delivered to both UPI and AP. The wire services would not carry the testimony although the author is an internationally known academic researcher with three books published at Stanford University, and a forthcoming book from the U.S. Naval Institute.

The testimony was later reprinted in full in *Human Events* (under the title of "The Soviet Military-Industrial Complex") and *Review of the News* (under the title of "Suppressed Testimony of Antony C. Sutton"). It was also reprinted and extensively distributed throughout the United States by both the American party and the Libertarian party during the 1972 election campaign.

The following is the text of this testimony as it was originally presented in Miami Beach and made available to UPI and AP:

The Soviet Military-Industrial Complex

The information that I am going to present to you this afternoon *is* known to the Administration.

The information is probably *not* known to the Senator from South Dakota or his advisers. And in this instance ignorance may be a blessing in disguise.

I am not a politician. I am not going to tell you what you want to hear. My job is to give you facts. Whether you like or dislike what I say doesn't concern me.

I am here because I believe — and Congressman Ashbrook believes — that the American public should have these facts.

I have spent ten years in research on Soviet technology. What it is — what it can do — and

particularly where it came from. I have published three books and several articles summarizing the work.

It was privately financed. But the results have been available to the Government. On the other hand I have had major difficulties with U.S. Government censorship.

I have 15 minutes to tell you about this work.

In a few words: there is no such thing as Soviet technology. Almost all — perhaps 90-95 percent — came directly or indirectly from the United States and its allies. In effect the United States and the NATO countries have built the Soviet Union. Its industrial *and* its military capabilities. This massive construction job has taken 50 years. Since the Revolution in 1917. It has been carried out through trade and the sale of plants, equipment and technical assistance.

Listening to Administration spokesmen — or some newspaper pundits — you get the impression that trade with the Soviet Union is some new miracle cure for the world's problems. That's not quite accurate.

The idea that trade with the Soviets might bring peace goes back to 1917. The earliest proposal is dated December 1917-just a few weeks after the start of the Bolshevik Revolution. It was implemented in 1920 while the Bolsheviks were still trying to consolidate their hold on Russia. The result was to guarantee that the Bolsheviks held power: they needed foreign supplies to survive.

The history of our construction of the Soviet Union has been blacked out — much of the key information is still classified — along with the other mistakes of the Washington bureaucracy. Why has the history been blacked out?

Because 50 years of dealings with the Soviets has been an economic success for the USSR and a political failure for the United States. It has not stopped war, it has not given us peace.

The United States is spending $80 billion a year on defense against an enemy built by the United States and West Europe.

Even stranger, the U.S. apparently wants to make sure this enemy remains in the business of being an enemy.

Now at this point I've probably lost some of you. What I have said is contrary to everything you've heard from the intellectual elite, the Administration, and the business world, and numerous well-regarded Senators — just about everyone.

Let me bring you back to earth.

First an authentic statement. It's authentic because it was part of a conversation between Stalin and W. Averell Harriman. Ambassador Harriman has been prominent in Soviet trade since the 1930's and is an outspoken supporter of yet more trade. This is what Ambassador Harriman reported back to the State Department at the end of World War II:

"Stalin paid tribute to the assistance rendered by the United States to Soviet industry before

and during the War. Stalin* said that about. two-thirds of all the large industrial enterprises in the Soviet Union has been built with the United States' help or technical assistance."

I repeat: "two-thirds of all the large industrial enterprises in the Soviet Union had been built with the United States' help or technical assistance."

Two-thirds.

Two out of three.

Stalin could have said that the other one-third of large industrial enterprises were built by firms from Germany, France, Britain and Italy.

Stalin could have said also that the tank plants, the aircraft plants, the explosive and ammunition plants originated in the U.S.

That was June 1944. The massive technical assistance continues right down to the present day.

Now the ability of the Soviet Union to create any kind of military machine, to ship missiles to Cuba, to supply arms to North Vietnam, to supply arms for use against Israel — all this depends on its domestic industry.

In the Soviet Union about three-quarters of the military budget goes on purchases from Soviet factories.

This expenditure in Soviet industry makes sense. No Army has a machine that churns out tanks. Tanks are made from alloy steel, plastics, rubber and so forth. The alloy steel, plastics and rubber are made in Soviet factories to military specifications. Just like in the United States.

Missiles are not produced on missile-making machines. Missiles are fabricated from aluminum alloys, stainless steel, electrical wiring, pumps and so forth. The aluminum, steel, copper wire and pumps are also made in Soviet factories.

In other words the Soviet military gets its parts and materials from Soviet industry. There is a Soviet military-industrial complex just as there is an American military-industrial complex.

This kind of reasoning makes sense to the man in the street. The farmer in Kansas knows what I mean. The salesman in California knows what I mean. The taxi driver in New York knows what I mean. But the policy makers in Washington do not accept this kind of common sense reasoning, and never have done.

So let's take a look at the Soviet industry that provides the parts and the materials for Soviet armaments: the guns, tanks, aircraft.

The Soviets have the largest iron and steel plant in the world. It was built by McKee Corporation. It is a copy of the U.S. Steel plant in Gary, Indiana.

All Soviet iron and steel technology comes from the U.S. and its allies. The Soviets use open hearth, American electric furnaces, American wide strip mills, Sendzimir mills and so on — all developed in the West and shipped in as peaceful trade.

The Soviets have the largest tube and pipe mill in Europe — one million tons a year. The equipment is Fretz-Moon, Salem, Aetna Standard, Mannesman, etc. Those are not Russian names.

All Soviet tube and pipe making technology comes from the U.S. and its allies. If you know anyone in the space business ask them how many miles of tubes and pipes go into a missile.

The Soviets have the largest merchant marine in the world — about 6,000 ships. I have the specifications for each ship. About two-thirds were built outside the Soviet Union.

About four-fifths of the engines for these ships were also built outside the Soviet Union.

There are no ship engines of Soviet design. Those built in*side* the USSR are built with foreign technical assistance. The Bryansk plant makes the largest marine diesels. In 1959, the Bryansk plant made a technical assistance agreement with Burmeister & Wain of Copenhagen, Denmark, (a NATO ally), approved as peaceful trade by the State Dept. The ships that carried Soviet missiles to Cuba ten years ago used these same Burmeister and Wain engines. The ships were in the POLTAVA class. Some have Danish engines made in Denmark and some have Danish engines made at Bryansk in the Soviet Union.

About 100 Soviet ships are used on the Haiphong run to carry Soviet weapons and supplies for Hanoi's annual aggression. I was able to identify 84 of these ships. None of the main engines in these ships was designed and manufactured inside the USSR.

All the larger and faster vessels on the Haiphong run were built outside the USSR.

All shipbuilding technology in the USSR comes directly or indirectly from the U.S. or its NATO allies.

Let's take one industry in more detail: motor vehicles.

All Soviet automobile, truck and engine technology comes from the West: chiefly the United States. In my books I have listed each Soviet plant, its equipment and who supplied the equipment. The Soviet military has over 300,000 trucks — all from these U.S. built plants.

Up to 1968 the largest motor vehicle plant in the USSR was at Gorki. Gorki produces many of the trucks American pilots see on the Ho Chi Minh trail. Gorki produces the chassis for the GAZ-69 rocket launcher used against Israel. Gorki produces the Soviet jeep and half a dozen other military vehicles.

And Gorki was built by the Ford Motor Company and the Austin Company — as peaceful trade.

In 1968 while Gorki was building vehicles to be used in Vietnam and Israel further equipment for Gorki was ordered and shipped from the U.S.

Also in 1968 we had the so-called "FIAT deal" — to build a plant at Volgograd three times bigger than Gorki. Dean Rusk and Wait Rostow told Congress and the American public this was peaceful trade — the FIAT plant could not produce military vehicles.

Don't let's kid ourselves. *Any* automobile manufacturing plant can produce military vehicles. I can show anyone who is interested the technical specification of a proven military vehicle (with cross-country capability) using the same capacity engine as the Russian FIAT plant produces.

The term "FIAT deal" is misleading. FIAT in Italy doesn't make automobile manufacturing equipment — FIAT plants in Italy have U.S. equipment. FIAT *did* send 1,000 men to Russia for erection of the plant — but over half, perhaps well over half, of the equipment came from the United States. From Gleason, TRW of Cleveland and New Britain Machine Co.

So in the middle of a war that has killed 46,000 Americans (so far) and countless Vietnamese with Soviet weapons and supplies, the Johnson Administration doubled Soviet auto output.

And supplied false information to Congress and the American public.

Finally, we get to 1972 under President Nixon.

The Soviets are receiving now — today, equipment and technology for the largest heavy truck plant in the world: known as the Kama plant. It will produce 100,000 heavy ten-ton trucks per year — that's more than ALL U.S. manufacturers put together.

This will also be the largest plant in the world, *period.* It will occupy 36 square miles.

Will the Kama truck plant have military potential?

The Soviets themselves have answered this one. The Kama truck will be 50 per cent more productive than the ZIL-130 truck. Well, that's nice, because the ZIL series trucks are standard Soviet army trucks used in Vietnam and the Middle East.

Who built the ZIL plant? It was built by the Arthur J. Brandt Company of Detroit, Michigan.

Who's building the Kama truck plant? That's classified *"se*cret" by the Washington policy makers. I don't have to tell you why.

Appendix C:

Letter from William C. Norris, Chairman of Control Data Corporation to Congressman Richard T. Hanna, 1973.

Control Data Corp.
Minneapolis, Minn., December 19, 1973.

Hon. Richard T. Hanna,
Rayburn House Office Building,
Washington, D. C.

My Dear Congressman Hanna: On Wednesday, December 5, 1973, testimony was given before the Subcommittee on International Cooperation in Science and Space of the House Science & Astronautics Committee by Mr. Benjamin Schemmer, Editor, *Armed Forces Journal International.* This testimony included the statement that Control Data Corporation had advanced the status of Soviet Computer technology by fifteen years with the sale of a Control Data 6200 computer.

Such a statement regarding transfer of technology to the USSR is simply not factual and we are prepared to correct that misstatement as well as other incorrect and misleading references to Control Data's activities with the USSR at the pleasure of your Committee. Meanwhile we respectfully request the consideration of the following.

We have offered to the Socialist countries only standard commercial computers, and these offerings have been in full compliance with the export control and administrative directives of the Department of Commerce.

The statement regarding a proposed sale of the CYBER computer is thoroughly confused. CYBER is a generic name denoting a line of computers. The least powerful model is the Control Data 6200 which is installed at the Dubna Nuclear Research facility near Moscow. Another is the CYBER 76 which is the most powerful and appears to be the model Mr. Schemmer is referencing. At the appropriate time we will seek advisory opinions and submit to the government export license requests for approval for applications in such areas as weather forecasting, simulation in the Worldwide Weather Watch Program, in econometric modeling and in education. Competition from West Europe and Japan will be expected to address these applications with the same kind of technologies that we offer.

Many persons, including some of the witnesses before your Committee, mistake the offering for sale of old or even current state of the art hardware for transfer of advanced technology. This is not unusual because in many cases it is difficult for those who are not technically well-informed to distingush advanced computer technology. Attempting to treat such a broad and complex subject in an informative and accurate manner in a brief statement results in inaccurate, unsubstantiated and misinterpreted inferences and conclusions. For example, it is possible that a computer with a slower arithmetic/logic unit

and a very large memory may represent more "advanced" technology when measured by the size of the problem to be solved than a faster machine with less memory. Also, many minicomputers contain circuit technology more advanced than that of more powerful computers. For this reason it is not possible to properly respond to Mr. Schemmer's remarks in a short letter, however the following are examples of those which need to be carefully examined before conclusions are reached.

All countries including the Socialists have a substantial base of computer hardware technology on which to build further advances in the state of the art. The major strength of the U.S. in computer technology is its ability to market superior cost/performance computer systems for a wide range of applications. This does not mean that for any given application or group of applications, another country cannot build the equivalent as far as performance is concerned or even exceed what the United States has available. Also, there is no evidence to my knowledge that the USSR has ever been prevented from carrying out a military project because of the lack of adequate computer technology.

Further advances in hardware are less significant than are software advances for applying computers. We believe that the United States stands to gain significantly from transfer of Soviet knowledge in the basic sciences. The USSR has many more scientists and engineers than do we, and the better ones in Russia have concentrated on the theoretical fields, such as physics, chemistry and mathematics -- the latter discipline being of particular value in the design of logic and software in the computer field.

We respectfully request that your Committee review the above points and consider incorporating them into the record. We would be pleased to have the privilege of appearing before your Committee to give you our more detailed views on these potential relationships with the Socialist countries and in stating our reasons in support of Administration and Congressional trade initatives and objectives.

Sincerely yours,

William C. Norris,
Chairman of the Board

BACK

Appendix D:

Letter from Fred Schlafly to friends and supporters of American Council for World Freedom, dated April 1978, asking to mail "Yellow Cards" of protest to William Norris.

Dear ACWF Supporter:

I need just a few seconds of your time right now.

I need you to sign and mail the 2 postcards I've enclosed for your personal use.

Since you're one of the best friends the American Council for World Freedom has, I'm sure I'm not asking too much of you.

Please let me explain these 2 postcards and tell you why it's **crucial** that you sign and mail them **today**.

The yellow postcard is addressed to Mr. William Norris, Chairman of the Control Data Corporation, one of the world's biggest and most advanced computer companies.

That yellow postcard calls on Mr. Norris and Control Data to stop selling computer technology to Communist Russia and its satellites . . .

. . . Technology that our Communist enemies are using to gain military superiority over the U.S.

Once before, Mr. Norris tried to sell our best and most advanced computer to the Soviet Union. Only an all-out, last minute effort by over 300 patriotic Congressmen stopped the sale of this highly valuable computer to the Russians.

Now Mr. Norris and Control Data are trying the same sell-out to Russia **again**. You and I have got to put a stop to it.

And just to make sure that Mr. Norris **personally** sees **your** postcard, I've adressed the card to his home address in St. Paul, Minnesota.

The blue postcard is addressed to Mr. J. Fred Bucy, President of Texas Instruments.

That blue postcard **praises** Mr. Bucy and Texas Instruments for refusing to sell American technology to our Communist enemies.

You probably know from reading your anti-Communist magazines and newspapers that a lot of big, U.S. corporations are making huge profits selling their products to Communist Russia.

Now I'm not talking about selling products like soft drinks and clothing to the Communists.

I'm talking about U.S. companies... like Control Data . . . that sell our Communist enemies computers, shipbuilding equipment, and jet airplanes . . .

. . . Technology that Communist Russia is using to turn itself into the world's number one military superpower.

My friend, let me tell you just how critical a problem we really face.

There are over 60 big U.S. companies selling U.S. technological secrets to the Soviet Union . . .

. . . Companies like Union Carbide, General Electric, Armco Steel, Bryant Chucking Grinder, which sells the Communists the ball bearings they need for their attack missiles . . . and Control Data.

So why is ACWF only going after Control Data, and not these other companies, for selling out U.S. military superiority to the Communists?

The answer is,

> Control Data is absolutely, far and away, the biggest offender when it comes to selling out U.S. technology and actively aiding the Soviet military power grab.

There's no doubt in my mind that if we ACWF Supporters force Control Data to stop building the Soviet war machine, then other sell-out companies like General Electric and Union Carbide will also stop aiding and abetting our Communist enemies.

That's why the American Council for World Freedom has set up its Task Force on Strategic Trade.

Look at what ACWF has already accomplished against Control Data:

- Just recently, we had a very large, enormously successful press conference on Capitol Hill, announcing our fight against Control Data's sell-out of U.S. computer secrets to the Communists. Over 75 reporters and Congressmen were there!

  (You might want to look at the enclosed note from General Daniel Graham which lists some of the Congressmen, newspapers, magazines, and wire services at our press conference.)

- ACWF just published a devastating expose of how Control Data and other sell-out companies are turning America into a second-rate power by helping build the Soviet war machine.

- We gave each reporter and Congressman at our press conference a copy of our study, "The Strategic Dimension of East-West Trade" by Dr. Miles Costick, one of America's top experts on foreign affairs and strategic trade.

ACWF is off to a fast start against Control Data, but there's no use kidding ourselves – we've got a big fight ahead of us.

Here's what needs to be done right away:

> 1.) We've got to flood Control Data and its Chairman, Mr. William Norris, with postcards and letters demanding "No More U.S. Help for the Soviet War Machine."
>
> You can help do that by signing and mailing your postcard to Mr. Norris... today.
>
> 2.) We've got to support and encourage companies like Texas Instruments when they show the guts and have the backbone to say "NO" to Communist Russia.
>
> Will you help do that by mailing your postcard to Mr. J. Fred Bucy, President of Texas Instruments... today?
>
> 3.) We've got to print and distribute 28,959 copies of Dr. Costick's brilliant expose, "The Strategic Dimension of East-West Trade."
>
> We must get this expose into the hands of America's 10,286 newspaper editors, 9,414 magainze editors, 9,309 TV and radio news editors.
>
> 4.) And finally, we've got to write to tens of thousands of other Americans... 50 thousand in May alone... alerting them to Control Data and similar sell-outs of America's scientific secrets. getting them active in ACWF's fight to keep America the #1 military power on earth.

I know I don't have to tell you that I'm talking about an aggressive, expensive program.

It will cost $28,090 to print 28,959 copies of ACWF's Control Data expose and distribute tham to 28,959 newspaper, magazine, radio and TV editors.

And it will cost $13,253 to write to fifty thousand Americans in May.

That's a total of $41,343 ACWF urgently needs. We simply don't have it.

Will you help ACWF again, with as generous a gift as you can afford? What I'm asking you for is your contribution... before May 15th... of at least $25, but hopefully more — perhaps even $50, $100, $250, $500 or $1,000 if you can afford it.

I know I ask an awful lot of you, but I don't have anyone else to turn to.

So please, when you mail your 2 postcards, won't you use the. enclosed reply envelope to rush ACWF your support of $25, $50, $100, $250, $500 or $1,000?

Gratefully, Fred Schlafly

P.S. Remember, when you mail that yellow postcard protesting Control Data's military sell-out of the U.S. to Russia, your card will be read by Control Data Boss William Norris because it's addressed to his home.

Letter from William C. Norris to each "Yellow Card Sender," dated May 5, 1978.

CONTROL DATA CORPORATION

May 5, 1978

Dear Yellow Card Sender:

You are grossly unfair, woefully ignorant or being led around by the nose. I suspect it is the latter, otherwise you wouldn't have signed a card with a canned message, along with a request to contribute money to the author — apparently a Mr. Schlafly of American Council for World Freedom.

Why didn't you write and ask about Control Data's position on trade with the Communists before signing a form card? You obviously have little knowledge about Control Data's position or activities, nor does Mr. Schlafly. He has not contacted anyone in Control Data. I would have furnished him information or I would have been glad to respond to a letter from you asking for information. Then if you still disagreed strongly — so be it — at least you would have acted sensibly and fairly by first getting adequate information. Then you probably wouldn't have resorted to the use of such words as "disgrace" and "outrage", because that is akin to the Communist procedure of not fairly weighing the evidence.

You obviously are deeply concerned about the Soviet military threat, and I certainly understand that, because I share that concern. I think about the subject a great deal and several points are clear, including that:

> 1. The U.S. should maintain a very strong military capability. Control Data's products and services contribute significantly to our nation's defense system.
>
> 2. The U.S. can gain much more by doing business with the Soviet Union than by trying to withhold many things. This latter procedure hasn't been effective where it has been tried.
>
> 3. Most important to maintaining a strong international position is that we maintain a strong domestic economy with an adequate number of jobs, especially for young, disadvantaged persons. (If you have studied world-wide Communism you are aware that it preys upon countries where the domestic economy is sick, weak or corrupt).

Further, Mr. Schlafly's letter to you was based on a highly inaccurate booklet by Miles

Costick. We are familiar with Mr. Costick's work, and have met with him to document inaccuracies in it. Apparently, he has chosen to ignore this evidence, because:

- While we did sign an agreement for technological cooperation with the Soviet Union, we have not transferred any computer technology to them.
- No Control Data computer is being used for any military purpose whatsoever by the Soviet Union.
- Further evidence of error was the blue card that you were asked to mail to Texas Instruments praising them for refusing to sell to the Soviets. I am sure that their chairman, Mr. Bucy, would admit that many Texas Instrument's high technology products are used in Soviet-built equipment.

My position is further explained in the enclosed article, "High Technology Trade with the Communists", which appeared in *Datamation* magazine last January.

I have also enclosed a clipping from a recent issue of *Time* magazine that describes some of Control Data's activities in helping to provide more jobs for the disadvantaged.

If you have questions after reading the material, write me. Sincerely,

s/s William C. Norris

William C. Norris

Encls.

Letter (Protocol) of Intent dated 19 October 1973 (English version) between State Committee of the USSR Council of Ministers for Science and Technology and the Control Data Corporation.
Letter (Protocol) of Intent

I. The State Committee for Science and Technology of the USSR Council of Ministers and Control Data Corporation (CDC) in the interest of developing extensive long term technological relationships between Soviet organizations and enterprises and Control Data Corporation, have on 19 October 1973 concluded an "Agreement on Scientific and Technical Cooperation". The State Committee for Science and Technology and Control Data Corporation, together with the USSR Ministry of Foreign Trade, hereafter referred to as the Parties, having in mind furthering the development of the desired cooperation, wish to conclude this Letter of Intent to identify joint projects which need detailed study, and to commit the Parties to initiate these studies.

II. The objective of the projects called for in Paragraph III of this Letter (Protocol) of Intent shall be to:

A. Establish the coordinating group, and working groups called for in Article 4 of the Agreement on Scientific and Technical Cooperation.

B. Specify the scope and mechanism by which the scientific anti technical information exchanges to be engaged in under the terms of Article 2 of the Agreement on Scientific and Technical Cooperation shall be carried out:

C. Implement detailed examination of those projects given first order of priority.

D. Define mutually satisfactory commercial and trade relationships.

III. The following preliminary list of tentative joint projects has been agreed to and a detailed examination of them will be our first priority.

A. **Finance and Trade —** To conduct studies and discussions in order to develop mutually satisfactory bases for payment for the activities to be undertaken within the scope of the Agreement on Scientific and Technical Cooperation. This shall include terms of credit, repayment, considerations, and cooperative activities whose purpose is to generate Western currencies to facilitate repayment of credit.

B. **Software and Applications Development —** Development by the USSR of automated programming methods for improving programmer productivity as well as the generation of systems within certain applications areas of mutual interest. These would include, but not be limited to, the medical/health care field, the transportation industry, and the education environment.

Objectives of transportation study might include both the increase of efficiency of passenger transportation, as well as enhance the timely delivery of freight, both by surface and by air.

The medical health care study would include the creation of systems dealing with patient care, health care management, as well as health care planning.

Work in the education field will be centered on the disciplines of computer-based education and training, including networks, special terminals, author language, curriculum and course-ware.

C. **New Computer Sub-Systems R & D —** The USSR will contribute research and technical development of computer elements based on new technical concepts. This research and development will be undertaken based on cooperative planning between Control Data Corporation and appropriate USSR organizations.

This research and development may include, but will not be limited to, the realm of memory systems, advanced mass memories, thin film, disk heads, plated disks, memory organization and ion beam memories, might be amongst the technologies to be investigated and research and development undertaken.

D. **Reserch and Development —** Joint exploration of research and development activities in USSR enterprises and institutes which will add to Control Data Corporation's research and development activities, particularily in the areas of computer systems software and applications software, and will constitute in part compensation for technologies which the USSR wishes to obtain from Control Data Corporation.

E. **Advanced Computer System Development —** To conduct a cooperative development of a computer with rear-rangeable structures and a performance rate of 50 to 100 million instructions per second to be used for solving large economic and management problems. Results of software and architectural research conducted in the Soviet Union will be utilized. The functional design of the software system and the architectural concepts will be supplied by the USSR. The implementation would be conducted in four phases as follows:

1) Feasibility
2) Detailed design
3) Prototype construction and checkout
4) Test and evaluation

The feasibility phase will be used to evaluate the proposed computer concepts, both hardware and software, in order to verify that the system can be implemented with known hardware technology.

The following are among the areas to be considered as part of the evaluation: architectural design, software system design, new software techniques, new software applications, components and circuitry, system performance, operating systems, principal applications, manpower and cost. The entire program is expected to require from five to eight years to reach fruition. Results will be shared on an equal basis.

F. Disk Manufacturing Plant — To build a plant for manufacturing mass storage devices based on removable magnetic disk packs with up to 100 million byte capacity per each pack. The yearly plant output shall be 5,000 device units and 60,000 units of magnetic disk packs (approximate estimate). It is expected that 80% of the plant output will be-30 mega-byte devices and 20% will be 100 mega-byte devices.

G. **Printer Manufacturing —** To build a plant to manufacture line printers to operate at a speed of 1,200 lines per minute. The yearly output shall be 3,000 devices (approximate estimate).

H. **Process Control Devices Manufacturing —** To build a plant for the manufacture of process control oriented peripheral devices, including data collection, analog/digital gear, terminals etc. The annual plant output for all devices, including data collection, is estimated as approximately 20,000 units.

Note: With respect to Items F, G and H, the Parties shall jointly develop technological documentation for manufactured products in accordance with the metric system standard and insure that all aspects of the plant(s) design and

construction are of the highest quality such that the manufactured output will be fully competitive in all respects within the world market place. Control Data Corporation shall deliver technical documentation, complete sets of technological equipment, as well as know-how, and full assistance in order to insure mastering of full production techniques.

I. Printed Circuit Board Manufacturing — Delivery to the USSR of a complete set of equipment for the manufacturing of multilayer printed circuit boards.

J. **RYAD/Control Data Corporation Information ProcessIng Systems —** Joint creation of information processing systems based on the use of Soviet manufactured computers and Control Data Corporation equipment. Control Data Corporation equipment would include local peripheral sub-systems as well as communications hardware, including front-ends, remote concentrators and terminals. It is expected that the system would include operational software jointly created to make a viable computer system for applications to problems in other parts of the world which could be commercially saleable as a total system.

K. **Process Control and Remote Communications Concentrator Manufacture** — To organize within the Soviet Union manufacturing of Control Data Corporation licensed remote communication equipment and analog to digital components for standalone use within technological process control systems. It must be kept in mind that such devices and components must satisfy requirements of both the Soviet Union and Control Data Corporation. Control Data Corporation evaluates that it can buy back approximately $4,000,000 worth of these products.

L. **Network Information System (CYBERNET) —** Joint study to provide a proposed specification for a Soviet computer communication network. Dimensions of networks to be explored will include both the distribution network between terminal users and processing center as well as an eventual bulk transfer network between cluster centers and private satellite centers. The USSR will develop systems and applications software for this Network Information System based upon the present commercially available Control Data Corporation network software system. The resultant software will be available and shared by both Parties. The various data communications technologies will be evaluated as one of the major tasks of the study.

M. **Control Data CYBER 70 Data Processing Centers —** Joint creation of processing centers which will utilize computers and other equipment of Soviet manufacture and those of Control Data Corporation for organization/application such as, but not limited to, those specified below:

> 1) World Hydrometeorological Institue, Moscow, for processing of weather data for forecasting and in preparation of weather maps.
>
> 2) Institute of High Energy Physics, Scrpukhov, for nuclear research, reduction of accelerated data, and basic particle research.

3) Ministry of Geology, Moscow, for seismic data reduction.

4) USSR Academy of Sciences, Academ Goradok, Novo-sibirsk, for operational numerical weather forecasts, as well as for on-line concurrent processing of scientific data from experiments related to atmospheric, gas dynamics, weather research and basic scientific research.

5) Ministry of Chemical Industry, Moscow, for an information processing network and plant and pipeline control.

6) Ministry of Oil Refining, Moscow, for electric distribution and plant design.

IV. In order to launch the above noted programs into viable, successful implementations, Control Data Corporation is prepared to advance long term credit on mutually beneficial terms through Commercial Credit Company, its financial affiliate. It is expected that the total volume of credit required for financing of the full dimensions of the Scientific and Technological Agreement may reach 500 million dollars. It is further expected that repayment of such credit will be made in the form of Western currencies. Commercial Credit Company is prepared to assist the USSR in obtaining such currencies by working jointly with the appropriate authorities in the USSR in the worldwide marketing of Soviet products and in the development of natural resources for which sustained world demand exists.

In the process of developing specific programs to generate currency for credit repayment, Control Data Corporation offered the following proposals for consideration:

A. Financing — Control Data Corporation is prepared to assist the USSR in obtaining the financing needed to accomplish the above noted objectives. Through its wholly-owned subsidiary, Commercial Credit Company, Control Data Corporation can marshal substantial long term credit to facilitate Soviet purchases of equipment and technology projected under the Agreement, as well as credit for potential customers for worldwide sales of Soviet products and materials.

Commercial Credit Company will take the initiative in assembling consortiums of major leaders to extend long term credit to the USSR on mutually beneficial terms. Commercial Credit Company is also prepared to use its Luxembourg facility to make use of U.S. Export/Import Bank financing to the extent such credit is available to finance the export of Control Data Corporation equipment to the USSR.

B. **Joint Venture Marketing Company** — A marketing company jointly owned by a competent Soviet organization and Commercial Credit Company will be established. The company would be incorporated in Western Europe and would be a self-sufficient, profit oriented entity.

The prime purpose of the company would be to sell the service non-computer-related Soviet products in the Western world on the open market. In addition to

selling the products of the USSR the Joint Venture Marketing Company will develop, in conjunction with Commercial Credit Company, economic and trade forecasts for the near to medium term future in the Western world that will indicate market trends, requirements and shortages, which can be fed back into the USSR five-year planning activities to insure that future USSR exports meet the requirements of future Western markets.

C. **Natural Resource Development** — Soviet natural resources are the largest of any single country in the world. The key to world trade in excess natural resources, not required for domestic use, is the creation of additional facilities to obtain and profitably dispose of these resources.

The financial resources and worldwide industry associations of Commercial Credit Company will be employed to create appropriate consortia having four major functional entities: a. finance b. resource extraction and processing expertise c. construction and operation expertise d. sales outlet for processed products

Natural resources to be considered would include, but not be restricted to: timber products, non-ferrous metals, precious metals and stones, asbestos, apatite, cement, synthetic rubber and resins, and coal.

The present Letter of Intent is executed in two versions, both in Russian and English. Both versions of the text have equal validity.

For the State Committee
of the USSR Council of
Ministers for Science
and Technology

For Control Data
Corporation

For the USSR Ministry
of Foreign Trade

English version of Agreement between State Committee of the Council of Ministers of the USSR for Science and Technology and Control Data Corporation (signed by Robert D. Schmidt), dated 19 October 1973.

On Scientific and Technical Cooperation between the State Committee of the

Council of Ministers of the USSR for Science and Technology and Control Data Corporation (USA)

The State Committee of the Council of Ministers of the USSR for Science and Technology (GKNT) and Control Data Corporation (CDC), hereinafter called "Parties",

Considering that favourable conditions have been created for extensive development of a long-term scientific and industrial and economic cooperation;

Taking into account the mutual interest of both Parties in the development of such cooperation and recognizing the mutual advantage thereof; and

In accordance with Paragraph 8 of the "Basic Principles of Relations between the Union of Soviet Socialist Republics and the United States of America", signed on May 29, 1972, and Article 4 of the "Agreement Between the Government of the USSR and the Government of the USA on Cooperation in the Fields of Science and Technology" concluded on May 24, 1972;

Have agreed as follows:

ARTICLE 1

The subject of the present agreement has to do with a long-term program for a broad scientific and technical cooperation in the area computational technology, and specifically;

–To conduct joint development of a technically advanced computer;

–Joint development and organization of the production of computer peripheral equipment;

–Joint creation of information processing systems based on the technical means of Soviet production and on the technical means developed by CDC and the development of software means for these systems;

–Joint development of Analog to Digital Equipment for control systems of technological processes;

–Joint development of computer components, technical equipment for their production and the organization of production of these components.

–Development of computer memories (based on large volume removable magnetic disk packs, and on integrated circuits, etc.).

–Creation of equipment and systems for data communication;

–Application (use) of computers in the fields of medicine, education, meteorological, physics, and etc.;

–Preparation (training) of specialists in the area of computer technology;

The scope of this Agreement may at any time be extended to include other fields of specific subjects of cooperation by agreement of the Parties.

This Agreement is not limiting either Party from entering into similar cooperation in the said fields with a third Party.

ARTICLE 2

Scientific and technical cooperation between the Parties can be implemented in the following forms with specific arrangements being exclusively subject to mutual agreement between appropriate Soviet organizations and the firm of Control Data Corporation:

–Exchange of scientific and technical information, documentation and production samples;

–Exchange of delegations of specialists and trainees;

–Organization of lectures, symposia and demonstrations of the production samples;

–Joint research, development and testing, exchange of research results and experience;

–Mutual consultations for the purpose of discussing and analysing scientific and technical problems, technical principles, ideas and concepts in the appropriate area of cooperation;

–Creation of temporary joint research groups to perform specific

projects and to produce appropriate (joint) reports.

–Exchange, acquisition or transfer of methods, processes, technical equipment, as well as of "know-how" and of licenses for the manufacture of products.

ARTICLE 3

The Parties have established that financial, commercial, and legal questions related to advancement of credit and payments for the delivered products and technical equipment, assignation of licences and "know-how" as well as supplied services in performance of the various joint projects, relative to the present Agreement, shall be decided by separate agreements between appropriate competent Soviet organizations and the Control Data Corporation.

ARTICLE 4

For the practical implementation of the present Agreement the Parties shall establish a Coordinating group, from authorized representatives (coordinators) which shall determine

and recommend a proper course for the cooperation and also to control compliance with responsibilities assumed by the Parties, and to take the necessary action for the successful implementation of the objectives of the present Agreement. For the preparation of proposals for the concrete cooperative projects, there shall be established special groups of experts whose task it will be to determine technical and economic feasibility of the joint projects and to draw up action plans for their realization. The results of these working groups shall be turned over to the Coordinating group for their discussion and preparation of recommendations.

Recommendations and proposals of the Coordinating group will be presented in the form of protocols, which will be used as the basis for preparation of separate protocols or contracts.

Coordinating and working groups shall meet as frequently as is necessary to perform their functions alternativelly in the USSR and USA unless otherwise agreed.

ARTICLE 5

Scientific and technical information furnished by one Party to the other under this agreement may be used freely for its own research, development and production, as well as the realization of finished products unless the Party supplying such information stipulates at the time of its transfer that the information may be used only on the basis of special agreement between Parties. This information can be transmitted to a third Party only with the approval of the Party which has furnished it.

Information received from a third Party which cannot be disposed of at will by one of the Contracting Parties is not subject to transmittal to the other Party unless mutually satisfactory arrangements can be made with the third Party for communication of such information.

It is contemplated in the foregoing that any organizations or enterprises of the USSR and any wholly owned or partially owned Control Data subsidiaries shall be not regarded as a third Party.

ARTICLE 6

Expenses of travelling back and forth of specialists of both Parties under the programs related to this Agreement, as a rule will be defrayed as follows:

–The Party sending the specialists pays the round-trip fare.

–The host Party bears all costs connected with their stay while in its own country.

The duration of the above visits and the number of specialists in each group shall be mutually agreed to by the Parties in advance of the visits.

Organizational questions, arizing from implementation of this present Agreement shall be discussed and determined by the Parties in the course of working.

The present Agreement shall continue for a period of 10 (ten) years and shall enter into force immediately upon its signature. It can be extended with mutial agreement of the Parties.

The cancellation of the present Agreement shall not affect the validity of any agreement and contracts enetered into in accordance with Article 3 of the present Agreement by organizations and enterprizes of the USSR and CDC.

Drawn up and signed the 19 October 1973, in the city of Moscow, USSR, in duplicate, one copy in Russian and one in English, both texts being equally authentic.

For the State
Committee of the
Council of Ministers of
the USSR for Science
and Technology
/s/ (illegible)

For the Control Data
Corporation
/s/Robert D. Schmidt

BACK

Appendix E:

Position of Texas Instruments Company and Chairman Fred Bucy on dangers of trading technology to the Soviets. (This letter demonstrates that the identification of Deaf Mute Blindmen must be made with care)

TI's Fred Bucy Warns Against Selling Technology Know-How and Turnkey Semiconductor Plants to Communist Nations

Even as West and East Bloc countries discuss relaxing the trade embargo on high technology, a sharp disagreement has developed between two major semiconductor manufacturers on how far this relaxation should extend. One viewpoint is exemplified in last month's Wescon speech by C. Lester Hogan, president of Fairchild Camera & Instrument Corp., who wants few restrictions made in East-West semiconductor trade.

Hogan stands ready to sell semiconductor products as well as the production equipment, technology, and management know-how to the Communist countries. This would mean the Communists would manufacture high-level semiconductor products themselves. The French company, Sescosem, a division of Thomson-CSF, has already broken the ice with the first turnkey semiconductor plant -- sold to Poland -- and Fairchild, waiting for the trade detente, does not deny having one quote outstanding on an MOS plant for Poland, and another two behind that for Russia.

On the opposite side is Texas Instruments, whose executives take a dim view indeed of trade agreements with the Communist bloc, on the grounds that such agreements are not protected by patent rights and do not offer either open markets or the opportunity to build a decent market share. J. Fred Bucy, vice president of Texas Instruments, points out that "it's one thing to sell high-technology products in the foreign market, but quite another to sell the know-how to make these products." He is adamant against turnkey contracts, and sees an equal risk in selling the Communists such pieces of production equipment as line-and-expose towers, diffusion furnaces, epitaxial reactors, and the like. "It's axiomatic in high-technology industries," says Bucy, "that the only adequate payment for know-how is market share. No lump-sum payment or turnkey-service fee can be great enough to fund the research and development necessary to enable the seller to maintain his advantage. You can be sure," he emphasizes, "that if we give away the know-how without obtaining a market share, they won't buy a dime from us -- devices or equipment. We will be giving away the crown jewels."

In Bucy's eyes, a big question with East-West trade is patent recognition. Because of the longstanding embargo on high-technology trade, few Western semiconductor patents are recognized by the Russians or other Eastern Europeans. "Since we can sell into the Communist community only through their governments," says Bucy, "the only way we can participate in their markets is for them to agree to recognize our patents retroactively, pay us

full royalties, and/or give us access to sell directly in their markets on an equal footing against their state-owned factories."

Bucy also feels "that if the free world is footloose with its technology, it may be building a monster that soon will gobble up domestic markets. The Communist countries will build their semiconductor capability with Western-supplied production equipment and know-how, and/or with Western-built turnkey plants protected by high tariff barriers," he says, and when they get their costs down and their own markets saturated, they will be "right out there exporting into ours."

This means that any semiconductor plant set up in Eastern European countries capable of anywhere near the capacity of typical Western manufacturing facilities will quickly saturate the domestic Communist market and be ready to export their overcapacity to the West.

The semiconductor capability of the Comecon has been greatly exaggerated as well, according to Bucy. "The shell game they're playing," says Bucy, "is taking small quantities of laboratory-developed devices, giving them to people who are visiting Russia, and saying 'look at our capability -- now why not sell us the equipment to manufacture this, because we can do it ourselves anyway.' If they can, let them do it. The truth is, they don't have the capability of producing in large quantities at high yields. And that's what they want us for."

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Appendix F:

U.S. Firms Trading with the Soviet Union in the 1960-1985 Period

Data concerning firms trading with the Soviet Union and the technologies transferred is classified by the Department of Commerce, allegedly to protect business from competitors. Censorship also has the effect of preventing independent analysis and public opinion from coming to grips with Soviet trade.

The following list was compiled from official files for the early and mid 1970s, supplemented by corporate news reports for the later years.

It is incomplete but certainly includes all major U.S. operations in the Soviet Union, and is the only such list in existence in the public domain.

Company	**Product**
AEC	AtomicEnergy
Acme Mfg. Co.	Machine Tools
Alcoa	Aluminum
Allen Bradley	Machine Tools
Alliance Tool & Die Corp.	Machine Tools
Alliance Tool & Die	Machine Tools
Allis-Chalmers	Machine Tools
Allsteel Press Co.	Machine Tools
Alpha Press Co.	Non Ferrous Metals
American Can Co.	Iron & Steel
American Can Co.	Food Machinery
American Chain & Cable	Machine Tools
American Express	Services
American Magnesium Co.	Metals Technology
Applied Magnetic Corp.	Electronics

Ara Oztemal (Subsidiary of Satra Corp.)	Trading
Armco Steel	Steel
Atlas Fabricators Inc.	Machine Tools
Automatic Production Sys.(Div. of Ingersoll-Rand)	Motor Vehicles
Babcock & Wilcox Boiler	Technology
Bechtel	Construction
Belarus Equip. of Canada Ltd.	Agriculture Equip.
Bendix Corp.	Machine Tools
Besley Grinder Co.	Machine Tools
Bliss, E.W. Div. of Gulf & Western Industries	Motor Vehicles
Boeing	Machine Tools
Boeing	Aircraft Technology
Borg-Warner	Machine Tools
Brown & Root Inc.	Construction
Brown & Sharpe Mfg. Co.	Machine Tools
Brunswick Corp.	Machine Tools
Bryant Chucking Grinder Corp.	Machine Tools
Burr-Brown Research Corp.	N.A.
C-E Cast Equipment	Machine Tools
Carborundum Co.	Motor Vehicles
Carlton Machine Tool Co.	Machine Tools
Carpenter Technology Corp.	N.A.
Caterpillar Tractor Co.	Agriculture Equip.
Centrispray	Machine Tools
Century Data	Electronics

* Chase Manhattan Bank	Finance
Chemetron Corp.	Machine Tools
Cincinnati Milacron Inc.	Machine Tools
Clark Equipment	Machine Tools
Cleveland Crane & Eng	Machine Tools
Colonial Broach	Machine Tools
Combustion Engineering	Motor Vehicles
Comma Corp.	Electronics
* Control Data Advanced	Computers
Cooper Industries Inc.	Petroleum Equipment
Cromalloy-Kessler Asso. Inc.	Machine Tools
Cross Co.	Machine Tools
D.A.B. Industries Inc.	Prime Movers
Denison Div. of Abex Corp.	Machine Tools
DoAll Co.	Machine Tools
Douglas Aircraft	Machine Tools
Dow Chemicals	Chemicals
Dresser Industries	Oil Tool Equip.
Dr. Dvorkovitz & Asso	Non Ferrous Metals
E.I. dupont de Nemour & Co.	Chemicals
E.W. Bliss, Div. of Gulf	Machine Tools
Easco Sparcatron	Machine Tools
Electronic Memories & Magnetics Corp.	Electronics
El Paso Natural Gas Co.	Gas Technology
Englehard Minerals & Chem. Corp.	Machine Tools
Ex-Cell-O Corp.	Machine Tools

FMC	Machine Tools
Fenn Rolling Mills Co.	Rolling Equip.
Fon du Lac	Machine Tools
Ford Motor Co.	Non Ferrous Metals
GMC	Machine Tools
Gearhart-Owen	Petroleum
General Dynamics	Aeronautical Tech.
General Electric	Petroleum Equip.
General Electric	Machine Tools
General Tool Corp.	Machine Tools
Giddings & Lewis	Machine Tools
Gleason Works	Motor Vehicles
*Gleason Works	Machine Tools
Goddard Space Flight Center	Machine Tools
Gould Inc.	Motor Vehicles
Gulf General Atomic	Atomic Energy
Gulf Oil Corp.	Petroleum Equip.
Halcroft & Co.	Machine Tools
Harig Products, Inc.	Machine Tools
Hewlett-Packard	Electronics
Holcroft & Co.	Motor Vehicle
Honeywell	Computers
Honeywell Information Systems	Electronics
Hudson Vibratory Co.	Mechanical Equip.
IBM	Machine Tools
IBM	Computers

IBM	Electronics
Ingersoll	Machine Tools
Ingersoll Milling Machine	Motor Vehicles
Ingersoll Rand Co.	Machine Tools
*International Computers	Electronics
Intel Corp.	Electronics
International Nickel	Nickel Technology
International Harvester	Machine Tools
Irving Trust Co.	Finance
Itel	Electronics
Jones & Lamson (Textron)	Machine Tools
Joy Mfg	Drilling Equip.

Appendix G:

Confidential Government Report on Cummins Engine Company (J. Irwin Miller) and Financing of Marxist Revolutionary Activities Within the United States.

I. INTRODUCTION

This Section has been reviewing available data on various; philanthropic foundations in an effort to determine if their activities are consistent with their announced goals. In this instance we have made n preliminary analysis of the Cummins Eugine Foundation which although a legitimate philanthropic enterprise, nonetheless would appear to serve as a conduit for funds to support black militants and organizations which are known to consistently promote radical revolutionary activities.

This analysis roughly outlines the data presently available. Obviously, there is considerably more to be learned concerning CEF's overall activities. Additional inquiries to the Fill are contemplated and liaison has already been established with the Internal Revenue Service in an effort to develop our respective interests.

Unfortunately, the complex nature of this tax exempt foundation does not lend itself to an easy explanation. It is suggested that the reader make frequent reference to the attached chart which will hopefully enhance understanding of the organization.

II. BACKGROUND

The Cummins Engine Foundation (CEF) was established in 1954 as a philanthropic organization by J. Irwin Miller, Chirman of the Board, Cummins Engine Coral)any, Columbus, Indiana. Mr. Miller is a highly respected 62-year old civic leader who in recent years has devoted much of his time and money to various charities and religious pursuits. He is regarded as a part of the "avant garde of the civil rights movement."

CEF is financed solely by Cummins Engine Company, which is the parent of a worldwide concern reputed to be the largest independent producer of high speed diesel engines. In 1970 CEC's pretax profit was $44,564,365.00, of which five percent was allocated to CEF. CEF generally receives one to three million dollars annually.

CEF is comprised of two sections: (1) the original County Related Philanthropic (CRP), which provides money for educational, health and social welfare projects in Bartholomew County, Indiana and (2) the General Philanthropic (GP). which was established in 1908. Little is known about the operations of the former and this report deals exclusively with the known activities of the GP section. which shares the pretax profits with the CRP.

In an effort to assist in the cultural and economic development of the nation's black people,

CEF's GP section provides large sums of tax-free dollars which are distributed through program directors in five cities, viz., Baltimore, Washington, D.C., I,os Angeles, Atlanta and Chicago. There appear to be no auditing procedures once the funds have been allocated by CEF to the program directors. This situation creates broad opportunities for misdirection or misappropriation of monies. The overall thrust of this report, therefore, is to illustrate how a seemingly munificent activity can, by divers means, serve to aid the objectives of radical individuals and organizations.

Specifically, CEF has provided a vehicle whereby:

(1) Monies were given to one organization earmarked for the use of another organization which in turn has recruited black activists to participate in revolutionary training in Communist China in December 1971:

(2) CEF contributed $5,500.00 during 1970 to the Institute for Policy Studies (IPS). A Resident Fellow of IPS also serves as the Washington Program Director for CEF;

(3) CEF funds are utilized for the purchase and operation of printing equil)-ment ultimately used by groups advocating revolutionary social change;

(4) A close working relationship exists between organizations funded by CEF and certain Marxist-Leninist organizations. One of these is headed by James Forman. a principal advocate of black revolutionary training abroad;

(5) A CEF Program Director was indicted for inciting to riot during a demonstration at a peniteutiary in October 1970 while serving as a self-appointed spokesman for prisoners' grievances:

(6) The aforementioned Program Director has purchased a 130-acre farm in his name. apparently using CEF funds. The announced purpose for the farm is that it is to be used as a youth camp to "train children in self-defense and in African culture":

(7) Seemingly irregular fiscal practices exist with respect CEF-funded **organizations:in Baltimore and inordinate amounts of money are** dispensed for such items as "materials";

(8) The possibility exists that certain "dummy" organizations have been created in order to siphon-off funds which are destined for otherwise legitimate activity.

III. DETAILS

To date the primary area of investigation into CEF activities has been concentrated in Baltimore, Maryland. The paucity of information concerning CEF funded activities in Los Angeles, Atlanta, Chicago and New York **stems** from the fact that investigation bas not yet been actively instituted in those areas. For this reason the scope of this report will be limited mainly to those activities of CEF in the Baltimore, Maryland area.

The CEF Program Director in Baltimore is Walter Lively, a 29-year old black activist who since 1961 has been variously involved with the Socialist party, CORE, U-JOIN (a jobs for blacks pro,ram he organized in Baltimore), SNCC and the Urban Coalition. He now heads the Baltimore Neighborhood Commons (BNC), a corporation through whose bank account

CEF channels a portion of its money. Presumably, CEF money enabled Lively to establish the Liberation House Press. which currently offers a full range of printing services at cut-rates to "radical groups." Lively, with his fellow *BNC* officers, Austin Sydnor and *Kenya* Kiongozi, also operates the Liberation Bookstore. The BNC, the Liberation House Press, Liberation Bookstore, and an office of the International Black Workers Congress (IBWC) are all located at the same address in Baltimore. Lively, Sydnor and Kiongozi also maintain close liaison with the UBWC, the Black Panther Party (BPP) and SOUL, School (SS), and significantly, these individuals were arrested and indicted for inciting to riot at a BPP-SS rally at the Maryland State Penitentiary in October 1970.

In December 1970, Lively purchased for $15,000.00 a 130-acre farm in Bedford. Pennsylvania, where Liberation Press and SOUL School are to build a youth camp to "train children in self-defense and African culture." (SOUL School is a "non-profit educational institution" whose literature in the past has advocated black revolution.)

The matador in which BNC funds are expended seems to suggest a lack of auditing procedures. From December 21. 1970 to September 17, 1971 a total of $46,-887.62 was withdrawn from the BNC account. Of this amount, checks totaling $17.135.00 were made payable to Cash or an officer of the BNC, usually for reason of "materials" or "supplies." It should be noted that checks totaling $2,-830.14 were made payable to companies which deal in paper and printing supplies and $11,50S.00 was withdrawn for purchase of a printing press. Similarly suspect are the activities of organizations which have received CEF funds through BNC and Lively.

In 1971 CEF made available $12,000.00 to BNC designated for the National Association of Black Students (NABS). an organization whose stated purpose is to provide a communications network for black college students. As of Novem-her 1971 NABS was recruiting revolutionary black students to travel to China with a group recruited by William Epton's Marxist-Leninist Collective. The express purpose of the trip is to provide training for student organizers to further revolution in the United States.

At least $5,000.00 from CEF was sent to BNC in 1971 marked for the Frantz Fanon Institute (EFI). FFI is allegedly an educational entity dedicated to inculcating Marxist-Leninist teachings in the minds of workers and students. Although a reference to its inception was made by radical activist James Forman at a NABS meeting in December 1970. the actual location of FFI is presently unknown. The available description of FFI's structure anti program was found attached to an International Black Workers Congress (IBWC) mailing list. It should be noted that James Forman founded IBWC and traveled to Algeria in 1970 obstensibly to gather information for a book he was writing about Frantz Fanon.

In September 1971 the three officers of the BNC traveled to Gary. Indiana for the IBWC conference called by James Forman. The purpose of the conference war to instruct local chapters in the techniques of organizing workers in factories to further the cause of destroying capitalism and building a socialist state. Forman, who traveled to Hanoi and Peking in July 1971, had copies of the 16 page *Manifesto of the* IBWC distributed to the 200 conferees, who were present by invitation only. This document includes, among other objectives: the elimination of "parasitic capitalistic vultures"; total disarmament of the U.S.; destruction of all police forces and their replacement with peoples militia; and an end to the blockade of Cuba. The program designed to effect these goals stresses teaching workers and students Marxist-Leninist ideology and promotes acceptance of money.from white

institutions as a good revolutionary tactic. The *Manifesto* concludes with a 6-point methodology for revolutionary work quoted from a 1970 North Vietnamese publication. The precise nature of the relationship betwen IBWC and BNC is unclear. It is nonetheless noteworthy that in April 1971. CEF'S program directors were said to be attempting to organize black American workers.

Ivanhoe Donaldson, CEF's Washington, D.C. Program Director, also serves as a Resident Fellow for the Institute for Policy Studies (IPS) which has been characterized as "a radical think tank." tie was selected for the CEF position because of his contacts with "leading black activists." Donaldson served concurrently as a leader for the Student Non-Violent Coordinating Committee (SNCC) in New York City and as an IPS

Appendix H:

From the Phoenix Letter, January 1986 Issue (Research Publication, P.O. Box 39850, Phoenix, Arizona 85069)

Secret U.S.-Soviet Group Plots Treason

A secret U.S.-Soviet operating group based in New York is acting in a manner strongly suggesting treason by its American members —and we do not use the word treason lightly.

We have circulated certain information in our possession to close associates. Without exception they are shocked, shaken, disbelieving... **and angry.**

Before we spell out the details for you, how do we define **treason?** Treason is defined in the Constitution as "aid and comfort" to an enemy of the United States.

Second, following this how do we define **an enemy?** We spend $300 billion a year on defense against the Soviet Union, so logically the Soviet Union is an enemy. We cannot SIMULTANEOUSLY have a $300 billion defense budget against the Soviet Union **and** give "aid and comfort" for the Soviet military structure without raising the question of treason.

This topic is discussed at length in a forthcoming book, *The Best Enemy Money Can Buy.*

Who is this secret group? Why do we suggest treason?

US-USSR Trade And Economic Council, Inc. (TEC, for short)

This bland official sounding title disguises a **formal joint Soviet-American apparatus to conduit advanced technology with pure military applications to the Soviet Union.**

The information that follows raises a distinct possibility that Administration "spy trials" and pious proclamations against aiding the Soviets are so much hogwash... **a smokescreen.**

This TEC group has official sanction and backing. It links to Bush elements in the White House, the National Association of Manufacturers, the U.S. Chamber of Commerce, and assorted Senators and Congressmen with more political ambition than common sense.

THE US-USSR TRADE AND ECONOMIC COUNCIL, INC. IS A SECRET ORGANIZATION.

TEC WILL NOT RELEASE ITS MEMBERSHIP LIST (ABOUT 300) TO THE MEDIA. TEC WILL NOT EVEN RELEASE ITS LIST TO U.S. FIRMS UNLESS THE FIRM HAS PASSED AN INTERVIEW BY A SOVIET NATIONAL WHOM WE SUSPECT HAS KGB LINKS.

Now hear this:

- The Soviet Government has a list of members
- The U.S. Government has a list of members
- The U.S. PUBLIC IS DENIED THIS INFORMATION, even though TEC claims official backing.

We acquired a **partial** list from a confidential source (reprinted on page 245). We know this partial list is accurate. We also know 500 copies of the membership list exist — so it's only a matter of time and persistence until we access the full list.

TEC claims backing from Vice President Bush (Skull & Bones) and Commerce Secretary Malcolm Baldrige, Jr. (son of S&B member Malcolm Baldrige). This makes TEC a quasi-public institution. Therefore, the public has a RIGHT TO DEMAND THE MEMBERSHIP LIST.

Why all the secrecy? Read on.

What We Know About TEC:

- TEC is headed by:
  VLADIMIR N. SUSHKOV (Co-Chairman) Soviet citizen
  DWAYNE O. ANDREUS (Co-Chairman) U.S. citizen
  JAMES H. GIFFEN (President) U.S. citizen
  YURI V. LEGEEV (Vice-President) Soviet citizen
- The PERMANENT directors of TEC are:
  ALEXANDER TROWBRIDGE, President National Association of Manufacturers
  RICHARD LESHER, President U.S. Chamber of Commerce
- TEC has 30 Soviet directors and 20 U.S. directors.
- TEC has eight full time Soviet engineers living in New York to assess U.S. technology. The cost is borne by TEC members. THESE SOVIET ENGINEERS INTERVIEW U.S. BUSINESSMEN AND ASSESS THE U.S. TECHNOLOGY OFFERED. THEY SELECT TECHNOLOGY REQUIRED FOR SOVIET MILITARY END USES AND FACILITATE THE TRANSFER.
- In a recent White House meeting the President's Science Adviser, Dr. George Keyworth, made the following statement: "... we all know that the Soviets are robbing us blind."
- Furthermore, the White House has a list of **more than 150 Soviet weapons systems using U.S. technology.**
- Yet Vice President Bush and Commerce Secretary Malcolm Baldrige, Jr. are **backing this Soviet technical vacuum operation**. We reproduce on page 246 a copy of a letter sent by Baldrige to many U.S. firms in June 1985. (The marginal notations are

by our confidential source. We left them intact.)

Partial List of Membership

U.S.-U.S.S.R. Trade & Economic Council Inc.

Abbott Laboratories	Garnac Grain
Allen Bradley	Gleason Corporation
Alliance Tool Corporation	Hope Industries
Allied Analytical Systems	Ingersoll Rand
Allis Chalmers	International Harvester
American Cyanamid	Kodak
American Express	Marine Midland
Archer Daniels Midland	Millipore Inc.
Armco Steel	Minnesota Mining
Bunge Corporation	Monsanto
Cargill	Occidental Petroleum
Caterpillar	Owens Illinois
Chase Manhattan	Pepsi Co.
Chemical Bank	Phibro-Salomon
Clark Equipment	Phillip Morris
Coca Cola	Ralston Purina
Con Agra	Rohm & Haas
Continental Grain	Seagram
Corning Glass	Stauffer Chemical
Deer & Company	Tendler-Beretz Associates
Dow Chemical	Tenneco Inc.
Dresser Industries	Union Carbide
E. I. DuPont	Unit Rig & Equipment Company

FMC Corporation Xerox

Alfred J. Mutter, The Key U.S. Operative

The key American operative in the New York office of TEC is ALFRED J. MURRER, former Chairman of the Gleason Works, a large machine tool firm in Rochester, New York with plants in Belgium and West Germany.

Murrer works closely day to day with the Soviet engineers. For our example here we select **Alexander Y. Markov**, listed as a Project Engineer. These two men jointly screen American business companies and if they find the offered technology interesting, attempt to draw the firm into the TEC net.

We can dismiss Alexander Markov briefly. Markov is a **Soviet citizen,** chemical engineer, suspected KGB, resident in New York for almost three years. Markov's job is to identify the usefulness of technology to the Soviet military complex. As Markov is a Soviet national, the question of treason does not arise. So far as we know Markov is a patriotic Soviet citizen doing his job. His only defect (that we have identified) is a habit of chainsmoking Turkish type oval cigarettes which overwhelms American visitors (unused to the pungent odor) in clouds of smoke.

Alfred Murrer deserves more attention because he is a U.S. citizen, born Rochester, New York 1923, educated MIT and University of Rochester. Before joining TEC, Murrer was Chairman of the Board of the Gleason Works, with 42 years service.

The Gleason Works is a long established prescision tool maker specializing in precision machine tools for cutting and grinding straight, zerol, spiral, bevel, hyphoid gears and curvic couplings with associated tooling and equipment.

It is vital to note that Gleason Works is in bad financial shape, with heavy losses during the past few years.

Every last machine tool produced by Gleason Works has military applications. We know from experience that there is no purely civilian industry in the Soviet Union. All plants are first and foremost military plants. All technology is examiend first and foremost for military applications. This was demonstrated 20 years ago in my three volume WESTERN TECHNOLOGY AND SOVIET ECONOMIC DEVELOPMENT and since confirmed by dozens of defecting Soviet engineers. This thesis is accepted today by Department of Defense and Central Intelligence Agency. (It is not accepted by Department of State, which operates in a fantasy world of its own making.)

What is the relationship between the financially troubled Gleason Works and the Soviet Union TODAY?

Appendix I:

U.S. Weapons Technology Sold To Soviets
From San Jose Mercury News - Sept. 6, 1985

Spanish company pleads guilty to illegal exports

WASHINGTON — The Soviet Union illegally has obtained "state-of-the-art" American equipment that could help it close the gap between its weapons and highly sophisticated U.S. weaponry, and additionally highly sensitive equipment has reached Cuba, according to a Department of Commerce official and an indictment made public Thursday.

Details of the case, which involves efforts by the Soviet bloc to obtain equipment crucial to the production of highly sought computer semiconductors and integrated circuits, emerged when a Spanish company that maintains offices in Illinois agreed to pay a criminal fine of $1 million for illegally exporting high-technology equipment between 1979 and 1982.

U.S. Attorney Joseph E. diGenova issued a statement saying the violation, by Piher Semiconductores, S.A., of Barcelona, was "one of the most significant in the area of United States high-technology transfer."

Under an agreement between the Department of Justice and Piher, the company pleaded guilty to two felony counts, waived indictment by a grand jury and agreed to pay the fine. In addition, the company, which already has been barred for two and a half years from exporting U.S.-made products, will remain barred for an additional nine months.

Equipment valued at $2.4 million was shipped to the Soviet Union and Cuba, and other highly sensitive items did not get through, according to Pentagon and Department of Commerce officials familiar with the case.

Those officials described the lot as items at the top of the Soviets' list of material needed to help them move into the age of highly sophisticated, computer-dependent weapons.

"They have a major need for it in the military," said one Pentagon official, speaking on the condition he not be identified. "It would probably narrow the gap considerably in weapons systems, lending a qualitative edge to their quantitative edge."

Officials said the Soviet Union, which in the past has tried to obtain semiconductors and integrated circuits produced in the West, recently had shifted its emphasis to obtaining the equipment needed to manufacture the circuitry — the miniature wires that carry electronic data in such common gadgets as pocket calculators and digital watches, as well as in the most sophisticated space weapons.

"Such equipment is among the Soviet bloc's most highly sought American high-technology goods needed for expanding and improving the bloc's lagging microprocessor and semiconductor production capability," said Donald Creed, a Department of Commerce spokesman.

He said departmental documents confirm that $2.4 million of these goods were illegally re-exported to Cuba and Russia... The most sensitive, state-of-the-art semiconductor manufacturing equipment went to the Soviet Union," after first being shipped to Switzerland.

Creed said the material shipped to Cuba, and additional equipment the Cubans were unable to obtain, "would have given them the capability to produce semiconductors and integrated circuits."

"As far as we know, the plant didn't get into production," he said. "They didn't get everything they needed." However, according to the agreement accepted by Piher, Cuba already has a semiconductor manufacturing facility in Pinar del Rio.

The indictment said two senior officers of the Spanish company, Jose Puig Alabern and Francesc Sole I Planas, reached agreements with Soviet and Cuban trade organizations to obtain the equipment from U.S. manufacturers. The two are believed to be in Spain and out of reach of U.S. law enforcement officials.

Piher itself apparently does not make semiconductor manufacturing equipment, according to a spokesman for a Silicon Valley market research firm.

"To my knowledge, they don't make equipment," said Jerry Hutcheson, president of VLSI Research Inc., a San Jose company that does market research on the semiconductor industry.

The indictment states that Puig reached an agreement with Imexin, a Cuban foreign trade organization, "to provide and erect a complete integrated circuit manufacturing facility" valued at $19 million.

It said Puig and Sole, who eventually quit the company, negotiated with Technoproimport, a Soviet foreign trade organization, to sell the Soviets "two highly sophisticated U.S.-origin integrated circuit manufacturing systems."

U.S. officials and information in the indictment said U.S. officials in Spain, checking at Piher facilities to determine whether the falsely completed export license documents were being adhered to, were shown fake equipment intended to resemble that exported by Piher.

BACK